

## Improved CFU efficiency with low shear Typhoon® Valve System

Conventional choke and control valves are known to break droplets in a dispersing flow. The high turbulence encountered in control valves creates high shear forces that act on the fluids. The low shear Typhoon® Valve System reduces the shear forces, and thereby increases the efficiency of a Compact Flotation Unit (CFU). Implementation of the Typhoon® Valve System is a simple and efficient solution for debottlenecking oil-water separation issues. The system retrofit does not require any modification to the separation vessel itself; simply replace the existing control valve.

### Field results

In 2018, a low shear Typhoon® Valve System was installed to feed a CFU during an FPSO upgrade. The objective was to improve the production capacity and extend the operational lifetime of the vessel. With the CFU in steady operation, and with similar inlet feed oil concentrations (OiW ~110ppm), the CFU performance was compared when using the Typhoon® Valve System and a conventional globe valve. The comparison showed that the Typhoon® Valve System resulted in an improved efficiency of ~23%.

	Typhoon® Valve System	Conventional Globe valve
Flow rate [m <sup>3</sup> /h]		52
Inlet pressure [bar]		4.5 – 5
Outlet pressure [bar]		2.3
Temperature [°C]		55
CFU inlet OiW [ppm]	113	107.3
CFU outlet OiW [ppm]	38.6	49.8
OiW removed [ppm]	74.4	57.5

**Niels van Teeffelen**  
 Engineering Manager  
 P.O. Box 6, 4349 Bryne, Norway  
 Phone: +47 48278442

[Niels.Teeffelen@typhonix.com](mailto:Niels.Teeffelen@typhonix.com)  
[www.typhonix.com](http://www.typhonix.com)



INSTALLATION  
 FAR EAST

23% improvement of  
 CFU efficiency