





# duplex

One of a kind

We listen to the market needs and, because of this, we are able to build products that perfectly match our customer's needs and also to continue innovation in the field of industrial web tension control systems.

- How to have always a perfect grip on any material core?
- How to eliminate the paper waste problem?
- How to eliminate blocked rolls on roll stands and ensure the highest safety level for the operator and the machine during the roll change?

It is from customers feedback and collaboration with world known machine builders and end users that we designed the Duplex, a roll ejector chuck for roll stands.

Duplex obtained the international patent for its unique and revolutionary technology.

Duplex reduces risks for the operator according to the Technical Standards ISO 11228 Ergonomics - Manual Handling, "Lifting and Carrying" and "Handling of low loads at high frequency".

renova-srl.com  
 **renova**  
WE NEVER LOSE CONTROL

duplex  
ROLL EJECTOR CHUCK

Click on the "play" icons in this catalog and see demonstration videos!



# MOST COMMON ROLL STAND PROBLEMS



## SLIP-GRIP

Customers report cases of damaged cores when low quality material cores and reduced core thickness make cores fragile and sensitive to surface damages. This leads to slip-grip.

**Slip-grip means paper waste**



## PAPER WASTE

Paper waste most often occurs:

- during splicing
- because of an incomplete unwinding of the roll
- due to core damage (cores can't be reused)
- due to damaged residual meters of paper on the core (paper can't be used)

**Paper waste means money waste**

## STUCK ROLLS ON ROLL STAND

Mechanical chucks technologies can incur in the incomplete ejection of cores or rolls from the roll stand.

**Stuck rolls on roll stand means low safety level for the operator and possible damage to the machine.**



## LOW SAFETY LEVEL DURING THE ROLL CHANGE

The incomplete ejection of cores or rolls during the roll change involves the manual intervention with levers or other tools for the discharge of blocked rolls from the roll stands.

The use of levers and the manual intervention may imply high probability of operator injuries or machine damages and it is not compliant with the Technical Standards ISO 11228 Ergonomic - "Lifting & Carrying" and "Handling of loads at high frequency".



# DUPLEX SOLUTION

Duplex combines the high quality of Renova's mechanical torque chuck with a pneumatic telescopic piston.

## CORE CHUCK

### NO MORE SLIP-GRIP ON ANY CORE

Perfect grip always ensured to every material core from first phase of work. Duplex does not damage cores (cores can be reused).

### ZERO END-OF-ROLL WASTE

By avoiding the core slippage problem and preventing the lateral damage of the roll, duplex eliminates the paper waste.

## PNEUMATIC PISTON

### NO MORE JAMMED ROLLS

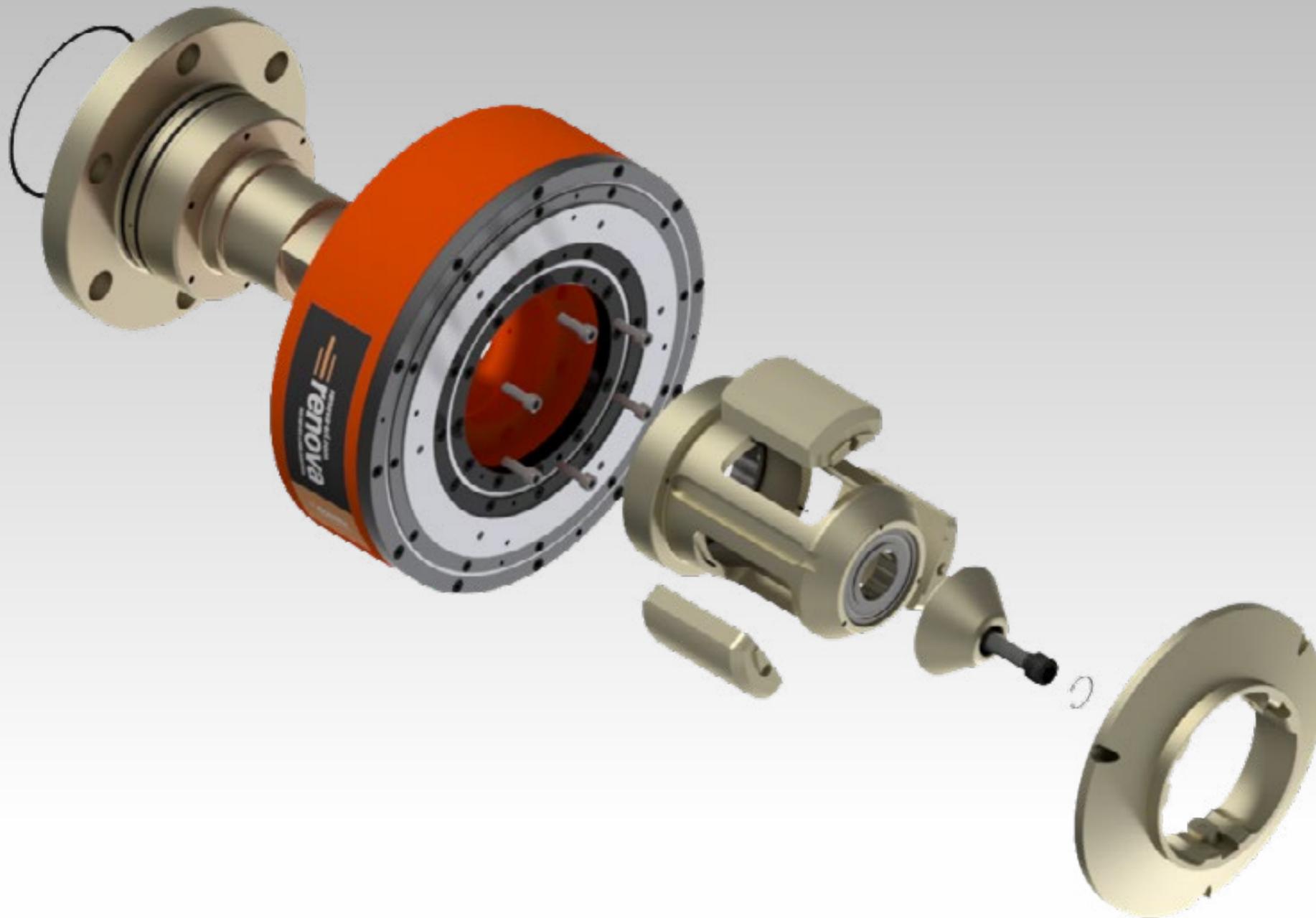
Automated ejection of every dimension roll always ensured even in the case of damaged cores.

### HIGHER SAFETY LEVEL

Duplex prevents injuries as it eliminates the manual intervention with levers or other tools for the discharge of blocked rolls.



# REVOLUTIONARY PATENTED TECHNOLOGY



## CORE CHUCK

uses the movement of the reel to expand the jaws and automatically block and center the reel core

## ROTARY CYLINDER

rotary cylinder with pneumatic telescopic piston which is concentric to the chuck

## IMPRESSIVE EJECTION FORCE

piston's coaxial thrust force of 4400 lb (first stage) + 2200 lb (second and final stage) at 87 psi, applied directly to the roll

## NO-FALL-DOWN SYSTEM

eliminates the dropping of the jaws while removing the chuck cage for cleaning purposes

## ANTI-UNSCREW CAP

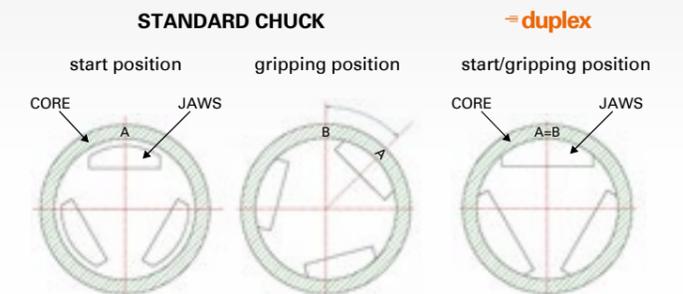
the new system doesn't need loctite glue for the cap installation which remains screwed on despite continuous vibrations

## EJECTION FLANGE

new design carefully studied to avoid any core and roll damages

## FASTEST GRIP EVER

fastest core engagement in the industry: the tight clearance between core and chuck reduces engagement time



# ZERO PAPER WASTE



Optimizing paper production processes and reducing waste is fundamental for safeguarding the plant's economy as well as for pursuing ecological purposes.

## DUPLEX SAVINGS CALCULATOR

Are you aware of how much paper your factory wastes every day, month and year? How much could you save by eliminating the waste of paper on your reel holder?

Click and get to the Duplex savings free calculator



# HIGHER SAFETY LEVEL



Duplex always ensures the automated ejection of rolls of any size and prevents injuries by eliminating the manual intervention with levers or other tools for the discharge of blocked rolls.

## SAFETY STANDARDS COMPLIANT

Duplex reduces risks for the operator according to the Technical Standards ISO 11228 Ergonomic - "Lifting & Carrying" and "Handling of loads at high frequency".

**NO MORE RESIDUAL PAPER  
NO MORE DAMAGED CORES**

**NO MORE JAMMED ROLLS  
ON ROLL STAND**

# 100% FITS ALL ROLL STANDS

Duplex is ideal for roll stands without an existing core ejector system or with automatic OEM original ejector system.

## EXPULSION TECHNOLOGIES COMPARED

Expulsion technologies currently available on the market

	roll stand without ejector	mechanical chuck with spring	pneumatic ejector with fork	mechanical chuck with spring ejection cylinder	= duplex
reel core ejection	X	✓	✓	✓	✓
ejection of 1000 mm diameter roll	X	X	✓	X	✓
ejection of 1600 mm diameter roll	X	X	X	X	✓
coaxial thrust force of the ejector	X	✓	X	✓	✓
roll ejection 100% ensured	X	X	X	X	✓
ejector free of dust and debris always working	X	✓	X	X	✓
absence of axial counter thrust during the loading phase	X	X	X	X	✓
automatic re-enter of the ejector	X	X	X	X	✓
complete visibility and safety during loading	✓	✓	X	X	✓
no maintenance	X	✓	X	X	✓
total safety of the operations always ensured	X	X	X	X	✓

# CONFIGURATIONS

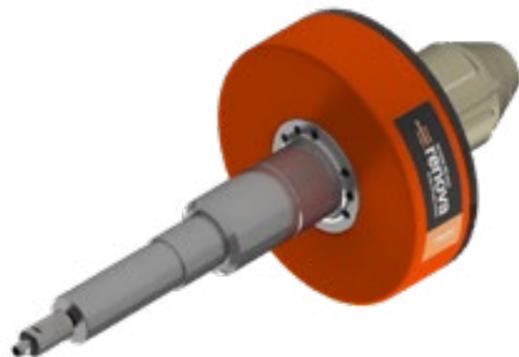
## MOUNTING CONFIGURATIONS

### MOUNTING FLANGE (+ rotary joint)



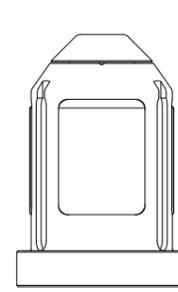
- Customizable mounting flange that interfaces with the customer existing shaft. The shaft allows the air passage to the pneumatic cylinder.
- Easy and fast installation
- Compact cylinder
- Ideal for unwinders and rewinder

### ROLL STAND ARM SHAFT (+ rotary joint)

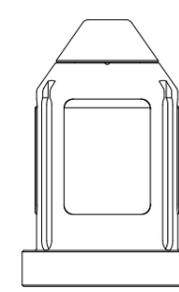


- A reproduction of the customer rollstand arm shaft which interfaces with the Duplex. The shaft allows the air passage to the pneumatic cylinder.
- 100% Plug&Play
- No changes to the machine needed

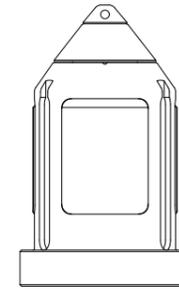
## CAP CONFIGURATIONS



S

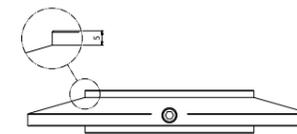


M

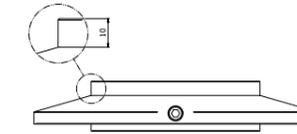


L

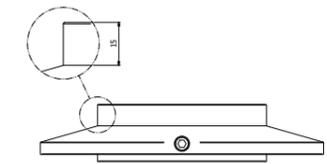
## EJECTION FLANGE THICKNESS CONFIGURATIONS



0.2"

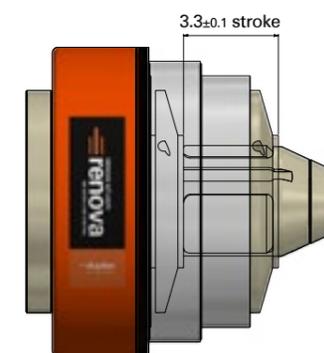


0.4"

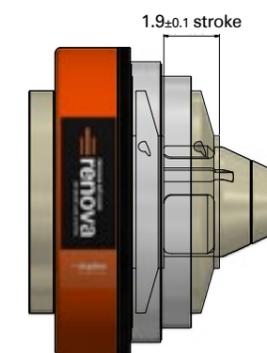


0.6"

## CYLINDER CONFIGURATIONS



standard



compact

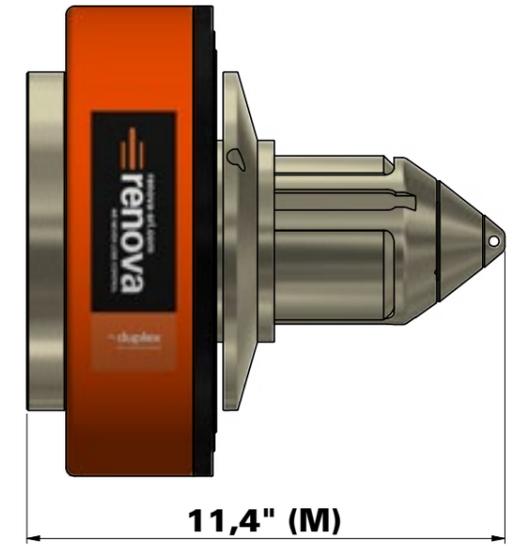
# DUPLEX RANGE CONFIGURATIONS

"S" TYPE

"M" TYPE

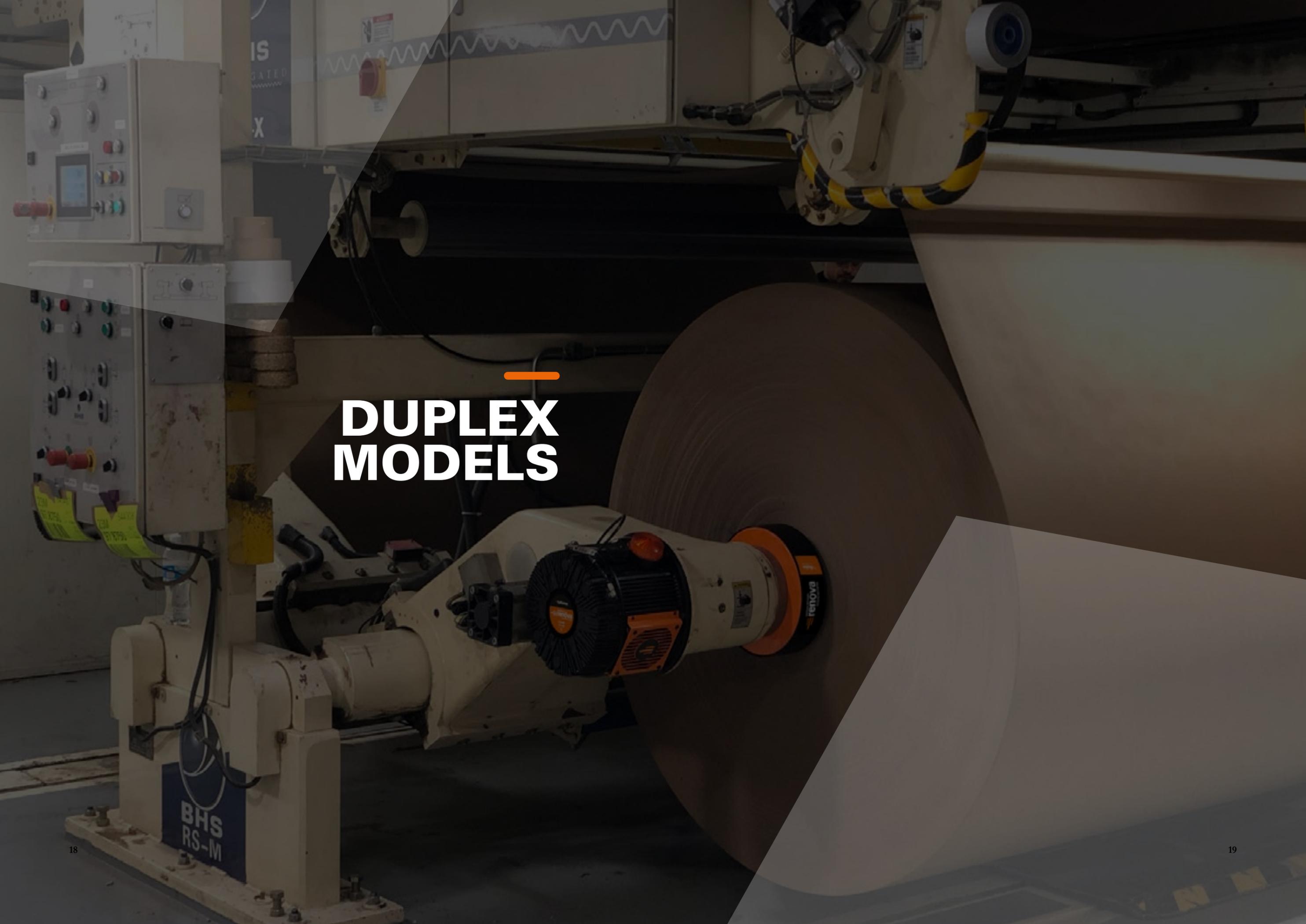
"L" TYPE

STANDARD  
CYLINDER



COMPACT  
CYLINDER



A photograph of an industrial robotic arm in a factory setting. The arm is white with orange and black accents, mounted on a metal structure. It is positioned over a large, circular, metallic workpiece. To the left, there are several electrical control panels with various buttons and switches. The background shows a factory environment with a blue and white striped pattern on a wall. The text 'IS GATED' and 'X' is visible on the wall. The overall scene is dimly lit, with a dark overlay on the right side.

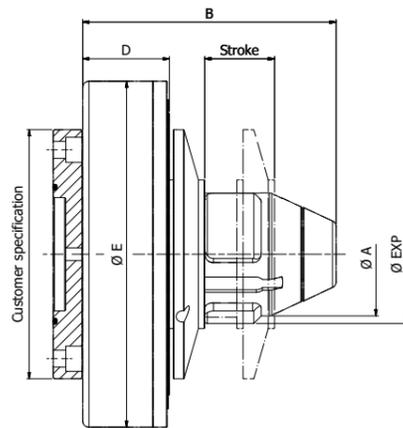
**DUPLEX  
MODELS**

# CK-XC

## SINGLE DIAMETER ROLL EJECTOR CHUCK WITH MOUNTING FLANGE

Duplex CK-XC with single diameter chuck, available for single core diameters.

Equipped with mounting flange and provided with rotary joint.



CHUCK PERFORMANCE		
chuck diameter	load capacity [lbf]	torque [Nm]
70 mm (2.8")	4050	850
75 mm (2.9")		
3"		
100 mm (3.9")	10100	2500
4"		
120 mm (4.7")		
5"		

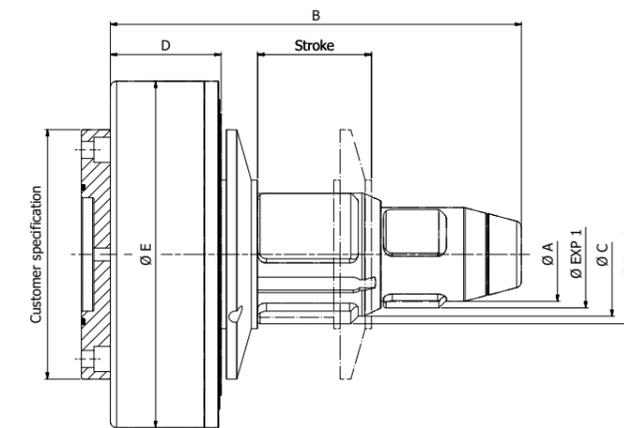
core diameter	CHUCK DIMENSIONS							PNEUMATIC CYLINDER	
	70 mm (2.8")	75 mm (2.9")	3"	100 mm (3.9")	4"	120 mm (4.7")	5"	air supply	87 psi
A	2.8"	2.9"	2.9"	3.8"	3.8"	4.6"	4.9"	first piston thrust force	4500 lbf
Ø EXP	2.8" ÷ 3.1"	2.9" ÷ 3.3"	3" ÷ 3.4"	3.9" ÷ 4.3"	4" ÷ 4.4"	4.7" ÷ 5.1"	5" ÷ 5.4"	second piston thrust force	2250 lbf
B	min 7.5" - max 11"							stroke	2" - 3.3"
D	2.7" - 3.5"								
E	10.8"								

# CK-XC/SDD

## DOUBLE DIAMETER ROLL EJECTOR CHUCK WITH MOUNTING FLANGE

Duplex CK-XC/SDD with stepped chuck that allows to run multiple core sizes.

Equipped with mounting flange and provided with rotary joint.



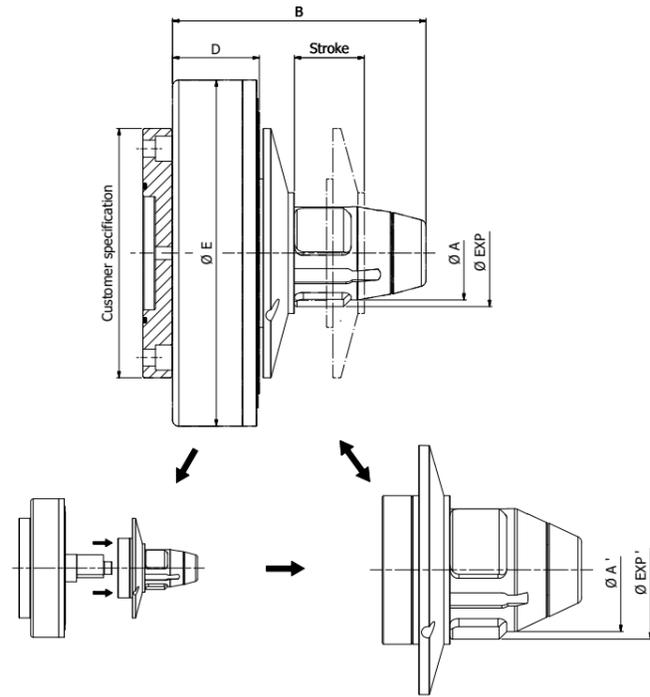
CHUCK PERFORMANCE		
chuck diameter	load capacity [lbf]	torque [Nm]
70 - 100 mm (2.8" - 3.9")	4050	850
75 - 100 mm		
3"-100 mm		
70 mm - 4"	10100	2500
75 mm - 4"		
3" - 4"		
70 - 120 mm		
75 - 120 mm		
3" - 120 mm		
70 mm - 5"		
75 mm - 5"		
3" - 5"		

core diameter	CHUCK DIMENSIONS							PNEUMATIC CYLINDER	
	70 mm (2.8")	75 mm (2.9")	3"	100 mm (3.9")	4"	120 mm (4.7")	5"	air supply	87 psi
A	2.8"	2.9"	2.9"	3.8"	3.8"	4.6"	4.9"	first piston thrust force	4500 lbf
Ø EXP 1	2.8" ÷ 3.1"	2.9" ÷ 3.3"	3" ÷ 3.4"	3.9" ÷ 4.3"	4" ÷ 4.4"	4.7" ÷ 5.1"	5" ÷ 5.4"	second piston thrust force	2250 lbf
Ø EXP 2	-	-	-	3.9" ÷ 4.3"	4" ÷ 4.4"	4.7" ÷ 5.1"	5" ÷ 5.4"	stroke	2" - 3.3"
B	min 10" - max 14"								
D	2.7" - 3.5"								
E [in]	10.8"								

# CK-XC/SM

## MODULAR ROLL EJECTOR CHUCK WITH MOUNTING FLANGE

Duplex CK-XC/SM presents a quick-change system of the cage that allows to run any core size. Equipped with mounting flange and provided with rotary joint.



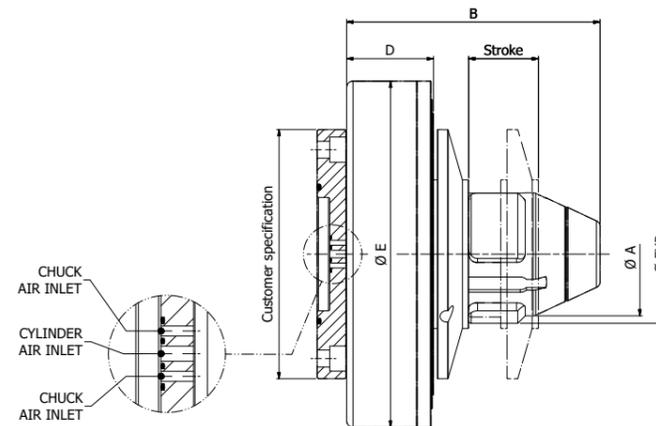
CHUCK PERFORMANCE		
chuck diameter	load capacity [lbf]	torque [ft-lbf]
70 mm (2.8")	4050	850
75 mm (2.9")		
3"		
100 mm (3.9")		
4"		
120 mm (4.7")	10100	1850
5"		
100 mm (3.9")		
4"		
120 mm (4.7")		
5"		

core diameter	CHUCK DIMENSIONS							PNEUMATIC CYLINDER	
	70 mm (2.8")	75 mm (2.9")	3"	100 mm (3.9")	4"	120 mm (4.7")	5"	air supply	87 psi
A	2.8"	2.9"	2.9"	3.8"	3.8"	4.6"	4.9"	first piston thrust force	4500 lbf
Ø EXP	2.8" ÷ 3.1"	2.9" ÷ 3.3"	3" ÷ 3.4"	3.9" ÷ 4.3"	4" ÷ 4.4"	4.7" ÷ 5.1"	5" ÷ 5.4"	second piston thrust force	2250 lbf
B	min 7.5" - max 11"							stroke	2" - 3.3"
D	2.7" - 3.5"								
E	10.8"								

# CK-XC/PM

## PNEUMOMECHANIC ROLL EJECTOR CHUCK WITH MOUNTING FLANGE

Duplex CK-XC/PM presents a quick-change system of the cage that allows to run any core size. Equipped with mounting flange and provided with rotary joint.



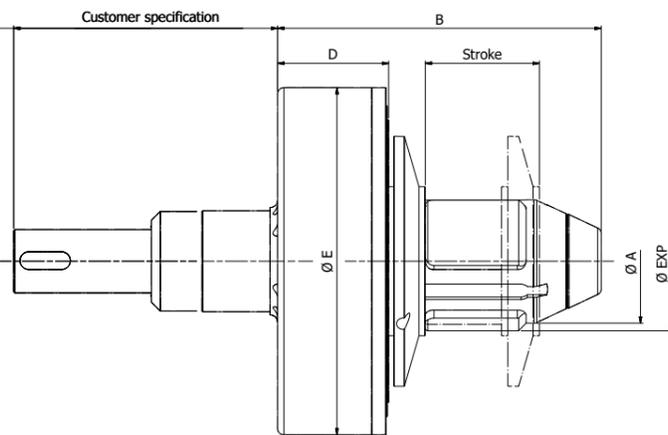
CHUCK PERFORMANCE		
chuck diameter	load capacity [lbf]	torque [ft-lbf]
70 mm (2.8")	4050	850
75 mm (2.9")		
3"		
100 mm (3.9")	10100	1850
4"		
120 mm (4.7")		
5"		

core diameter	CHUCK DIMENSIONS							PNEUMATIC CYLINDER	
	70 mm (2.8")	75 mm (2.9")	3"	100 mm (3.9")	4"	120 mm (4.7")	5"	air supply	87 psi
A	2.8"	2.9"	2.9"	3.8"	3.8"	4.6"	4.9"	first piston thrust force	4500 lbf
Ø EXP	2.8" ÷ 3.1"	2.9" ÷ 3.3"	3" ÷ 3.4"	3.9" ÷ 4.3"	4" ÷ 4.4"	4.7" ÷ 5.1"	5" ÷ 5.4"	second piston thrust force	2250 lbf
B	min 7.5" - max 11"							stroke	2" - 3.3"
D	2.7" - 3.5"								
E	10.8"								

# CK-X

## SINGLE DIAMETER ROLL EJECTOR CHUCK WITH MOUNTING SHAFT

Duplex CK-X with single diameter chuck, available for single core diameters. Equipped with mounting shaft and provided with rotary joint.



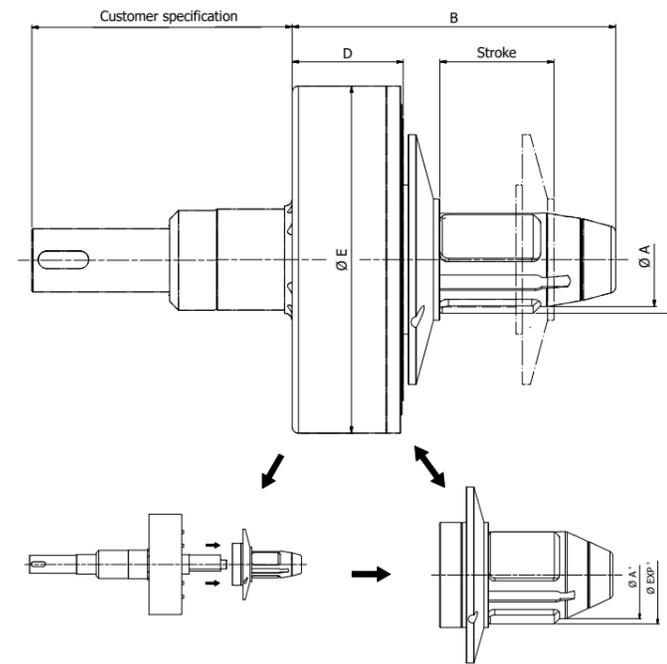
CHUCK PERFORMANCE		
chuck diameter	load capacity [lbf]	torque [ft-lbf]
70 mm (2.75")	4050	850
75 mm (2.95")		
3"		
100 mm (3.95")	10100	1850
4"		
120 mm (4.7")		
5"		

core diameter	CHUCK DIMENSIONS							PNEUMATIC CYLINDER	
	70 mm (2.8")	75 mm (2.9")	3"	100 mm (3.9")	4"	120 mm (4.7")	5"	air supply	87 psi
A	2.8"	2.9"	2.9"	3.8"	3.8"	4.6"	4.9"	first piston thrust force	4500 lbf
Ø EXP	2.8" ÷ 3.1"	2.9" ÷ 3.3"	3" ÷ 3.4"	3.9" ÷ 4.3"	4" ÷ 4.4"	4.7" ÷ 5.1"	5" ÷ 5.4"	second piston thrust force	2250 lbf
B	min 9.6" - max 11"							stroke	3.3"
D	2.7" - 3.5"								
E	10.8"								

# CK-X/SM

## MODULAR ROLL EJECTOR CHUCK WITH MOUNTING SHAFT

Duplex CK-X/SM presents a quick-change system of the cage that allows to run any core size. Equipped with mounting shaft and provided with rotary joint.



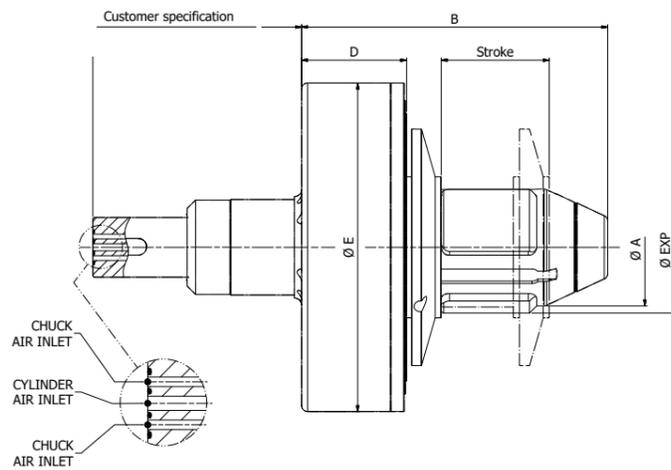
CHUCK PERFORMANCE		
chuck diameter	load capacity [lbf]	torque [ft-lbf]
70 mm (2.75")	4050	850
75 mm (2.95")		
3"		
100 mm (3.95")	10100	1850
4"		
120 mm (4.7")		
5"		

core diameter	CHUCK DIMENSIONS							PNEUMATIC CYLINDER	
	70 mm (2.8")	75 mm (2.9")	3"	100 mm (3.9")	4"	120 mm (4.7")	5"	air supply	87 psi
A	2.8"	2.9"	2.9"	3.8"	3.8"	4.6"	4.9"	first piston thrust force	4500 lbf
Ø EXP	2.8" ÷ 3.1"	2.9" ÷ 3.3"	3" ÷ 3.4"	3.9" ÷ 4.3"	4" ÷ 4.4"	4.7" ÷ 5.1"	5" ÷ 5.4"	second piston thrust force	2250 lbf
B	min 9.6" - max 11"							stroke	3.3"
D	3.5"								
E	10.8"								

# CK-X/PM

## PNEUMOMECHANIC ROLL EJECTOR CHUCK WITH MOUNTING SHAFT

Duplex CK-X/PM with single diameter chuck, available for single core diameters. Equipped with mounting shaft and provided with rotary joint.



CHUCK PERFORMANCE		
chuck diameter	load capacity [lbf]	torque [ft·lbf]
70 mm (2.75")	4050	850
75 mm (2.95")		
3"		
100 mm (3.95")	10100	1850
4"		
120 mm (4.7")		
5"		

core diameter	CHUCK DIMENSIONS							PNEUMATIC CYLINDER	
	70 mm (2.8")	75 mm (2.9")	3"	100 mm (3.9")	4"	120 mm (4.7")	5"	air supply	87 psi
A	2.8"	2.9"	2.9"	3.8"	3.8"	4.6"	4.9"	first piston thrust force	4500 lbf
Ø EXP	2.8" ÷ 3.1"	2.9" ÷ 3.3"	3" ÷ 3.4"	3.9" ÷ 4.3"	4" ÷ 4.4"	4.7" ÷ 5.1"	5" ÷ 5.4"	second piston thrust force	2250 lbf
B	min 9.6" - max 11"							stroke	3.3"
D	3.5"								
E	10.8"								



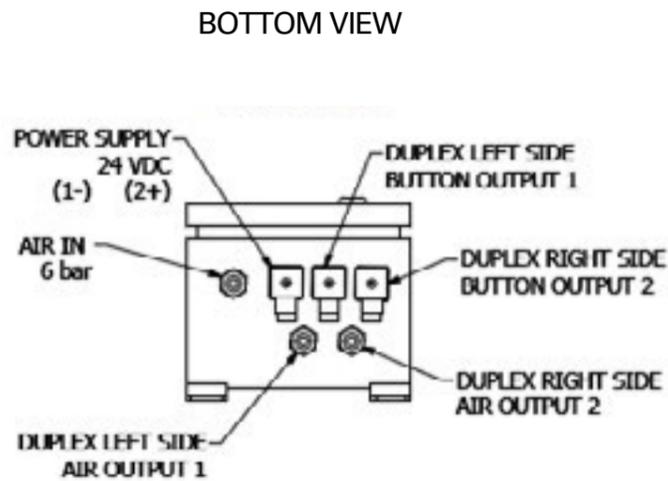
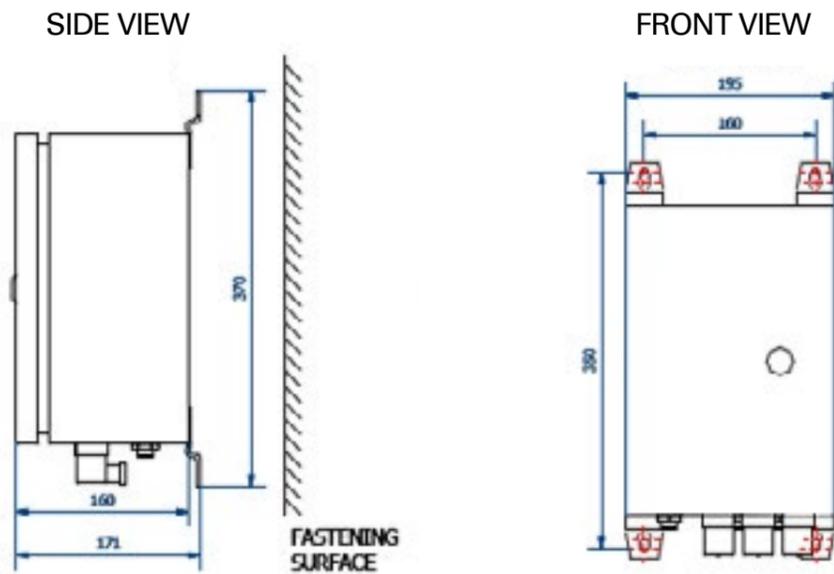
A photograph of an industrial robotic arm, likely a KUKA model, with white and orange segments. The arm is positioned in a factory setting, with various cables and mechanical parts visible. The text 'OPTIONALS AND ACCESSORIES' is overlaid in white on a dark semi-transparent background. A small orange horizontal line is positioned above the text.

# OPTIONALS AND ACCESSORIES

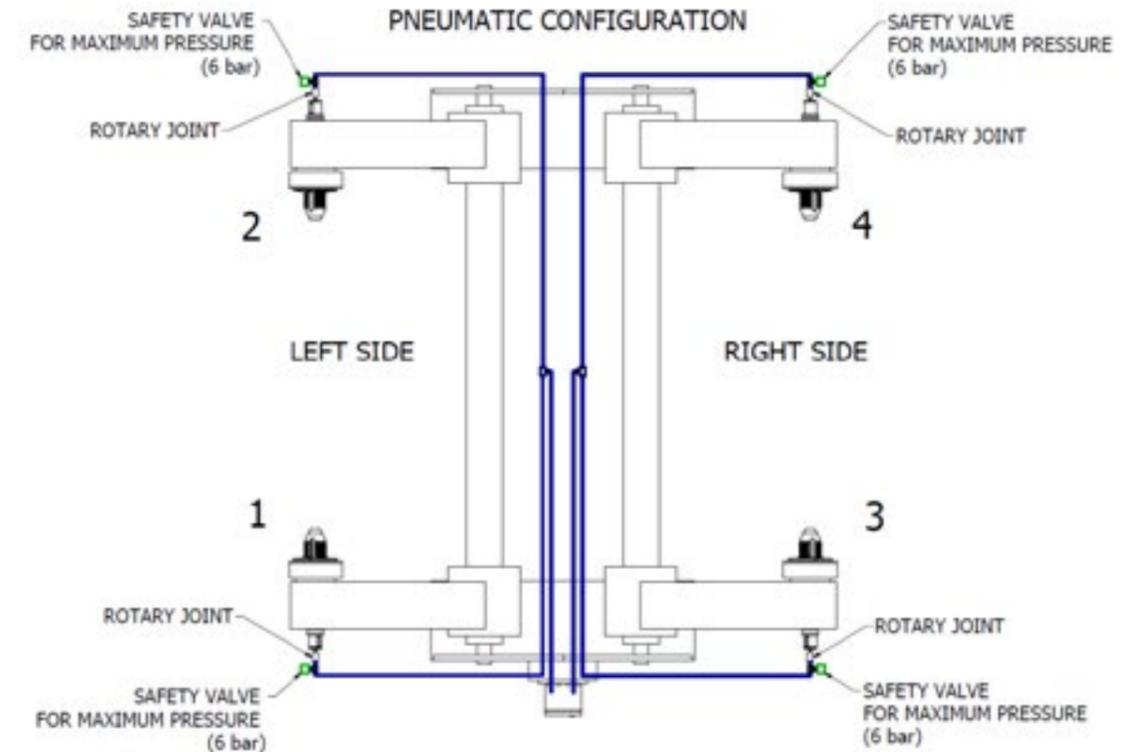
# CONTROL PANEL

## AUTOMATIC RETRACTION OF THE PISTON

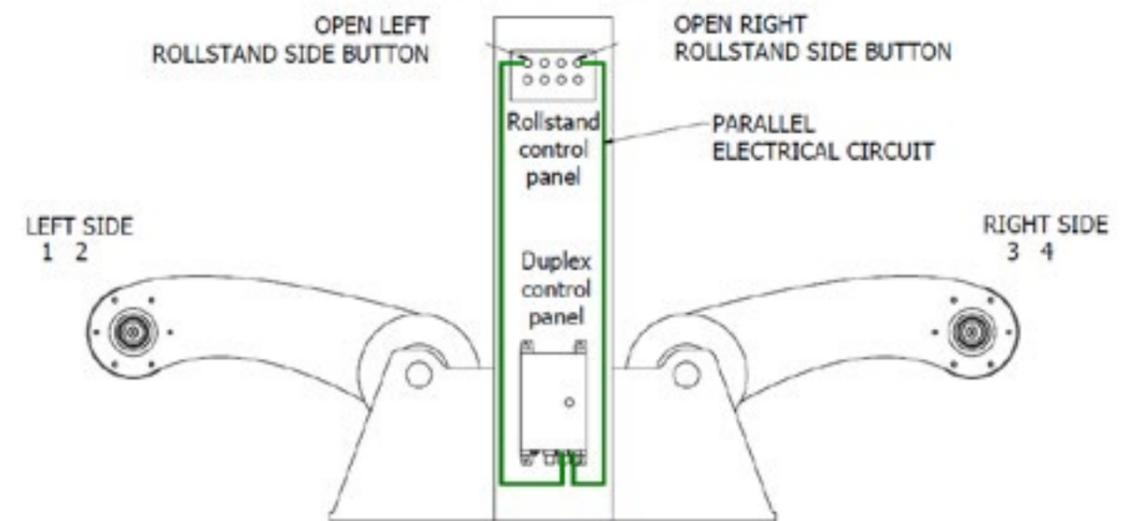
The pneumatic activation and retraction of the piston is made possible through the Duplex control panel. This box integrates the original command panel of the machine and allows to command up to 4 Duplex units (2 per roll stand, right side and left side), while the existing management of the roll stand operations remains unchanged.



## TOPOGRAPHY LAYOUT AND PNEUMATIC CONFIGURATION



## ELECTRICAL CONFIGURATION



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# SENSOR RING + PROXIMITY

## AUTOMATIC REEL LOADING AND UNLOADING

Duplex is ideal for retrofitting reel stands with manual, semi automatic and automatic loading. Duplex replaces part of the reel stand while ensuring the automatic loading and unloading of the reel 100% of the times.

This is possible thanks to the Duplex sensor ring and a bracket with proximity sensor applied to the roll stand.



**MADE IN ITALY**  
Our products are 100% designed and made in Italy



**INNOVATION**  
We provide solutions that increase productivity and safety levels while reducing maintenance costs and procedures



**SUPPORT**  
Our staff is always available to answer your questions, also in the after-sales phase



**QUALITY**  
All Renova's products are managed by TUV ISO 9001



**CUSTOM PROJECTS**  
Projects large or small, we work with you to provide the solution that fits



**SUSTAINABILITY**  
Sustainable products, sustainable company. Renova has joined Erion



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ROLL EJECTOR CHUCK