



ACM20 Aviation Fuels Monitoring

Brochure: FDCB139GB



CMC Overview

LCM20 History

Hydraulic, Lubrication & Coolant Filtration
High-performance filtration systems for production machinery in industrial, mobile and military/marine applications.



Parker's technical resources provide the correct filtration technologies that conform to your requirements. That's why thousands of manufacturers and equipment users around the world rely on Parker Filtration products and people.

System Contamination Monitoring

On-line dynamic particle analysis, off-line bottle sampling and for fluid analysis or measurement of water content polluting the oil in a system. All important and achievable, cost-effective solutions available to equipment manufacturer's and end users alike with Parker Filtration's range of system contamination monitors.



For more than 20 years Parker's Condition Monitoring Centre in the UK has been designing and manufacturing Portable Automatic Particle Counters for the hydraulics industry and mobile equipment manufacturers. Original equipment manufacturers and end users across the world have successfully specified Parker fluid condition monitoring equipment because of a proven performance in the field, on the production line and in the laboratory. The most recent monitor, the LaserCM or LCM20 combines laser technology with fluid management and accurate data download to further confirm Parker as the global leader in portable particle counting.

Consistent quality

Technical innovation

Premier customer service

Parker Filtration's global reputation as a reliable supplier of superior filtration products is the result of a focused and integrated development and manufacturing system.

Racor Fuel Conditioning & Filtration

Parker air, fuel and oil filtration systems provide quality protection for engines operating in any environment, anywhere in the world.



It is from those years gaining experience in providing reproducible, repeatable and highly accurate fluid contamination data for a wide range of customers and applications that Parker has



Connecting and operating a Parker ACM20 couldn't be easier. The monitor connects directly into the system for dynamic monitoring.

developed a new industry dedicated portable monitoring instrument. The new ACM20 will replace current subjective methods of fluid monitoring still in use today for checking and maintaining the quality of today's modern Aviation fuels, from the point of manufacture through to the WPM, through the distribution system to the point of uplift into the Aircraft.

Parker Filtration consolidates quality filtration products, manufactured by process filtration, air and gas filtration and separation, fuel conditioning and filtration, fluid power products and hydraulic filter products into one broad-based range that covers many markets and most applications, as detailed here.

Worldwide Sales and Service

Process & Chemical Fluid Filtration

Liquid filtration systems for beverage, chemical and food processing; cosmetic, paint, water treatment; photo-processing; and micro-chip fabrication.



Now, not only can Parker offer the latest in on-line dynamic, real-time monitoring, but because of our diversified manufacturing of API/EI approved filtration, motion, control products and systems we can provide effective solutions to the Aviation Industry as well.

Compressed Air & Gas Filtration and Nitrogen Generation

Complete line of compressed air/gas filtration and separation products; coalescing, particulate and adsorption filters in many applications in many industries.



CM portability is renowned throughout the industrial monitoring world. Connect the hoses to the system and 2 minutes later, the monitor is reporting contamination content within your systems fluid.



The Aviation Industry

To help explain some of the advantages to be gained by specifying and using a new ACM20 portable monitor in aviation fuel applications, we posed some questions to our technical people and here are their answers?

Q Is the product in your storage tank clean/settled?

A Up until now, cleanliness of fuel has always been a long, complicated and indifferent characteristic to establish. Now fuel cleanliness anywhere in the distribution system can be determined in a 2 minute test with very little waste being produced.

Q Is the fuel you are using/receiving acceptable?

A At each stage of distribution, system owners and operators assume the fuel is clean and within specification. Now with portable monitoring the fuel can be monitored from point of manufacture to point of use.

Q What are your filters costing you?

A In most cases, the contamination that blocks filters comes from upstream. By ensuring that the fuel received is the same quality as the fuel bought, any costs associated with cleaning up contaminated fuel can be discussed with suppliers. Conformity and liability issues can be resolved easily. Additionally filter efficiency can be checked against manufacturing performance claims.

Q Why do you clean your storage tanks?

A It is recommended that level storage tanks be cleaned every 2-3 years. Why? If it is not dirty the scheduled maintenance can be postponed for years simply by measuring fuel cleanliness levels of fuel directly from the tanks.

Q Pipeline commissioning! How clean is your system?

A With an ACM20 Particle Counter, trend analysis over periods of time can track increases or decreases of particle contamination as the system is flushed, making sure that agreed standards are met before releasing the pipeline for use.

Q How can I use the data?

A The ACM20 can store up to 300 individual tests in its integrated memory. Using user friendly software this data can be downloaded directly onto a PC or laptop for easy conversion into reports or presentations.

Q Where can I use the ACM20?

A Anywhere hydrocarbon fuel is used. It can be used on filters, tanks, fuel receipt from ships and laboratories to compliment existing analysing equipment.

Q What are the current, accepted methods for monitoring jet fuel?

A Clear & Bright.

Although recognised as being very subjective, the Clear and Bright test is still used to determine particulate and water contamination levels in fuel.

Problems with this method are the visual variations from one person to the next. Also the human eye can only see objects bigger than 30-40 $\mu(c)$. Anything above that is really of no concern as these relatively large particles are easily removed by current filtration methods.

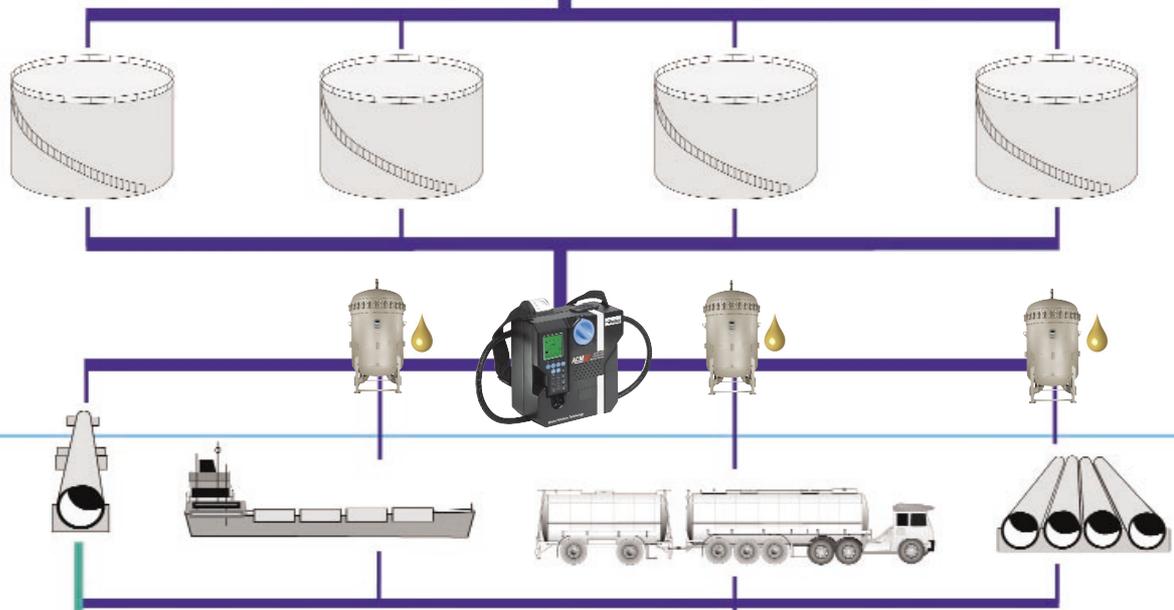
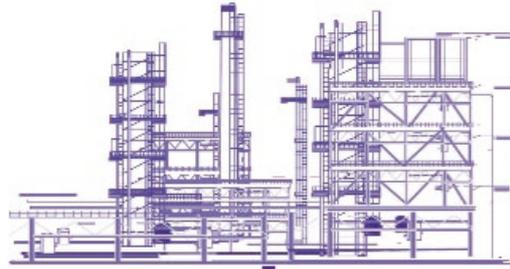
A Gravimetric Millipore More widely used across the industry and considered to be much more reliable. But is it? As with all the current methods, we have to ask are we looking at those parts of the contamination that cause damage in our fuel systems? No! Gravimetric Millipore filters out all particles greater than 0.8 μ . Large particles of dirt impact greatly on the results but, as with C&B, they have no real importance. It is the small particles that we cannot see and the concentration of those particles that are of real concern, especially when taking into consideration the critical tolerance in today's aero derived Gas turbines.

With the introduction of light observation technology, all subjectivity can be removed. Particle Counters calibrated in accordance with ISO 11171, 11943 through principles to ISO 4406:1999 bring laboratory standard equipment into the field for precise, quick and reliable results.

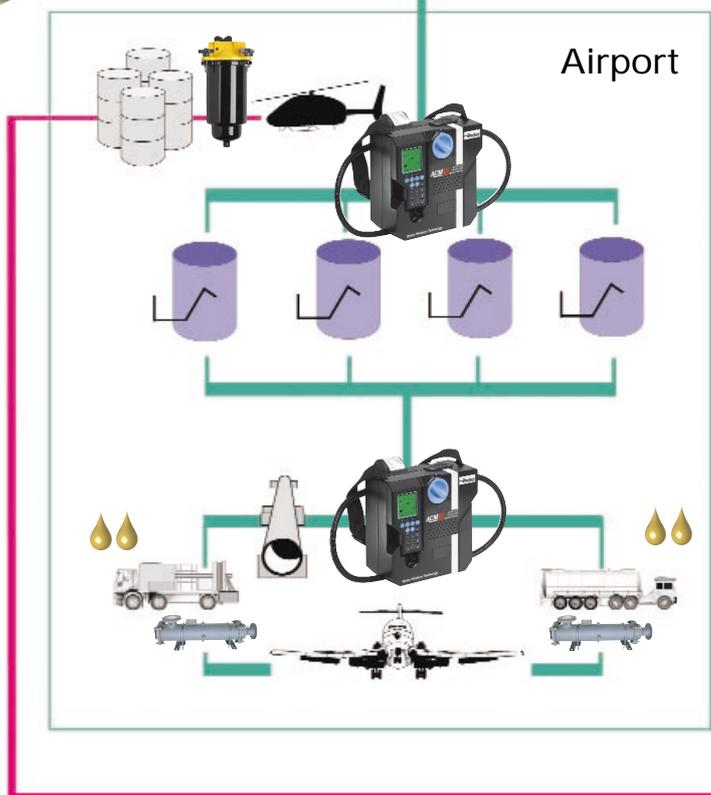




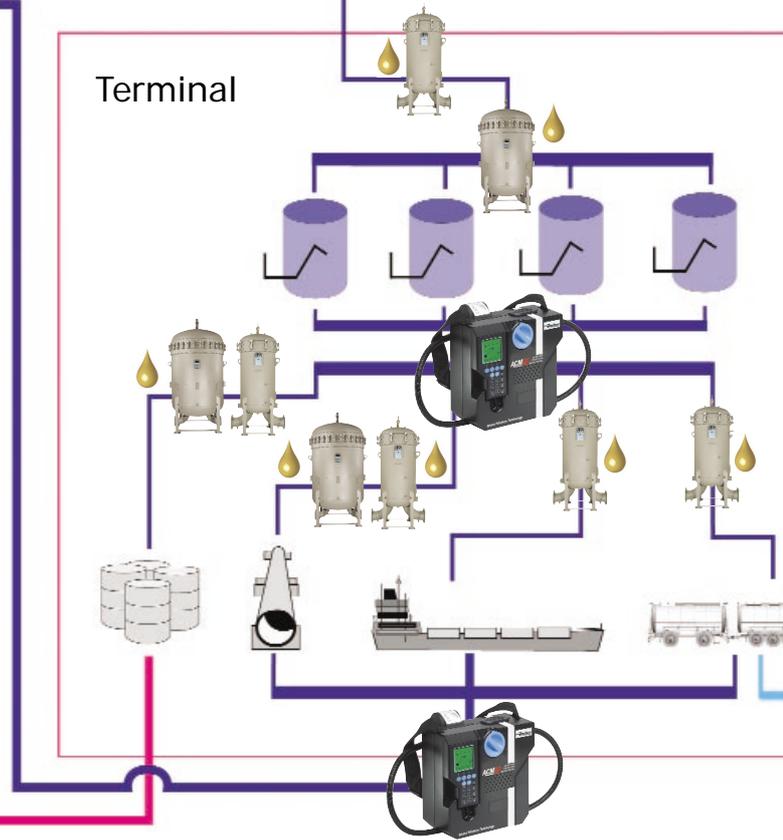
Refinery



Airport



Terminal



💧 Filtration requirements will vary depending on local fuel quality.

💧💧 The minimum filtration requirement of Jet-A1/A1 into Airports and drum filling, is a filter (FWS) meeting the requirements of API/IP1581 current edition.

A Fuels Distribution Systems



-  Multi-Product Pipeline
-  Dedicated Pipeline
-  Road Transport
-  Refueler
-  Dispenser
-  Sea Cargo
-  Aircraft
-  Helicopter
-  Fuel Drums
-  Fuel Storage
-  Floating Junction

Over the last 30 years Parker has become the premium name to trust in Marine, Automotive fuel filtration and water separation. With advanced fuel filtration laboratories in the USA, Europe and new ones planned for Asia and South America, with separate 2500GPM API/IP test facilities in the USA, Parker will continue leading the market in advanced fuel filtration technology for many years to come.



ACM20 Parker's renowned particle counter has been re-engineered and calibrated for use in fuels and allows quick, easy economical fuel condition checks for aviation and diesel fuels. A quick 2 minute test will allow you to check contamination levels, trends and integrity in a far more consistent reliable and repeatable way than traditional clear and bright methods.



FWS Parker offers 2 types of Micro-Filters: FP Cellulose elements offer 95% filtration efficiency and are available in micron ratings of 1, 2, 5, 10, 25, & 40, suitable for chemical, fuel and hydrocarbon applications. FS Synthetic high efficiency micro-filter elements feature a water resistant, all synthetic media providing 99.5%+ efficiency at the stated 1, 5, 10, & 25 micron ratings complying to AP/PP 1590.



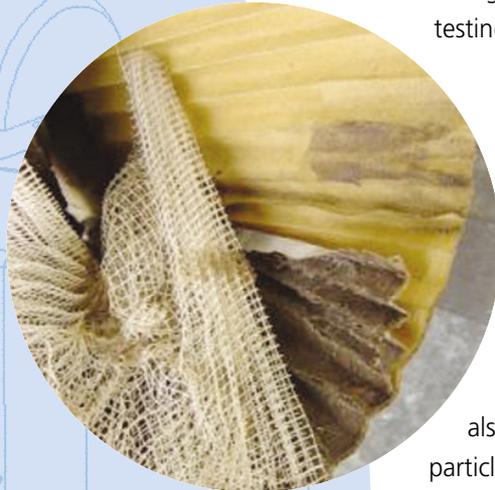
MF Parker offers 2 types of Micro-Filters: FP Cellulose elements offer 95% filtration efficiency and are available in micron ratings of 1, 2, 5, 10, 25, & 40, suitable for chemical, fuel and hydrocarbon applications. FS Synthetic high efficiency micro-filter elements feature a water resistant, all synthetic media providing 99.5%+ efficiency at the stated 1, 5, 10, & 25 micron ratings complying to AP/PP 1590 3rd Edition (1 and 5 micron). Requirements may differ depending on location and contamination history.



Technical Info



The ACM20 is designed to be easy to use and fast to provide results. These accurate downloadable results can be manipulated to provide valuable predictive maintenance statistics. Standard industry quick connections are suitable for taking a sample, a small amount of waste is produced during sampling, but not the amount generated when testing a Millipore.



Examples of field use are demonstrated here (Pictured left). The vessel DP was steady and a Millipore showed nothing was wrong. Having taken the results and knowing that the elements were 1 micron, it was decided to inspect the installation after carrying out a test.

In addition to counts per ml, the ACM20 software also provides a particle distribution detecting the % of particles across the 6 channels, which can be checked against 'soon to be published' OEM recommendations for dirt levels.

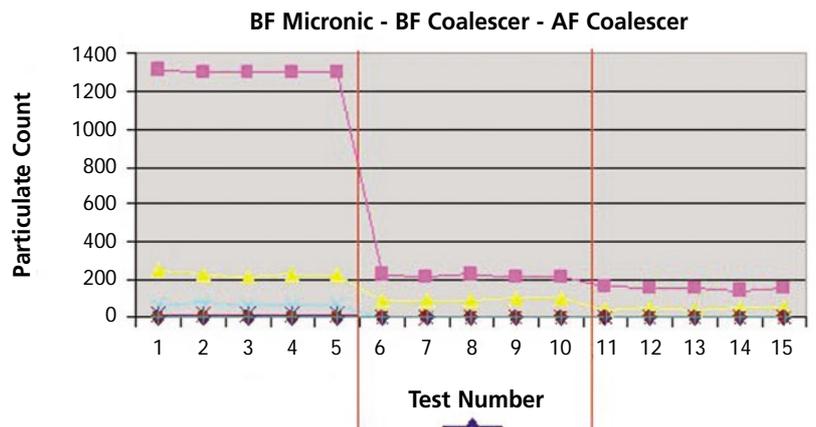
Downloaded data can easily be turned into useful trend, presentation data.

As well as the handset displayed graphic or downloaded data, a hard copy can also be printed from the ACM20 unit.



MTD Key

- >4 μ
- ✦ >14 μ
- >25 μ
- ▲ >6 μ
- ✱ >21 μ
- + >30 μ



Specification & Ordering

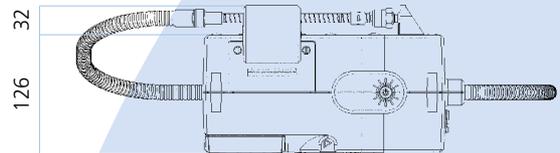
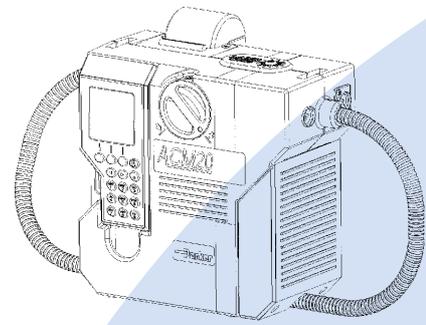
Aviation CM20 (ACM20.2022)

Lexan, structural foam and ABS case
ABS handheld display
Polyester keypad
Mechanical composition – Brass, plated steel, stainless steel and aluminium
Fluorocarbon Seals
Nylon hoses (kevlar braided microbore)
Stainless steel armoured hose ends
1.2m fluid connection hose
Rechargeable battery pack
12Vdc power supply
Fast blow fuse
Unique optical scanning system
Bonded glass optical window enclosed in stainless steel plate
Micron channels analysis - solid particulate (4µ+, 6µ+, 14µ+, 21µ+, 25µ+ & 30µ+(c))
Analysis range ISO 7 to 22 incl % by volume
32 character dot matrix LCD.
Alpha numeric keypad
Data retrieval
Calibration to ISO standards*
Viscosity range 2 to 250 cSt. (2000 SUS)
Fluid operating temp. +5°C to +80°C
Ambient storage temp. -20°C to +50°C
2 minute test completion time
Memory store – 300 test memory
12Vdc regulated power supply input
Battery operated 6 x 1.5 D cells
Mineral oil, petroleum based & aviation turbine fuels (ATF) compatibility
Up to 420 bar (6000 psi) operating pressure
Integral 16 column printer
RS232 computer interface
Astra board case weight – (Kg) – 5
Unit weight – (Kg) – 8
Downloader software and cable link pack
CE certified
Auto logging

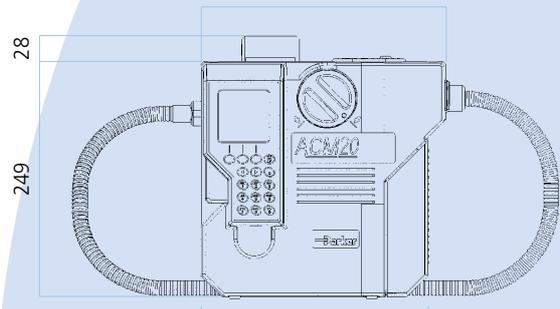
Commissioning kit includes:

6 x 1.5 D cell batteries
2 x spare paper rolls
Spare printer ribbon
Fuse
Screwdriver
12v jack plug for DC supply
Adaptor Valve, Flow Control Device & Waste Bottle
Re-chargeable battery pack
Calibration certificate
User manual

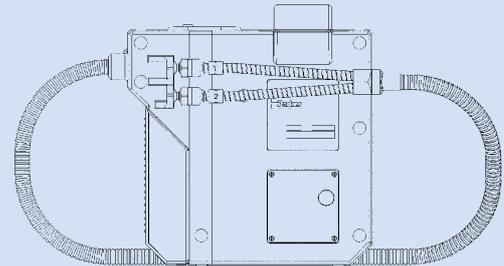
	Part Number	Description
CM20's	ACM20.2022	Portable Particle Counter
	B.84.817	ACM20 12 Vdc power supply
	B.84.609	Re-chargeable battery pack
	B.84.702	Printer paper (5 rolls)
	P.843702	Printer ribbon
	B.84.746	Bottle Assembly
B.84.645	Millipore Adaptor Assembly	
System 20 Sensors	STI.Ø144.100	Industrial size 0 sensor
	STI.1144.100	Industrial size 1 sensor
	STI.2144.100	Industrial size 2 sensor (Mobile Sensors can be specified)
Datum	B.84.779	ACM20 downloader software pack
	B.84.708	Cable and adaptor



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*Note: In compliance with international standards, all Parker portable particle counters can meet the ISO Medium Test Dust standards. The ACM20, in addition to the complete range of Condition Monitoring products, is capable of achieving certification to ISO 4406:1999, and with traceability to ISO 11171 for SRM 2806.

Commissioning Kit

- ACM20 particle counter
- Power supply B.84.817
- Waste bottle B.84.746
- Flow control assembly B.84.752
- Millipore adaptor assembly B.84.645
- Rechargeable battery pack B.84.609
- Downloader software B.84.779
- Cable and adaptor B.84.708
- Aluminium case P.843850
- User manual P.849111 ACM

Commissioning Kit





01422 377367



enquiries@prosep.co.uk

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SPRINGS & WELLS
- WATER TESTING

FUEL FILTRATION

- DIESEL, AVIATION



Prosep Filter Systems Ltd
Unit G19, River Bank Way,
Lowfields Business Park,
Elland, West Yorkshire
HX5 9DN

Phone: 01422 377367
email: sales@prosep.co.uk
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