Waterjet Filtration Systems

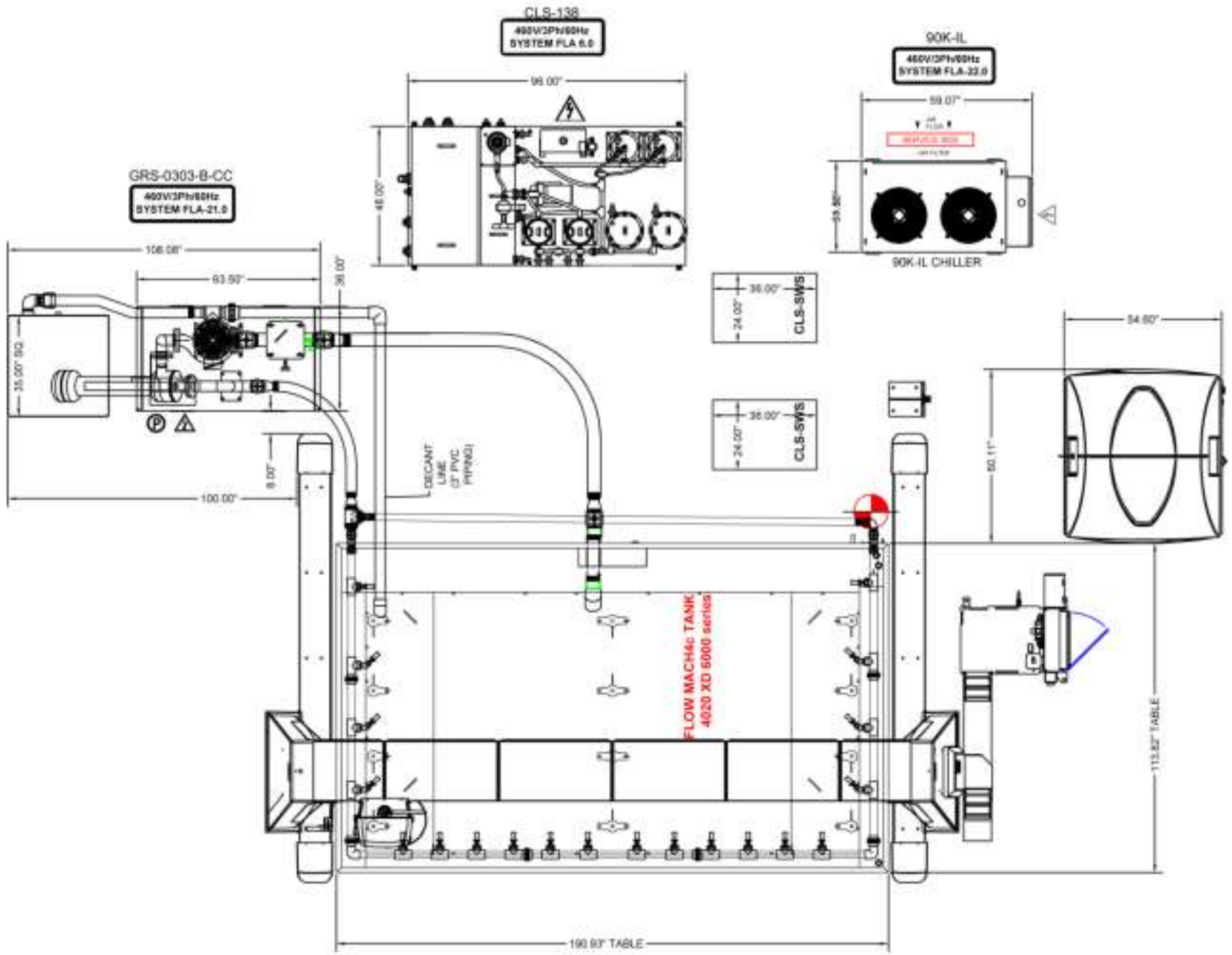
Ebbco inc.
WATERJET FILTRATION

Ebbco inc. WATERJET FILTRATION Waterjet Filtration Systems

Closed Loop Filtration System

Reverse Osmosis System

Abrasive Removal System



GRS-0303-B-CC-SYSTEM SPECIFICATIONS

SYSTEM	DIMENSIONS	[illegible]
PUMP	STYLE	VERTICAL SEALLESS SINGLE STAGE CENTRIFUGAL
	PUMP	[illegible]
	PERFORMANCE	[illegible] GPM @ 45 PSI
MOTOR	ENCLOSURE	TEFC
	HORSE POWER	10
	ELECTRICAL	460Vac/3Ph/60Hz
	FLA	[illegible] AMP
	RPM	[illegible]
SEPARATOR	CONSTRUCTION	MILD STEEL
	SEPERATOR	[illegible]
	INLET/OUTLET	3" NPT
	PURGE	1.5" NPT
	PERFORMANCE	74 MICRON @ [illegible] EFF
ABRASIVE BAG HOPPER	CONSTRUCTION	[illegible] MILD STEEL
	CAPACITY	1 CUYD
	DECANT SIZE	3" NPT
UTILITIES	ELECTRICAL	460Vac/3Ph/60Hz
	FLA	21 AMP
	PLANT AIR	[illegible]
	MAKE-UP WATER	N/A

CLS-138-SYSTEM SPECIFICATIONS

SYSTEM	DIMENSIONS	[illegible]
FILTER PUMP	STYLE	HORIZONTAL SINGLE STAGE CENTRIFUGAL
	CONSTRUCTION	STAINLESS STEEL
	INLET/OUTLET	[illegible] NPT
	SEAL	[illegible]
	PERFORMANCE	15 GPM @ 40 PSI
FILTER PUMP MOTOR	ENCLOSURE	TEFC
	HORSE POWER	1.5
	ELECTRICAL	460Vac/3Ph/60Hz
	FLA	[illegible] AMP
	RPM	[illegible]
FEED PUMP	STYLE	VERTICAL MULTI SINGLE STAGE CENTRIFUGAL
	CONSTRUCTION	STAINLESS STEEL
	INLET/OUTLET	[illegible] NPT
	SEAL	[illegible]
	PERFORMANCE	[illegible] GPM @ [illegible] PSI
FEED PUMP MOTOR	ENCLOSURE	TEFC
	HORSE POWER	[illegible]
	ELECTRICAL	460Vac/3Ph/60Hz
	FLA	[illegible] AMP
	RPM	[illegible]
UTILITIES	ELECTRICAL	460Vac/3Ph/60Hz
	FLA	[illegible] AMP
	PLANT AIR	N/A
	MAKE-UP WATER	[illegible] SUPPLY

CLS-90,000-IL-3-SYSTEM SPECIFICATIONS
- HP-HIGH PRESSURE PUMP

SYSTEM	DIMENSIONS	[illegible]
CHILLER	CAPACITY	[illegible]
	FLUID FLOW	[illegible] GPM @ 25 PSI
	CONSTRUCTION	STAINLESS STEEL
	INLET/OUTLET	1 1/2" NPT
UTILITIES	ELECTRICAL	460Vac/3Ph/60Hz
	COMP HP	7 1/2 HP
	COMP FLA	[illegible] AMP
	FAN HP	[illegible] HP EACH [illegible]
	FAN FLA	[illegible] AMP EACH [illegible]
	ADDITIONAL PUMP HP	1 HP
	COMP FLA	[illegible] AMP
	SYSTEM FLA	[illegible] AMP

REV	ZONE	REVISION HISTORY	DATE	APP'D
[illegible]		FIRST ISSUE	[illegible]	JPG

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GARNET REMOVAL FILTRATION SYSTEM
MODEL GRS-0303-B-CC
LAYOUT

L-2217-019-001

SHEET 1 of 1

THIS DRAWING HAS BEEN GENERATED AND IS MAINTAINED BY A CAD SYSTEM. PAPER COPIES ARE UNCONTROLLED.

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Closed Loop Filtration System

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Main Reasons For a Closed Loop Filtration System

1. Eliminates Contaminated Water Going to the Drain
2. Drastically Reduce Water Consumption
3. Supplies Chilled Cutting and Hydraulic Cooling Water to the HP Pump
4. Maximizes Seal and Orifice Life
5. Ability to easily Comply with ISO-14001

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ELIMINATE THE DRAIN COMPLETELY

The overflow water is filtered and reused. No suspended or dissolved solids go to drain.

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REDUCE WATER CONSUMPTION

Up to 90 percent reduction from normal overflow to drain operation.

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PROTECT THE HIGH PRESSURE PUMP

A properly maintained Closed Loop System will supply the FLOW pump, water that meets or exceeds the water quality specifications. This results in reduced pump maintenance and machine tool downtime.

When a Closed Loop is Necessary

- Inaccessible or No Drain in Facility
- High Water or Sewage Costs
- Well or Septic Water Systems
- Poor Incoming Water Quality
- Cutting Hazardous Materials
- Geographical Area Water Rationing
- Short Pump Seal Life
- Insufficient Incoming Water Supply

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Water Consumption
50 HP Hydraulic Intensifier Pump

# WJ	Cut Water	Cooling Water	8 hr/day	Year
1	1 GPM	5 GPM	2,880 GPD	748,800 GPY
2	2 GPM	10 GPM	5,760 GPD	1,497,600 GPY
3	3 GPM	15 GPM	8,640 GPD	2,246,400 GPY
4	4 GPM	20 GPM	11,520 GPD	2,995,200 GPY

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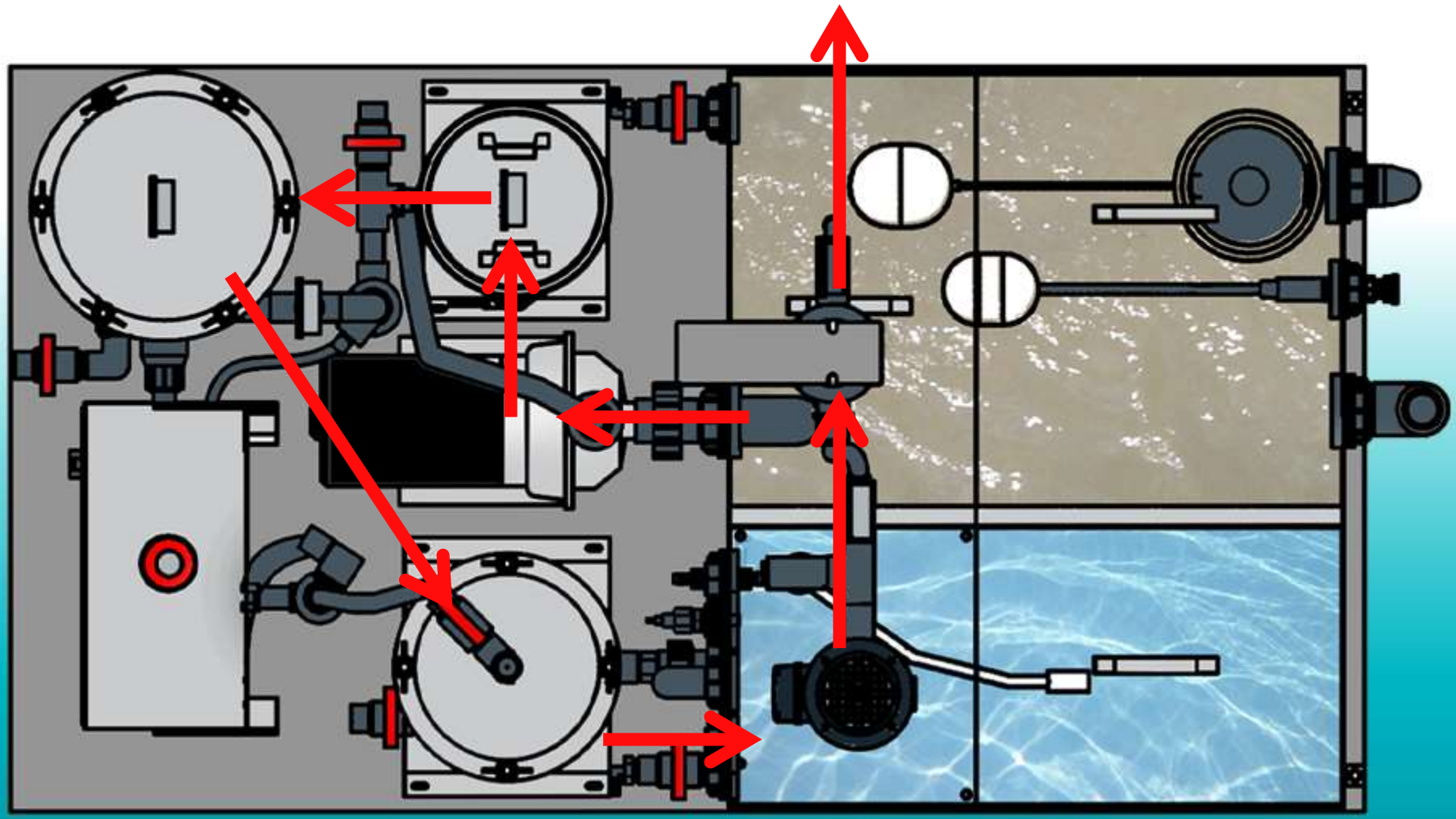
Closed Loop System Layout



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Filter Vessel #1
Slim Line Bag Vessel

- 1 Micron Extended Area Filter Bag
- Average Life* 20-40 cutting hours

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Filter Vessel #2
Hurricane Filter Vessel

- 0.35 Micron Pleated Filter Cartridge
- Average Life* 160-240 Hours

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Filter Vessel #3
DI Resin Vessel

- Maintains PPM of Clean Tank
- Waterjet Blend Resin
- Virgin Resin Exchange Program
- Average Life* 200-240 cutting hours

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Filter Vessel #4 - Final Filter Cartridge

- 0.35 Micron Filter Cartridge
- Average Life* 500 Hours

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Closed Loop Consumables

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Prefilter Bag
PN: WJF-PFB-150

Filter Vessel #1
1 Micron EA Bag
P/N: WJF-1-G2PS/EA

Filter Vessel #2
Hurricane Filter
P/N: HR-930-Q.35

Filter Vessel #3
DI Resin Bag
P/N: WJF-100-PKG

Filter Vessel #3
Final Filter
P/N: WJF-801-0.35

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Inline Chillers

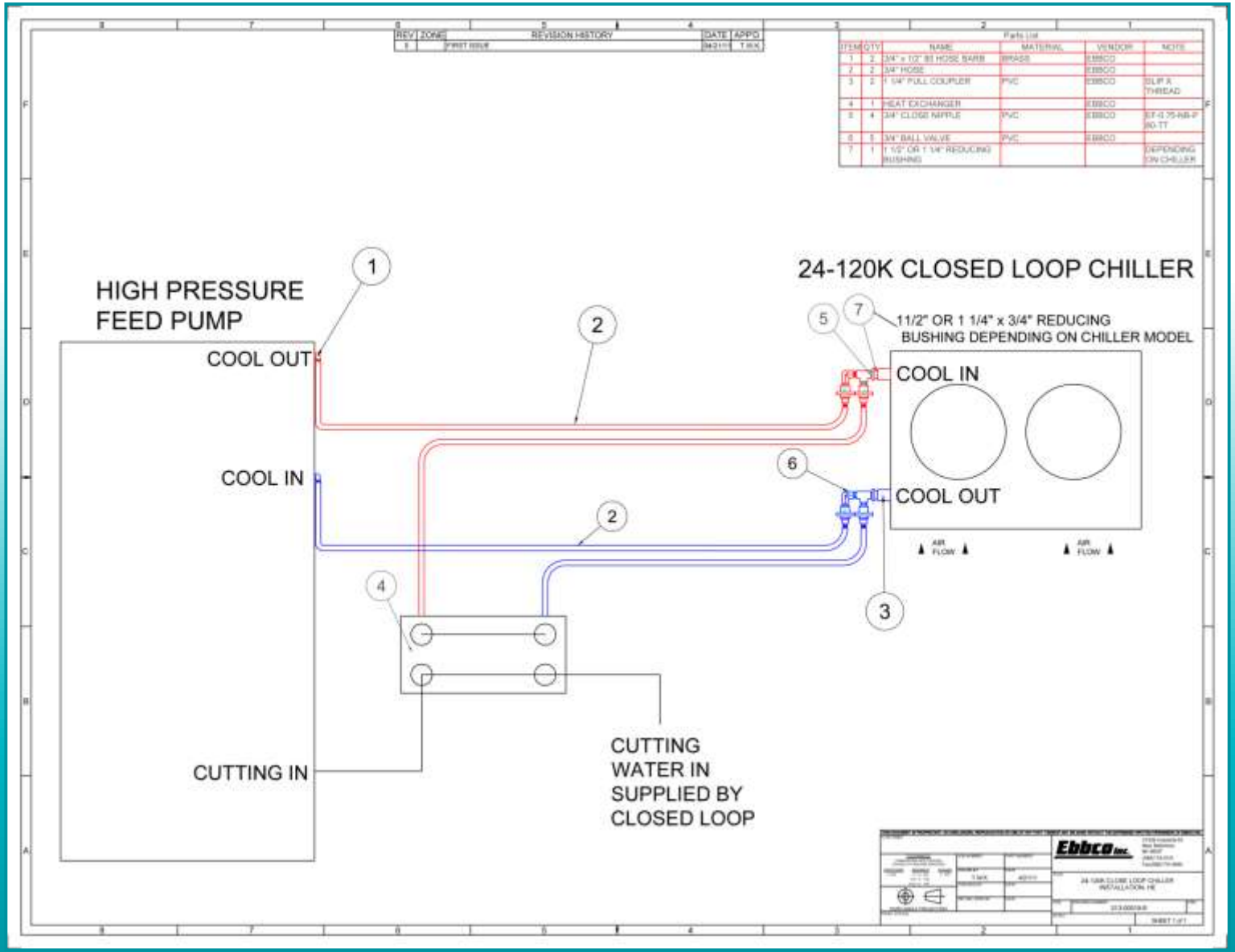
Fluid Chillers maintains a constant temperature in the Closed Loop Filtration System, which supplies cool water to the cutting head and hydraulic cooling.

Inline Chillers, For use In conjunction with a Closed Loop Filtration System. They supply both the hydraulic cooling and cool cutting water to the intensifier pump.

Closed Loop Chillers

***Closed Loop Style Chillers** used independently to provide hydraulic cooling to the intensifier pump.*

Hydraulic Cooling with Optional Heat Exchanger for Cooling Cutting Water



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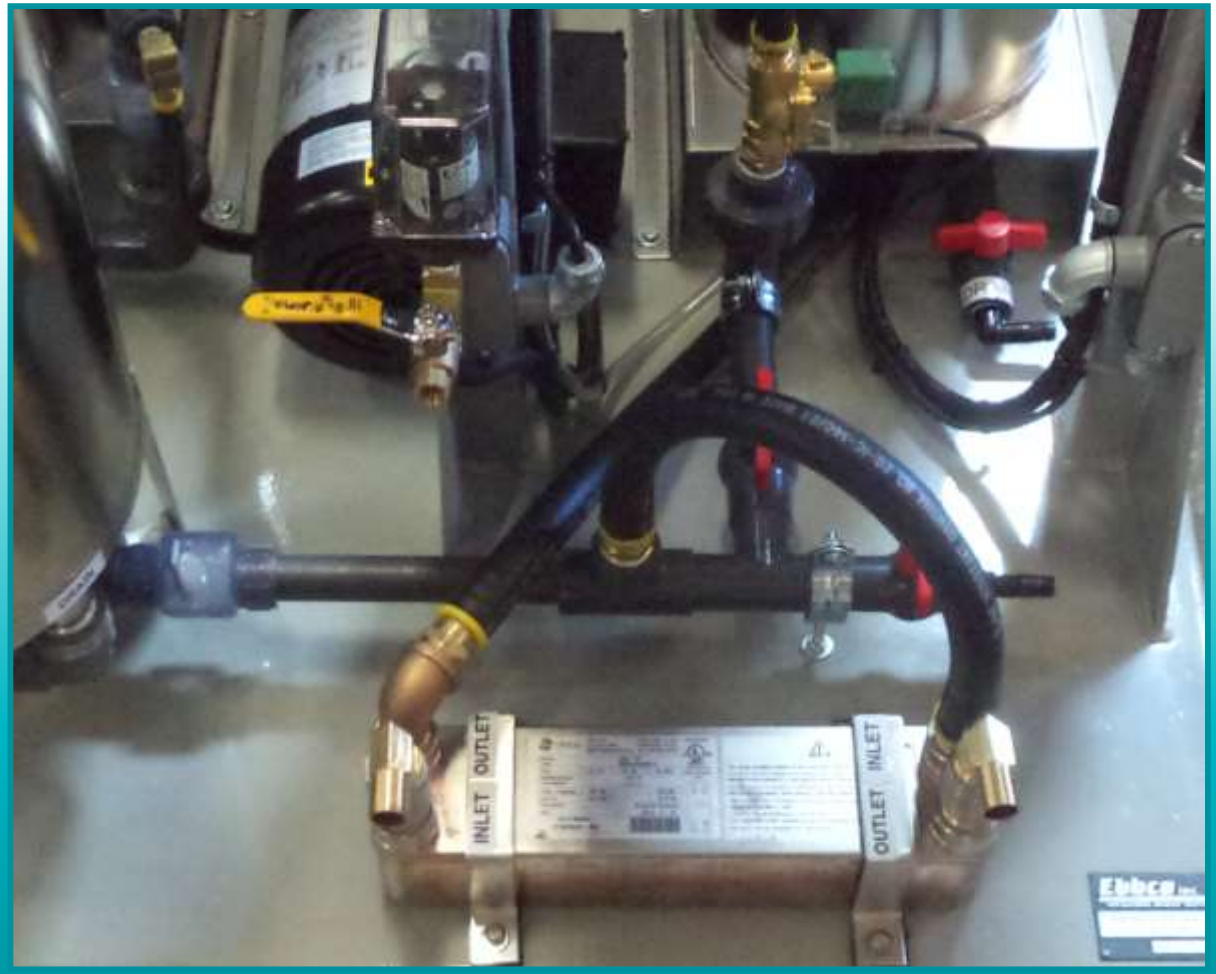
Heat Exchanger Packages can also be added to the Closed Loop Filtration System to utilize the use of Closed Loop Chillers.



Settling Weir Prefilter

The Ebbco Over-Under Settling Weir System Provides Maximum Settling Time For Removal Of Suspended Solids. The Ebbco Settling Weir Is Fitted With our Patented Disposable Liner For Easy Change out. The Liner Is Capable Of Holding Up To 9 cu.ft. Of Abrasive.

Weir Bag Allows Settlement of the Abrasive Before Entering Closed Loop System

3 Chamber Patented Over Under Over Weir Bag Allows Maximum Settling Time

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Reverse Osmosis Systems

Lowers The Operating Costs Of The Ebbco Closed Loop System In Applications Where Make-up Water Quality Is Poor.

RO Systems are comprised of three (3) main components.

One 200 Gallon Polyethylene Holding Tank

One Ozone Generation Module

One Reverse Osmosis System (RO)

Closed Loop Filtration with Chiller and RO Make-up

Holding Tank with
Ozone Generator

Incoming
City Water

RO
Membrane

Drain

Hydraulic Cooling Water

Closed Loop
Make up Water

Cutting Water

Hydraulic
Cooling

Cutting Head

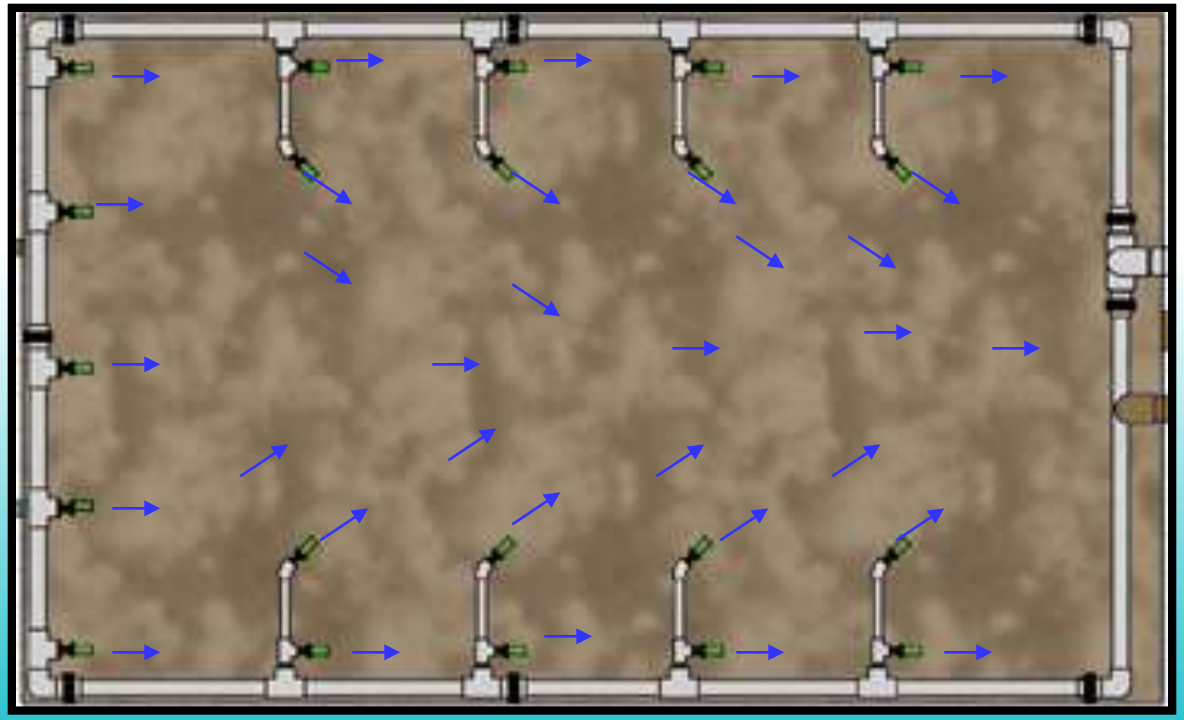
Abrasive Removal System

Continuously Removes The Spent Abrasive That Collects In The Catch Tank, Eliminating Downtime For Clean Out and Maximizing Production.

Benefits to the Abrasive Removal System

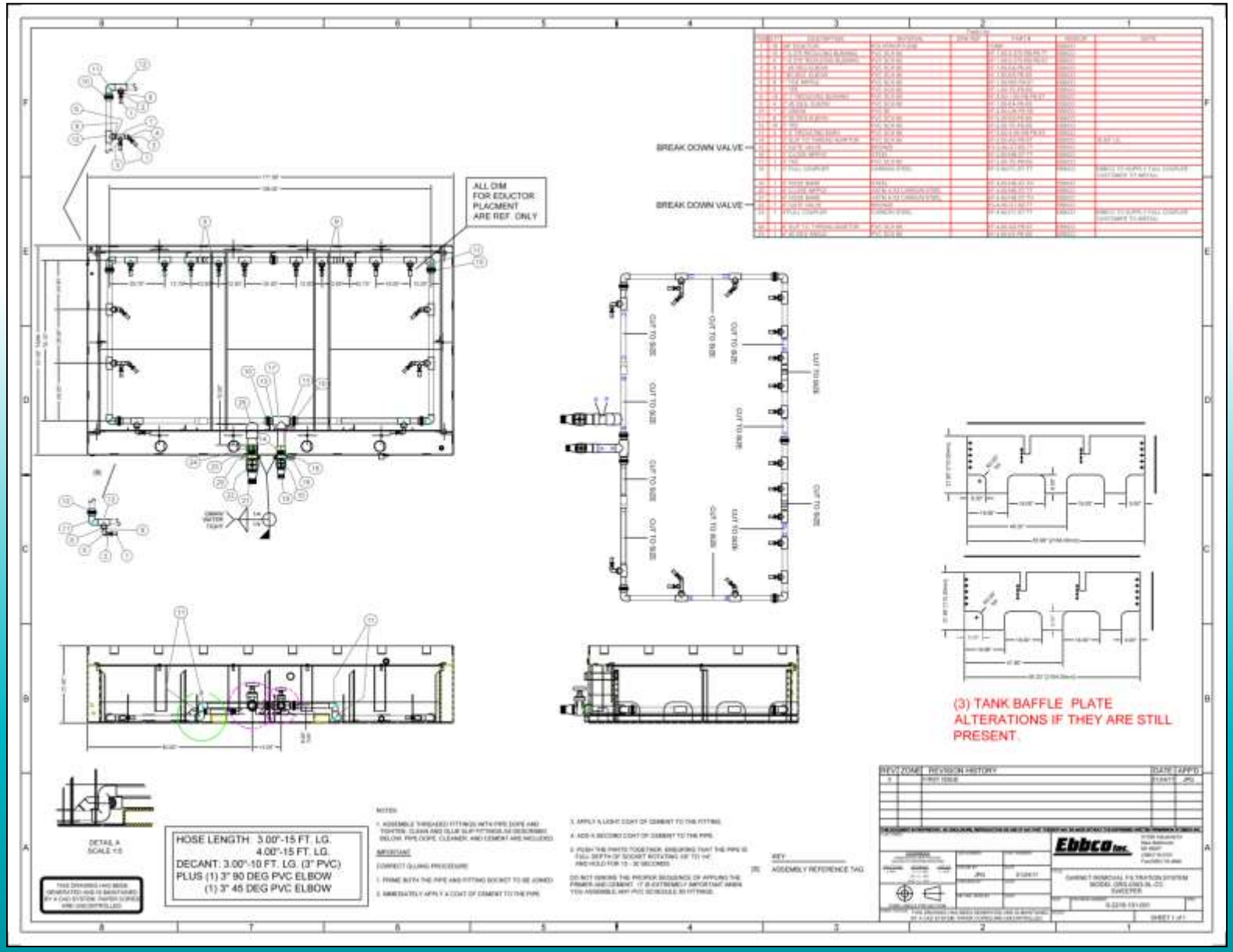
- Maximize Productivity
- Eliminate Down time for Catch Tank Cleaning
- Easy Solution for the Handling of Spent Abrasive
- Reduces Possibility of Thermal Distortion
- Reduces Closed Loop Consumable Costs

Sweeper Package Installation



A Sweeper Package is specifically designed to fit the catcher tank and can be installed by a qualified service technician. The eductors enhance water flow and keep the abrasive in suspension, pushing it toward the system suction port.

Each System Includes a Engineered Sweeper Package Installation Drawing Customized per Table



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The Existing Tank Couplers are Utilized in the installation of the Sweeper Package. Heavy Duty Valves allow for easy Isolation of the Abrasive removal from the Table.

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45˚ Inlet Elbow allows maximum Abrasive Removal from the floor of the catch tank

Strategically placed eductors keep abrasive from settling out on the bottom of the catch tank and pushed toward the pump suction.

How it works

- *Dirty Water is drawn out of the catch tank through a strainer basket to protect the pump and collect large debris*
- *The Pump then delivers water to the centrifugal separator which spins the abrasive out of the water stream*
- *Concentrated abrasive slurry is purged into a hopper with a replaceable bag.*
- *Clean water from the centrifugal separator is fed back into the sweeper package under pressure causing agitation*
- *The process continues the entire time the Waterjet table is in use*

Abrasive Disposal

Spent abrasive is purged into the abrasive hopper and is captured in a removable hopper bag.

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Abrasive Disposal

The Easy to remove bag is capable of holding up to 4,000lbs. The spent abrasive is relatively dry and clean, free of debris larger than 1/4" diameter

Abrasive Disposal

Overflow Water from the Hopper Returns to the Table.

Application Data Forms

Ebbco inc.
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51536 Industrial Drive | New Baltimore, MI 48047
(586) 716-5151 Fax: (586)716-4949 info@ebbcoinc.com

Quote#: _____
DATE: _____
SALES REP TO CONTACT: HOWARD MCCOLLOM III
LOCATION: MICHIGAN
PHONE NO: 586-716-5151 x-41

NOTE : ALL FIELDS ARE REQUIRED TO ASSURE PROPER APPLICATION

WATERJET APPLICATION DATA SHEET

CUSTOMER INFORMATION

COMPANY NAME: _____ PHONE: _____
ADDRESS: _____ FAX: _____
CITY/STATE/ZIP _____ E-MAIL _____
CONTACT #1: _____ CELL PHONE: _____
CONTACT #2: _____ CELL PHONE: _____

General Information

Machine Make/Model of Waterjet Table #1 _____
Length, Width and Height of catch tank _____
Electrical in Facility 208Vac ☐ 230Vac ☐ 480Vac ☐ 575Vac ☐ 50HZ ☐ 60HZ _____ Other
High Pressure Pump Information _____ HP ☐ Direct Drive ☐ Intensifier Operating PSI _____
Number Cutting Heads _____ Abrasive Used (Mfg.) _____
Approximate Cutting Hours Per Week _____ Material Being Cut _____
Existing Abrasive Removal ☐ Yes ☐ No Existing Overflow System ☐ Yes ☐ No
Existing Chiller System ☐ Yes ☐ No
Exiting Make-Up Water System ☐ Yes ☐ No If Yes, What Type: ☐ RO ☐ DI ☐ Softener
Cutting Make-up water ☐ City Water ☐ Well Water

Abrasive Removal Filtration

How Often Do You Service the Catch Tank? _____ weeks
How Much Down Time for Draining/Cleaning/Refilling Catch Tank? _____ hours
How Many Employees are Used for Catch Tank Service? _____
Is Down Time for Catch Tank Cleaning a Factor? ☐ Yes ☐ No
Is Disposal Cost a Factor? ☐ Yes ☐ No
Is The Handling of Spent Abrasive a Factor? ☐ Yes ☐ No
Is Morale of Employees who Service Catch Tank a Factor? ☐ Yes ☐ No

Closed Loop Filtration

Average Pump Seal Life? _____ hours Approximate Down Time for Service? _____ hours
Is Down Time for Pump Service a Factor? ☐ Yes ☐ No
Approximate Orifice/Jewel Life _____ hours Mixing Tube _____ hours
Cost of Existing Water Treatment? (If any) $ _____ Cost of Overflow System? $ _____
Is Local Water/Sewage Costs a Concern ☐ Yes ☐ No
City Water PPM of Dissolved Solids _____ PPM Has Overflow Water Been Tested? ☐ Yes ☐ No

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SYSTEM DATA APPLICATION SHEET PG 2

Quote # _____
DATE: _____
SALES REP TO CONTACT: _____
LOCATION: _____
PHONE NO: _____

Scope of Work to be Performed

Waterjet Filtration Product Presentation by:

04.2017