# Magnetic Separator Testing Sample Station

Black Powder Solutions Inc. (BPS) designs and manufactures its patented magnetic separators to remove black powder contamination, below 1 micron, from liquids and gas, refined products, process fluids, water and other applications in all pipeline and facility applications to 95% plus efficiency. BPS also manufactures single magnetic element sample/test stations, where one/some of the following are required:

1. Identifying the source of the contamination, including policing 3rd party deliveries;
2. Capturing contamination for purposes of doing composition and particulate size analysis;
3. Determining contamination loading, such as Total Suspended Solids (TSS), at different flow rates; and/or
4. Determining the efficacy of magnetic separation in a particular application.

BPS test/sample stations are typically configured with the following specifications, or designed as per a client's specific requirements. All our sample stations utilize engineering stamped pressure vessels (U-Stamp, CRN, CE PED), are equipped with pressure differential gauges and are skid-mounted for ease of installation.

| Magnetic Separator Vessel | Configuration | Pressure Class | Inlet / Outlet Drain / Vent | Flow Rate* | Pressure Differential |
|---|---|---|---|---|---|
| 5" ID x 40" L | (1) 2" OD x 26" L magnetic element | 150#<br>300#<br>600#<br>1500#<br>(others) | 2" OD<br>1" OD<br>3/4" OD<br>(ORB, NPT, others) | ≤ 1,400 bpd<br>≤ 1.0 mmcfd | ≤ 0.5 psig (clean)<br>≤ 6 psig (full) |

* The same test magnetic separator can be used in both gas and liquid; flow meter/totalizer available.

Our sample/test stations are also configured with sample ports in order to allow for product sampling before and after magnetic separation has occurred. The magnetic element is easily removed from the magnetic separator and can be weighed for purposes of determining contamination loading prior to the contamination being wiped from the magnetic element. We always recommend laboratory testing such as XRD, EDS, particle size distribution (PSD) and TSS of the before, after and removed solids samples from multiple separate tests to properly understand the particulate contamination in a given system.