

ECR 4000/8000

for Electro Hydraulic Control (EHC) Applications



ECR 4000

Flow Rate	4.5 GPM
Width	20 in
Length	43 in
Height	57 in, 90"total vertical clearance required to change elements
Weight	345 Lbs
Electrostatic VAC	13KV

ECR 8000

Flow Rate	9 GPM
Width	20 in
Length	56 in
Height	57 in, 90"total vertical clearance required to change elements
Weight	415 Lbs
Electrostatic VAC	13KV

THE NEED FOR ECR (ELECTROSTATIC CONTAMINATION REMOVAL)

EHC fluids generally darken over time as they accumulate fine particles that are less than 1 micron in size. This contamination is not measured in ISO particle code analyses nor is it removed via mechanical particulate filters. This fine particulate contamination accounts for up to 90% of system contamination suggesting that as little as 10% of the EHC particulate contamination is being removed with existing filtration. Patch testing (see photo on right) is used to measure the levels of fine particulate contamination. Ideally, the patch should be white, while a dark patch would indicate high levels of contamination. This type of contamination is harmful in EHC applications as it causes increased air entrainment accelerating fluid breakdown, and leads to a more serious form of breakdown called micro dieseling. ECR fluid conditioning systems are an essential tool for EHC fluid maintenance. When used as directed and as part of proper fluid maintenance program, ECR systems remove up to 90% of particulate contamination <5 microns, decrease air entrainment, improve fluid color, and increase resistivity.

ECR PERFORMANCE

The photo below shows the before and after results using ECR on a large GE EHC system operating at a 4000MW power plant.



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Fluid clarity improvement over 3 months using an ECR system

Volts/Phase/HZ

115-220/1/50-60 standard; other power configurations available on request. Supplied with standard 115VAC cord. See electrical schematic.

Amperage

14 AMPS inrush current

Reservoir Sizing

<800 US Gal reservoirs

Seals

Viton

Paint

2 part epoxy for Phosphate ester fluids

System Tubing

SS Tubing with common manifold, chemical resistant hose with Swagelok fittings

Fittings

Inlet: 1" MNPT (Bulkhead fittings)

Outlet: 1" MNPT (Bulkhead fittings)

Pump/Motor

Gorman Rupp gear pump

3/4 HP Baldor Motor

Connection Configuration

The ECR equipment should be installed in a kidney loop format as follows:

- Maximum vertical head: 10ft
- Maximum distance from reservoir: 15ft
- 4 Elbows Maximum on inlet or outlet/ No Globe Valves

Typical ECR Operating Specifications

- Operating pressure: <25psi
- Typical Max pressure drop: Approx 10psi
- Maximum collector chamber pressure: 25 PSI

Min/Max Fluid Operating Temperature

>90°F * <160°F **

Min/Max Ambient Operating Temperature

>50°F <110°F **

** Cooling system option recommended for control panels operating above this temperature

Maximum Fluid Moisture Levels

<500ppm**

*** TMR Water removal systems recommended for all ECR installs.

Consumables

There are 2 different elements for this application to accommodate known fluid operating conditions.

P/N 600907 When fluid resistivity values are <8G-OHMS/cm

P/N 600990 When fluid resistivity values are >8G-OHMS/cm

Recommended stock level: 1 set

Consumables Replacement Interval

Cleanup mode: 1-3 months

Maintenance mode: 6 Months