

## Intermediate Bulk Containers



*Buck Systems Technologies*

GEA Pharma Systems is world leader in providing advanced processing solutions for solid dosage forms to the pharmaceutical industry. Based on a dedication to research and durable quality, GEA Pharma Systems offers a wide range of solutions, from individual pieces of equipment to complete integrated plants, by uniting the state-of-the-art technologies of Aeromatic, Buck, Collette, Courtoy, Fielder, Lyophil, Nica and Niro.

# Storage - Transport - Blending

IBCs are widely used within the pharmaceutical manufacturing process as storage, transport and blending vessels. Increasingly, with the introduction of in-container blending, IBCs are being used as process vessels for blending applications.

The Buck IBC is more than just a container. With technologies such as the Blending Prism™, the Vibroflow™ discharge device and the world leading Buck® high-containment Split Butterfly Valve, common issues such as difficult to blend materials, poor flowing product, and handling potent materials – all faced by pharmaceutical manufacturers – are met and addressed.

The Buck IBC is designed specifically for the Pharmaceutical and Healthcare industries. With product contact parts constructed from 316L stainless steel, a range of finishes are available for the internal and external surfaces of the IBCs. Modern construction techniques ensure accurate manufacturing tolerances are met with repeatable dimensional accuracy.



# Powder Handling Technology

## The Buck IBC

**Containment Valves**  
One important feature of the Buck IBC is its world leading High Containment Split Butterfly Valve. The Buck® Docking System is the market leading split butterfly valve, and the 'C' Passive Valve is fitted as



standard to the outlet on the Buck IBC. With the new MC Modular Containment Valve offering further improved containment levels, a range of containment valves is available to suit all applications. The valves can be fitted to the inlet of the IBC for contained filling, or an invertible design of the IBC allows filling through the outlet valve. For more details on the Buck® Split Butterfly Valve, please refer to the Docking Station datasheet

### Vibroflow Discharge Technology™

An important feature of any IBC System is its ability to discharge product from the IBC in a reliable and repeatable manner.

In an age where containment of a product and operator safety is of major importance, it is not acceptable for operators to intervene and open the IBC to overcome blockages from the IBC.

The Vibroflow™ was designed to meet these needs. It is now a proven discharge technology, having been thoroughly tested by leading pharmaceutical manufacturers and installed successfully in a number of Primary API plants, as well as Secondary pharmaceuticals plants.

The Vibroflow™ is mounted within the IBC between the outlet flange of the IBC and Passive Valve. By applying vibration to the valve, low frequency vibration is applied into the centre of the product bed, destroying the 'Keystone' of the bridging product. The spiral design sends vibrations sideways through the product bed, promoting mass flow of product. The vibration is applied externally from the Active Valve, so there are no working mechanisms within the process flow.



Another benefit of the Vibroflow™ is its ability to overcome the build up of vacuum within the IBC, which can be an issue for larger volume IBCs. The Vibroflow™ allows air to percolate through the powder bed and into the top section of the IBC. This overcomes the build up of vacuum without the need to vent the IBC from the top, which compromises the containment of the IBC.

The Vibroflow™ is a modular design, therefore it only needs to be fitted to IBCs where the process demands it.

### Blending Prism™

The Prism™ has been developed to aid and improve blending of more difficult materials. The Prism™ adds low shear mixing to the rotating IBC, adding to the turbulence of the tumbling product and improving the time to homogeneously blend products. When the IBC is loaded into the blender, the Prism™ is orientated at right angles to the rotation axis. As the IBC is rotated, the product is divided up by the Prism™, and product is forced outwards to the corners of the IBC.

The Prism™ is of particular benefit in dry blend processes, where IBC Blending is the key process step. For Dry Blending, or Direct Compression products, the powders can be more cohesive and have poorer flow properties. Dry powders take noticeably longer to blend in comparison to free flowing granular materials (for example the dispersion of magnesium stearate into a granulated batch) which blend easily and within a relatively short period of time.

The Prism™ is fully welded into the container body, and can be fully cleaned in place with the Buck Systems' Wash Station.



### Clean in Place

An important feature of any containment system is the prevention of operator intervention. All Buck Systems IBCs are designed to be Cleaned in Place within the Buck Systems Wash Station. The Passive Valves are a hygienic design and are mounted on the inlet and outlet of the IBC in a manner that prevents any ingress of dust. Naturally, both the Prism™ and the Vibroflow™ have been designed to allow full CIP.

## Technical details

Size	1	2	3	4	5
Footprint (mm)	525 x 620	725 x 840	960 x 1125	1125 x 1325	1350 x 1590
Max Volume (Litres)	150	300	600	2000	3000
Min Volume (Litres)	75	200	400	700	1200
Min Volume Bottle in a Frame (Litres)	25	50	50	100	100
Outlet Valve					
Valve Size (mm)	100	150	200	250	250
Buck® 'C' Passive	•	•	•	•	•
Buck® 'HC' Passive	o	o	o	o	o
Buck® 'MC' Passive	o	o	o	–	–
Inlet					
Manway Size (mm)	300	300/460	300/460	300/460	300/460
Spun lid with clampband and seal	•	•	•	•	•
Bolted Plate lid with hygienic seal for mounting	o	o	o	o	o
Buck® Passive Valves					
Clamped Plate lid with hygienic seal for mounting	o	o	o	o	o
Buck® Passive Valves					
Handling					
Pallet Guides	•	•	•	•	•
Stacking/Blending Clamping Features	o	o	o	o	o
Post Hoist Pick-up Features	•	•	•	•	•
Skid Feet for conveyor handling	–	–	o	o	o
Invertable Design	o	o	o	o	–
Blending					
Prism	o	o	o	o	o
Sapphire Window for PAT device	o	o	o	o	o
Discharge					
Vibroflow™	o	o	o	o	o
Vibrator Pocket	o	o	o	o	o
Identification					
Card Holder	o	o	o	o	o
Etching	o	o	o	o	o
Barcode Plate	o	o	o	o	o
Container Bottle Internal Finish					
<i>"Natural 2B cold rolled finish (&lt;0.5µm Ra), welds ground back to parent metal and strip polished to a 0.5µm Ra or better finish"</i>	•	•	•	•	•
<i>"Mirror 2P finish (&lt;0.1µm Ra), welds ground back to parent metal and strip polished to a 0.2µm Ra or better finish"</i>	o	o	o	o	o
<i>As above + electropolishing</i>	o	o	o	o	o
Container Bottle External Finish					
<i>"Natural 2B cold rolled finish (&lt;0.5µm Ra), welds as laid, and chemically cleaned and strip polished"</i>	•	•	•	•	•
<i>"Satin brush finish (&lt;1.0µm Ra), welds chemically cleaned and polished"</i>	o	o	o	o	o
<i>"Satin brush finish (&lt;1.0µm Ra), welds ground back to parent metal, chemically cleaned and polish"</i>	o	o	o	o	o
Legs and Base Frame Finish					
0.5 - 1.0 µm Ra	•	•	•	•	•
<b>Materials of Constructions</b>					
Product Contact Areas					BS EN 10088-2 1.4404 (AISI 316L) Stainless Steel
Non-Product Contact Areas					BS EN 10088-2 1.4301 (AISI 304) Stainless Steel
Seals and Gaskets					FDA approved EPDM / Silicone

Features and Benefits checklist		Features and Benefits checklist	
Range of containers from 25L upto 3000L	•	Spun lid and clampband inlet	•
316L Product contact parts	•	Plate Lid with 'C', HC and 'MC' Inlet Valves	o
304 Non-Product contact parts	•	Invertible single valve design	o
FDA approved seals and gaskets	•	Vibroflow™ Discharge Technology	o
< 0.5 RA finish for product contact parts	•	Prism™ Blending Technology	o
Mirror internal finish	o	Nylon non marking feet	•
Electro-polished internal finish	o	Skid feet for conveyor handling	o
External welds ground flush	o	Designed to be Cleaned in Place	•
Design for safe and easy handling	•	Validation Documentation and full material	•
using low lift pallet trucks		traceability in accordance to GAMP	
Buck® 'C' Valve outlet valve	•		
Optional Buck® 'HC' and 'MC' Outlet Valves	o		

• standard o optional – not available



### Central Know-How on a Global Scale

Based on a strong commitment to research and development, pharmaceutical technology centres in Belgium, Denmark, Switzerland, the UK, Singapore, and USA provide global technical support and know-how to the pharmaceutical industry. These centres

of excellence give customers access to a range of test facilities and expert teams with technical and process know-how. Our teams work closely with our customers to optimise processes and evaluate their products, enabling them to achieve their process and production goals.



### Contracting Profitable Experience

A world leader in supplying pharmaceutical equipment, GEA Pharma Systems offers manufacturers all over the world the opportunity to enter into a profitable partnership for development and contract. GPS combine advanced in-house technology with a thorough

understanding of the pharmaceutical industry to help customers maximize their development results.



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