



Process Engineering
Division

Niro Pharma Systems

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Buck Systems

Post Hoists



IBC Post Hoists

IBC Post Hoists are used for many handling applications within the pharmaceutical manufacturing process. Common applications include lifting IBCs over the inlet of processing equipment, lifting IBCs up to dock with filling equipment, and as IBC blenders.

Safety First

Safety is critical to any lifting equipment, and the Buck Systems' Post Hoist has been designed for paramount safety of the operator.

The larger post hoists use a twin chain lifting system; each of the chains is rated to the safe working load of the hoist. So, in the unlikely event that one chain should fail, the second chain maintains the lifting position.

The lifting drive is via an electric 'braked' motor. In the event of loss of utilities to the hoist, the load will remain in the same position; any risk of the carriage slipping is prevented, a risk associated with hydraulics lifting systems.

The operator interface panel is mounted on the rear of the column and operated on a 'hold-to-run' principle, ensuring the operator is in a safe position.

GMP Design

The electric motor lift drive removes the need for hydraulic lifts, and with it all the non-GMP issues associated with hydraulic devices.

A unique stainless steel dust tight front cover that fully encloses the working parts of the column is available as an option, to further improve the GMP design of the post hoist.

Controls

The control system is simple and user friendly. For the basic units, simple push buttons control the raise and lowering operations. For more sophisticated requirements, a PLC control is utilized with user friendly HMI. The PLC control system is available in either Siemens or Allen Bradley versions.

For high lift applications or where a slow speed is required for IBC docking operations, an inverter can be added to provide a variable speed drive. This allows for fast lifting operations, and allows the carriage to stop at a slow controlled speed.

Modular Design

Ranges of lifting carriages are available for the Buck Systems' Post Hoist. For the IBC lifting operations, **Standard Forks** allow the IBC to be securely lifted and accurately aligned. For drum handling operations, the **Drum Inversion Carriage** is available for the PH150 and PH300 models. Where the IBC needs to be inverted for filling through its outlet valve, the **IBC Inverting Carriage** can be fitted. By fitting the **IBC Blending Carriage**, the Post Hoist becomes a Blender, offering the same blending efficiency as the Pedestal range of blenders. The **IBC Weighing Carriage** allows the IBC to be lifted to a filling point, accurately aligns the IBC with the Buck® Filling Active Valve, and allows dynamic weighing of the IBC as it is filled. The **Bowl Inverting Carriage** is used to allow Aeromatic-Fielder Fluid Bed Dryer bowls and discharge cones to be lifted and inverted for discharge.

The base of the column allows the column to be either **Static Mounted** or mounted on a **Slewing Base** to allow the carriage to be swivelled over the inlet of a downstream process. Slewing can be either manual or electrically driven. Position switches allow for accurate docking alignment. For models up to the PH600, a **Portable Base Frame** can be added to allow the unit to be mobile. This module together with the IBC blending carriage is ideal for small scale R & D blending applications, where portable blending units are popular.



Applications

Post Hoists can be used for a range of applications within the pharmaceutical manufacturing environment, a few common examples are explained below

IBC Discharge

The most common use for the Post Hoist is lifting an IBC for discharge over the inlet of a down stream process, i.e. a granulator or a tablet press. The Forks on the standard lifting carriage accurately aligns the IBC to ensure a positive docking operation. The variable speed lifting motor allows for a fast lifting operation, with a slow docking speed.

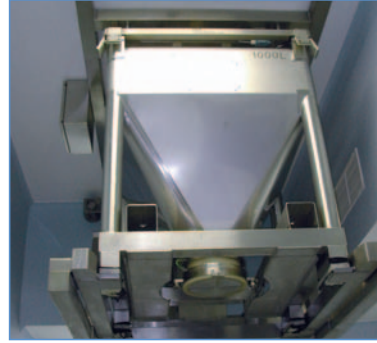
Milling and Blending

By carry out blending functions on the Post Hoist, the blender has the versatility to carry out discharge operations directly after blending. A common application is to allow blended material to be discharged through a mill or sieve into a receiving IBC. The IBC is aligned and clamped on the IBC Blending Carriage, before being docked with the Buck® Active Valve on the inlet of the Mill. Controls and interlocks for the Buck® Valve are managed through the Post Hoist control system



IBC Filling

For filling applications - from a dispensary or granulation equipment on the floor above, the Post Hoist is used to lift the receiving IBC up to dock with the Buck® Active Filling Valve. Where different heights of IBCs need to be handled, the Post Hoist is ideal for lifting the smaller IBCs to dock with the Buck® Active Filling Valve. The IBC Weighing Carriage allows the weight of the IBC to be measured as it is filled. Controls and interlocks for the Buck® Valve are managed through the Post Hoist control system



Small Container Handling

The Post Hoist fitted with the Drum Inversion Carriage is ideal for manipulating small drums or charge pots over the inlet of process equipment or IBCs. For High Containment applications, small Charge Pots with highly potent API can be lifted, inverted and docked with a Buck® Valve on the inlet of the granulator or IBC.

TECHNICAL DETAILS

Features	PH150	PH300	PH600	PH1000	PH1500	PH2000
Power Lift	•	•	•	•	•	•
IBC Size	Size 1	Size 2	Size 3/4	Size 3/4	Size 4	Size 4
Maximum IBC Size (Liters)	150	300	600	1000	1500	2000
Maximum Weight IBC + Product (Kg)	150	300	600	900	1250	1600
Lift Speed	2 meters per minute					
Column Height	Up to 4 meters					
Reach	1450mm from centre of column to centre of IBC					
Lifting Limit Switches	1 Upper Overtravel / 2 Load Position / 3 Process Position					
Fixing	Floor			Floor and Ceiling		
Cable Connection Point	Base of Column					
Control System	Column Mounted Controls with Push Buttons and Pilot Lamps					

Optional Features	PH150	PH300	PH600	PH1000	PH1500	PH2000
Additional Height Up to 7 meters	o	o	o	o	o	o
Ceiling Fixing	Compulsory upgrade for any column over 4 meters					
Manual Slew with pneumatic lock and position sensors plus additional lift limit switch for slew position	o	o	o	o	-	-
Powered Slew and position sensors plus additional lift limit switch for slew position	o	o	o	o	o	o
Variable Speed Lift 1-7 meters per minute with additional lift limit switch for pre-stop position	o	o	o	o	o	o
Inversion Head - fixed speed at 2 RPM	o	o	o	o	o	o
Blending Head - variable speed at 2 - 15 RPM	o	o	o	o	o	o
Portable Base	o	o	o	-	-	-
Drum Inversion Head - fixed speed at 2 RPM	o	o	-	-	-	-
External Vibration	o	o	o	o	o	o
Butterfly Valve Actuation	o	o	o	o	o	o
Buck Valve Controls	o	o	o	o	o	o
Siemens S7 300 PLC with TP170A HMI	o	o	o	o	o	o
Allen Bradley Micrologix 1200 PLC with Panelview 300 Micro HMI	o	o	o	o	o	o

o optional - not available

TECHNICAL DETAILS

Utility Data	PH150	PH300	PH600	PH1000	PH1500	PH2000
Electrical Power	220-240V 3 Ph 60 Hz or 380-415V 3 Ph 50 Hz supplied to base of column					
Lift Motor Power (fixed/variable)	0.18/0.37 kW	0.25/0.55 kW	0.75/1.5 kW	0.75/2.2 kW	1.1/3 kW	1.1/3 kW
Slew Motor (fixed)	0.12	0.12	0.18	0.18	0.18	0.18
Inversion Motor (fixed)	0.25	0.25	0.75	1.5	1.5	3.0
Blending Motor	1.5 kW	1.5 kW	3.0 kW	4.0 kW	5.5 kW	7.5 kW
Pneumatics	6 Barg supply pressure with a 12mm BSP Connection supplied to base of column					
Pneumatics for Slewing Position Lock	3L/Sec	3L/Sec	3L/Sec	3L/Sec	3L/Sec	3L/Sec
Pneumatics for External Vibration	10L/Sec	10L/Sec	10L/Sec	10L/Sec	10L/Sec	10L/Sec
Pneumatics for Butterfly Valve Actuation	3L/Sec	3L/Sec	3L/Sec	3L/Sec	3L/Sec	3L/Sec

FEATURES AND BENEFITS CHECKLIST!

- Allows gravity discharge from an IBC to a downstream process – removes need for vacuum conveying
- Lifts and holds IBC directly above process machine – no need for discharge stations
- Twin Chain Lifting Carriage*
- Electrical braked motor
- No Hydraulics
- St/St Front Dust Cover
- Fully enclosed column and drive motors
- Robust Mechanical Construction
- IBC Forks for secure and accurate lifting and docking
- Drum Module Handling
- IBC Inverting Module
- IBC Blending Module
- IBC Weighing Module
- FBD Bowl Module
- Failsafe and Stress Free Clamping System (for Inversion and Blending Modules)
- Positive IBC Detection
- Pallet Truck Loading
- *Standard*
- *Optional*
- Manual Slewing
- Powered Slewing
- Through the Wall design
- User Friendly Control System
- ‘Hold to Run’ Controls
- Siemens PLC and HMI
- Allen Bradley PLC and HMI
- Variable Speed Lifting Drive
- CFR 21 Part 11 compliant
- ATEX Compliance
- Validation Documentation in accordance to GAMP

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Niro Pharma Systems unites the technologies of Aeromatic, Buck, Collette, Courtoy, Fielder, Nica and Niro to supply advanced processing solutions for solid dosage forms to the pharmaceutical industry.

Buck Systems

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