

# OAK HILL ASSOCIATES

MAGNUS EQUIPMENT DIVISION

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## ***RECOGNIZED AS THE INDUSTRY STANDARD***

The Magnus Coalescer separates splitting oils from oil/water or oil/cleaner solutions.\*

**Extremely Effective** - the Coalescer is designed to use the natural specific gravity differences between oil and water, enhanced by the coalescing element, to separate one from the other.

**Extend Bath Life** - by keeping cleaning baths from excessive soil overload, the chemical additives are reduced and the overall bath life is extended, resulting in fewer bath dumps and improved cleaning effectiveness. The cleaner bath provides consistently cleaner work loads by removing major contaminations.

**Built Strong for Durability** - the Coalescer is constructed of 305 stainless steel which will provide a long service life. The coalescing elements are polypropylene modules which are easily removed for cleaning when necessary. The only moving part in a Coalescer is the pump.

**Cost Savings** - the MAGNUS Coalescer reduces the amount of cleaner required.

**Three Standard Sizes** - to meet your demands, our coalescer is available in three standard sizes, The Miji Coalescer, The 5/20 Coalescer, and the heavy duty 10/40 Coalescer.

*\* Oils which are chemically emulsified or soluble in water will not effectively be removed by coalescing*



### **Coalescer Additional Features:**

- Solution return pump
- Cone bottom for easy sludge cleanout

### **Coalescer Available Options:**

- Level control
- Conductivity base chemical addition system

## COALESCER OPERATION

### *PURPOSE*

The coalescer is designed to separate splitting oils from oil/water or oil/cleaner solutions. Oils which are chemically emulsified or are soluble in water will not be effectively removed by any coalescer.

### *THEORY OF OPERATION*

The coalescer is designed to use the natural gravity difference between oil and water as well as the oil-philliac (oil attracting) properties of the coalescing elements to separate the oil. The oil laden solution is introduced into a still chamber with the coalescing element. The chamber is sized to provide adequate residence time for oil separation. The coalescing element provides a baffling effect to maintain a still volume and provides the oil-philliac surface for very small droplets of oil to collect on and coalesce into larger droplets. The larger droplets have adequate buoyancy to float to the top of the chamber. Once on the surface of the chamber, the oil is removed by an overflow weir.

### *OPERATION DESCRIPTION*

Solution from the wash tank exits by overflowing through an overflow trough. The solution flows by gravity to the dirty side of the coalescer. A baffle is provided at the coalescer inlet to minimize turbulence from the entering liquid. The dirty side of the coalescer is a chamber filled with polypropylene coalescing elements. As the liquid slowly passes through the element, the oil coalesces into droplets and rises to the surface. The cleaned solution exits the dirty chamber by passing under a baffle (this insures no carry over of floating oil from the surface). Once under the baffle, the solution overflows a weir that maintains the liquid level in the dirty side of the coalescer. The clean solution overflowing the weir goes into a clean surge tank. The surge tank provides adequate volume to handle the displacement from the parts immersion in the wash tank. Solution is pumped from the clean surge tank back to the wash tank causing the continuous overflow back to the coalescer. Oil that is separated in the dirty side floats to the surface and is discharged over a weir into a waste oil container.

The tank wetted portions and lids are constructed of 304 stainless steel. The coalescing elements are polypropylene modules which are easily removed for cleaning if required.

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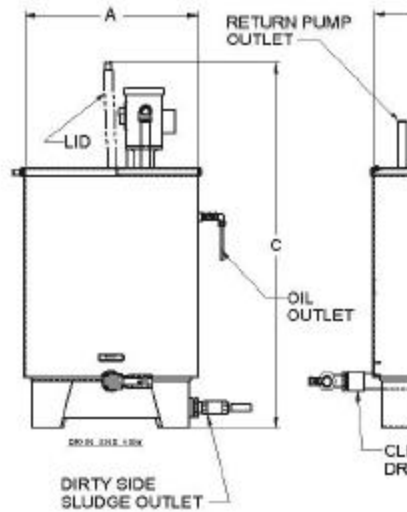
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## MACHINE DIMENSIONS

MACHINE NUMBER:		MIJI COALESCER	5/20 COALESCER	5/40 COALESCER
Width	A	15"	26 3/4"	26 3/4"
Width	B	52 3/4"	51 3/4"	51 3/4"
Overall Height	C	26"	38 1/2"	50 1/2"
Tank Height	D	26"	27"	39"
Liquid Level Height	E	18"	20"	32"

## LIQUID CAPACITY:

Maximum	36 Gal.	65 Gal.	120 Gal.
Minimum	23 Gal.	45 Gal.	70 Gal.
Surge	13 Gal.	25 Gal.	50 Gal.

## RATED FLOW (GPM):

	1	5	10
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## SERVICE CONNECTIONS:

Solution Inlet	1/2" NPT	2" NPT	2" NPT
Outlet (pump return)	1/2" NPT	1" NPT	1" NPT
Dirty Side Sludge Outlet	1/2" NPT	2" NPT	2" NPT
Oil Outlet	1/2" Tube	1/2" Tube	1/2" Tube
Clean Side Drain	1/2" NPT	2" NPT	2" NPT
Vapor Relief	4"	4"	4"

## TANK THICKNESS:

	12 Gauge	12 Gauge	12 Gauge
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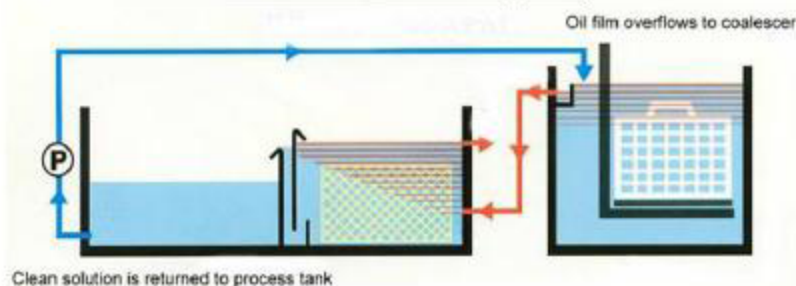
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## OIL COALESCER

The coalescer is of 304 stainless steel construction and includes;

- \* An inlet baffle area to distribute solution
- \* A separation chamber with baffles, poly pack coalescing element (plastic), and an oil removal weir.
- \* An underflow weir followed by an overflow weir to transfer cleaner solution to the clean chamber.
- \* A clean solution chamber
- \* A pump to return the solution to the process.
- \* A secondary gravity separation chamber. This takes oily solution from separation chamber and separates additional remaining solution. Oil is discharged to waste container, (by the customer), and solution returned to separation chamber.

### Coalescer Flow Diagram



### Coalesced Oils in a Magnus Coalescer

