icount BS

icountBS User Manual

Parker

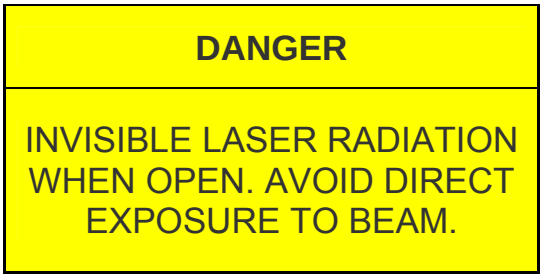
Issue K, 05 Aug 08

www.parker.com/eurofilt

Laser Information

This product contains an invisible infrared 5mW laser.

Any dismantling of the product may result in dangerous exposure to laser radiation.



Please note that users are not required to access the laser radiation source and should never do so.

Contents

Introduction

The icountBS with its innovative industrial design has been developed for customers looking for state of the art technology, attention to detail and the compactness of a permanent laboratory particle analysis model.

Principles of operation

Combine this with on-board, laser based, leading-edge technology to bring to all industries a truly revolutionary Particle Counter.

The icountBS is a product from the next generation of Parker Hannifin's fluid particle analysis and monitoring innovations.

The icountBS features an easy to use interactive touch screen, pressurized bottle chamber for air suppression via an internal compressor pump, bottle cavity aperture design with automated door closure mechanism, sample tube cleaning sleeve minimizing contamination cross over (competitor shortfall), internal printer and is self-calibrating to ISO standards.

Accredited to US Standards and achieving full ISO certification and calibration to the latest ISO Medium Test Dust Standards, icountBS represents the most up to date technology in solid particle contamination analysis.

The icountBS brings to all industry a truly revolutionary Bottle Sampler as a remarkable cost effective market solution to fluid management and contamination control.

Safety requirements

Refer to the Parker Hannifin Quality and Servicing booklet.

Maintenance requirements

Please contact Parker Hannifin in the unlikely event of the icountBS being faulty or damaged.

Recalibration

Contact your local Parker Hannifin Sales Company for recalibration. The recommended recalibration frequency is between 12–18 months.

Storage requirements

Store in dry conditions within a temperature range of -40°C to + 90°C (-40°F to +194°F)

Benefits

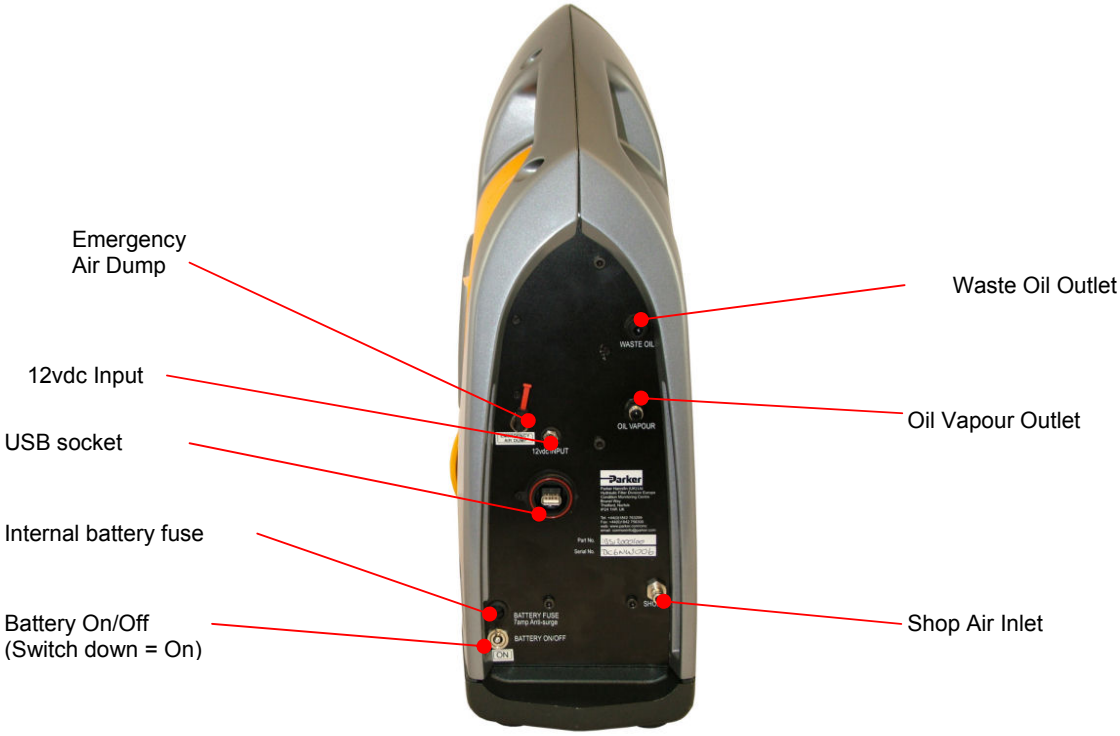
- Quick sample bottle analysis with variable test time options from 15 second and volume capacities from 10ml.
- Repeatable and re-producible result performance to ISO11171 and NAS1638 particle count distributions.
- Design concept allowing for portability. DC and rechargeable battery pack power options.
- Cost-effective and economical alternative solution to external laboratory services.
- 6 variable channel size analysis
- Fluid resistant touch type screen panel
- Sample tube self cleaning sleeve minimizing contamination cross over
- Internal printer

Technical specification

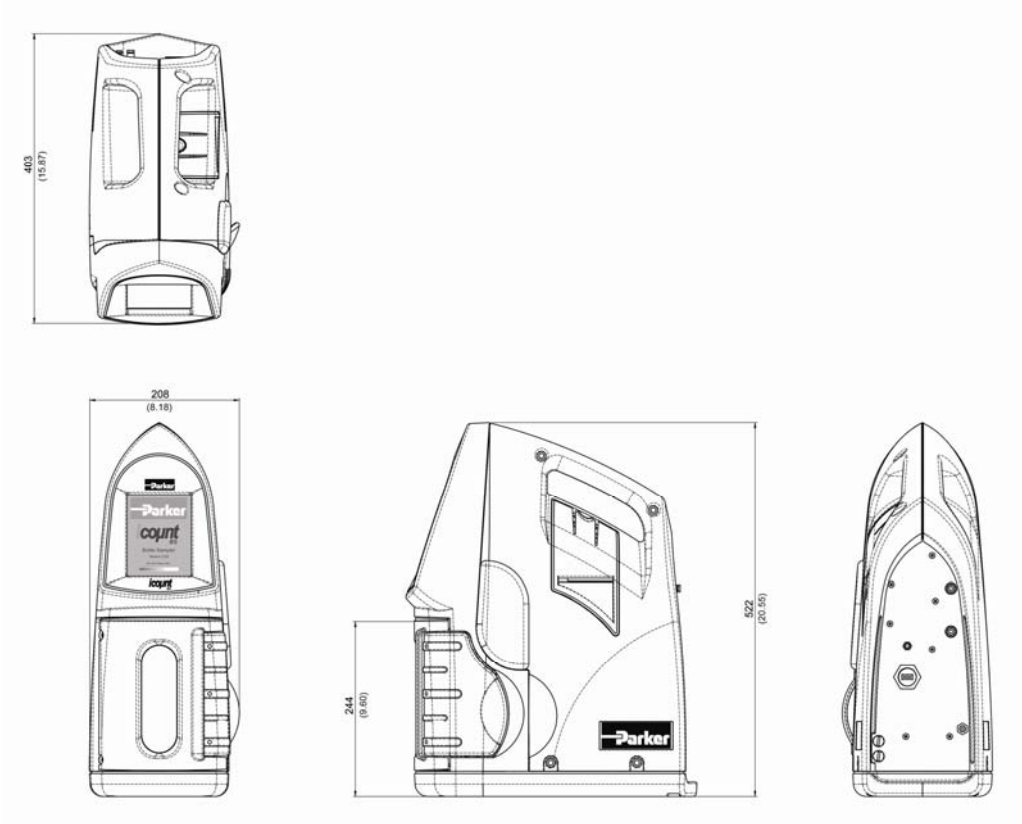
Principle of Operation	Laser based light obscuration
Calibration Dust	MTD or ACFTD
Dimensions	H=525mm x W=180mm x D=410mm
Weight	18Kg
Mechanical Composition	Stainless steel 316, plated mild steel and aluminium
Plastics Composition	Precision polyurethane RIM mouldings and ABS plastic
Operating Temperature	+5°C to + 60°C
Operating RH range	20 – 85% (Tested at 30°C, No condensation)
Storage Temperature	-40°C to + 90°C
Storage RH range	10 – 90% (Tested at 30°C, No condensation)
Channel Sizes	**ACFTD** - >2µ,>5µ,>15µ,>25µ,>50µ,>100µ **MTD** - >4µ(c),>6µ(c),>14µ(c),>21µ(c),>38µ(c), >70µ(c)
Analysis Range	ISO 7 to 21, NAS 0 to 12
Contamination Standards	**ACFTD** - ISO 4406:1987, ISO 4406:1991 & NAS 1638 **MTD** - ISO 4406:1999, NAS 1638
Calibration Standard	**ACFTD -** Fully traceable to gravimetric first principles. **MTD -** Traceable to ISO11171 via ISO11943*.
Fluid management	60ml/min
Test Time	Variable – depends on user selection of flush volume and test sample volume.
Languages	English and Japanese only.
Pre-Test Flush Volume	Minimum = 10ml, Maximum = 100ml
Possible Test Sample Volume Configurations	User selectable from single test up to 5 tests per run. (eg.1x100ml up to 5x10ml per run)
System Flow Rate	Test = 60ml/Min, Exhaust =240ml/Min
Viscosity Range	10 to 400 cSt
Fluid Compatibility	Mineral based oils.
Sample Bottle Size	No specific bottle required. Maximum size = Ø75mm x 150mm height Maximum Volume Sample = 250ml
Memory Storage	Maximum of 500 tests. Test can be exported to USB memory stick. The data can then be read by Microsoft Excel.
Output Display	Hitachi touch screen display Backlight 256 colour STN transmissive Resolution - 320x3 (R.G.B) (H) x 240(W) dots
Display Active Area	115(H) x 86(W) mm
Operating System	Windows CE
Data Input	Via icon on touch screen
Printer	Thermal dot-line printing
Printer Paper	Paper rolls - Ø50mm x 57mm/60mm length x 25m long
Test Certification	Yet to be established.
Power Supply	**DC Output** – 12V @ 6.60 Amps, 80 Watts max. **AC Input** – 100 to 240V @ 1.2Amps (50 – 60 Hz)
Battery Power	2 hours (recommended to be fully charged every 3 months)
Battery Stand-by Time	1 month (then 1 hour of operation)
Battery fuse	6.3 Amps (Anti Surge)
Air pressure Source	3.5 bar Mini-compressor OR 7 bar shop air.

* (For full ISO 11171 calibration, consult Parker Hannifin)

Product features



Product Dimensions



Working and Testing

The icountBS is capable of degassing and supplying a fixed amount of oil to test. Because of this it is able to eliminate many of the variables associated with contamination monitoring.

The oil sample is degassed using compressed, cleaned air and then supplied, through a fixed displacement pumping system. Its test method is consistently controlled, thus removing more of the variables, which could occur with Bottle Sampling.

Unfortunately, there are other factors that are beyond the control of Parker Hannifin products, consideration of which could result in error limitation.

These are categorised as:

THE EFFECT OF SYSTEM CONDITIONS.
FLUID SAMPLE EXTRACTION.
SAMPLE HANDLING AND PREPARATION.

In most instances, the adoption of simple controlled procedures will result in reliable trend monitoring.

The Effect of System Conditions

System flow rate

Samples are best taken from a point in the system where the flow is TURBULENT (Reynolds No. greater than 4000). The turbulent flow creates a mixing action. Where the flow is streamline or LAMINAR, larger particulate may tend to settle toward the lower pipe surface and not be sampled.

System Condition Changes

Changes in the system operating condition, flow, temperature, pressure or vibration can result in previously sedimented contaminant being retained into the flowing oil. It is also possible that these changes may cause partially contaminated filter elements to shed particulate into the system. Samples should therefore, be extracted when the system is in a steady state condition and the result less likely to be distorted by contaminant peaks.

Taking a Sample

Extract a sample while the system is operating under consistently controlled conditions. Adopt a consistent technique.

Spill off at least 200ml of fluid to flush the sampling port of residual contaminant.

Leave bottle capped until ready to extract the sample.

Fill the bottle to approximately 80% and cap immediately after extracting the sample.

Fluid Sample Extraction

Flow Rate

Variations in the sampling flow rate may affect the result from bottle samples. The flow rate through a sampling port from an operating hydraulic system will vary dependant upon the system pressure, the port restriction and fluid viscosity. For best trend monitoring, it is necessary to maintain these conditions consistently when extracting Bottle Samples.

Sampling Valves

There are a number of proprietary sampling valves available, which adhere to good theoretical principles. However, they do tend to generate a level of precision and cost which is unnecessary for trend monitoring.

Sampling points

Sampling points should enable extraction of a sample without changing the system's condition. Fine control needle valves are not desirable, as they have a tendency to silt up under some operating conditions, causing the distribution of contaminants in the fluid to be changed. The sampling port should be protected to maintain cleanliness and thoroughly flushed before collecting the sample for analysis.

Sample Handling and Preparation

Bottle Cleanliness

It is preferable that bottles have sealing screw caps and both parts are cleaned to a suitable level in accordance with ISO3722.

The bottle should not contain more than one tenth of the number of particles per 100ml than are expected to be monitored. Standard Parker Hannifin bottles are supplied clean to ISO 13/11 or better in a Class 10,000 Clean Room and should not be used to accurately count oils cleaner than ISO 16/14 although they may be used for "trend monitoring" at lower levels.

NOTE: A Class 10,000 clean room is designed to never allow more than 10,000 particles (0.5 microns or larger) per cubic foot of air. So as you can quantify this, a typical office buildings' air contains between 500,000 to 1,000,000 particles (0.5 microns or larger) per cubic foot of air.

The bottle should remain capped until time of sample filling and be re-capped immediately afterwards.

Sample Mixing

Sedimentation of contaminant in a sample will occur, the rate of which is dependent upon both the fluid and particle characteristics.

Methods of sample agitation have not been provided, as they are likely to inconsistently distort the analysis of results.

Samples should be analysed, without delay, once agitated.

Where facilities are available, mixing can be achieved using “paint shakers” and/or an ultrasonic bath (for example, 5 minutes with a paint shaker, 30 seconds in an ultrasonic bath and a further 15 minutes with the paint shaker, as indicated in ISO4402:1991[E]).

Care should be taken when using ultrasonic baths to avoid distortion of the result by extended use, causing contamination breakdown.

Bottle samples can be sufficiently stirred by swirling and tumbling by hand.

Results

The first result from a bottle sample should be disregarded, as it could be distorted by fluid from a previous sample.

To reduce the effects of mixing variations and sedimentation, it is preferable to average the results of three tests. Individual users may establish the possibility to reduce this number of tests, dependant upon their requirements and experiences.

Samples from different parts of a system will give different results. Consideration should be given to what monitoring is desired and where samples are to be extracted from for suitable trend monitoring to be performed.

It is important that whatever practices are adopted by the user, they are performed consistently.

A) Touch screen instructions

- The icountBS is operated via the touch screen on the front of the product.
- Features are chosen by simply pressing the required icons on the screen.

Common icons used:

- 

- return to the main screen
-  - Returns to previous screen.
- 

- Prints selected data.

B) Product set-up

1. Using the supplied clear waste tube, connect the waste bottle to the '*WASTE OIL*' connection on the rear panel of the icountBS.
2. Using the supplied blue vapour tube, connect the waste bottle to the '*OIL VAPOUR*' connection on the rear panel of the icountBS.
3. If available, Parker Hannifin recommends connecting shop air to '*SHOP AIR*' inlet on rear panel on icountBS. If not the icountBS will operating using the internal compressor.
4. Open the pressure chamber door by pulling the yellow door latch. Note that the chamber door will not open if the chamber is pressurised. Ensure that the door seal is correctly seated and dust/dirt free.
5. Ensure the battery switch is '*ON*' (switch in the DOWN position)
6. Connect the supplied power supply to the 240V mains supply and switch on.
7. Connect the supplied power supply jack plug to the '*12vdc INPUT*' connection on the rear panel of the icountBS. After approximately 25 seconds, the icountBS touch screen will activate and perform a 20 seconds self test.
8. On initially powering up the iBS a language selection screen appears. Once the language of choice is selected this screen will not be seen again. It will, however, be possible to change the language, if desired, through the 'Config' System Settings option at a later point.
9. The icountBS is now ready for use.

C) Product Registration

The icountBS "Product Registration" screen may appear. The product needs to be activated.
Please select one of the three on-screen options:

1. Visit **www.parker.com/reg** to obtain your registration key. Enter this key on the icountBS screen and then press "***Reg Now***"
2. Press "***Skip***" and start the 30 days grace
3. To simply turn the icountBS off, press "***Turn Off***"

D) Home Screen overview

Home screen

a. "*Switch Off*" – switches the icountBS off. The product can be re-activated by opening or closing the chamber door.
b. "*New Test*" – perform a test.
c. "*Browse Tests*" – displays previously saved tests.
d. "*Config*" – displays the icountBS "System Settings" screen.

E) Configuration (Config)

System Information:

Home screen

"Config" screen

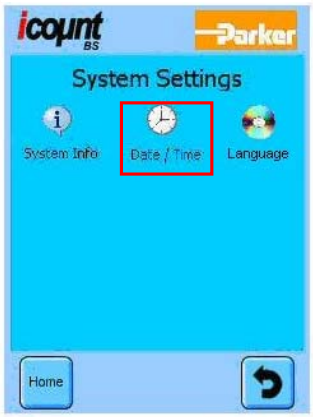
"System Info" screen

- "System Info" – display system information regarding the icountBS.
- "Version" and "Build" refers to the installed icountBS software.

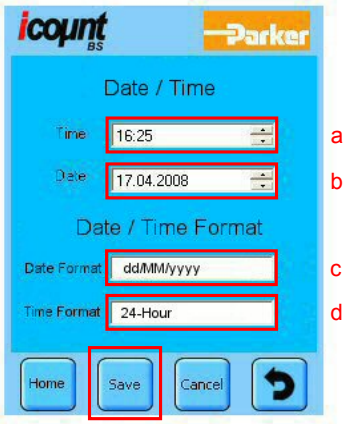
Date / Time:

Home screen

"Config" screen



"Date / Time" screen



a
b
c
d
e

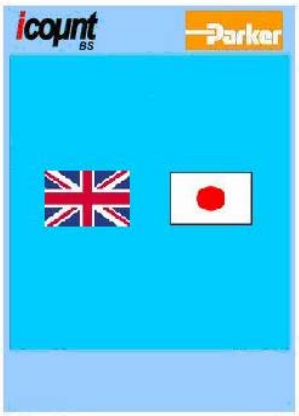
a. To set the "Time" – select either the hour or minute then press "Arrows" to adjust.
b. To set the "Date" – select the day, month or year then press "Arrows" to adjust.
c. To set the "Date Format" – select the current format. Three options will then be shown –
    1. dd/MM/yyyy, 2. MM/dd/yyyy or 3. yyyy/MM/dd
d. To set the "Time Format" – select the current format. Two options will then be shown –
    1. 24-Hour or 2. AM/PM
e. Press "Save" to save settings.

Language:

Home screen

"Config" screen

Language screen



a b

a. To set the language as "English" press the Union Flag.

b. To set the language to "Japanese" press the Nishoki.

F) To start a test

1. Ensure the 'Product set-up' procedures are carried out.
2. Ensure that the required test sample bottles are close to hand.
3. Open the pressure chamber door by pulling the yellow door latch.
   Note that the chamber door will not open if the chamber is pressurised.
4. Apart from the drip tray, ensure the chamber is empty.
5. Remove the drip tray from chamber.
6. Remove the cap from the test sample bottle. Place the sample bottle onto the drip tray.

7. Reposition the drip tray (and test sample bottle) into chamber.

Note it is necessary to tilt the test sample bottle slightly backwards on the drip tray so that it clears the icountBS sample steel dip tube (located inside the pressure chamber, top surface).

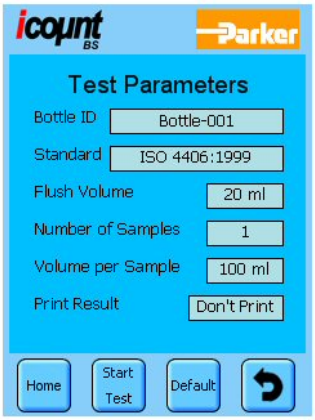
Ensure the test sample bottle is located centrally on the drip tray and that the icountBS sample tube (located inside the chamber) does not collide with the sample bottle when the icountBS operates

8. Close the chamber door then re-lock using the yellow door latch.
9. The icountBS is now ready to be operated via the touch screen.

IMPORTANT
WHILST TESTING, ENSURE THE WASTE BOTTLE OIL LEVEL IS MONITORED TO PREVENT OVERFLOWING.

G) Default Test Parameters

Test parameters screen

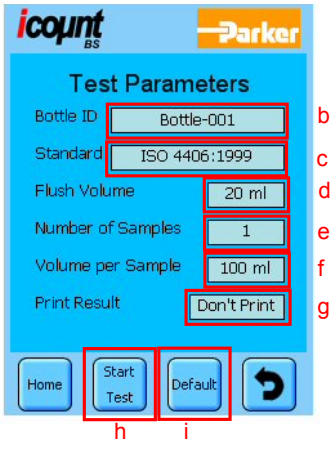


- Bottle ID – Bottle-xxx (where xxx = sequential number, e.g. 001, 002, 003)
- Standard – ISO 4406:1999
- Flush Volume – 15ml
- Number of Samples – 3
- Volume of Sample – 50ml
- Print Result – Don't Print

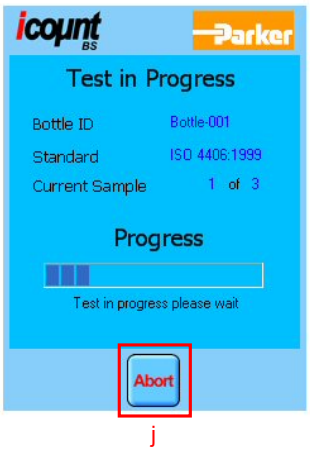
H) New Test Screen (Perform a test)

Home screen

Test parameters screen



Test in progress screen



a. Press '*New Test*'

The 'Test Parameters' screen will appear. The parameters fields shown are all user definable. By selecting/pressing the relevant parameter field, either an options panel or QWERTY style keyboard will be displayed.

b. "Bottle ID" – Test sample bottle identification. Accept the default or type the required bottle identification, remembering to press enter on the keyboard. Note that after this test is completed, the bottle ID will revert back to the default ID.
c. "Standard" – Select between different Contamination Standards.
d. "Flush Volume" – Total volume of fluid to be flushed through the icountBS before the sample test is performed.
e. "Number of Samples" – The total number of samples to be taken from the one test sample bottle.
f. "Volume per Sample" – Total volume of fluid to be take from test sample bottle.
g. "Print Result" – Option to print test result after the sample test.

h. "Start Test" – will start a sample test to the current Test Parameters. The 'Test in Progress' screen will appear.
i. "Default" – will reset the icountBS Test Parameters to the factory test parameter defaults:-
j. "Abort" – will abort the current test. Occasionally the icountBS will require a re-boot to recover from the abort test command. Simply switch the mains / battery supply off, wait approximately 5 seconds and then switch back on.

Note:
The internal pump capacity is 110ml
The maximum Test Volume is 250ml (i.e. Flush Volume + Volume per Sample x Number of Samples = 250ml)

If multiple samples are required from one sample bottle and the combined Flush Volume & Volume per Sample is greater than 110ml, then the pump will empty to the connected waste bottle before drawing the next sample.

The icountBS will perform an AMF (Automatic Mini-Flush) of approximately 5ml at the end of the first Volume per sample and then again at the beginning of the next Volume per Sample.

However, if the Flush Volume and Volume per Sample is LESS than 110ml (the internal pump capacity) then the test samples are combined (see Example B).

Example A:
The icountBS unit has been configured – Flush Volume = 10ml, No of Samples = 3, Volume per sample = 60ml

Sample number	Flush Volume (ml)	Volume per Sample (ml)	*AMF* (ml) Approx.*	*Actual Test Sample Volume (ml)*
1	10	60	*5*	*75*
2	5 *	60	*5*	*70*
3	5 *	60	-	*65*
Total	*20*	***180***	*10*	***210***
* *Automatic Mini-Flush*				

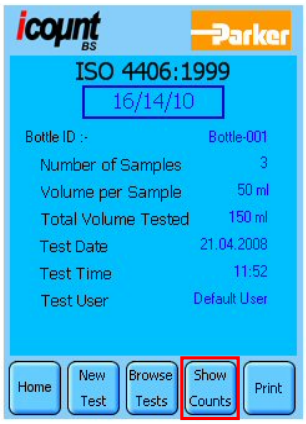
Example B:
The icountBS unit has been configured – Flush Volume = 20ml, No of Samples = 3, Volume per sample = 50ml

Sample number	Flush Volume (ml)	Volume per Sample (ml)	*AMF* (ml) Approx*	*Actual Test Sample Volume (ml)*
1	20	50	*5*	*75*
2	5 *	50+50	-	*105*
3	-	-	-	-
Total	*25*	***150***	*5*	***180***
* *Automatic Mini-Flush*				

I) Review New Test Data

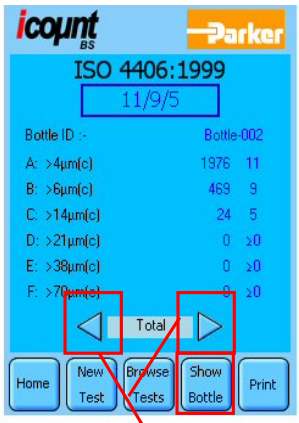
On completion, the test result is shown.

Test bottle screen



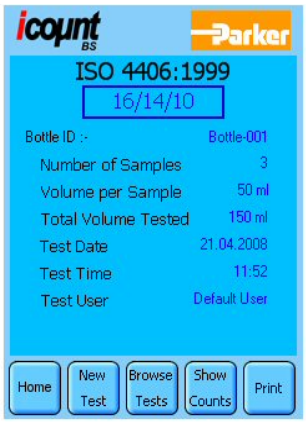
a

Test bottle counts screen



b c

Test bottle screen



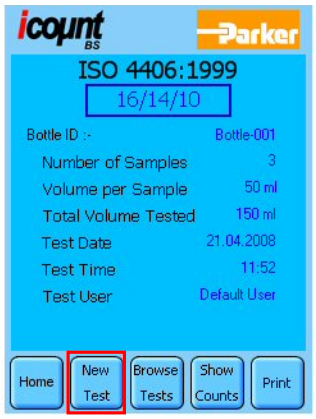
a. Select “Show Counts” to review test counts.
b. On the test counts screen, if the test has more than one measured sample, then press/select the ◁ and ▷ to page through the total and each sample.
c. Select “Show Bottle” to review test bottle detail (return back to the original screen).

The test data is automatically stored on the icountBS (refer to section K for instructions to browse test data).
The icountBS is limited to 500 stored tests. By default, the icountBS will warn the user from the 450th test to export or delete test data. At the 500th test, the user has no further option but to export / delete test data. Refer to **section N** of this manual to change this setting.

J) Perform Another Test

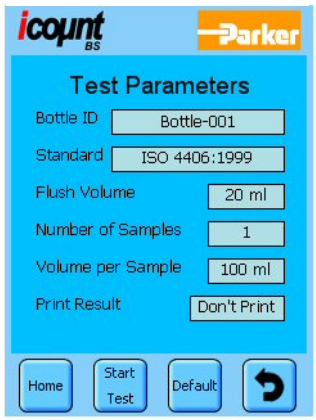
Straight after review the test data it is possible to perform another test – assuming that there is plenty of fluid left in the sample bottle.

Test bottle screen



a

Test parameters screen



a. Press “New Test” to perform another test and display the ‘Test Parameters’ screen. Refer to **section H** of this manual.

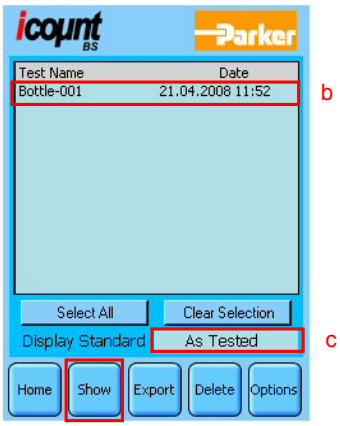
K) Browse Previous Tests

The review / browse previously stored tests.

Home screen

a

Browse Test screen

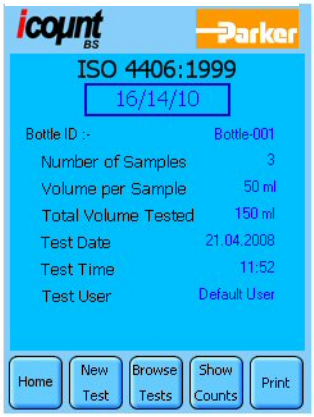


b

c

d

Test bottle screen



a. Press “Browse Tests” to browse previous tests. The browse test screen will be displayed.

Note the test names displayed on this list are individual tests that have been stored on the icountBS.

b. Select / highlight the required test.
c. Select the standard to be displayed. “As Tested” is the default value and will display the selected test in the standard it was originally tested in. Other standards are available to view tests in a different standard to the original.
d. Press “Show” to display the sample test bottle details.

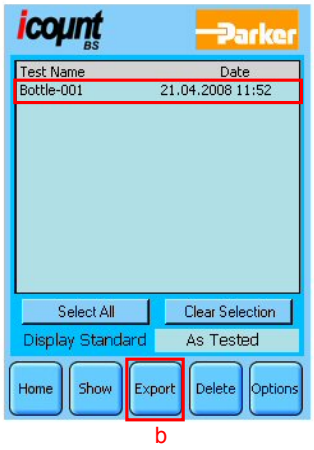
Refer to **section I** of this manual to review the counts for this particular bottle.

L) Exporting test data

Export one test

Ensure that a USB memory pen is connected to the rear of the icountBS.

Browse Test screen



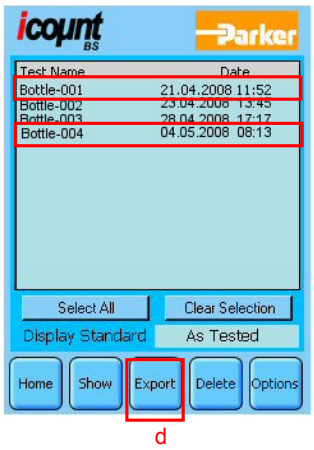
a. Select / highlight the required test.
b. Press “Export”.

A Microsoft Office Excel Comma Separated Values File (.csv) is automatically saved to the USB memory pen. Note that a directory named ‘icountBS’ is created on the root directory of the USB memory pen. The exported .csv file(s) are located here.

Export multiple tests

Ensure that a USB memory pen is connected to the rear of the icountBS.

Browse Test screen



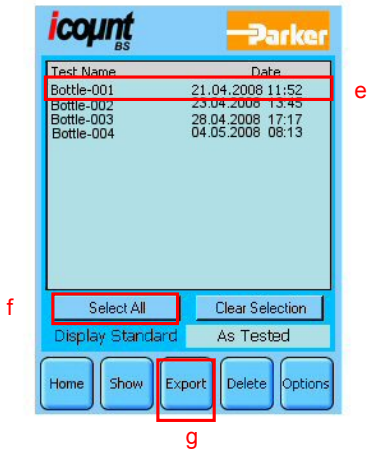
c. Individually press/select the required test files
d. Press “Export”.

A Microsoft Office Excel Comma Separated Values File (.csv) is automatically saved to the USB memory pen. Note that a directory named ‘icountBS’ is created on the root directory of the USB memory pen. The exported .csv file(s) are located here.

Export all stored tests

Ensure that a USB memory pen is connected to the rear of the icountBS.

Browse Test screen



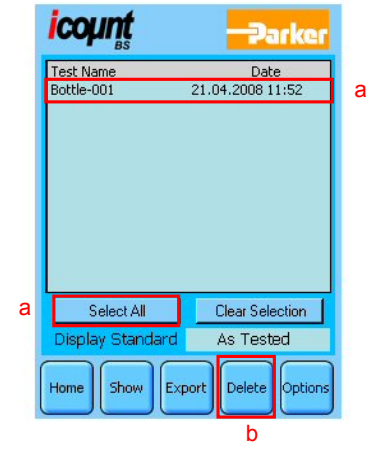
e. Individually press/select the required test files
f. Press/select “Select All”
g. Press “Export”.

A Microsoft Office Excel Comma Separated Values File (.csv) is automatically saved to the USB memory pen. Note that a directory named ‘icountBS’ is created on the root directory of the USB memory pen. The exported .csv file(s) are located here.

M) Delete test data

Please note that once the test data is deleted, this information is unrecoverable from the icountBS.

Browse Test screen

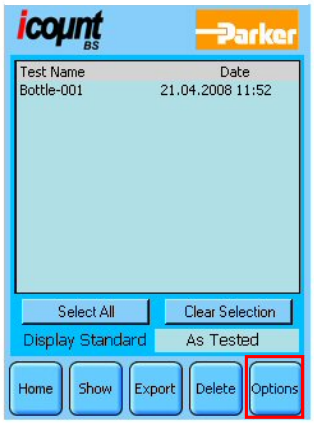


a. Select / highlight the required test(s) OR press “Select All”.
b. Press “Delete”.

N) Browse Options

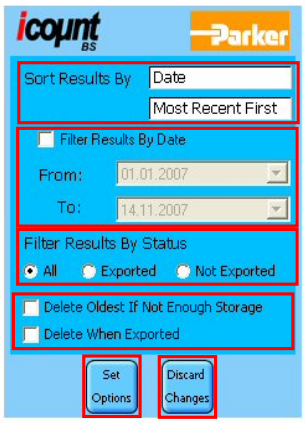
The browser on the icountBS can be reconfigured to the suit the users requirements.
For example, sort by date, sort by name, etc.

Browse Test screen



a

Options screen



b c d e f g

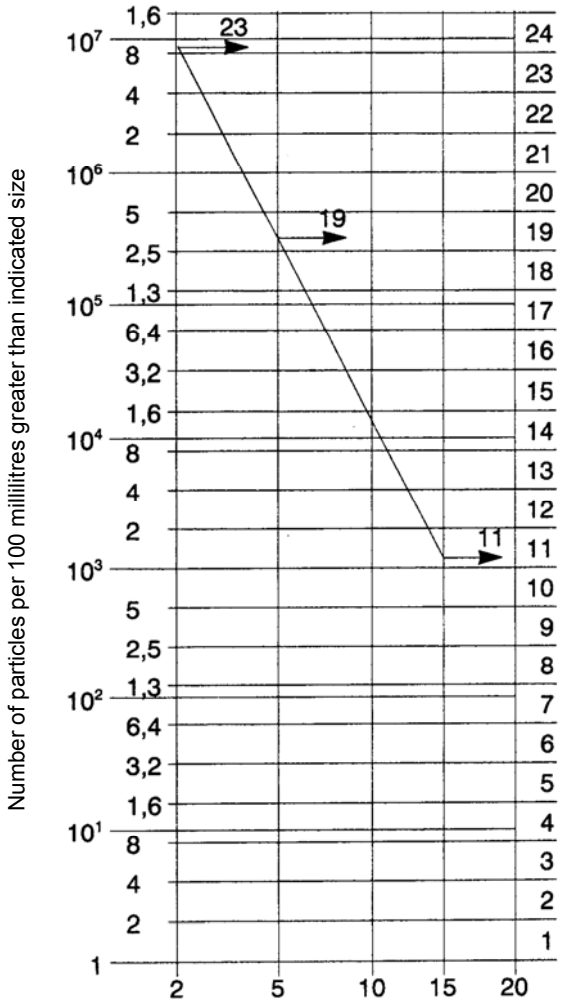
a. Select “Options”
b. Sort Results By “Date”, then select either “Most Recent First” or “Oldest First” OR Sort Results By “Name”, then select either “A-Z” or “Z-A” to sort alphabetically.
c. Select the “Filter Results By Date” tick box to allow the user to search between stored test dates.
d. This option allows the user to select “All” test data or test data that has already been “Exported” and test data that has “Not Exported”.
e. Select either option if required.

Interpreting data

Solid contaminants in fluid power systems vary in size, shape, form and quantity. The most harmful contaminants are normally between 6 microns and 14 microns. The ISO code is the preferred method of reporting quantity of contaminants.

The ISO code number corresponds to contamination levels pertaining to three sizes.

The first scale number represents the number of particles larger than 4µm(c) per 100 milliliter of fluid, the second number for particles larger than 6 µm(c) per 100 milliliter of fluid and the third number for particles larger than 14 µm(c) per 100 milliliter of fluid.



Interpolation is acceptable; extrapolation is not permissible.

ISO contamination numbers

Range number	Number of particles per 100 ml	
	More than	Up to and including
24	8×10^6	8×10^6
23	4×10^6	16×10^6
22	2×10^6	4×10^6
21	1×10^6	2×10^6
20	500×10^3	1×10^6
19	250×10^3	500×10^3
18	130×10^3	250×10^3
17	64×10^3	130×10^3
16	32×10^3	64×10^3
15	16×10^3	32×10^3
14	8×10^3	16×10^3
13	4×10^3	8×10^3
12	2×10^3	4×10^3
11	1×10^3	2×10^3
10	500	1×10^3
9	250	500
8	130	250
7	64	130
6	32	64
5	16	32
4	8	16
3	4	8
2	2	4
1	1	2

For example: code 20/18/13 indicates that there are between 500,000 and 1,000,000 particles larger than 2 microns, and between 130,000 and 250,000 particles larger than 5 microns, and between 4,000 and 8,000 particles larger than 15 microns.

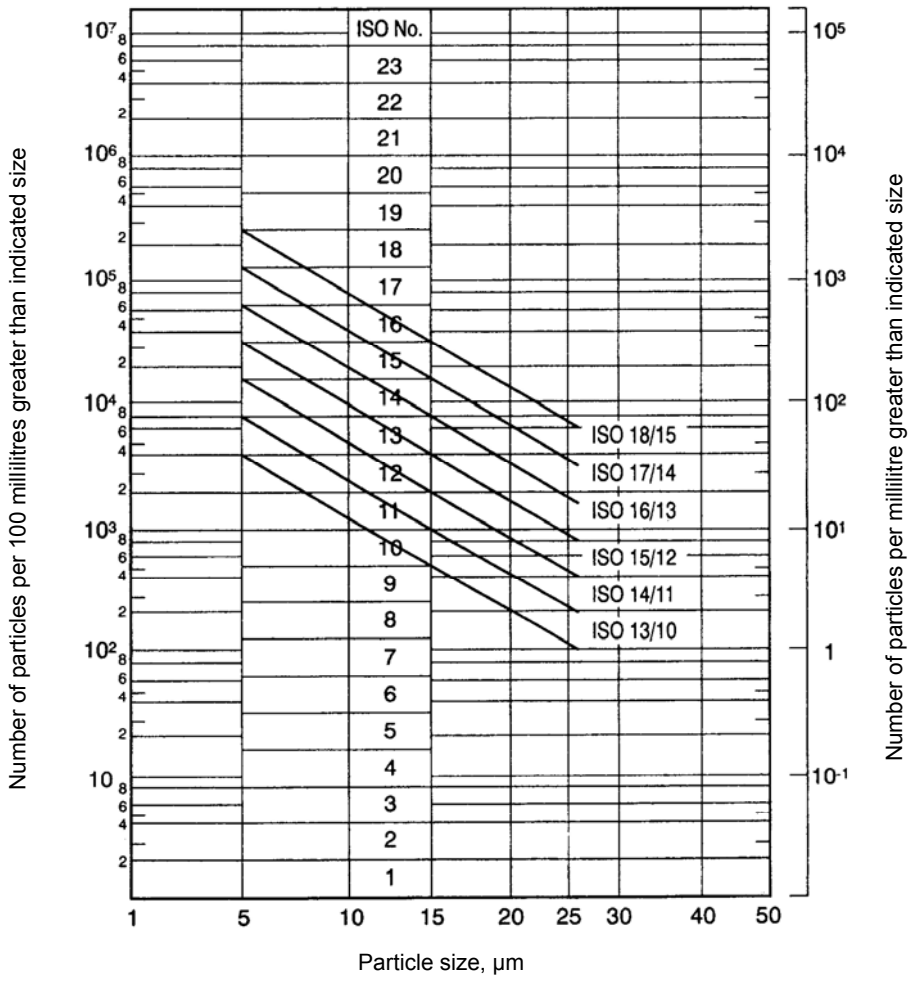
Reference ISO 4406:1999

When the raw data in one of the size ranges results in a particle count of fewer than 20 particles, the scale number for that size range is labelled with the symbol '>'.

For example, a code of **14/12/>7** signifies that there are more than 8,000 and up to and including 16,000 particles equal to or larger than 4µm(c) per 100 ml and more than 2,000 and up to and including 4,000 particles equal to or larger than 6µm(c) per 100 ml. The third part of the code, >7 indicates that there are more than 64 and up to and including 130 particles equal to or larger than 14µm(c) per 100 ml. But the 14µm(c) part of the code could actually be 7, indicating a particle count more than 130 particles per 100 ml.

ISO4406 particle distribution chart

Including various ISO level contamination grades.



NAS 1638 chart

Size range µm		5-15	15-25	25-50	50-100	>100
Classes (based on maximum contamination limits, particles per 100ml)	00	125	22	4	1	0
	0	250	44	8	2	0
	1	500	89	16	3	1
	2	1,000	178	32	6	1
	3	2,000	356	63	11	2
	4	4,000	712	126	22	4
	5	8,000	1,425	253	45	8
	6	16,000	2,850	506	90	16
	7	32,000	5,700	1,012	180	32
	8	64,000	11,400	2,025	360	64
	9	128,000	22,800	4,050	720	128
	10	256,000	45,600	8,100	1,440	256
	11	512,000	91,000	16,200	2,880	512
	12	1,024,000	182,400	32,400	5,760	1,024

ISO/NAS/SAE comparison chart

BS 5540/4	Defence Std. 05/42		NAS 1638	SAE 749
	Table A	Table B		
11/8			2	
12/9			3	0
13/10			4	1
14/9		400F		
14/11			5	2
15/9	400			
15/10		800F		
15/12			6	3
16/10	800			
16/11		1,300F		
16/13			7	4
17/11	1,300	2,000		
17/14			8	5
18/12	2,000			
18/13		4,400F		
18/15			9	6
19/13	4,400	6,300F		
19/16			10	
20/13	6,300			
20/17			11	
21/14	15,000			
21/18			12	
22/15	21,000			
23/17	100,000			

The above comparisons relate to the particle count data only. To confirm to any particular standard, reference should be made to the recommended experimental procedure.

Component cleanliness guidelines

Suggested acceptable contamination levels for various hydraulic systems.

Target contamination class to ISO 4406		Suggested maximum particle level		Sensitivity	Type of system	Typical components
6 µm	14 µm	6 µm	14 µm			
13	9	4,000	250	Super critical	Slit-sensitive control systems with very high reliability. Laboratory or aerospace.	High performance servo valves
15	11	16,000	1,000	Critical	High performance servo and high pressure long life systems, e.g. aircraft, machine tools etc.	Industrial servo valves
16	13	32,000	4,000	Very important	High quality reliable systems. General machine requirements.	Piston pumps, proportional valves, compensated flow controls
18	14	130,000	8,000	Important	General machinery and mobile systems. Medium pressure, medium capacity.	Vane pumps, spool valves
19	15	250,000	16,000	Average	Low pressure heavy industrial systems, or applications where long lift is not critical.	Gear pumps, manual and poppet valves, cylinders.
21	17	1,000,000	64,000	Main protection	Low pressure systems with large clearances.	Ram pumps

ISO contamination charts

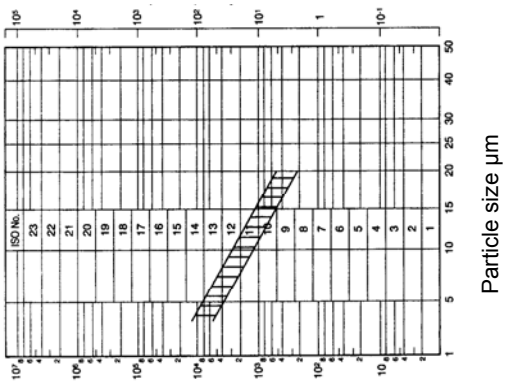
Typical system applications and code numbers
These typical applications and ISO code numbers are taken from the UK Contamination and Control Research Programme (1980 – 1984)

Ref. *AHEM Guide to Contamination Control in Hydraulic Power Systems - 1985*

Solid Contaminant Code No 13/10

Application: Aircraft test stands

Number of particles per ml greater than indicated size

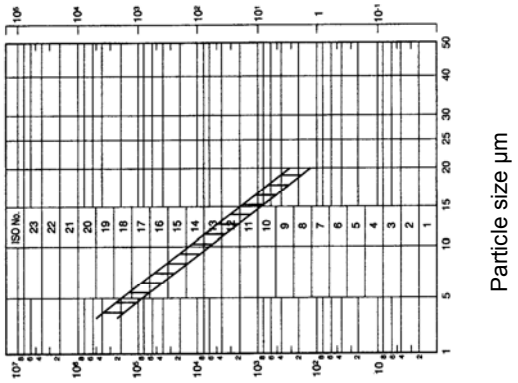


Number of particles per 100 ml greater than indicated size

Solid Contaminant Code No 18/11

Application: Mobile systems

Number of particles per ml greater than indicated size

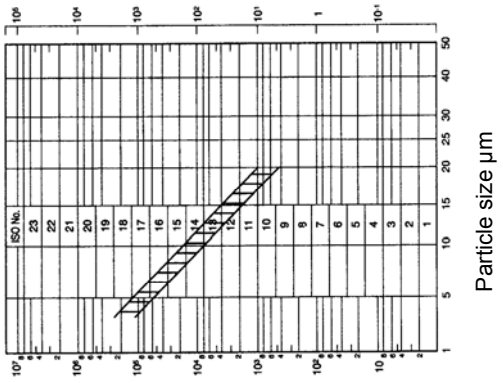


Number of particles per 100 ml greater than indicated size

Solid Contaminant Code No 17/12

Application: Marine installations

Number of particles per ml greater than indicated size

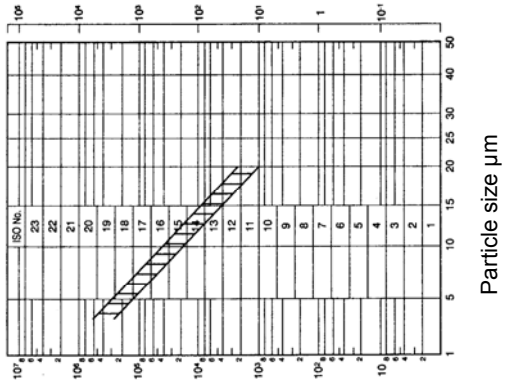


Number of particles per 100 ml greater than indicated size

Solid Contaminant Code No 18/13

Application: Mechanical handling

Number of particles per ml greater than indicated size

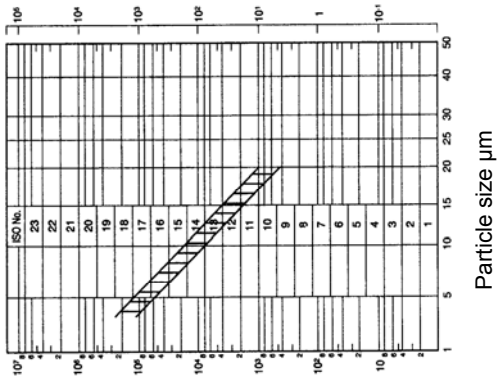


Number of particles per 100 ml greater than indicated size

Solid Contaminant Code No 16/11

Application: Injection moulding;
Metalworking;
Unused commercial-grade oil

Number of particles per ml greater than indicated size



Number of particles per 100 ml greater than indicated size

Troubleshoot guide

Problem

The chamber does not pressurise.
Message appears - “System Fault code 5302 please switch off and try again”

Cause

The door seal may be split or dirty causing the chamber to leak under pressure.
The door location pin has not engaged the door chamber handle.
The chamber door latch has not engaged.
The chamber door locking pin has not engaged

Solution

1. Press “ok” on the touch screen to remove the System Fault message or abort the current test.
2. Open the chamber door and inspect door seal / seal groove. Clean, re-grease (with high vacuum
3. Whilst performing the test procedures again, check the alignment of door location pin against the
4. If the icountBS fails to recover, then contact Parker Hannifin.

Problem

Data can not be exported.
Message appears - "USB Disk Not Found"

Cause

For exporting data, the icountBS requires an USB memory pen/stick to be connected.

Solution

1. Connect a USB memory pen / stick to the USB port to the USB connection on the rear panel of the

Problem

The icountBS does not function (i.e. locked / frozen)

Cause

The sample bottle has not been centrally aligned with the dip tube inside the chamber. This has resulted in the dip tube being ‘wedged’ against the sample bottle.

Solution

1. Switch the icountBS off and then re-start.
2. If the icountBS fails to recover, then contact Parker Hannifin.

Problem

The icountBS compressor continuously runs.

Cause

System communication error.

Solution

1. Switch the icountBS off and then re-start.
2. If the icountBS fails to recover, then contact Parker Hannifin.

Problem

Test counts are displaying ‘00000000’

Cause

The counting sensor has not detected any particles.

Solution

1. Switch the icountBS off then re-start and then perform another test.
2. If the icountBS still shows ‘0000000’ counts, then contact Parker Hannifin.

Problem

Total sample volume is more than 250ml
Message appears - "Total volume require exceeds 250ml"

Cause

The maximum sample volume is 250ml
(ie. Flush Volume + Volume per Sample x Number of Samples = 250ml max)

Solution

1. Return to Test Parameters screen and re-enter.

Problem

Remains pressurised.

Cause

1. Electrical failure
2. Mechanical failure.

Solution

1. Remove Red Plug from the Emergency Air Dump Valve on the Rear Panel .
   WARNING!! Allow 5 seconds for the air to fully deflate before attempting to open the Door.
   A very small amount of air will remain in the Sample Chamber but the door can be safely opened.

Part number Matrix

Key	Fluid Type		Calibration		Future Option	Future Option	Future Option	Moisture Sensor		Options		Power Supply	
IBS	1	Mineral	1	ACFTD	0	0	0	1	No	0	None	0	UK
	2	Aggressive	2	MTD				2	-	1	-	1	USA
	3	Aviation Fuel										2	Europe

Key	Fluid Type	Calibration	Future Option	Future Option	Future Option	Moisture Sensor	Options	Power Supply
IBS	1	2	0	0	0	1	0	2

Accessories	Part Number
250ml Sample Bottle Kit (Pair)	ACC6NW001
Sample Bottle Pack (50 x B89911)	ACC6NW002
Vapour / Waste Bottle	ACC6NW003
Waste Bottle Folder Holder	ACC6NW004
Printer Paper Reel (x1)	ACC6NW005
UK Power Supply	ACC6NW006
USA Power Supply	ACC6NW007
European Power Supply	ACC6NW008
Transit Case	Contact Parker
1m waste tube (clear)	ACC6NW009
1m vapour hose (blue)	ACC6NW010
USB Memory Stick / pen	ACC6NW011
icountBS CD Manual	ACC6NW012

Parker's Motion & Control Technologies

At Parker, we're guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion or control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker.

AEROSPACE

Key Markets

- Aircraft engines
- Business & general aviation
- Commercial transports
- Land-based weapons systems
- Military aircraft
- Missiles & launch vehicles
- Regional transports
- Unmanned aerial vehicles

Key Products

- Flight control systems & components
- Fluid conveyance systems
- Fluid metering delivery & atomization devices
- Fuel systems & components
- Hydraulic systems & components
- Inert nitrogen generating systems
- Pneumatic systems & components
- Wheels & brakes

CLIMATE CONTROL

Key Markets

- Agriculture
- Air conditioning
- Food, beverage & dairy
- Life sciences & medical
- Precision cooling
- Processing
- Transportation

Key Products

- CO^2 controls
- Electronic controllers
- Filter driers
- Hand shut-off valves
- Hose & fittings
- Pressure regulating valves
- Refrigerant distributors
- Safety relief valves
- Solenoid valves
- Thermostatic expansion valves

ELECTROMECHANICAL

Key Markets

- Aerospace
- Factory automation
- Life science & medical
- Machine tools
- Packaging machinery
- Paper machinery
- Plastics machinery & converting
- Primary metals
- Semiconductor & electronics
- Textile
- Wire & cable

Key Products

- AC/DC drives & systems
- Electric actuators, gantry robots & slides
- Electrohydrostatic actuation systems
- Electromechanical actuation systems
- Human machine interface
- Linear motors
- Stepper motors, servo motors, drives & controls
- Structural extrusions

FILTRATION

Key Markets

- Food & beverage
- Industrial machinery
- Life sciences
- Marine
- Mobile equipment
- Oil & gas
- Power generation
- Process
- Transportation

Key Products

- Analytical gas generators
- Compressed air & gas filters
- Condition monitoring
- Engine air, fuel & oil filtration & systems
- Hydraulic, lubrication & coolant filters
- Process, chemical, water & microfiltration filters
- Nitrogen, hydrogen & zero air generators

FLUID & GAS HANDLING

Key Markets

- Aerospace
- Agriculture
- Bulk chemical handling
- Construction machinery
- Food & beverage
- Fuel & gas delivery
- Industrial machinery
- Mobile
- Oil & gas
- Transportation
- Welding

Key Products

- Brass fittings & valves
- Diagnostic equipment
- Fluid conveyance systems
- Industrial hose
- PTFE & PFA hose, tubing & plastic fittings
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects

HYDRAULICS

Key Markets

- Aerospace
- Aerial lift
- Agriculture
- Construction machinery
- Forestry
- Industrial machinery
- Mining
- Oil & gas
- Power generation & energy
- Truck hydraulics

Key Products

- Diagnostic equipment
- Hydraulic cylinders & accumulators
- Hydraulic motors & pumps
- Hydraulic systems
- Hydraulic valves & controls
- Power take-offs
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects

PNEUMATICS

Key Markets

- Aerospace
- Conveyor & material handling
- Factory automation
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & automotive

Key Products

- Air preparation
- Brass fittings & valves
- Manifolds
- Pneumatic accessories
- Pneumatic actuators & grippers
- Pneumatic valves & controls
- Quick disconnects
- Rotary actuators
- Rubber & thermoplastic hose & couplings
- Structural extrusions
- Thermoplastic tubing & fittings
- Vacuum generators, cups & sensors

PROCESS CONTROL

Key Markets

- Chemical & refining
- Food, beverage & dairy
- Medical & dental
- Microelectronics
- Oil & gas
- Power generation

Key Products

- Analytical sample conditioning products & systems
- Fluoropolymer chemical delivery fittings, valves & pumps
- High purity gas delivery fittings, valves & regulators
- Instrumentation fittings, valves & regulators
- Medium pressure fittings & valves
- Process control manifolds

SEALING & SHIELDING

Key Markets

- Aerospace
- Chemical processing
- Consumer
- Energy, oil & gas
- Fluid power
- General industrial
- Information technology
- Life sciences
- Military
- Semiconductor
- Telecommunications
- Transportation

Key Products

- Dynamic seals
- Elastomeric o-rings
- EMI shielding
- Extruded & precision-cut, fabricated elastomeric seals
- Homogeneous & inserted elastomeric shapes
- High temperature metal seals
- Metal & plastic retained composite seals
- Thermal management

Parker

ENGINEERING YOUR SUCCESS.

Parker Worldwide

AE – UAE, Dubai
Tel: +971 4 8127100
parker.me@parker.com

AR – Argentina, Buenos Aires
Tel: +54 3327 44 4129

AT – Austria, Wiener Neustadt
Tel: +43 (0)2622 23501-0
parker.austria@parker.com

AT – Eastern Europe,
Wiener Neustadt
Tel: +43 (0)2622 23501 970
parker.easteurope@parker.com

AU – Australia, Castle Hill
Tel: +61 (0)2-9634 7777

AZ – Azerbaijan, Baku
Tel: +994 50 2233 458
parker.azerbaijan@parker.com

BE/LU – Belgium, Nivelles
Tel: +32 (0)67 280 900
parker.belgium@parker.com

BR – Brazil, Cachoeirinha RS
Tel: +55 51 3470 9144

BY – Belarus, Minsk
Tel: +375 17 209 9399
parker.belarus@parker.com

CA – Canada, Milton, Ontario
Tel: +1 905 693 3000

CH – Switzerland, Etoy
Tel: +41 (0) 21 821 02 30
parker.switzerland@parker.com

CN – China, Shanghai
Tel: +86 21 5031 2525

CZ – Czech Republic, Klecany
Tel: +420 284 083 111
parker.czechrepublic@parker.com

DE – Germany, Kaarst
Tel: +49 (0)2131 4016 0
parker.germany@parker.com

DK – Denmark, Ballerup
Tel: +45 43 56 04 00
parker.denmark@parker.com

ES – Spain, Madrid
Tel: +34 902 33 00 01
parker.spain@parker.com

FI – Finland, Vantaa
Tel: +358 (0)20 753 2500
parker.finland@parker.com

FR – France, Contamine s/Arve
Tel: +33 (0)4 50 25 80 25
parker.france@parker.com

GR – Greece, Athens
Tel: +30 210 933 6450
parker.greece@parker.com

HK – Hong Kong
Tel: +852 2428 8008

HU – Hungary, Budapest
Tel: +36 1 220 4155
parker.hungary@parker.com

IE – Ireland, Dublin
Tel: +353 (0)1 466 6370
parker.ireland@parker.com

IN – India, Mumbai
Tel: +91 22 6513 7081-85

IT – Italy, Corsico (MI)
Tel: +39 02 45 19 21
parker.italy@parker.com

JP – Japan, Tokyo
Tel: +(81) 3 6408 3901

KR – South Korea, Seoul
Tel: +82 2 559 0400

KZ – Kazakhstan, Almaty
Tel: +7 7272 505 800
parker.easteurope@parker.com

LV – Latvia, Riga
Tel: +371 6 745 2601
parker.latvia@parker.com

MX – Mexico, Apodaca
Tel: +52 81 8156 6000

MY – Malaysia, Subang Jaya
Tel: +60 3 5638 1476

NL – The Netherlands,
Oldenzaal
Tel: +31 (0)541 585 000
parker.nl@parker.com

NO – Norway, Ski
Tel: +47 64 91 10 00
parker.norway@parker.com

NZ – New Zealand, Mt Wellington
Tel: +64 9 574 1744

PL – Poland, Warsaw
Tel: +48 (0)22 573 24 00
parker.poland@parker.com

PT – Portugal, Leca da Palmeira
Tel: +351 22 999 7360
parker.portugal@parker.com

RO – Romania, Bucharest
Tel: +40 21 252 1382
parker.romania@parker.com

RU – Russia, Moscow
Tel: +7 495 645-2156
parker.russia@parker.com

SE – Sweden, Spånga
Tel: +46 (0)8 59 79 50 00
parker.sweden@parker.com

SG – Singapore
Tel: +65 6887 6300

SK – Slovakia, Banská Bystrica
Tel: +421 484 162 252
parker.slovakia@parker.com

SL – Slovenia, Novo Mesto
Tel: +386 7 337 6650
parker.slovenia@parker.com

TH – Thailand, Bangkok
Tel: +662 717 8140

TR – Turkey, Istanbul
Tel: +90 216 4997081
parker.turkey@parker.com

TW – Taiwan, Taipei
Tel: +886 2 2298 8987

UA – Ukraine, Kiev
Tel +380 44 494 2731
parker.ukraine@parker.com

UK – United Kingdom,
Warwick
Tel: +44 (0)1926 317 878
parker.uk@parker.com

US – USA, Cleveland
Tel: +1 216 896 3000

VE – Venezuela, Caracas
Tel: +58 212 238 5422

ZA – South Africa,
Kempton Park
Tel: +27 (0)11 961 0700
parker.southafrica@parker.com

European Product Information Centre
Free phone: 00 800 27 27 5374
(from AT, BE, CH, CZ, DE, EE, ES, FI, FR, IE, IT, PT, SE, SK, UK)

Issue K, 05 Aug 08

Parker Hannifin Ltd.
Hydraulic Filter Division Europe
Condition Monitoring Centre
Tel.: +44 (0) 1842 763299
Email: conmoninfo@parker.com
www.parker.com/hfde

Your local authorised Parker distributor