

# friends

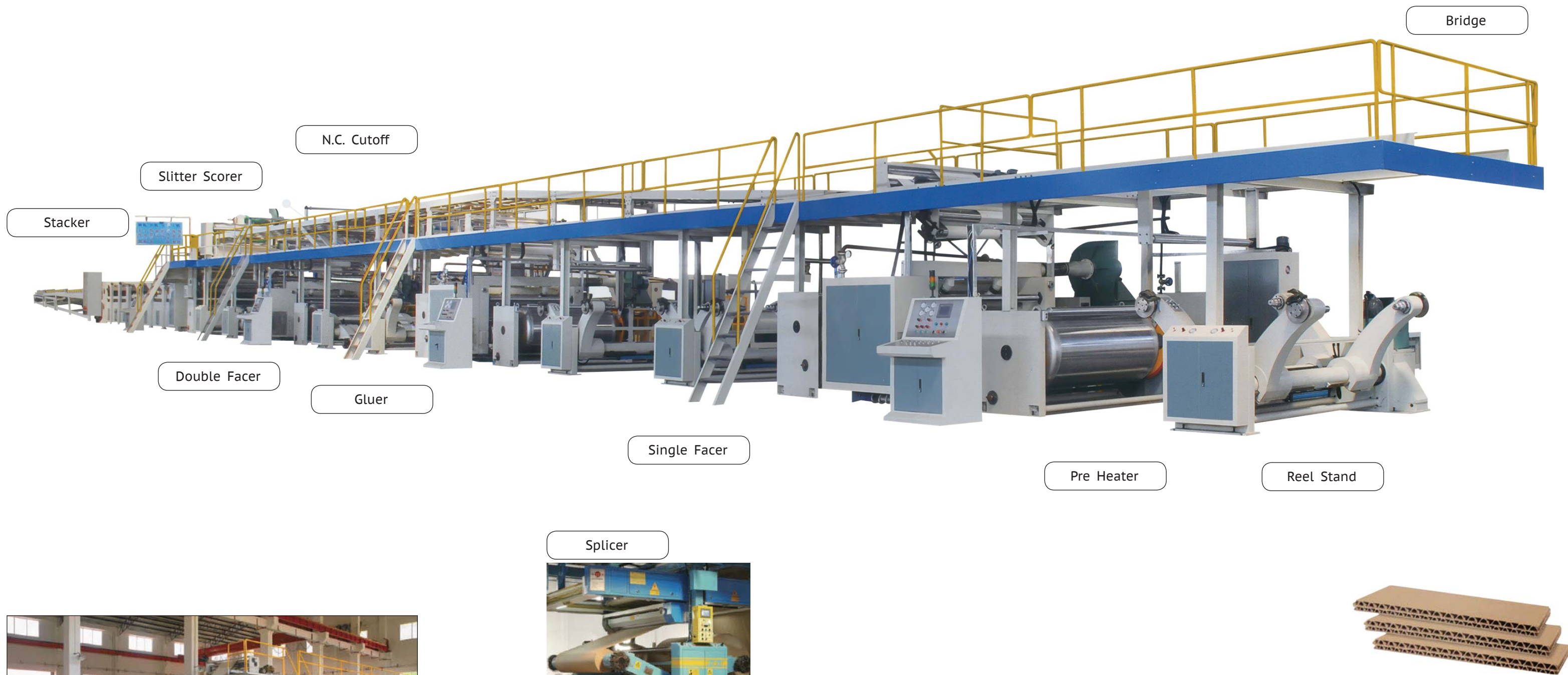


Corrugated Board  
& Box Making  
Machines



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# Corrugated Board Production Line



## Purpose and Characteristics

Corrugated Cardboard Production Line is the professional equipment for producing corrugated cardboard. The 3ply, 5ply, 7ply and multi-function corrugated cardboard production line mainly consist of the following equipment: Mill Roll Stand, surface paper (core-paper) pre-heater, single facer, Conveying Bridge, Glue Application Machine, Double Facer, Slitter Scorer, Cut-off, Conveyer and Stacker, Heating System, Air compression system and Glue Making System, etc.

The 3ply, 5ply, 7ply, and multi-function corrugated cardboard production line has high middle and low grade with different-specification and different-quality equipment. On the base of understanding the requirements of the customers and the advanced skills at home and abroad, our company has developed and designed these production lines with the speed 100-220m/min; the paper width 1400-2200mm and four fluting UV type A, B, C, E for all the customers to choose from.



# Automatic High Speed Printing Slotting and Die Cutting Machine



## Technical Parameter

Parameter		FRIENDS-900	FRIENDS-1200	FRIENDS-1400
Printing Roller Dia		300mm	408mm	480mm
Control Mode		PLC / Touch Screen / Button		
Color Group		Everything can be quipped according to users' needs		
Production Speed		120/150/200		
Max. Paper Sizes		900x1800/2000/2200/ 2400/2600mm	1200x1800/2000/2200/ 2400/2600mm	1400x1800/2000/2200/ 2400/2600mm
Min. Paper Sizes	Positive knife	300x640mm	350x720mm	400x720mm
	Negative knife	300x720mm	350x740mm	400x740mm
Max. Printing Sizes		900x1600/1800/2000/ 2200/2400mm	1200x1600/1800/2000/ 2200/2400mm	1400x1600/1800/2000/ 2200/2400mm
Max die-cutting Size		900x1700/1900/2100/ 2300/2500mm	1200x1700/1900/2100/ 2300/2500mm	1400x1700/1900/2100/ 2300/2500mm
Max. Printing Plate Thickness		7.2mm		
Slot Width x Max.depth		7mmx220mm	7mmx300mm	7mmx350mrn
Min. Slot Space	Positive knife	150*150*150*150mm	1701 701 701 70mm	170*170*170*170mm
	Negative knife	250*90*250*90mm	260*90*260*90mm	260*90*260*90mm



Printing Unit



Rotary Slotting



Rortary Die Cutting

## Motor list

	Name	Size
Feeding unit	Main motor SIEMENS / ABB	1.5KW (Frequency )
	Separation and reunion of the machine	1.5KW 1/60 Gear reduce speed
	Left and right baffle plate	0.2KW RV-30
	Suction motor	7.5KW
	Dust exhausting fan	1.5KW
Printing unit	Phase adjustment	0.2KW RV-30(Frequency )
	Anilox roller / Ceramic roller	0.4KW 1/30(Gear reduce speed)
Slotting unit	Phase adjustment	0.2KW RV-30
	Knife seat horizontal movement (by maunal / by electrical) SIEMENS / ABB	0.37KW RV-50 1/80
Die—cutting unit	Phase adjustment	0.2KW RV-30
	Left and right tensile	0.18KW RV-50 1/80
	Repair of rubber roller	0.37KW RV-40-50 1/900
Stacking unit	Conveying belt	3.0KW (electromagnetic controlling speed)
	Lift of stack table	2.2KW RV-135 1/80



# Rotary Slotting Machine (RS4)

## Uses and Features

FRIENDS series rotary slotting machine is a kind of comprehensive equipment that slotting, slitting, cutting corner, creasing. Its main feature is feeding single piece cardboard by hand, common bend card board are also OK.

## Main Features

- Used lead edge feeder with vacuum feeding system, fast and smoothly, (or kick feeder option).
- Motorized (or PLC) adjust side and front baffle, manual adjust black buffer (motorized).
- Planet gear type motorized observe and reverse adjustment in 360°.
- All of shaft precision grind, chrome plated.
- Electric adjusting box height (or PLC adjust).
- Slotting crease joint movement by motorize control (PLC option).
- High quality 48 CrMo slotting knife with induction hardness.
- Frequency conversion motor drive, save power.
- Equipped with the photo electricity counter, display production amount



# Chain Feeding Rotary Slotting Machine (RS4)

## Uses and Features

FQK Series rotary slotting machine is a kind of comprehensive equipment that slotting, slitting, cutting corner, creasing. Its main feature is feeding single piece cardboard by hand, common card board also OK.

### MAIN FEATURES

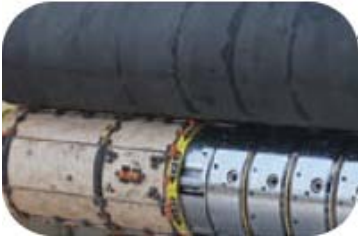
- Semi-automatic chain feeding system, side lay gauge adjust feeding position, ensure feeding accurately.
- Planet gear type motorize observe and reverse adjustment in 360°
- Manual adjusting four box height cutter synchronous (motorize adjusting is option).
- All of shaft precision gring, chrome plated.
- High quality 48CrMo slotting knife with induction hardness.
- Speed variable motor drive machine, speed is adjustable.
- Equipped with the photo-electricity counter, display production amount.
- Slotting crease joint movement by hand control.



## Technical Parameter

Cutter die diameter (mm)	405		480			
Model	FRIENDS 2200	FRIENDS 2400	FRIENDS 2200	FRIENDS 2400	FRIENDS 2600	FRIENDS 2800
Max. Sheet Size (mm)	1200 x 2200	1200 x 2400	1400 x 2200	1400 x 2400	1400 x 2600	1600 x 2800
Min. Sheet size (mm)	350 x 500	350 x 500	400 x 500	400 x 500	400 x 500	400 x 500
Min. Slot distance (mm)	190 x 50 x 190 x 50					
Slot width (mm)	7		7			7
Sheet thickness (mm)	3 - 10		3 - 10			3 - 10
Work speed (Pcs/min)	0-60		0-60			0-60
Power (kw)	2.2		2.2			2.2

# Rotary Die Cutting Machine



## Function and Uses

The machine adopts chain feeding system and double roller rotary type. It can perform all process of slitting, creasing , corner cutting and hit special whole at one time. It has advantage of high precision, easy to operate, long service life and low cost.

## Paper Feeding Unit

- Adopt lead edge feeding system with vacuum adsorption auxiliary feed, (optional equipment kick feeding system)
- Speed: 10000 Sheets/Hr, die-cutting precision: ±0.75mm.
- Manual adjust former block board and computer control lateral block board, dial indicator.
- Leading paper roll have groove glue surface to prevent the crushed card board and increase the accuracy of feeding.

## Main Characteristics

- The drum made of high quality steel tube, thickness 30mm, do balance treatment, plated chrome.
- Full machine gear made of 45# steel have been quenched treatment, Adopts lock-alx key less and cross-head system connect with shafts finish no gap adjustment.
- Driving part uses pull pump to lubricating (motorized phase adjustment type used spray lubricating).
- Oil box made of thick iron plate to avoid oil leakage.
- Phase adjustment by manual operate with micro-adjustment (or motorized adjust in 360°)
- Die Roller (bottom roller) lift-down adopts pneumatic control, manual or automatic operation.
- Rubber roller (top roller be wrapped anvil cover from “Maxdura” Brand from Taiwan (or CUE, DAY option), long use life.
- Rubber roller (top roller) can move automatically, move range ±40mm.
- Rubber roller (top roller) fix overrunning clutch to compensate line speed automatically, and avoid one position cutting.
- Equipped with anvil cover repair device, prolong use life.



Automatic Folder Gluer Machine



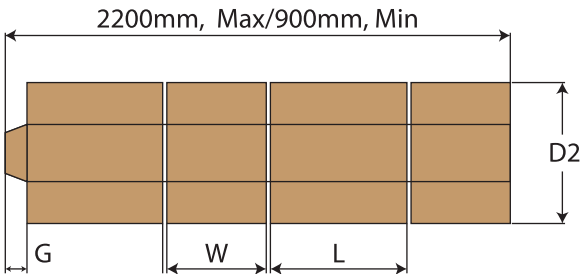
Semi-Automatic Folder Gluer Machine



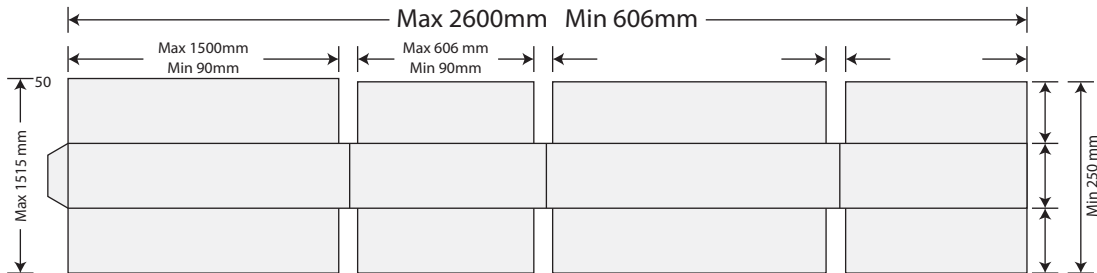
Technical Parameter

Model	TS-2400	TS-2500
Max.Cardboard(mm)	900*2200	1200*2500
Min.Cardboard(mm)	300*900	300*900
Dimensions(mm)	L11000*W3000*H1600	LI 2500*W3200*H1600
Total weight	5500kg	6500kg
Power Required	12KW 380V 3Phase 50HZ	12KW 380V 3Phase 50HZ
Paperboard thickness	3 or 5 layer paperboard	3 or 5 layer paperboard
Control	PLC&Touch Screen	PLC & Touch Screen

Blank Size

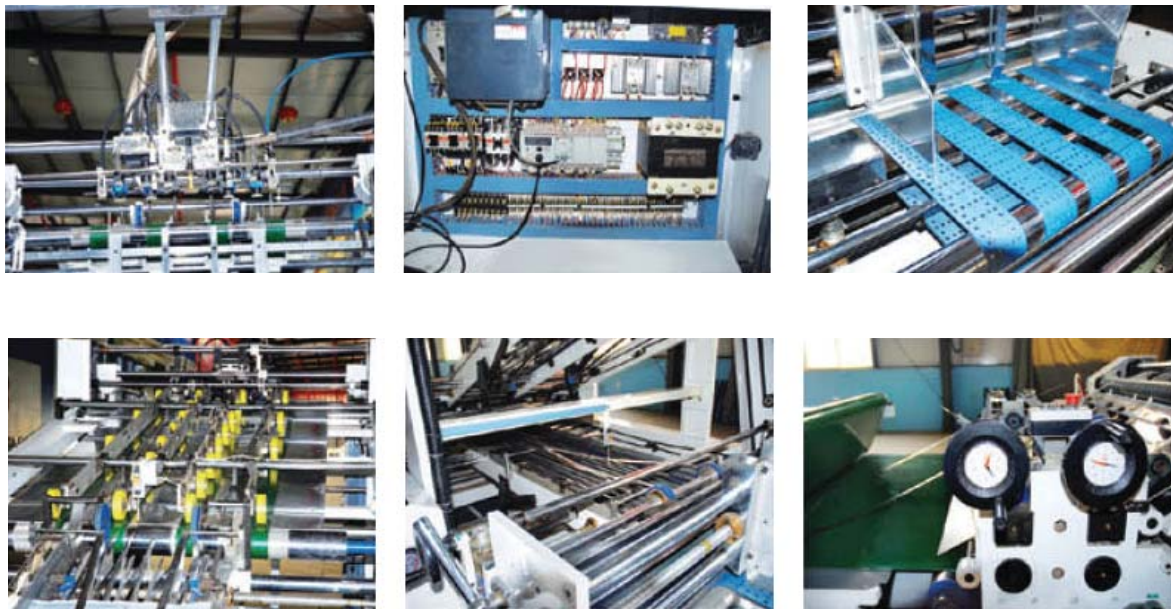


	Max. (mm)	Min. (mm)
W	450	180
L	650	270
D2	900	300
G	40	34





Automatic Flute Laminator



Technical Parameter

Model	FRIENDS - 1300	FRIENDS - 1450	FRIENDS - 1600
Maximum size (mm)	1100 x 1300	1100 x 1450	1400 x 1600
Minimum size (mm)	350 x 350	350 x 350	450 x 450
Laminate precision	±1.5mm	±1.5mm	±1.5mm
Speed	6000 Sheets/h	6000 Sheets/h	6000 Sheets/h
Total power (kw)	12	12	13
Length (m)	12.5	12.5	15
Total weight (T)	6.8	7.2	8.0

Semi-Automatic Flute Laminator

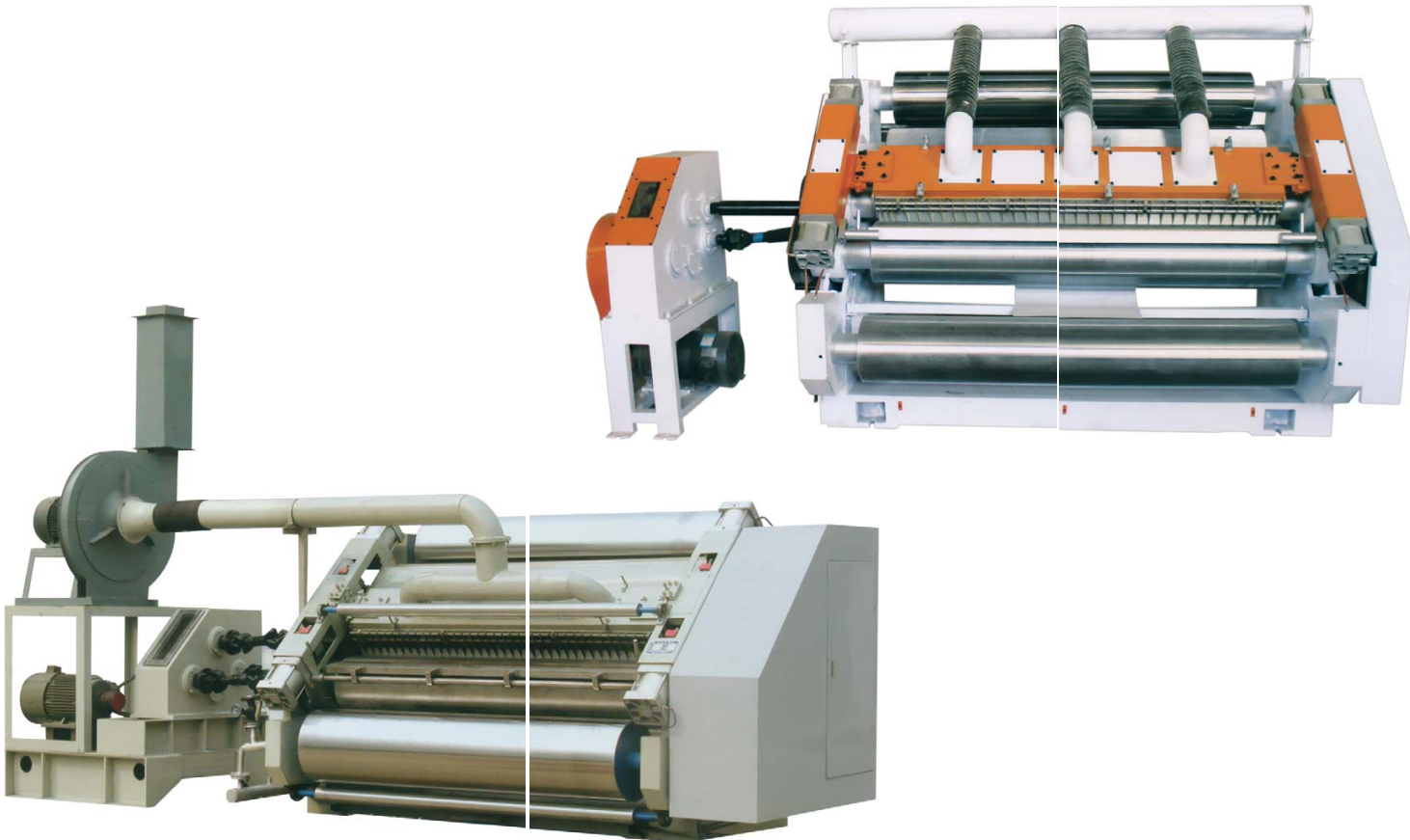


Technical Parameter

Model	FRIENDS - 1300	FRIENDS - 1450	FRIENDS - 1600
Maximum sheet size (mm)	1300 x 1300	1450 x 1300	1600 x 1300
Minimumsheet size (mm)	350 x 450	350 x 450	350 x 450
Speed (mt/min)	0-90	0-90	0-90
Total power (kw)	7	7	7
Overall dimensions (m)	8.8x2.2x1.7	8.8x2.35x1.7	8.8x2.5x1.7
Total weight (T)	3.5	4.0	4.5



# Fingerless Type Single Facer



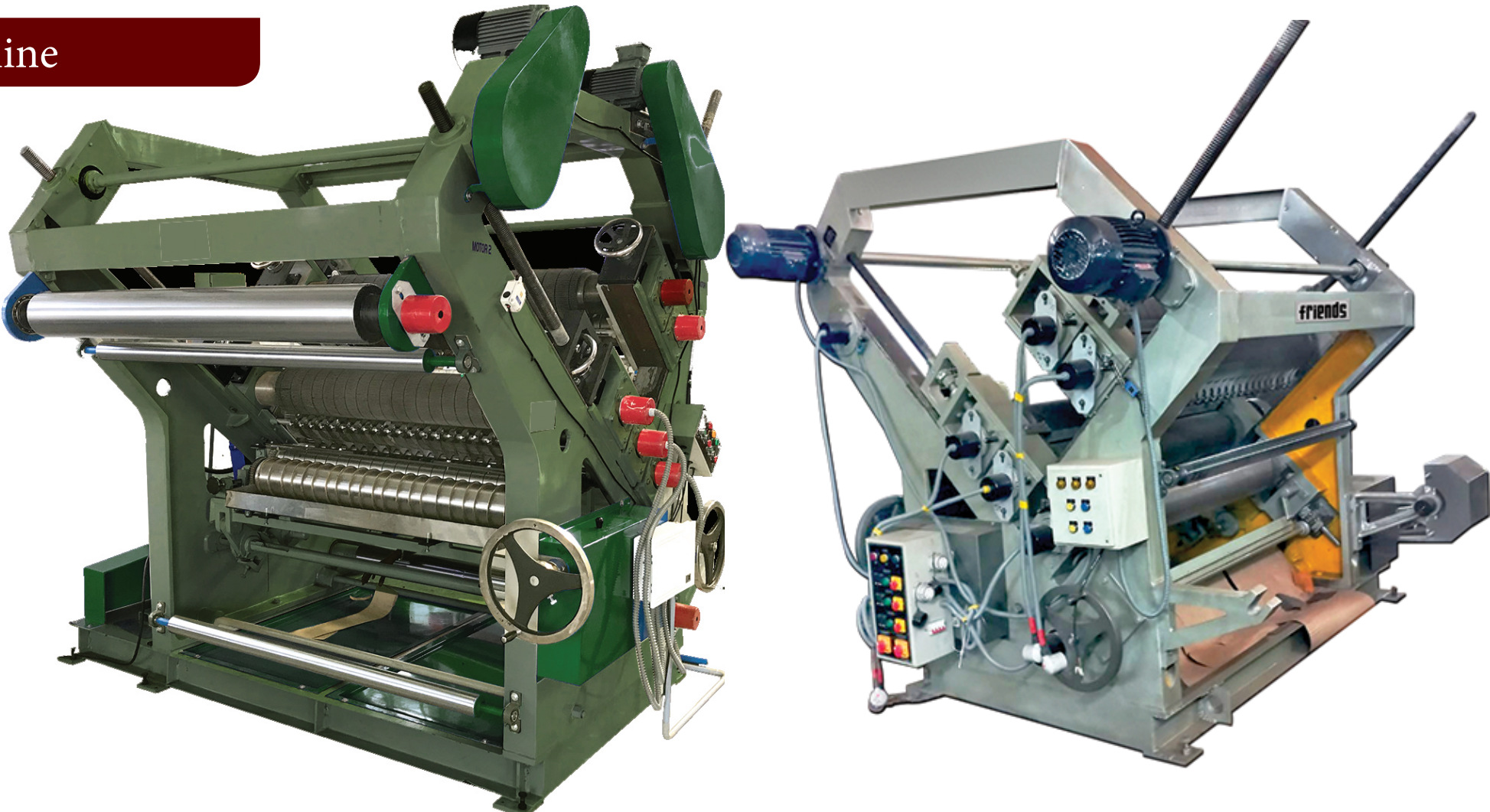
## Technical Parameter

Machine Size (mm)	FRIENDS 1400 - 2300		
Roller Dia. (mm)	280	320 / 360	380
Heating type	Steam / electric / oil		
Corrugated roller material	48CrMo alloy steel / 52CrMo alloy steel		
Wallboard type	Oblique / square		
Transmission type	Gear box / chain		
Feeding type	Fingerless / finger		
Design speed	100m/min	150m/min	200m/min
Pneumatic working pressure	0.4-0.9Mpa		
"Upper corrugated roller diameter"	0280mm	0320mm	0350mm
"Lower corrugated roller diameter"	0280mm	0320mm	0380mm
Pressure roller diameter	0280mm	0320mm	0385mm
Glue roller diameter	0242mm	0242mm	0268mm
Paste fixed roller diameter	0127mm	0127mm	0140mm
Preheat roller diameter	1402mm	1402mm	1402mm
Main driving motor	11KW	15KW	30KW
Wind suction motor	11KW	11KW	11KW
Control type	SIEMENS / SCHNEIDER		
Bearing	SKF / NBC / NACHI		

# Double Profile Corrugation Machine

## TECHNICAL DATA

Size	42"	52"	62"	72"	84"
Motor (H.P)	9	11.5	11.5	14	16.5
Heating Load KW	19	18	21	25	25
Wt. Approx.	5	5.5	6	6.5	7.5
Floor Space	7.5'×15'	8.5'×15'	9.5'×15'	10.5'×15'	11'×18'





OBLIQUE TYPE  
PAPER  
CORRUGATING  
MACHINE



OBLIQUE TYPE CORRUGATION MACHINE

TECHNICAL DATA

Size	36"	42"	46"	52"	62"
Motor (H.P.)	2	3	3	5	5
Heating Load KW	15	19	18	21	25
Wt. Approx.	3.0	3.5	4	4.5	5
Floor Space	7'x15'	7.5'x15'	8'x15'	8.5'x15'	9.5'x15'



FOUR BAR ROTARY CUTTING &  
CREASING MACHINE

Size	65"	75"	85"	95"
Motor (H.P.)	2	2	2	3
Wt.Approx. (Tons)	1.7	2	2.2	2.8
Floor Space	7'x4'	8'x4'	9'x4'	10'x4'

ECCENTRIC SLOTTER

TECHNICAL DATA

Size	65"	75"	85"	95"
Motor (H.P.)	2	3	3	5
Max. Slot	17"	18"	18"	18"
Wt. Approx.	1.8	2.2	2.4	3
Floor Space	7'x4'	8'x4'	9'x4'	10'x4'



BOARD PRINTER

Size	50"x75"	50"x85"	50"x95"
Motor (H.P.)	3	3	3
Wt. Approx. (M.T.)	2	2.3	2.6
Floor Space	7'x12'	7'x13'	7'x14'

REEL TO SHEET CUTTER



Size	54"
Motor (H.P.)	2
Wt. Approx	1.8 M.T.
Floor Space	6'x8'

SHEET PASTING  
MACHINE



Size	45"	55"	65"	75"	85"
Motor (H.P.)	1	1	1	1	1
Wt.Approx	400	450	500	600	700
Floor Space	5'x3'	6'x3'	7'x3'	8'x3'	9'x3'

BOX STITCHING  
MACHINE



Flap Sealing &  
Bottom Sealing Stitcher

Sizes:  
20" 30" 36" 42"  
48" 60"





# friends

## ENGINEERING COMPANY



an ISO 9001:2008 certified Company

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