

DWC Innovations LLC We Enhance Distillation

Product Brochure

Our Company

At DWC innovations, our goal is to re-invent the age old process of distillation. It is the most widely used unit operation in oil and gas industry and we strongly believe that it needs to be improved and upgraded by challenging the status quo, using innovative design techniques, and coming up with out-of-the-box solutions. DWCI plans to achieve this goal by removing inherent thermodynamic inefficiencies, optimizing overall process scheme, designing state-of-the-art tower internals, and incorporating rigorous thermal coupling techniques to provide its clients with a custom-designed column, that is far ahead of its competition.



About DWC Prime



Since the mid-1940s, Dividing Wall Columns (DWCs) have provided a unique way to repurpose the age old concept of distillation. With latest advances in process simulators and design techniques, DWCs have emerged as a reliable and widely acceptable technology for the end users.

DWCs offer the clear advantage of lower CAPEX and plot space, which when combined with added benefits of lower OPEX, make DWCs a highly attractive substitute over its conventional counterparts.

At DWC Innovations, our goal is to help our clients realize full benefis of DWC technology, whether as a single column project or as part of a bigger complex. Multiple DWCs can sometimes be installed in series to reduce overall column count in processes requiring a sequence of conventional distillation columns.

DWC Innovations is pleased to offer its clients the proprietary '*DWC-Prime*' technology.

DWC-Prime is capable of producing three or more high-purity product streams using a single column. It can be applied as a new grass-roots column or an existing conventional column can be retro-fitted and modified into a revamped DWC.

DWC Prime Configuration









Why **DWC Prime**

DWC Prime offers concept-tocommissioning solutions

Starting with feasibility analysis of the process to complete process optimization, DWC Prime is custom designed as per customer requirement for tailormade, reliable and smooth operation.

Robust Control Schemes

DWC Prime comes with individually designed control schemes, derived from many years of operating experience and confirmed by dynamic simulation models. Depending on the complexity of the application, the control schemes used can be conventional or advanced process control.

Local Manufacturing of internals

Local manufacturing of tower internals ensures shorter delivery schedules and better project economics.



Top View of the Dividing Wall



Vapor Distributor below the Dividing Wall

Energy Optimization

DWC Prime team has extensive background in energy optimization. Many of our DWCs are integrated with other process units resulting in further lowering energy requirements

Complete project management

Team DWC is equipped and is highly capable to handle complete detailed engineering, manage site and complete procurement process to the best of customer satisfaction.

Dual DWC Prime

Dual Dividing Wall Column (DDWC Prime) is an extension of our process intensification portfolio. DDWC Prime combines multiple conventional columns, usually three or more, into a single shell to produce four or more high purity products.

DDWC Prime has higher thermodynamic effciency than DWC with a single wall. The column uses multiple walls, which are placed inside the shell in such a way so as to minimize the complexities in liquid and vapor splits. This has made the DDWC an extremely viable technology.



Liquid Splitter on Top of Dividing Wall





ltem	Conv. columns in sequence	DWC Prime
Columns	3	1
Pimps	6	4
Condensers	3	1
Reboilers	3	1
Drums	3	1
Total equipment count	18	8
Plot space	100%	40%
OPEX	100%	50%
CAPEX	100%	50%

Project awarded for a Network of Dividing Wall Columns in a Chemical Complex: DWC Innovations was awarded the project in Mid-2022 by an Indian chemicals manufacturing company for modifying distillation train used in the production of acetone derivatives. The primary objective of this project was to replace a sequence of eight distillation columns with four DWC Prime columns while reducing equipment count, foot print, and energy consumption.

Successful commissioning of DWC Prime column to meet new CS₂ regulations for Petrochemical Naphtha (PCN):

DWC Innovations successfully commissioned its DWC Prime column designed to produce petrochemical naphtha (PCN) with less than 1 ppm CS_2 in the product. This revamp project for a South–east Asian refinery involved retrofitting an existing Depentanizer column into a DWC Prime column. Along with upgrading petrochemical naphtha, DWC Prime column has produced premium grade gasoline, thereby adding to refinery's bottom line.

Project awarded for upgrading Isomerization unit to produce Food Grade Hexane: DWC Innovations has been awarded a project by a South Asian refinery to upgrade existing C_5-C_6 Isomerization unit to produce additional Food Grade and Polymer Grade Hexane products. The first-of-its-kind advanced distillation project will use dual dividing wall column (DDWC) technology to produce four high purity product streams from an existing Deisohexanizer (DIH) column. The revamped DDWC column combines the functionality of four conventional columns into a single shell of a Deisohexanizer column.

Dividing wall column award project award in LOBS unit of Indian refinery: DWC Innovations has been awarded a project to design a grass—roots Dividing Wall Column (DWC) Project in Lubricating Oil Base Stock (LOBS) unit of an Indian refinery. This DWC column produces four precise cuts and combines three conventional distillation <u>column into one</u>.

Successful commissioning of project for de-bottlenecking feed preparation unit of CCR & ISOM:

The revamp involved converting series of naphtha splitters to a thermally–coupled dividing wall column. The retrofit provided a capacity increase of more than 40%

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DWC Innovations LLC

 2500 Wilcrest Dr., Suite 300 Houston, Texas 77042
info@dwcinnovations.com
+1 832 220 3630