



# Dispenser Technology - Tokheim Quantum ML

Product Enhancements

Apr-2022

DFS *Worldwide* Brands

WE  
ARE

## OUR VALUES

**A Collaborative**  
Entrepreneurial Spirit

**Winning**  
Through Customers

**Engaging**  
in High Ethical  
Standards, Openness  
and Trust

**Fostering**  
Expectations for  
Results

**Respecting**  
and Valuing People



WE  
ARE

## OUR VISION

Enabling the  
evolution of  
consumer  
experience in  
fueling and  
convenience retail.



WE  
ARE

## OUR MISSION

A leading global  
provider of  
advanced  
customer-  
focused  
technologies,  
services and  
solutions in the fuel  
and convenience  
retail industries.



WE  
ARE

## OUR CULTURE

A team committed to  
doing great things,  
collaborating to  
deliver exceptional  
business results for  
our customers. We  
are accountable,  
results driven and  
create value, through  
innovation,  
continuous  
improvement and  
execution excellence.



WE  
ARE

## CULTIVATING EXCELLENCE

**Aligned**

**Accountable**

**Engaged**

**Problem Solvers**

**Customer-  
Centric**

**Celebratory in  
Success**

**Execution  
Champions**



DFS *Worldwide* Brands



# Tokheim Dispenser Technology



# Meet Tokheim Quantum ML

## Product Enhancements



## Our Trusted Tokheim Quality Re-Imagined



**Quantium ML**

*Full Hose Retraction*

**Leveraging decades of hydraulic innovation, we have re-imagined the Quantium 510M model and engineered a new and improved fuel pump packed with leading technology for reliable performance**

**Our modularity, quality materials and best of the best components ensures superior nozzle availability and low TCO**





## Say Hello to Tokheim Quantum ML

### Reliable Quality through Engineering Excellence offering True Modularity and Configuration Flexibility

- Engineering excellence with field-proven best of the best components and industry leading corrosion protection providing our trusted long-lasting Tokheim quality
- Superior modularity with models for wide range of fluids, flow rates and options to suit any site or application
- Reliable quality that maintains accuracy, requires less maintenance and lasts longer for the lowest total cost of ownership





### **Our modularity, quality materials and best of the best components ensures superior nozzle availability and low TCO**

- Reliable electronics and certified metering accuracy from field-proven technology delivering exceptional stability for minimal drift
- Robust hydraulic system with field-proven gear pump technology and quality materials for excellent fluid compatibility delivering reliable quality for superior nozzle availability
- Optional IoT technology connecting the dispenser to the cloud and our powerful DX platform for monitoring and advanced remote management capabilities for low TCO
- A safe investment for years to come with future-proofing modularity and our durable quality that benefits from field-proven components and corrosion resistant materials for a lifetime of reliable operation



# **Tokheim Quantum ML**

## What's New?



## True Modularity and Reliability for Superior Nozzle Availability in Trusted Tokheim Quality

- Market leading hose reach of 4.7 meters with new EHR retraction system for extended reach and premium user experience
- Improved hydraulic system based on field-proven gear-pump technology in new stack arrangement for reduced vibration & noise.
- Improved nozzle availability from enhanced durability with suction stack redesigned with cast-iron pulley and self-tensioning belt technology for reduced wear and better TCO.
- Improved user experience with new 7-6-5 S&V display and redesigned FHR hose retraction for long reach with less pull force required.
- Improved maintainability with better access, patented double-bump tube connections and external filter-pot as standard.
- Advanced optional IoT technology connecting the dispenser to the cloud and our powerful DX Platform for advanced management capabilities for low TCO



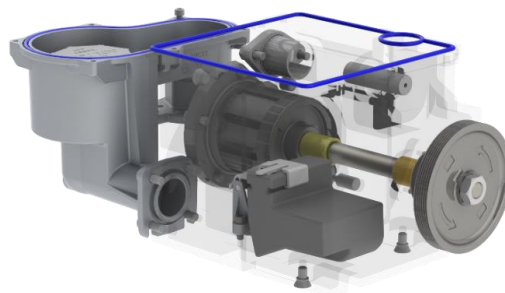
## Improved Hydraulic Suction System

**Improved hydraulic system based on field-proven best of the best gear-pump technology in new arrangement for reduced vibration & noise with same reliability & performance**

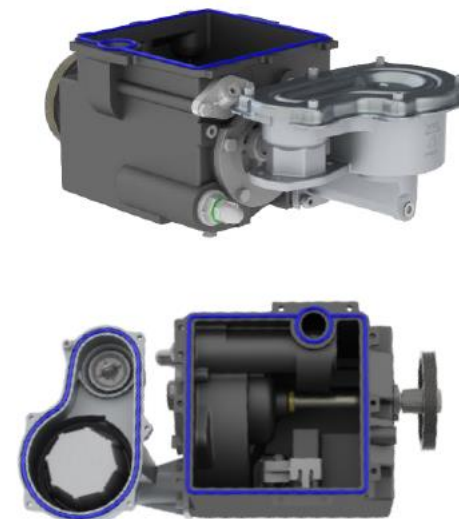
- New stack arrangement



- New cast-iron pulley & self-tensioning belt system



- New sealed connection



- Improved TCO with reliable performance and reduced wear & tear

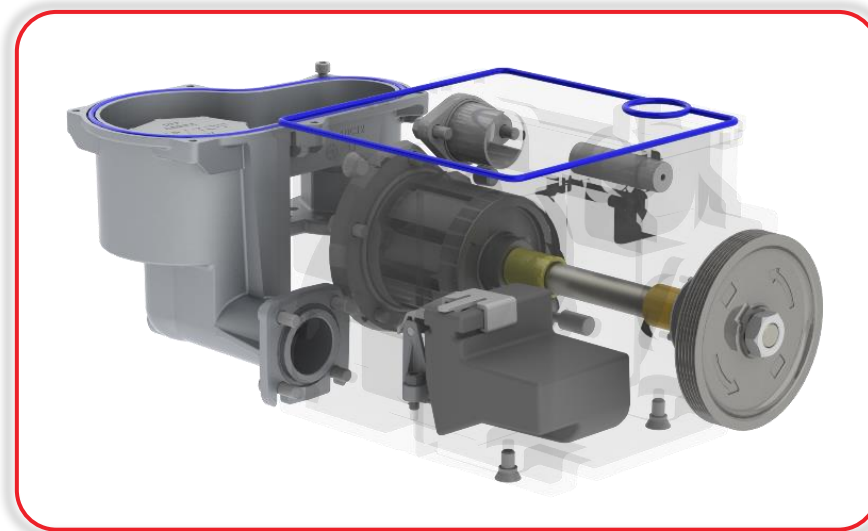
**Our field-proven best of the best gear pump technology offer more efficient fueling with less noise and reduced risk of leaks compared with competitive designs**

## **Less vibration & noise**

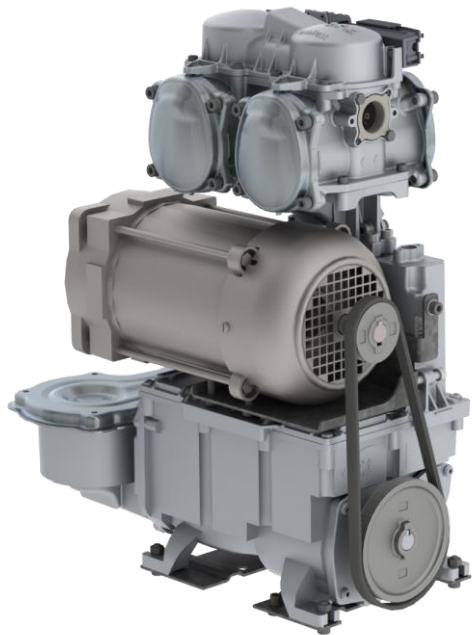
- Gear pump cause less vibration than vane-style pumps resulting in less noise and less vibration, reducing the risk of leaks caused by vibration strain on tube assemblies and bracketry. Our design offer additional stability from the positioning of the pumping unit below the motor for a lower point of gravity.

## **Versatility for all fuel types**

- Our hydraulic system is designed with quality materials incl fluor silicone seals for excellent fluid resilience for durability with all fuel types in a broad range of temperatures.



**Designed for high-capacity flow using positive displacement gear pump technology for reliability and lowest TCO**



### **Designed for reliability in all conditions**

- Robust versatile design with superior lifetime performance from durable materials and high-quality componentry including fuel resistant seals compatible with a broad range of fuels for reliable performance in a wide temperature range

### **Optimal performance from maintenance free design**

- Compact self-lubricating design with guided path for moving parts to avoid wear for enduring operation. Engineering excellence with less operational vibration from aluminum housing, cast-iron pulley and self-tensioning belt technology for minimal wear and easy maintainability.

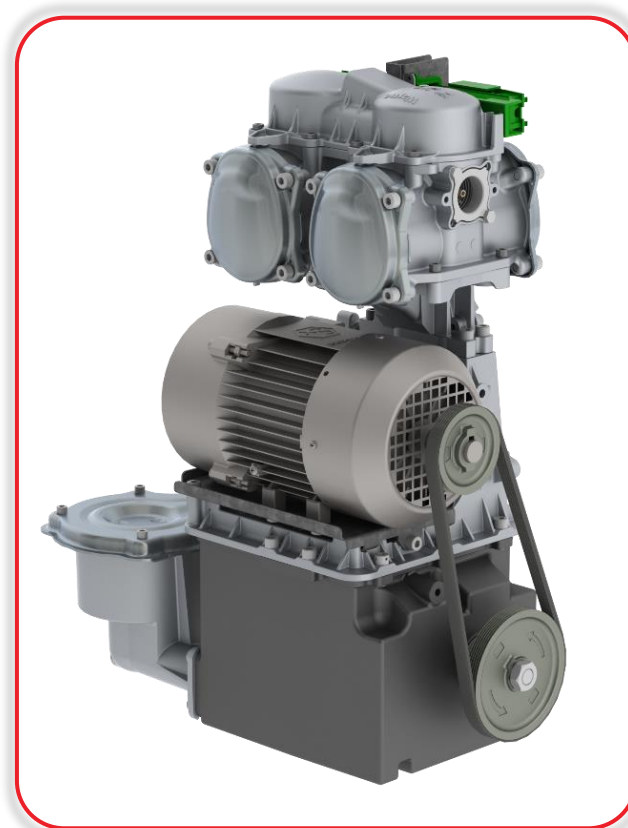
**DFS is standardizing on gear pump technology for both retail and high flow capacity dispensers, as gear pump technology offers better durability and reliability than vane-style pumps, offering superior performance and low TCO**

## **Maintenance free design**

- Our maintenance free self-lubricating gear pump has guided path for moving parts to prevent breakdown and repairs. No blade to replace from wear as gear pumps avoids the friction between the housing and the blade seen with vane-style pumps.

## **Self-tensioning belt**

- Engineering excellence with less operational vibration with cast-iron pulley and self-tensioning belt that reduces heat from belt friction for minimal wear to ensure durability.



**Improved stage II vapour recovery (VR2) system with direct drive form combined motor and pump unit, eliminating belt used on alternative system, avoiding wear & tear for low TCO**



### **Electronic Vapour Recovery (EVR)**

- Robust field-proven electronic VR2 system to ensure environmental compliance from reliable vapour recovery performance.






### **Self-Calibrating Electronic Vapour Recovery (SC-EVR)**

- Field-proven VFM technology providing an automatic vapour recovery monitoring system that continuously checks the recovery performance and proactively regulates the vapour flow in a closed loop system to ensure compliance with environmental codes.



We offer almost endless configuration possibilities including choice of hose management

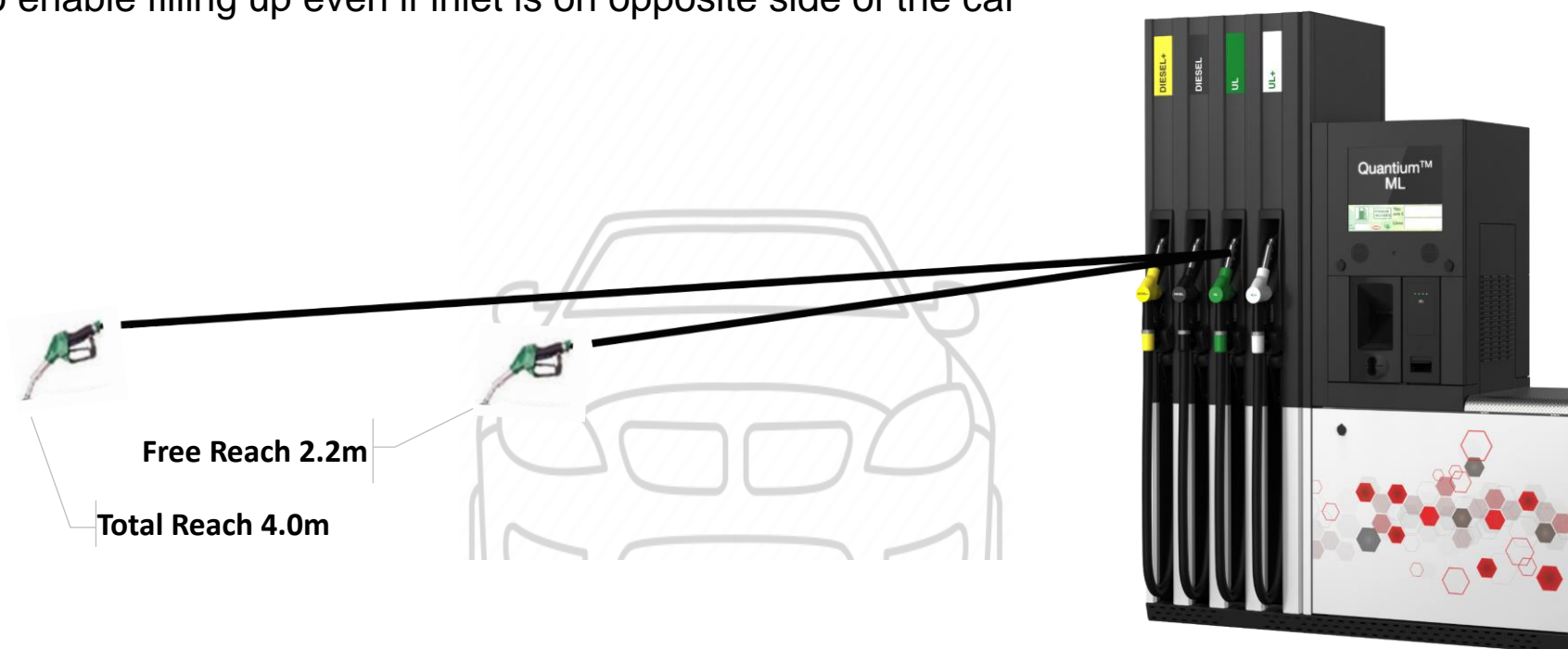
LHR	FHR	EHR
<p>Light Hose Retraction (LHR)</p> <ul style="list-style-type: none"> <li>▪ Hose Reach 3.5 meters</li> <li>▪ Free Reach 2.5 meters</li> </ul>	<p>Full Hose Retraction (FHR)</p> <ul style="list-style-type: none"> <li>▪ Hose Reach 4.0 meters</li> <li>▪ Free Reach 2.2 meters</li> </ul>	<p>Extended Hose Retraction (EHR)</p> <ul style="list-style-type: none"> <li>▪ Hose Reach 4.7 meters</li> <li>▪ Free Reach 2.9 meters</li> </ul>
		

## Improved hose retraction system for better user experience that requires less pull force for long reach

- Field-proven design improved to require less pull force, offering minimal wear & tear and ease of use even for long reach
- Users benefit from long reach with less pull force providing hose reach of 2.2m (free reach) without any need for pull force and total reach of 4.0m to enable filling up even if inlet is on opposite side of the car

### Hose Reach

- Free reach is measured from the dispenser to its furthest nozzle reach at a height of 1 meter without engaging the retraction system
- Total reach is measured from the dispenser to the fullest pull of the nozzle at a height of 1 meter

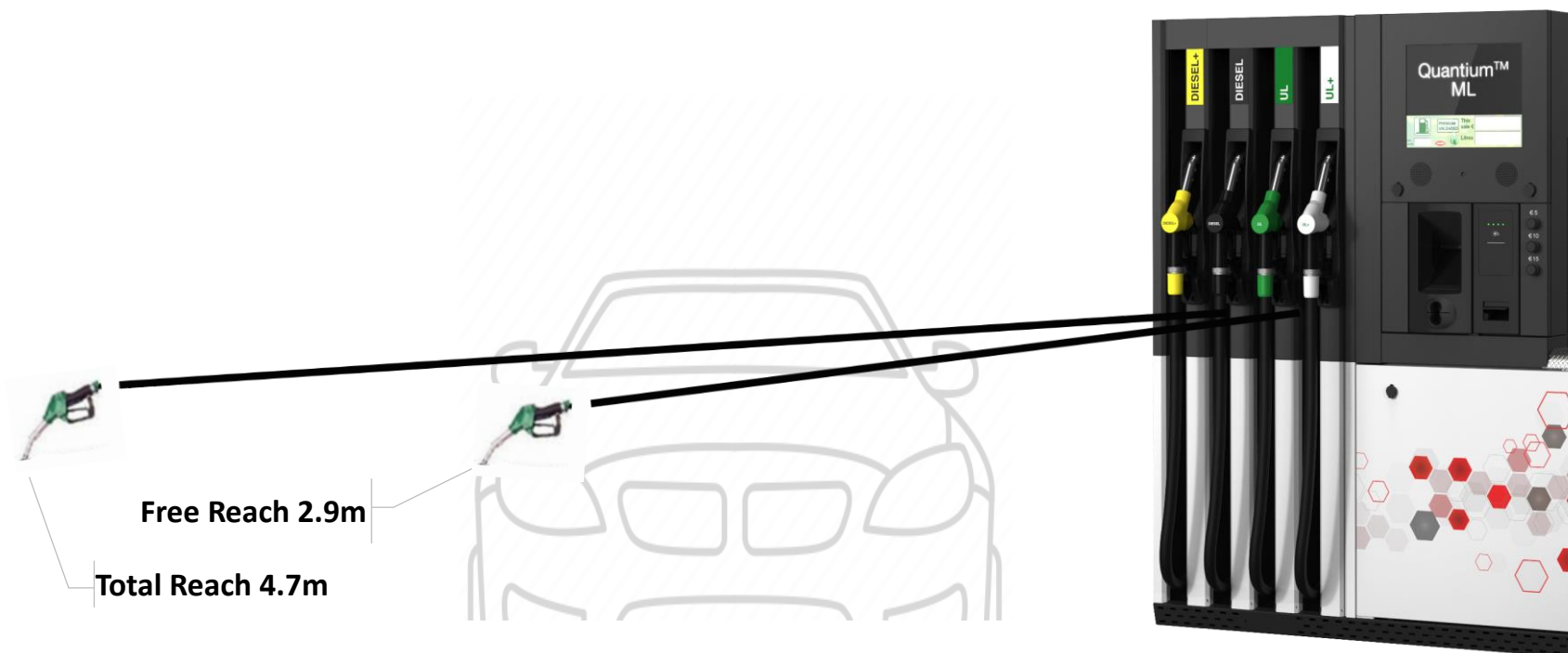


## New market leading hose reach of 4.7 meters with new EHR retraction system for extended reach and premium user experience

- Innovative design providing excellent user experience with best-in-class free reach of 2.9 meters without any pull force
- Extra long reach of 4.7 meters offering longest reach in the market for superior flexibility on the forecourt

### Hose Reach

- Free reach is measured from the dispenser to its furthest nozzle reach at a height of 1 meter without engaging the retraction system
- Total reach is measured from the dispenser to the fullest pull of the nozzle at a height of 1 meter



## Improved Electronic Head

**Our dispensers features a bonded glass solution protecting the electronics and sales & volume display.**

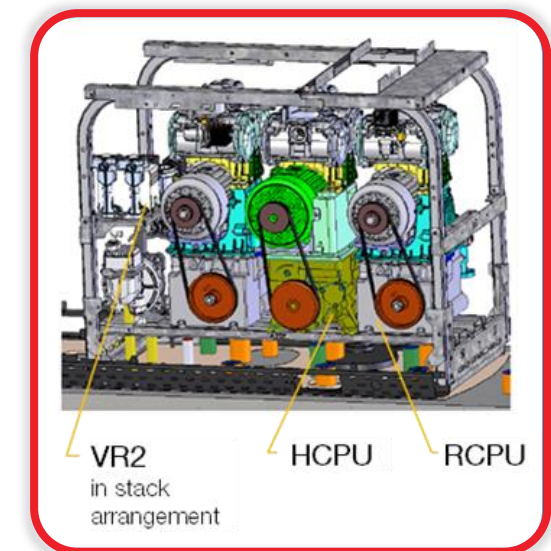
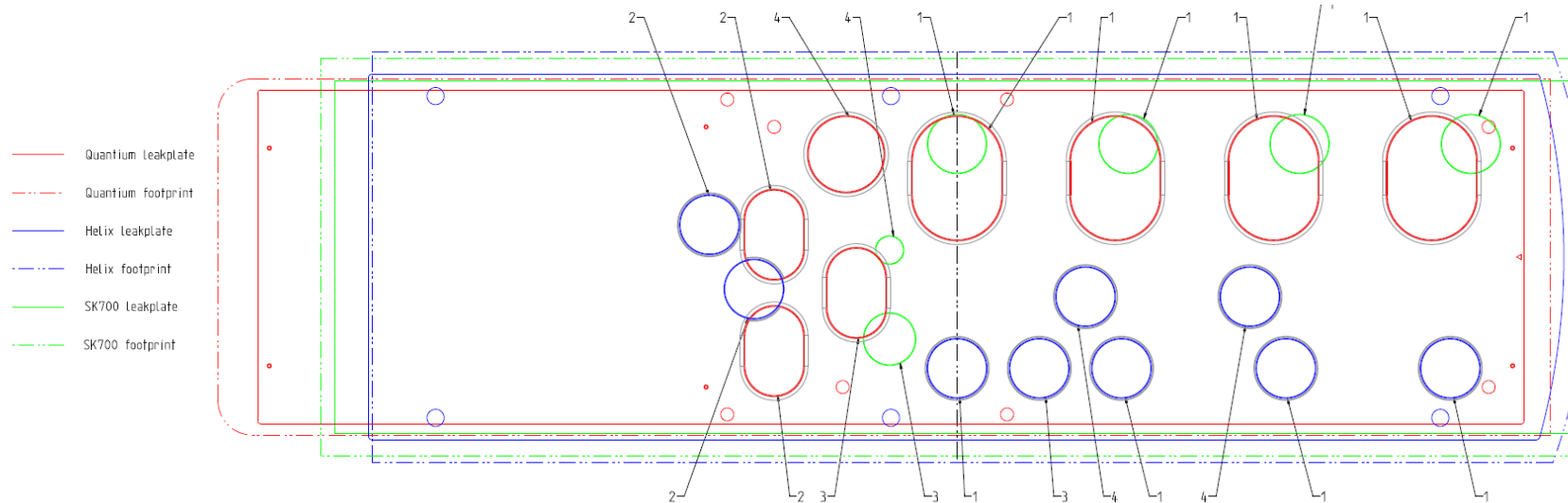
### **Strong protection from water ingress**

- Our design eliminates the risk of damaging the electronics from water ingress that could otherwise happen with other makes using plexi-glass fastened only with tape.
- Our design offers a new optional premium 7-6-5 sales & volume display for optimal user experience and up to 5 individual unit price displays.



## Quantum ML features a similar positioning of inlet connections

- Improved height underneath stacks for connection to riser pipework



## Quantum ML features an optimized design with minor changes in footprint

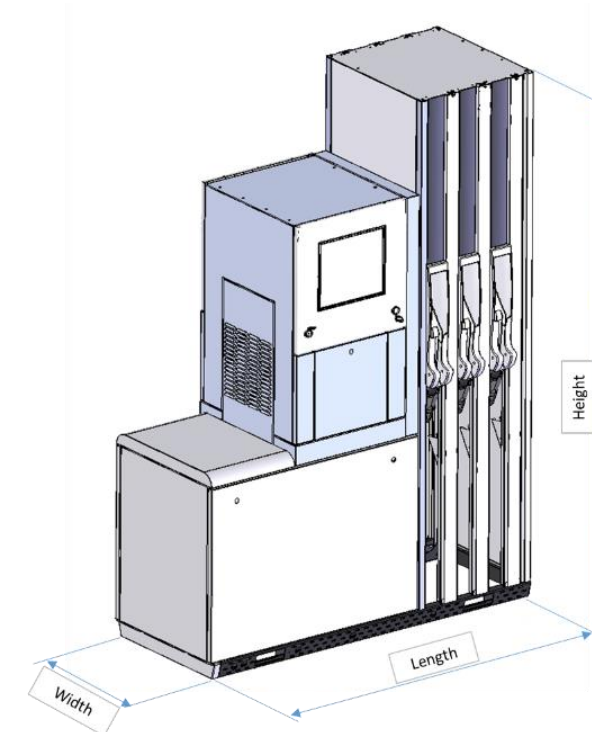
- Smaller footprint than Q510M for easier fit wherever you need it
- Optional adaptor plates available for secure fixation and low cost of change

### ■ Quantum 510M

Configuration	Height	Length	Width
1-2-1	FHR: 1781	995	520
2-4-2		1158	
3-4-2		1389	
3-6-3		1551	
4-4-2		1620	
4-6-3		1782	
4-8-4		1945	
5-8-4		2175	
5-10-5	SHR: 2005	2340	

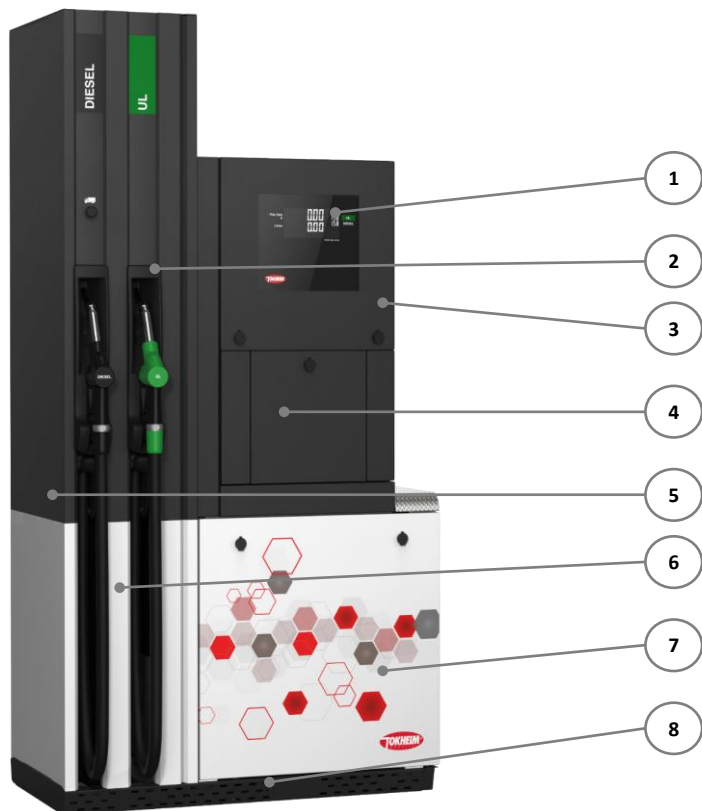
### ■ Quantum ML

Configuration	Height	Length	Width
1-2-1 (2F1C)	2050	892	560
2-4-2 (2F2C)		1032	
3-4-2 (3F2C)		1272	
3-6-3 (3F3C)		1412	
4-4-2 (4F2C)		1512	
4-6-3 (4F3C)		1652	
4-8-4 (4F4C)		1792	
5-8-4 (5F4C)		2032	
5-10-5 (5F5C)		2172	



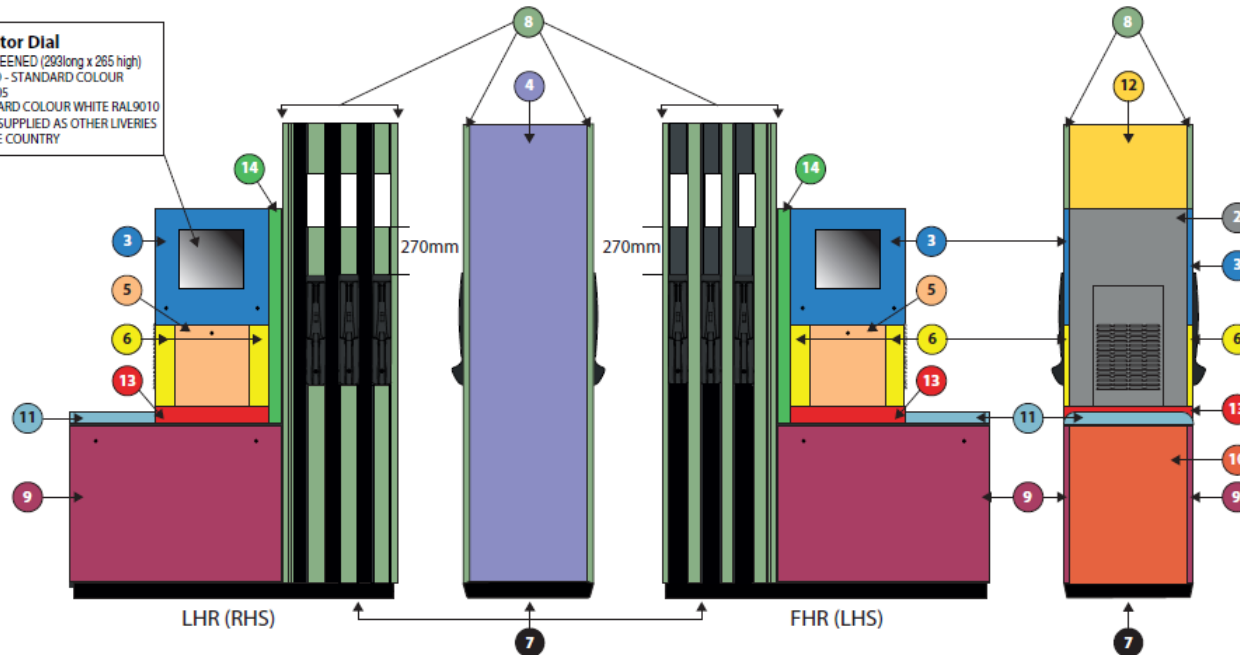
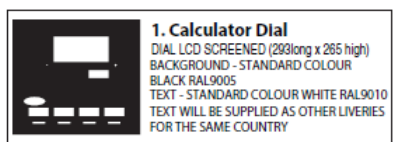


**Designed with field-proven quality components and corrosion resistant materials for a lifetime of reliability**



Number	Material	Details
1	Hardened glass	No risk of yellowing and hardened to withstand accidental nozzle impact
2	Coloured injected moulded plastic	Nozzle boot plastic specified for continuous expose to fuel and chemical vapours and liquids without significant fading. Plastic is coloured through to maintain colour despite scratches
3	Powder painted aluminum composite panel	Laser welded aluminum panel protected with high quality paint for protection to C4 standard
4	Powder painted aluminum composite panel	Aluminum panel protected with high quality paint for protection to C4 standard
5	Powder painted hot dipped galvanized steel	Bent sheet metal without any welding, protected with high quality paint for protection to C4 standard
6	Powder painted hot dipped galvanized steel	Bent sheet metal without any welding, protected with high quality paint for protection to C4 standard
7	Powder painted aluminum composite panel with vinyl wrap	Bent aluminum panel without any welding, protected with high quality paint for protection to C4 standard. Logo and design provided through vinyl wrapping
8	Powder painted hot dipped galvanized steel	Bent sheet metal without any welding, protected with high quality paint for protection to C4 standard

Full flexibility for customer branding with same trusted corrosion protection through our leading paint technology



No.	Name	Customisable	Code
2	Calculator Box (louvre)	Yes	RAL
3	Calculator Door	Yes	RAL
4	Column	Yes	RAL
5	DIT Door	Yes	RAL
6	DIT Option Panel	Yes	RAL
7	Drip Tray	2 OPTIONS	RAL 9005 / SHELL
8	Hose Outlet	Yes	RAL
9	Hydraulic Door	Yes	RAL
10	Hydraulic End Panel	Yes	RAL
11	Hydraulic Top Panel	Yes	RAL
12	Top Tech Column??	Yes	RAL
13	Horizontal Spacer (calc box)	Yes	RAL
14	Vertical Spacer (calc box)	Yes	RAL



### Quantum ML

- Choice of hose management, including market leading hose reach of 4.7 meters with new EHR retraction system for extended reach and premium user experience
- Improved hydraulic system based on field-proven gear pump technology in new stack arrangement for reduced noise & vibration
- Stage II vapour recovery in stack arrangement for better service access. New field-proven vapour flow meter and same field-proven direct drive VR pump eliminating belt wear & tear
- Field-proven high capacity pumping unit for very high-speed flowrates. Same stack size as the retail capacity pumping unit to offer full flexibility
- Optional IoT technology connecting the dispenser to the cloud and our powerful DX platform for remote monitoring and advanced management capabilities for low TCO
- Minor changes to footprint. New standard position of inlets. Improved height underneath stack for connections to riser pipework for minimal cost of change
- Redesigned full hose retraction with improved ease of use
- Greater flexibility for customer branding and strong corrosion protection from our leading paint technology

