



Vacuum Handling Systems
Tube Lifters Jumbo and Lifting Devices VacuMaster

Vacuum Tube Lifters Jumbo

Introduction

Application

Fast and frequent lifting and moving of workpieces weighing up to 300 kg, for example:

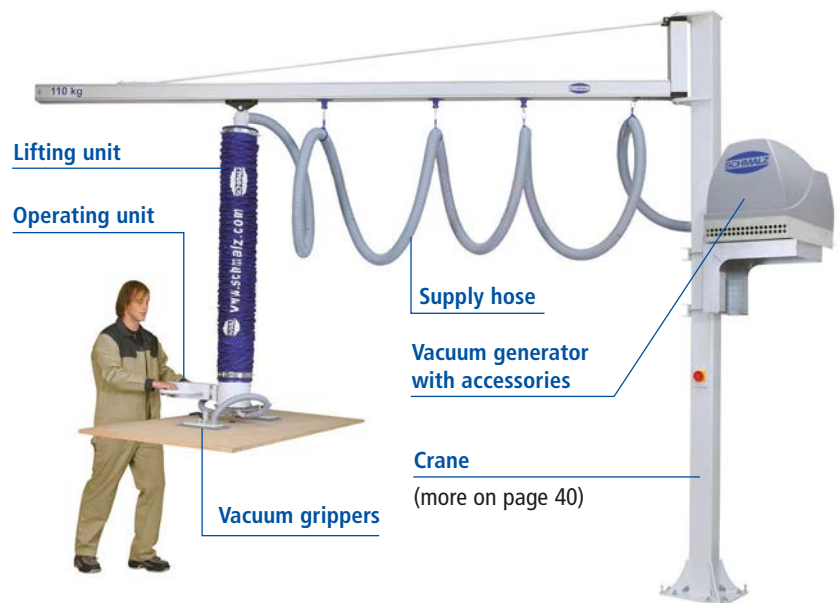
- Handling goods such as cardboard boxes, bags, barrels, buckets and jugs within in-house logistics processes
- Loading and unloading CNC machining centers

Your Benefits

- Increased productivity thanks to reduced handling and loading times
- Secure, damage-free gripping by using vacuum
- Minimization of downtime due to employee injury
- Increase in employee motivation
- Only one person for handling

Design and Function

The lifting unit, operating unit, vacuum grippers and vacuum generator on the vacuum tube lifter Jumbo can be configured according to customer specifications. The Jumbo is characterized by its lifting unit, which contracts and extends when lifting and lowering the load. The large effective suction area confers a safe holding of the workpiece. Schmalz also offers a comprehensive range of accessories and a complete system with a highly responsive aluminum crane upon request.



Product Overview

Three high-performance types for a variety of applications: JumboFlex, JumboErgo and JumboSprint differ in the form and function of their operator handles and are conceived in each case for specific applications.

Typ	Max. lift capacity (horizontal)									
	20 kg	35 kg	45 kg	50 kg	65 kg	85 kg	110 kg	140 kg	200 kg	300 kg
JumboFlex	→	→	→	→						
JumboErgo / JumboSprint	→	→	→	→	→	→	→	→	→	→



JumboFlex

One-hand operation for workpieces weighing up to 50 kg (page 14)



JumboErgo

For workpieces of many different shapes and sizes weighing up to 300 kg (page 18)

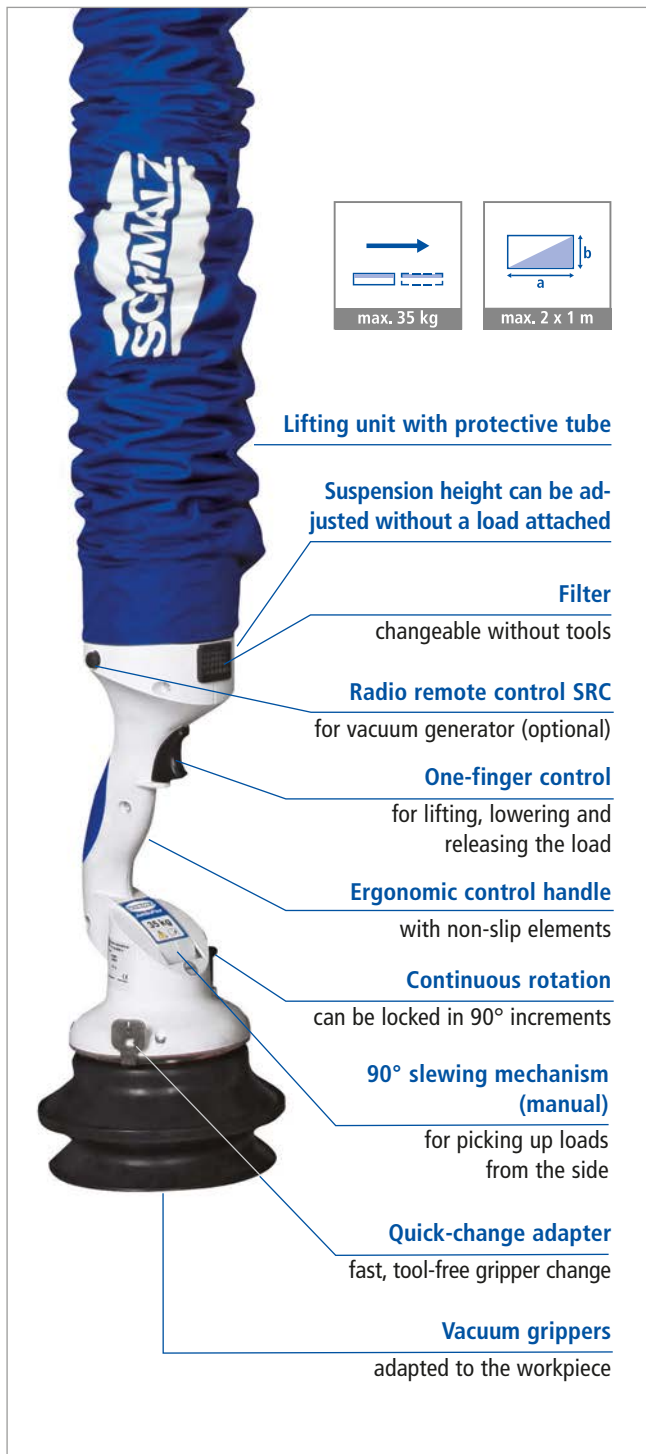


JumboSprint

For compact workpieces weighing up to 300 kg (page 18)

JumboFlex

Lift Capacity up to 50 kg



JumboFlex 35



JumboFlex 50

The vacuum tube lifter JumboFlex allows you to move lighter goods up to 50 kg ergonomically and with high cycle rates. The control handle fits comfortably in the hand and allows the operator to work for a long period of time without fatigue. With simple one-finger control, lifting, lowering and releasing the load is extremely intuitive.

The JumboFlex's wide range of features allows it to tackle virtually any task. It comes standard with a quick-change system for replacing the vacuum grippers. Workpieces which are gripped from the vertical side automatically swing back into the horizontal position where they can be continuously rotated.

Vacuum Grippers

Versatility is key: Schmalz offers the correct vacuum grippers for virtually any application. You can also change grippers quickly and easily.

Quick-change adapter
as standard



Round vacuum gripper

For compact goods such as cardboard boxes, barrels, buckets, jugs and cabinets.



Round vacuum gripper with skirt

For optimal sealing on plastic bags and shrink-wrapped packages.



Double vacuum gripper

For stapled, glued, strapped or open cardboard boxes as well as small wooden boards.



Quadruple vacuum gripper

For large cardboard boxes, wooden boards and other flat workpieces.



Multiple vacuum gripper

For uneven workpieces such as foil trays or unstable cardboard boxes. The individual vacuum grippers compensate for any unevenness.



2-in-1 gripper

Combination of a vacuum gripper and a suspension hook for baggage pieces such as suitcases or bags.



Suspension hook

For mechanical suspension of buckets, jugs and other workpieces with a point from which to hang.



Box gripper

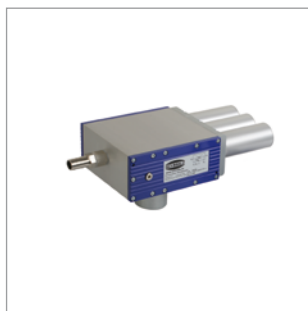
For transport and storage boxes from all commercial manufacturers.

Vacuum Generators



Vacuum pump EVE

Electric vacuum generator with short evacuation times and low power consumption.



Vacuum ejector SEM

Compact compressed air vacuum generator with a high flow rate (up to JumboFlex 35).

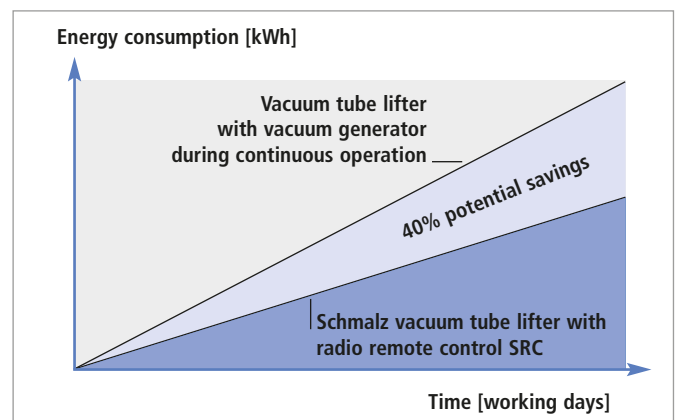


Accessories



Save up to 40% in energy with the push of a button

With the radio remote control SRC, you can directly switch off the vacuum generator on the operator handle when not in use and then back on again. The radio remote control is activated by a simple button push and needs no energy source due to an integrated induction generator.



Potential energy savings with radio remote control SRC



Reduced sound level

The silencer box SBB reduces the sound level of the vacuum generator to 65 dB(A) and protects it from outside dirt. It can be easily mounted on the optional blower console.



Protection against dirt

The dust filter STF keeps dirt particles away from the vacuum generator and is always recommended to protect the generator. It can be cleaned quickly and easily.



Protection against thermal overload

With the motor-protection switch MSS the vacuum generator can be switched on/off and protected against overcurrent. It can be integrated into the Schmalz crane column without the need for complicated wiring and can be optionally locked.



Secure storage

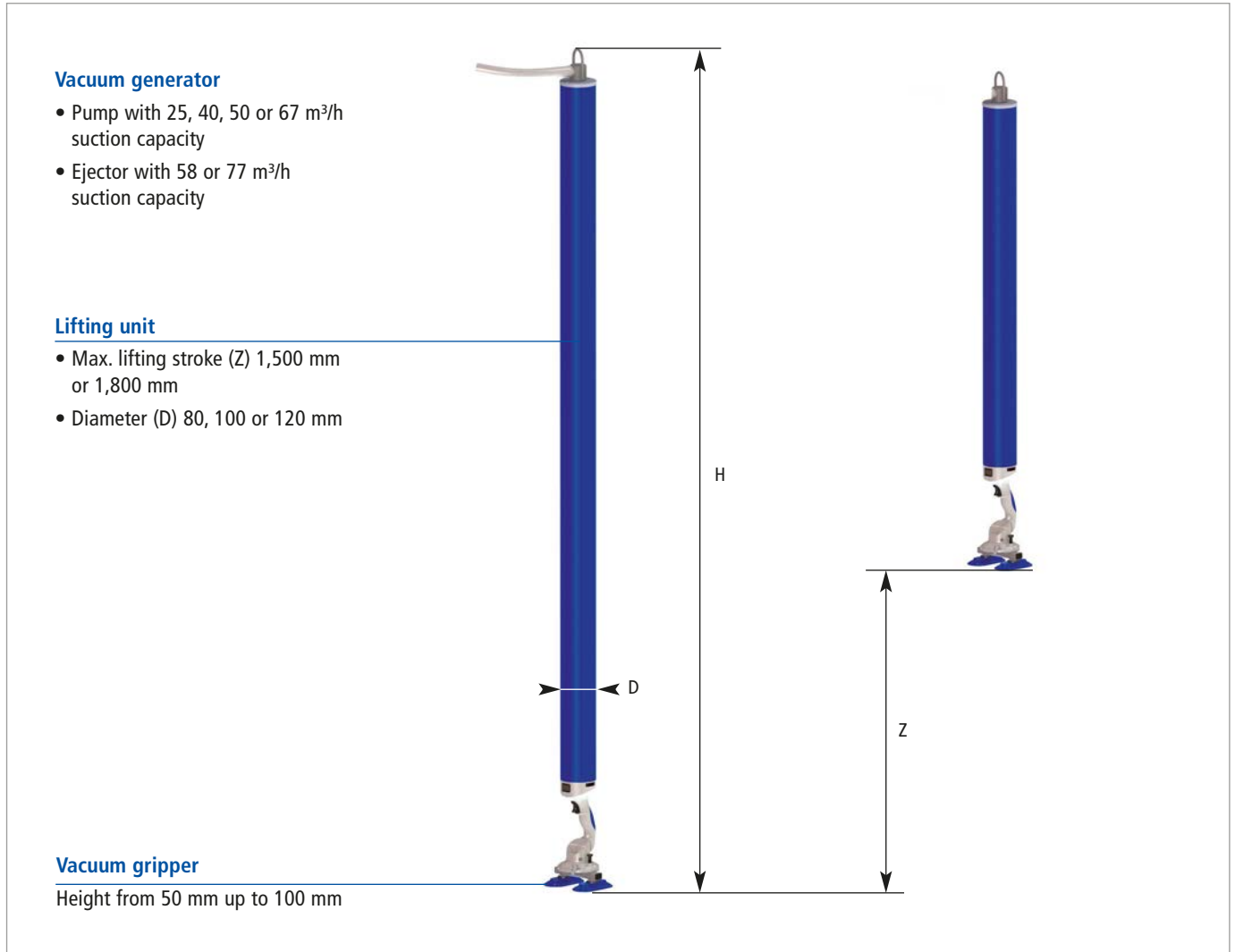
The storage rack AB-JU can be used to store the JumboFlex when not in use in order to protect the lift tube and vacuum grippers.

JumboFlex

Technical Data



The vacuum tube lifter JumboFlex can be configured specifically based on the requirements of each individual application due to its modular design. The technical data varies depending on the configuration and on the vacuum gripper chosen.



The following technical data are standard values.

Jumbo type	Max. lift capacity [kg]	Workpiece format* [mm]		Max. lifting speed [m/min]	Max. lifting stroke Z [mm]	Height H** [mm]		Lift tube Ø D [mm]
		Minimum	Maximum			With vacuum pump	With vacuum ejector	
Flex 20	20	200 x 200	2,000 x 1,000	60	1,500	2,500	2,680	80
	20	200 x 200	2,000 x 1,000	60	1,800	2,800	2,980	80
Flex 35	35	200 x 200	2,000 x 1,000	60	1,500	2,500	2,680	100
	35	200 x 200	2,000 x 1,000	60	1,800	2,800	2,980	100
Flex 50	50	200 x 200	2,000 x 1,000	60	1,500	2,500	2,680	120
	50	200 x 200	2,000 x 1,000	60	1,800	2,800	2,980	120

*Depends on the vacuum gripper chosen

**Vacuum grippers not included (total height = H + height of the vacuum gripper)

JumboErgo and JumboSprint

Lift Capacity up to 300 kg

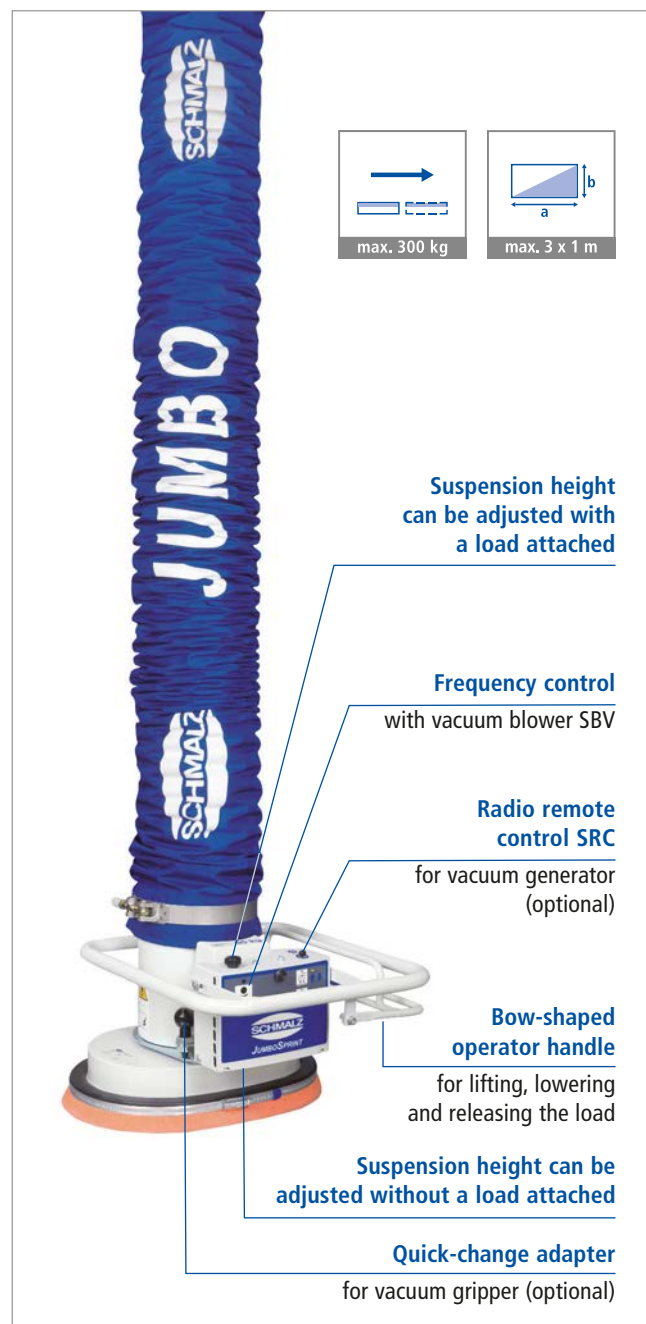
One modular system, two product types: The vacuum tube lifters JumboErgo and JumboSprint share a common technical basis but differ in terms of their operator handles.



JumboErgo

For workpieces of many different shapes and sizes

The twist grip on the JumboErgo is designed to operate like a motorcycle throttle. Large and heavy loads such as wooden boards, cardboard boxes and solar panels can be moved gently and precisely. The length of the operator handle can be varied, which allows the user to always maintain a safe distance from the load.



JumboSprint

For compact workpieces

The JumboSprint is equipped with a bow-shaped operator handle which extends all the way around the unit. This allows the user to optimally position it on compact goods such as bags or rubber bails. The load is raised by pulling up on the handle lever and lowered by pushing down.

Vacuum Grippers

Versatility is key: Schmalz offers the right vacuum grippers for virtually any application. With quick-change adapter the gripper can be changed quickly and easily.

Quick-change adapter
(optional)



Single vacuum gripper

For compact goods such as cardboard boxes, barrels, buckets, jugs and cabinets.



Single vacuum gripper, long

For pallets, narrow cardboard boxes, beams, square tubes and other elongated workpieces.



Round vacuum gripper

For barrels, buckets or stone slabs with rough surfaces.



Sack gripper

For paper and plastic bags, raw rubber bails and shrink-wrapped packages.



Double vacuum gripper

For cardboard boxes, crates or sheets. The vacuum grippers can be continuously adjusted along the beam.



Double vacuum gripper FM

For pallets, sections or cut pieces where the vacuum gripper is not fully covered by the workpiece. The grippers can be continuously adjusted along the beam.



Quadruple vacuum gripper

For large cardboard boxes, sheets and non-rigid pieces. The vacuum grippers can be continuously adjusted lengthwise and cross-ways.



Multiple vacuum gripper

For uneven workpieces such as foil trays or unstable cardboard boxes. The individual vacuum grippers optimally compensate for any unevenness.



Mechanical grippers

Schmalz offers mechanical gripper solutions for workpieces that cannot be vacuum-gripped, such as bags or open transport boxes.



Vacuum blowers SBM, SBL, SBV

Electric vacuum generators for workpieces weighing up to 300 kg. The frequency-controlled blower SBV is continuously variable, and its power can be adjusted to changing loads.



Vacuum ejector SEM

Compact, compressed air vacuum generator with high flow rate for workpieces weighing up to 85 kg.

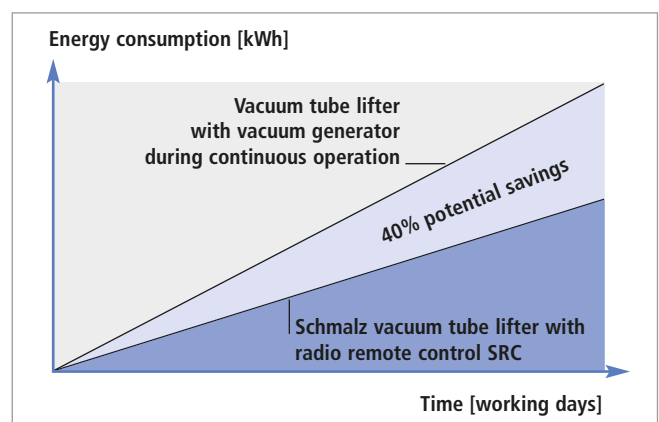


Accessories



Save up to 40% in energy with the push of a button

With the radio remote control SRC, you can directly switch off the vacuum generator on the operator handle when not in use and then back on again. The radio remote control is activated by a simple button push and needs no energy source due to an integrated solar cell.



Potential energy savings with radio remote control SRC



Instantly switch vacuum gripper

The quick-change adapter SWA allows you to quickly and easily switch the vacuum gripper on your tube lifter in order to adapt to changing workpieces.



Swivel workpieces by 90°

With the push of a button, the pneumatic swiveling unit PSE allows the user to swivel workpieces weighing up to 120 kg securely and in an ergonomic fashion.



Continuously rotate workpieces

With the rotation unit DE, vacuum-gripped workpieces weighing up to 200 kg can be continuously rotated and positioned precisely.

JumboErgo and JumboSprint

Lift Capacity up to 300 kg



Maximize stack heights

High stacking heights are no problem with the movable operator handle (only for JumboErgo). An optional locking mechanism allows it to be fixed at different angles.



Instantly release workpieces

The venting unit BEL allows non-porous workpieces to be released from the vacuum gripper and set down.



Reduce the sound level

The silencer box SBB reduces the sound level of the vacuum generator to 65 dB(A) and protects it from outside dirt. It can be easily mounted on the optional blower mounting platform.



Protection against dirt

The dust filter STF keeps dirt particles away from the vacuum generator and is always recommended to protect the generator. An optional differential pressure monitor with a signal lamp indicates when the dirty filter has to be changed.



Reach into deep containers

The hose-cylinder extension SZV enables ergonomic loading and unloading of containers such as lattice boxes.



Protection against thermal overload

With the motor-protection switch MSS the vacuum generator can be switched on/off and protected against overcurrent. It can be integrated into the Schmalz crane column without the need for complicated wiring and can be optionally locked.



Spring balancer for long operator handles

The spring balancer FZG keeps the tube lifter JumboErgo balanced and is recommended if the operator handle is longer than 750 mm.



Protection against wear

The protective tube prevents mechanical damage to the lift tube and is easy to clean. The retaining net protects the vacuum grippers and the lift tube when the tube lifter is not in use and allows for space-saving storage.

JumboErgo and JumboSprint

Technical Data



The vacuum tube lifters JumboErgo and JumboSprint can be configured specifically based on the requirements of each individual application due to their modular design. The technical data varies depending on the configuration and on the vacuum gripper chosen.

Vacuum generator

- Blower with 155, 185 or 220 m³/h suction capacity
- Ejector with 132 m³/h suction capacity

Lifting unit

- Max. lifting stroke (Z) 1,700 mm or 2,100 mm
- Diameter (D) 120 mm up to 305 mm

Operator handle

Operator handle length (L)

- JumboErgo: 350 mm up to 1,000 mm
- JumboSprint: 155 mm up to 500 mm

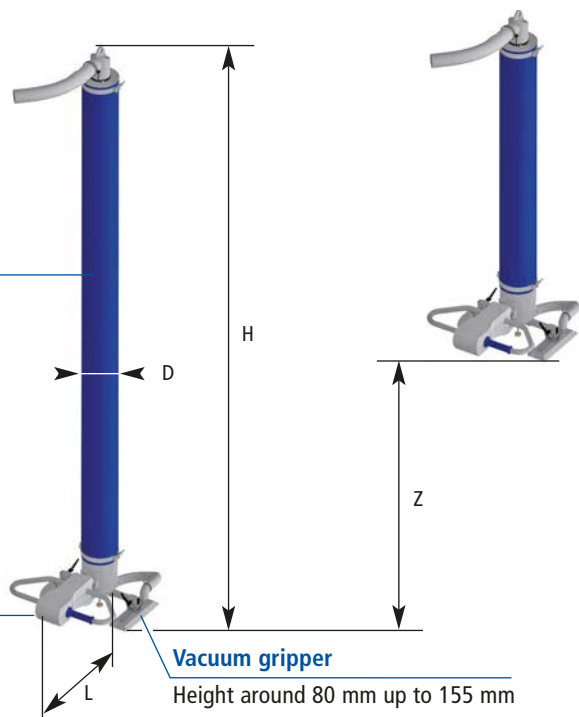


Fig. shows JumboErgo

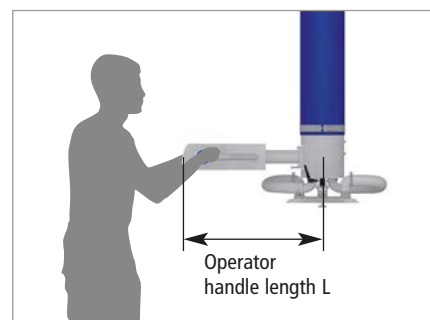
The following technical data are standard values.

Type	Workpiece format*		Operator handle length L [mm]	Max. lifting speed [m/min]	Max. lifting stroke Z [mm]	Height H** [mm]
	Minimum	Maximum				
JumboErgo	300 x 200	4,000 x 2,000	350 – 1,000	60	1,700	2,850
	300 x 200	4,000 x 2,000	350 – 1,000	60	2,100	3,400
JumboSprint	300 x 200	3,000 x 1,000	155 – 500	60	1,700	2,850
	300 x 200	3,000 x 1,000	155 – 500	60	2,100	3,400

A lift capacity of 140 kg and higher applies: lifting stroke Z +160 mm, height H +250 mm

*Depends on the vacuum gripper chosen

**Vacuum gripper not included (total height = H + height of the vacuum gripper)



The operator handle for the JumboErgo is designed with safety in mind, allowing the operator to maintain a safe distance when oversized workpieces are being lifted.

Lift Capacities

Jumbo type	Max. lift capacity [kg]		Ø Lift tube D [mm]	Max. lift capacity							
	Horizontal	90° swivel		35 kg	45 kg	65 kg	85 kg	110 kg	140 kg	200 kg	300 kg
Ergo/Sprint 35	35	–	120	→							
Ergo/Sprint 45	45	30	140	90° →	→						
Ergo/Sprint 65	65	50	160		90° →	→					
Ergo/Sprint 85	85	70	178			90° →	→				
Ergo/Sprint 110	110	90	203				90° →	→			
Ergo/Sprint 140	140	120	230					90° →	→		
Ergo/Sprint 200	200	–	250						90° →	→	
Ergo/Sprint 300	300	–	305							90° →	→



JumboSprint Ex

Safe Handling in an Explosion Protection Zone



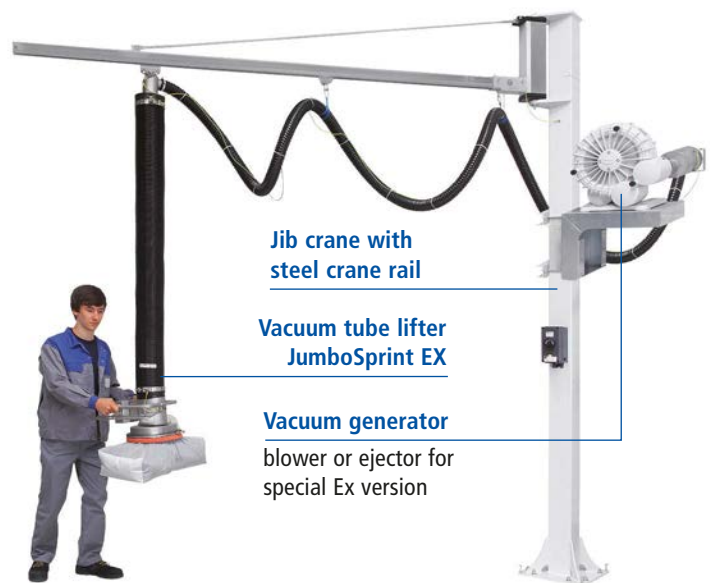
Application

Efficient handling of loads weighing up to 85 kg in explosion protection zones

- Lifting of bags, barrels, cardboard boxes, jugs, buckets and varnish/paint containers
- Preparation and positioning of filled bags, e.g. for emptying into hoppers or mixers
- For use in explosion protection zones 1/21 and 2/22
- Certified according to ATEX 94/9/EC standard – Can be used throughout Europe without country-specific certificate

Special Features

- Operator handle and vacuum grippers made from stainless steel
- All conductive parts are connected with a potential equalization
- Conductive lift tube made from a special material
- Vacuum generator either compressed air driven (ejector up to 85 kg) or electric (blower up to 85 kg)
- Various vacuum grippers in explosion protection design
- Easily change vacuum grippers using the quick-change adapter (optional)
- Complete system for vacuum tube lifter and steel jib crane for explosion protection zone available



Jib crane with steel crane rail

Vacuum tube lifter JumboSprint EX

Vacuum generator

blower or ejector for special Ex version

Areas of Application

Explosion zone	Vacuum generator	Max. lifting stroke [mm]	Max. lift capacity		
			45 kg	65 kg	85 kg
1/21	Ejector	1,700/2,100			
2/22	Ejector	1,700/2,100			
	Blower	1,700/2,100			