



## HIAC Industrial

Our overview solution for fluid power testing for all applications

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### INTRODUCTION

Particle Counting in the fluid power industry provides a critical piece of information in determining the health of the fluid system. Particle Counters measure fluid contamination as expressed by cleanliness standards like ISO 4406, SAE AS4059, and NAS 1638. These Standards provide a quick snapshot of the how dirty the fluid is by way of a cleanliness code. Why do we care? We care because over 90% of catastrophic failures are the result of abrasive wear that can cause the pumps, valves, precision mechanical components, or other fluid power systems to fail.

The primary role of oils and hydraulic fluids is to coat these parts, helping to reduce friction, extend component life, and minimize abrasive wear. Yet these same “protective” oils may be contributing to a catastrophic failure. Over time, the oils themselves become contaminated with particles that can contribute to wear on the machinery. These particles come from a wide variety of sources, including particles left on new machinery or parts by the factory, dirt, dust, and moisture from the outside environment, wear and tear on the machinery internal parts, and even contamination from new oil itself. Over time particles from all these sources build up in the oil, and eventually can cause temporary or permanent equipment failure.

**Enter the HIAC series of Liquid Particle Counters; 8011+, PODS+, and the ROC.**



HIAC 8011+



HIAC PODS+



HIAC ROC

**There are 3 primary industrial applications where particle counters play;**

**1. Laboratory (HIAC 8011+):**

Full featured instrument designed to meet laboratory needs in terms of fluid compatibility, sample volumes, throughput efficiency, dilution, and viscosity.

**2. Portable (HIAC PODS+):**

Fully self-contained instrument that can be deployed in the field testing fluid using either the Bottle Mode or connected in the Online Mode

**3. Online (HIAC ROC):**

Remote permanently mounted instruments that are installed directly into the fluid power system to perform routine monitoring in a dynamic environment.

## HIAC 8011+ LABORATORY BASED LIQUID PARTICLE COUNTING SYSTEM

The HIAC 8011+ Liquid Particle Counting System, is the culmination of over 30 years of particle counting expertise. Designed for ease of use, one button sampling yields results in under 60 seconds. The sample management system ensures consistent, accurate data and is capable of testing fluids from 1cSt to 425cSt without dilution.

### 8011+ Benefits

- Save time with 20 available custom sample recipes and <60 sec. sample test runs
- Pressurized sample deliver reduces the impact of bubbles
- Integrated Vacuum/Degas function streamlines sample handling for increased accuracy.
- Automated sample flow for precision data, enabling superior repeatability and reproducibility
- Advance Instrument diagnostics with recommended actions for users
- User alerts for particle settling and run-to-run variances
- Multi-liquid sampling capability (fuels, oils, water & glycols)
- Fewer steps increases throughput in time sensitive Testing Laboratory environments
- HRLD Smart Sensor alerts for when service and calibration are due
- No dilution required for high viscosity fluids at ambient temps (< 425cSt)
- Automated walk away cleaning and flushing routines.



### Applications/Industries

- Fuel test Labs
- Industrial Testing Labs
- Aerospace
- Metrological Labs
- Commercial testing Labs
- Hydraulics/Heavy Machinery
- Aerospace
- Oil/Gas
- Military
- Power
- Industrial Manufacturing

### Drivers

- Quality Assurance
- Increased Production
- Maximize Production Uptime
- New Fluid Qualification
- Health & Safety
- Asset Protection
- SOP Compliance
- Research & Development

## HIAC PODS+ PORTABLE LIQUID PARTICLE COUNTER

Performing Online or Bottle mode particle counting with the HIAC PODS+ maximizes uptime, by identifying problems before costly breakdowns occur, in addition to employing one button sampling and providing displayed, exported, and or printed results within 60 seconds.

### Proven, rugged, and field ready

The United States Navy and other US and global military's currently employ these instruments in the toughest conditions imaginable. Constructed for harsh environments, and maintaining the trusted HIAC accuracy and dependability, the HIAC PODS+ provides online and bottle mode testing capability, and a powerful Filtercart mode for walk away testing. The pressure and viscosity range coupled with the fluid compatibility that includes fuels, oils, phosphate esters, Glycols, and water only based applications make this instrument arguably the most versatile portable liquid particle counter on the planet!

### PODS+ Benefits

- Save time with custom sample recipes and <60 sec. sample test runs
- Features both Online and Bottle mode capability
- Portability allows easy transition from one sample point to another
- 1-Button sampling, no training or instrument expertise required
- Onsite instant reports that eliminate lab wait times and lab fees
- Multi-liquid sampling capability (fuels, oils, water & glycols)
- Ability to report out to multiple standards (ISO, SAE, NAS, ASTM, GOST, DEFSTAN, NAVAIR) from the same sample
- Custom reporting standard capable
- Detects moisture in fuels and oil based fluids



### Applications/Industries

- Flushing stands
- Filtercarts
- Pumps and Compressors
- Test Rigs
- Hydraulics/Heavy Machinery
- Aerospace
- Oil/Gas
- Military
- Power
- Industrial Manufacturing

### Drivers

- Quality Assurance
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## HIAC ROC REMOTE ON-LINE COUNTER

Simple, trouble-free, and affordable: The HIAC ROC allows you to spend your time preventing problems and less time fixing them.

Constructed for harsh environments, the HIAC ROC excels in high pressure and high temperature applications and offers carefree maintenance. The large flow path minimizes blockages during operation. The lack of moving parts makes maintenance trouble-free. The HIAC ROC online particle monitor serves a wide range of industrial and mobile applications multipoint system monitoring as well as point of use applications included hydraulic presses and machines, filter carts, fluid fill stations, hydraulic power units, reclamation stations, and component test stands.

### ROC Benefits

- Wide viscosity range from 2-424 cSt
- Results reported on local display in ISO, SAE, or NAS Reporting Codes
- Easily adapt to filter carts with auto stop when oil is clean or applications with auto stop when fluid is dirty
- Temperature and pressure capabilities for harsh environments
- Designed for continuous online, maintenance free operation
- Utilize customer SW utility to configure the ROC to fit your application



### Applications/Industries

- Flushing stands
- Heavy machinery
- Wind Turbines
- Filtercarts
- Pumps and Compressors
- Test Rigs

### Drivers

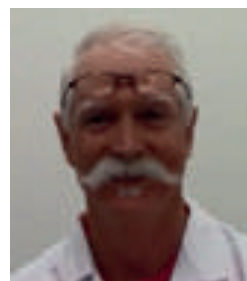
- Quality Assurance
- Increased Production
- Maximize Production Uptime
- Asset Protection
- SOP Compliance

## HIAC - FOR OVER 25 YEARS

For over 25 years, the legendary HIAC name has provided our customers with dependable and accurate liquid Particle Counting solution. These needs include applications that range from the field to the Laboratory and everywhere in between! Couple that proven quality and versatility with our Global Service capability and you've got a winning combination to serve the most challenging liquid Particle Counting need.

### About the author

**Bill F. Bars** is a Sr. Applications Scientist for Beckman Coulter Life Sciences in Grants Pass, Oregon, USA. He has created and developed many of the liquid Particle Counting systems production processes, instructional videos, and Application/Marketing technical papers for the BEC Particle products. These include but are not limited to the following HIAC™ branded products: 8011+, PODS+, 9703+, ROC, and HRLD Sensors. He has worked for Beckman Coulter Life Sciences for 22+ years in a multitude of engineering capacities ranging from Manufacturing Engineering, Metrology to Technical Service Training and Application Support. He is a member of the NFPA U.S. TAG to ISO/TC 131/SC 6 - Contamination control group.



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