

Built-in damage prevention

If your paper rolls could decide.....



.....they would rather select Brudi Bolzoni Auramo paper roll clamps.

With modern attachments and accessories, a lift truck can provide high-capacity, non-damaging handling of forest products. The Brudi Bolzoni Auramo paper roll clamp is the most advanced of the paper roll clamp line. Typical handling damage includes various forms of side, corner and end damage to the paper roll and its wrapper.

The unique Brudi Bolzoni Auramo damage free handling concept provides the right tools for preventing paper roll damage, by concentrating special efforts into:

- Correct driving practices: Continuous user training reduces the risk of damage to the paper roll.
- Dedicated training programs as well as our experienced trainers are always available to assist.
- Correct choice of equipment: Brudi Bolzoni Auramo paper handling equipment is designed to meet the specific needs of our customers, making it the optimal choice for even the most demanding tasks.
- Correct operating condition of the equipment: Well maintained, regularly serviced equipment is essential for safe and efficient work. Brudi Bolzoni Auramo's worldwide service centers perform service, repairs and complete refurbishments and give service assistance.
- Protection of the loads: Good and clear driving routes, with protective Brudi Bolzoni Auramo roll guards on critical corners, can reduce the risk of damage with easier and reduce risk for accidents and roll damage.

Brudi Bolzoni Auramo is the leading supplier of solutions: dedicated equipment, training and service. The Brudi Bolzoni Auramo paper roll clamps have been the primary choice for many of the world's top paper producers, harvest and printing companies. Our worldwide service network provides paper handling solutions, spare parts, maintenance, training, dedicated service and handling training.



Thin, smooth arms
Thin, smooth arms enable tight stacking and loading also in confined spaces. Arm lengths are adjustable to fit the roll diameter and measurability of the lift truck. The short and long arm principle on all rotating clamps enable both vertical and horizontal handling, as well as effective loading.

Excellent stability
Narrow and low frame design and minimized arm height ensure excellent stability in vertical and horizontal lifting situations.



Total clamping force control
All Brudi Bolzoni Auramo paper roll clamps have a pressure control valve for setting and adjusting the clamping force. Easily accessible, the cartridge-type valve provides accurate pressure selection valves enable easy clamping force control directly from the lift truck's cabin.

Contact pad protection
Built-in pad protection keeps on the clamp contact pads from wearing against the floor, and thus prevent the formation of paper-roller marks. The pad protection function also has a secondary function to work as standing supports for the clamp.

Split arm for multiple roll handling
A split arm design provides safe and damage-free handling of multiple rolls at a time. The split arm design depends on the clamp model and number of clamping arms). Split arm reduces roll edge damage and the risk of dropping the roll due to incorrect clamping. A clamp with a split clamping arm can also handle single paper rolls. Many Brudi Bolzoni Auramo paper roll clamp models are available automatically with non-slip contact pad design to suit all handling needs.

Fast, accurate rotation system
All paper roll clamps handling both vertical and horizontal loading have a fast and accurate rotation system also allows tight stacking in confined spaces as the short arm can be turned towards the wall or nearest paper roll. This saves space and reduces the risk of damage to the roll. The exclusive Brudi Bolzoni Auramo 180-degree rack-and-pinion rotation system provides fast, safe handling with a fixed and accurate vertical rotation. The rotation system also provides arms hydraulic cushioning in the vertical and positions minimises the risk of high clamping force and reduces shockloads directed to the lift truck.

Brudi Bolzoni Auramo

YOUR COMPETITIVE OPTION

Brudi Bolzoni Auramo paper roll clamps - for the most demanding applications, and for the most delicate paper handling applications.
Invented by Brudi Bolzoni Auramo - and now completely redesigned, the new generation of Brudi Bolzoni Auramo's CTX series intelligent clamps combines more than 10 year intelligent clamp experience with the latest paper handling technology. The CTX-G2 intelligent clamps use the latest microprocessor technology to control the clamp operation:

- Automatic clamping force control
- Protection of the paper roll size, weight, wrapper properties or handling conditions
- Eliminates the risk of out-of-round paper rolls
- Collects handling data in a history file
- Has a user-friendly visual display unit
- Can be directly connected to CANbus compatible lift trucks

The CTX-G2 series paper roll clamps enable safe, non-damaging and effective paper roll handling - even with sensitive paper grades.

The CTX control technology is available for most of the Brudi Bolzoni Auramo paper roll clamps. For more information on our intelligent clamp applications are possible as well. Consult our Brudi Bolzoni Auramo regarding our specialized AGV applications.



Regardless of your paper roll wrapper type, the right pad is always available.

In most normal handling situations, the pads are the only parts of the clamp which are in contact with the paper roll. Therefore, Brudi Bolzoni Auramo has paid special attention in designing and manufacturing contact pads which will ensure safe and non-damaging roll handling.

All Brudi Bolzoni Auramo contact pads share the following properties in common:

- Demands of standard and special friction surfaces to meet the demands of varying handling practices and changing paper and wrapper types.
- Thin pad design. The minimized pad thickness ensures good knife penetration and prevents paper roll damage.
- Well-rounded, smooth pad profile and safe finish. The pads have no protruding parts or edges to damage the adjacent paper rolls.

Standard pad friction surfaces

Cast	Steel-plated	Rubber-faced	Polyurethane

Four-stage Pressure Relief Valve Electrical operation



The Brudi Bolzoni Auramo four-stage pressure relief valve reduces load damage by ensuring easy and fast clamping pressure selection.

The electrically controlled pressure-relief valve enables a clamp attachment to be used at four different pre-set clamping pressure levels.

This valve is especially recommended to be used in conjunction with clamp attachments handling loads sensitive to clamping forces.

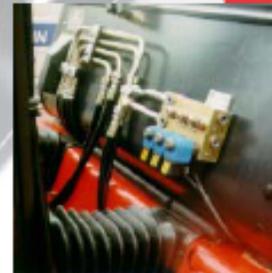
The valve enables easy clamping force adjustments with varying load weights and unit sizes.

A wide variety of applications can be found in paper roll, carton, box and white-ware handling.

Easy and user-friendly pressure setting using a cabin-mounted rotary switch. The rugged, well-proven design, wide flow and pressure ranges ensure suitability for all applications.

The valve is mounted into the auxiliary hydraulic line between the lift truck and the attachment. Several mounting configurations are possible.

Optional pressure-control lights can be used in combination with an electrically controlled four-stage pressure-relief valve. Red, amber, green and blue lights in the tower indicate the selected pressure setting.



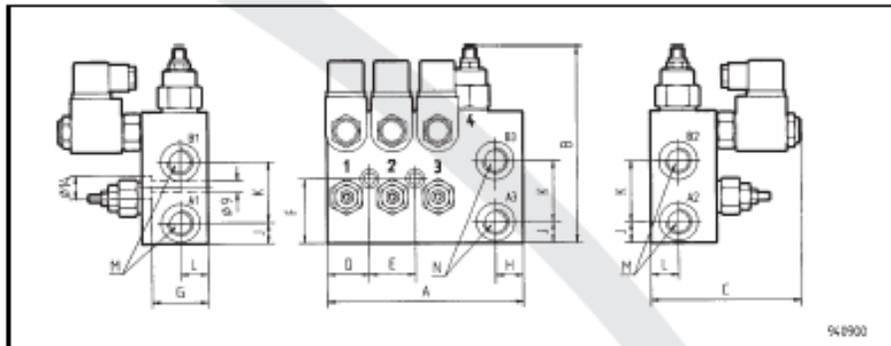
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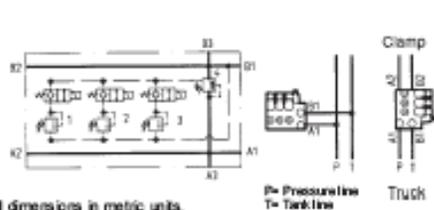
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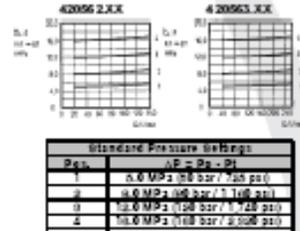
Four-stage Pressure Relief Valve / Electrical operation



Type	Voltage	Flow Rate l/min	Pressure MPa	A	B	D	E	F	G	H	J	K	L	M	N	
420562.12	12 VDC	20 - 120	3.0-20.0	150	150	115	33	35	46	42	21	16	45	20	M18x1.5	M18x1.5
420562.24	24 VDC															
420563.12	12 VDC	20 - 240	3.0-20.0	175	190	128	36	35	62	52	37	24	58	29	M18x1.5	1" BSPP
420563.24	24 VDC															



All dimensions in metric units.
P= Pressure line
T= Tank line
Clamp
Truck



Technical Specifications

- Order code:** See table above. The delivery includes valve, operation with hand applicator between the valve and a wrench.
- Standard pressure setting:** There are four pre-set operation pressures. Standard pressures are preset at the factory at a flow rate of 16 GPM (60 l/min). See pressure curves above for settings at other flow rates. The pressure curves show pressure differences between the pressure and tank lines inside the valve.
- Maximum connection pressure:** 250 bar / 3600 psi (25.0 MPa)
- Assembly:** See figure above for various assembly configurations. The valve can be assembled in any position. Use wide-diameter hoses to avoid pressure loss.

Options

- Pressure control light:** 420565.12 Operation voltage 12V DC, cable included
420565.24 Operation voltage 24V DC, cable included
- Pressure gauge:** 610002 Gauge delivery does not include fittings or hoses

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Test Pad

Clamping force measuring device



Brudi Bolzoni Auramo Test Pad is an all new solution for clamping force testing. The device is extremely light, thin, robust and portable. And it can measure clamping forces up to 100 kN.

Regular paper roll clamp force testing is a vital part of the modern paper transport quality systems. Incorrect or excessive clamping force levels on paper roll clamps are an important source of various paper roll out-of-roundness problems.

The Test Pad enables easy and fast on-site measurements. This makes it especially suitable for troubleshooting and quality control purposes. Clamping forces are equally easy to measure from a wide range of paper roll clamp models. The Test Pad design adapts to varying contact pad models and sizes.

The Test Pad can be used for:

- Timing the clamping force of the paper roll clamp
- Adjusting the clamping force of the paper roll clamp
- Troubleshooting the roll clamp operation
- Timing and adjusting pressure selection valves

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Test Pad / Clamping force measuring device

Operation Principle

The Test Pad is put between the paper roll clamp contact pad and the paper roll. The clamping arms are then closed just as they would be during a normal clamping operation.

When the Test Pad is being pressed between the contact pad and the paper roll, it shows the exact clamping force which the clamp arm is applying to the roll.

As the Test Pad is extremely thin, the measured clamping force value is practically the same as the real clamping force value normally existing between the clamp contact pads and the paper roll.

Real Clamping Force Readout

Unlike conventional, fixed length clamping force test cylinders, there is no longer a need to use conversion factors or separate force diagrams to convert the measured force values to the real paper roll diameter.

The Test Pad shows the real clamping force value with the same diameter as the paper roll itself has. This makes the test device especially suitable for checking the clamping forces whenever the paper rolls have pre-defined, individual maximum clamping force levels



Clamping forces are equally easy to measure from a wide angle of paper roll clamps.

marked on them.

The device can be used with a very wide paper roll diameter range without any auxiliary equipment. The pad radius is designed to provide non-damaging measuring operation for a wide roll range.

Wide Measurement Range

The Test Pad can measure clamping forces from 0 lbf to 22000 lbf. This enables even the largest commonly used pa-

per roll clamps to be measured with it. Its all-electronic design based on highly sophisticated scale sensors ensures high accuracy with all clamping force levels.

No conversion factors or force diagrams are required to get the clamping force reading. A clear and easy-to-use LCD display shows the clamping force directly in lbf units. Display is also available in kN units (Factory option only please specify when ordering).

The Auramo Test Pad is highly portable. The combined weight of the measurement unit is only 19 lbs (8.7 kg). Small overall dimensions make the unit easy to carry.

The robust measurement unit is made of durable, lightweight aluminum alloy. The LCD display unit is battery operated and requires no external power source. Standard delivery includes a carrying case.



The Test Pad is light to carry and easy to handle.



Due to its thin design, the Test Pad adapts to changing roll diameters.



The Test Pad measures the clamping force between the paper roll and the clamp pad.

Technical Specifications

Model:	Test Pad TPD-400
Measuring range (min-max):	0 - 22,000 lbf
Display unit interval:	100 lbf
Dimensions, pad:	15.7 x 9.8 x 1.9 in
Dimensions, display unit:	8.0 x 8.0 x 2.1 in
Weight, pad:	16.5 lbs
Weight, display unit:	2.6 lbs (batteries included)
Operation voltage:	9 VDC
Batteries:	6 x 1.5 volt (size C)
Operation temperature:	+30°...100°F

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Spider

Out-of-roundness
measuring device

Brudi Bolzoni Auramo's Spider electronically measures variations in the radius of paper rolls, to determine the degree of out-of-roundness.

The Spider utilizes state-of-the-art micro-processing ultrasonic technology. It is used to quickly and accurately measure the roundness of a paper roll, without destroying the roll or the roll wrapping.

The test results can be viewed on an LCD display, or they can be directed to a computer for further analysis.

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Spider / Out-of-roundness measuring device

The Out-of-roundness Problem

Out-of-roundness is one of the most costly types of damage that a paper roll can be subjected to during its journey from paper mill to end-user. What makes this especially costly is that often the damage is not discovered until the roll has been positioned on a high-speed, web-fed printing press. At this point, the print run must be stopped and the damaged roll returned.



Transport Quality

As the international quality standards are being universally adopted within the worldwide paper industry, paper mills will soon be required to assure the quality of their paper roll products throughout the transportation chain - from mill to end-user.

Printers are also being compelled to set tolerance limits for out-of-roundness and to perform random inspections of incoming paper to verify roundness.

Until recently, no accurate and easy-to-use device has been available for on-site measurement of paper-roll roundness.

The "Spider" Solution

Finally, there's an answer. Auramo's all-new Spider utilizes state-of-the-art microprocessing and ultrasound technology to quickly and accurately mea-

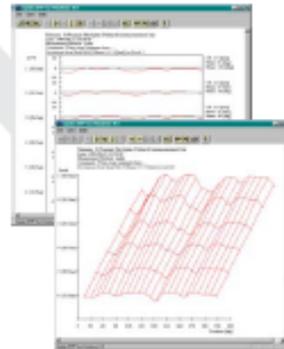
sure the roundness of a paper roll, without destroying the integrity or the roll wrapping. The test results can be viewed on an LCD display-on-site or directed to a printer or a computer disk for further analysis.

The measurement process, utilizing the lightweight, compact Spider, is extremely easy. The Spider's aluminum frame is placed on top of the paper roll and secured with three extendable "legs", without damaging the wrapping. Precise positioning is not critical. Any misalignment between the center line of the roll and the Spider will be compensated automatically by the analysis program.

After properly positioning the ultrasonic transducer, the power is switched on and the transducer is rotated 360° around the roll. During this rotation, the distance from the transducer to the roll is measured and stored in the memory of the control unit at four-degree intervals at an average accuracy of 0.008 inches. A

total of 10 levels can be measured from one paper roll.

When the desired number of levels have been measured, the stored data is analyzed with just a push of a button. The out-of-roundness information at each measurement level is then displayed on the Spider's LCD display.



Once the stored data has been downloaded into a standard PC for further analysis and printing, a graphic representation of the surface profile is displayed at each measurement level, with calculated values of maximum out-of-roundness deviations.

Technical Specifications

Maximum Roll Diameter Range:	24 - 63"
Roll Width Range:	2 - 73"
Maximum Measurement Levels/roll:	10 at 0.1" intervals
Measuring Method:	Ultrasonic sound
Measuring Accuracy:	0.004"
Output Device(s):	Internal LCD display External PC/graphics display Printer
Power Source:	Rechargeable 12-volt battery
Battery Duration:	8 hours of continuous operation
Optional Requirements:	Windows 95, Windows 98 or Windows NT 4.0, Spider Data Processing Program (DPP)
Accessories Included:	User license for the DPP Cable for optional external PC Portable battery charger Carrying case & User manual
Options:	Cone probe

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