



C O A L I E S C E R

# PhaseSep® WR Liquid/Liquid Coalescer Retrofits WAKO Carbon Fiber Rod Mount Coalescers

## Introduction

Pall Corporation's PhaseSep WR Series liquid/liquid coalescer is designed to directly retrofit WAKO carbon fiber liquid/liquid coalescers. This new coalescer does not require field assembly as is the case with the WAKO product, thereby saving time when completing change outs. Pall Corporation offers world wide support to assist you with the most challenging separation demands.

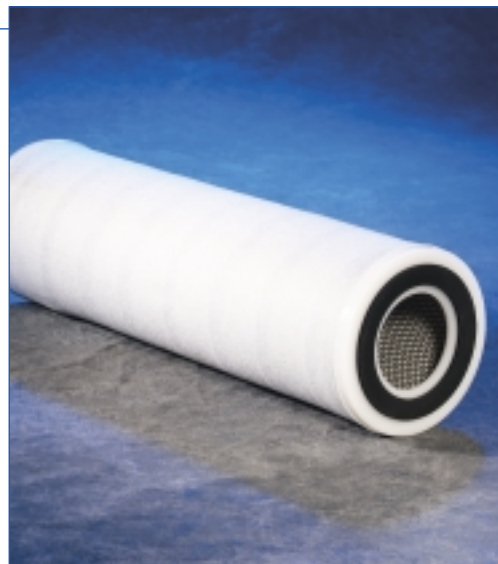
### PhaseSep WR Coalescers:

- Handle dispersions with inlet liquid contaminant concentrations as high as 10%
- Separate dispersions with interfacial tensions as low as 0.5 dyne/cm
- Reduce sodium levels from cumene hydroperoxide – cumene streams in Phenol plants down to <2 ppmw on a consistent basis

The Pall PhaseSep WR system is a multiple stage unit starting with preconditioning of the fluid with a Pall particulate filter followed by the PhaseSep WR coalescer. The purpose of the preconditioning filter is to remove particulate matter to prolong the service life of the PhaseSep WR coalescer and to initiate coalescence of the dispersed phase.

Pall preconditioning particulate filters are available in numerous configurations that can fit directly into your current prefilter housing. If you do not have a prefilter installed, a system can be provided by Pall.

The PhaseSep WR Series coalescer utilizes the same specially formulated proprietary PhaseSep medium that Pall deploys when it sells new PhaseSep High Efficiency liquid/liquid coalescer systems. The WR series product allows cus-



*Pall PhaseSep WR Liquid/Liquid Coalescer*

tomers to adopt Pall coalescer technology without the need to purchase new capital equipment.

## Materials of Construction

Item	Materials
End Caps/Outer Sleeve	Fluoropolymer
Core/Support Mesh	316 Stainless Steel
Medium	Fluoropolymer
Gasket	Viton A *
Coalescer Spacer :	316 Stainless Steel

*\*Trademark of El Dupont de Nemours and Company*

## Retrofit Options

The PhaseSep WR coalescer can directly retrofit WAKO tie rod style liquid/liquid coalescers (WAKO assembly part number CF-19300-42T). No field assembly of the Pall PhaseSep WR coalescer is required. The element slides over the existing housing tie rods along with a coalescer spacer, and is then sealed using the existing housing flange and spring loaded seal nut (See Figure of Pall PhaseSep WR Coalescer installed assembly).

## Typical Applications

- Removal of water or caustic from cumene/cumene hydroperoxide
- Separation of salt water from phenol/acetone
- Removal of caustic from methylene chloride

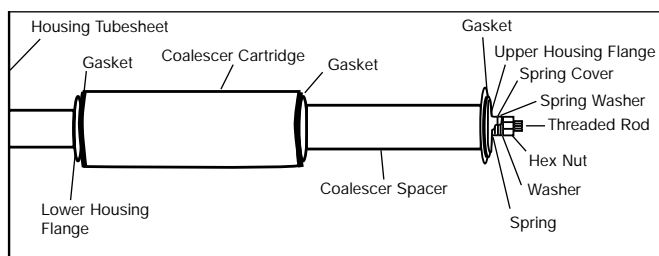
## Installation\*

Each application for the PhaseSep WR Coalescer must be reviewed by Pall Corporation for technical feasibility. It must be determined if the existing WAKO housing is large enough to prevent the two liquid phases from recombining once the emulsion is broken.

Once the application has been approved as suitable and the vessel size is determined to be large enough by a Pall scientist,

1. The current WAKO coalescers are removed from service
2. The current prefilter elements are removed from service
3. Pall PhaseSep WR Coalescers and coalescer spacers are installed using existing coalescer upper plate/spring loaded seal nut
4. Pall prefilters installed in current housing or in new Pall prefilter vessel. Dirt is removed from liquid/liquid mixture via the prefilters and coalescence is initiated by the prefilter.

\* for more information refer to Pall form No. 2093 "Pall PhaseSep WR Coalescer Element Installation Instructions"



Pall PhaseSep WR Coalescer Installed Assembly

## Pall PhaseSep WR Coalescer Installed Assembly

In the coalescer housing, the liquid / liquid mixture enters the PhaseSep WR coalescing element and flows inside to outside. Dispersed phase droplets suspended in the continuous phase come together, or coalesce, as the mixture moves through the coalescer. The large coalesced droplets of the dispersed phase separate by gravity in the housing and are removed.

### Liquid/Liquid Coalescer

#### Compatibility

The PhaseSep WR coalescer is compatible with many corrosive chemicals encountered in the chemical and petrochemical industries including phenol, cumene, cumene hydroperoxide,

hydrogen peroxide, organic acids, caustic, methylene chloride, alkaline amines, and essentially all organic solvents. For compatibility information with a specific chemical, please contact your Pall distributor or Pall applications engineer.

## Operating Characteristics

Maximum Temperature:	180°F/82 °C
Initial Pressure Drop:	2 psid/137 mbard
Recommended Changeout:	15 psid/1 bard

## Ordering Information - Dimensions

Part Number	Description	Nominal Diameter	Nominal Length
		inch/cm	inch/cm
WR1L620EH	PhaseSep WR Coalescer	6/15.2	20/50.8
WR117SPL	Coalescer Spacer	6/15.2	17/43.2

## Pall Corporation

### A Powerful Resource For Control Protection and Teamwork

Pall Corporation brings over 50 years of filtration and separations experience to your plant's processes. With the industry's widest range of advanced products, Pall can design a system specifically for your plant, based on a thorough evaluation of your needs.

You'll receive technical consultation and support from our Scientific and Laboratory Services Department (SLS). This is a network of some 400 scientists and engineers working from more than 30 Pall laboratories worldwide.

Pall continues to develop new products and methods to advance the state of the art of phase separation. No other company offers such a strong core competency in coalescing technology to help you reduce operating and maintenance costs through improved product control, plant protection and teamwork.

For more information, contact your local Pall distributor or call Pall at (888) 873 7255 (Toll Free) or (516) 484 5400. Additional information on Pall products and services can be found at our Web site: <http://www.pall.com>.



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