

# POWDER

FILLING LINE

NEW-MILLENNIUM PACKAGING MANTRAS

**NPM** Mach

PHARMA

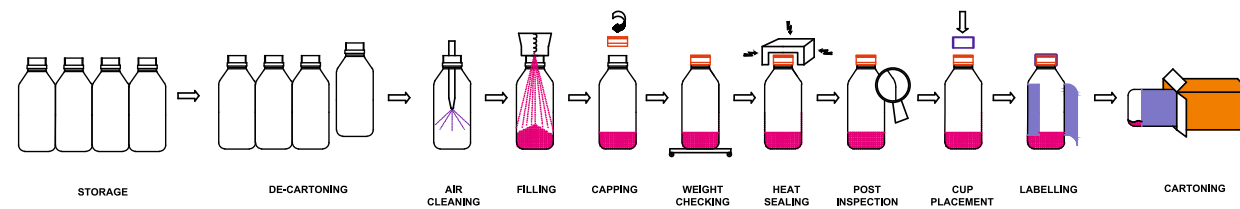
## Powder Filling Line

In Pharmaceutical industry, there are some  $\beta$  lactum & non  $\beta$  lactum formulations being manufactured, packed and sold in dry syrup or suspension form. Oral dry syrups & suspensions require a sequence of equipments to perform different operations of primary and secondary packaging.

NPM's wide range of products includes various equipments to perform all the essential operations of an automated powder filling and packaging line for Pharmaceutical industry as per the standard flow.

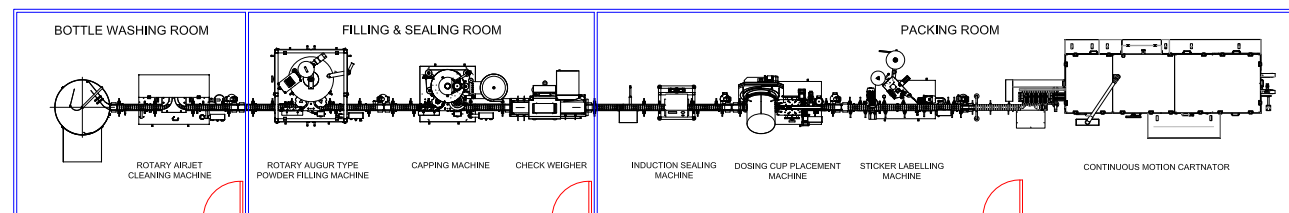
NPM's range of equipments can form filling lines starting from 1500 bottles an hour up to 10000 bottles an hour within the range of filling starting from 5gm up to 40gm, depending on selection of operations and models.

### Standard Flow of Filling Line:



### POWDER FILLING LINE

#### STANDARD FILLING LINE ARRANGEMENT



Important parameters to be kept in mind while selecting equipments or defining a filling line:

**Product Specific:** Nature of the product to be filled (Particle Size, Bulk Density, Sugar Percentage, Flow ability, Dusting etc)

**Input Material Specific:** Bottles (Material & Shape), ROPP Caps (Material thickness & Strength of seal joints), Screw Caps (Material, Sealing pattern, Thread pattern, Wad thickness), Self Adhesive Labels (Thickness, Adhesive strength, Material), Paper Label (Thickness, Grain direction), Measuring Cups (Size & Shape), Carton (Material & Folding pattern)

**Filling Range Specific:** Minimum to Maximum filling weight

**Capacity Specific:** Required throughput per filling size per minute/hour/shift

**Operation Specific:** Cleaning requirement, Weight Checking requirement, Induction Heat Sealing requirement, Batch coding, Bar coding, Secondary packaging necessities.

**Floor Plan Specific:** Dimensions of each area, Entry in each area, Process & Material flow

**Personnel Competence:** Necessary skill to validate, operate & maintain

**Utility Specific:** Available or considered utilities like Normal & DM water, Compressed & Filtered air, Electricity, Vacuum



**Typical Dry Syrup Filling line consists of Rotary Air Cleaning machine, Rotary Powder Filler, Rotary ROPP cum Screw Capper, Measuring Dosing Cup Placement machine & a Sticker Labeller.**

**Variants available from 10000 to 70000 Bottles per Shift**

# AUTOMATIC VERTICAL AIRJET CLEANING MACHINE

NVAJC



# AUTOMATIC ROTARY AIRJET CLEANING MACHINE

NRAJC



Technical Specifications				
Model		NVAJC-100	NVAJC-150	NVAJC-200
Output / Hour*		1000 to 5000	2400 to 7200	6000 to 9000
No. of Cleaning Nozzles		4	6	8
Direction of Movement		Left to Right		
Electric Specifications	Conveyor Motor	0.5 HP / 415 Volts / 50 Hz.		
	Blower Motor	0.5 HP / 415 Volts / 50 Hz.		
Cleaning Cycle		Positive air pressure and vacuum cleaning		
Working Height		860 mm ± 50 mm		

Input Specifications		
Container Neck Diameter		Minimum 22 mm
Container Size	Round	Diameter : Ø 28 mm to Ø 70 mm
		Respective Height : 58 mm to 160 mm
	Flat / Square	Length : 30 mm to 70 mm
		Width : 20 mm to 50 mm Height : 58 mm to 160 mm

Utility Requirement	
Electric Supply	3 Phase + Neutral + Earthing
Electric Load	1 kW
Air Consumption	5,7,10 CFM @ 4 to 6 Kg

\* Depend on bottle size & condition

## SALIENT FEATURES

- » Positive air pressure and vacuum cleaning
- » Easy operation
- » Adjustable & diving type cleaning nozzles
- » Settable cleaning time
- » Automatic loading and unloading of container
- » Individual control for air pressure and vacuum
- » Higher capacity blower for accurate cleaning
- » Very less change over time
- » Inbuilt 20 micron filter bag for vacuum

Technical Specifications		
Model		NRAJC-200
Output / Hour*		8000 - 12000
Direction of Machine		Left to Right
No. of Cleaning Nozzles		20 Nos. (Working Nozzle : 6 Nos. per Cycle)
Cleaning Cycle		Positive air pressure and vacuum cleaning
Electric Specifications	Main Drive	0.5 HP / 415 volts / 50 Hz
	Conveyor Drive	0.5 HP / 415 volts / 50 Hz
	Vacuum Blower Motor	0.5 HP / 415 volts / 50 Hz
Conveyor Height		860 ± 50 mm
Change Parts		Carrousel; Bottle Guide; Vacuum Cups

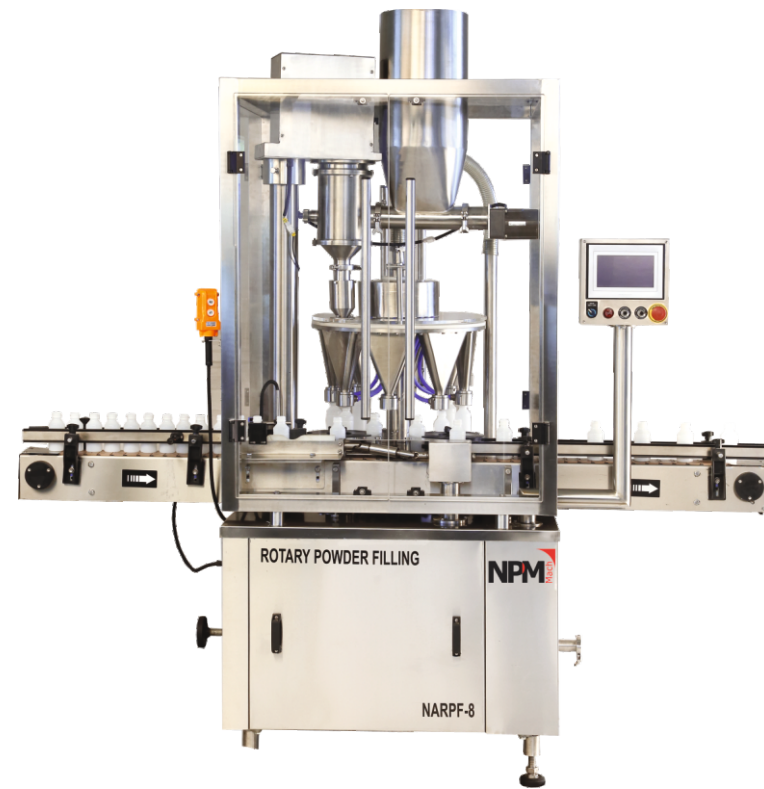
Input Specifications		
Container Neck Diameter		Minimum 22 mm
Container Size	Round	Diameter : Ø 28 mm to Ø 60 mm
		Respective Height : 60 mm to 160 mm
	Flat / Square	Length : 30 mm to 70 mm
		Width : 20 mm to 50 mm Height : 60 mm to 160 mm

Utility Requirement	
Electric Supply	3 Phase + Neutral + Earthing
Electric Load	1.5 HP
Air Consumption	8 CFM @ 4 to 6 kg

\* Depend on bottle size & condition

# AUTOMATIC ROTARY POWDER FILLING MACHINE

NARPF



NARPF - 12/2

Technical Specifications				
Model	NARPF-8	NARPF - 12/1	NARPF - 12/2	
Output / minute (on free flow powder)*	60-80 @ 15gm	100-110 @ 15gm	130-150 @ 15gm	
Number of Funnels	8	12	12	
Number of filling heads	1	1	2	
Direction of Movement	Left to Right	Left to Right	Left to Right	
Fill Size	5 to 30 gram	5 to 30 gram	5 to 30 gram	
Filling Accuracy	±3%	±3%	±3%	
Electric Specification	Main Motor	1.5 HP	1.5 HP	1.5 HP
	Servo Motor	750 w	750 w	750 w x 2 Nos.
	Stirrer Motor	90 w	90 w	90 w x 2 Nos.
	Feeder Screw Motor	90 w	90 w	90 w
	Conveyor Motor	0.5 HP	0.5 HP	0.5 HP
Height Of Conveyor	860 ± 50 mm			
Change parts required	(A) Container: Star Wheels, Back Guide, Feed Worm (B) Filling: Augur & Funnel			

Input Specifications	
Container Neck Diameter	Minimum 22 mm
Container Size	Round
	Diameter : Ø 28 mm to Ø 60 mm
	Respective Height : 60 mm to 120 mm
	Length : 30 mm to 70 mm
Flat / Square	Width : 20 mm to 50 mm
	Height : 58 mm to 120 mm

Ambient Conditions	
Temperature of the filling room	24-28 C depending upon the product nature
Humidity of the room	<45% RH depending upon the product nature
Dust Extraction	Of adequate suction power

Utility Requirement	
Electrical supply	3 Phase + Neutral + Earthing
Electrical load	3 KW      3 KW      4 KW

\* Depend on Product nature, neck size of bottle & ambient conditions

### SALIENT FEATURES

- » GMP Model based on advanced technology.
- » Faster servo based augur type filling mechanism.
- » Machine operation with PLC and Touch Screen HMI.
- » Drip & Dust free filling system.
- » Easy volume adjustment.
- » Filling Accuracy is ± 3%.
- » No Bottle – No Fill arrangement for individual filling pocket.
- » Universal coupling for quick and easy setting of In-feed worm.
- » Safety guards with interlocking for operational protection.
- » Hopper level sensor with indicator

# AUTOMATIC LINEAR AUGUR FILLING MACHINE

NAPF



Technical Specifications		
Model	NAPF-1	NAPF-2
Output / Minute (on free flow powder)*	20-35 BPM @ 20 gms	40-50 BPM @ 50 gms
Direction of movement	Left to Right	
Electric Specifications	No. of Cleaning Nozzles	01 No.      02 Nos.
	Stirrer Motor	0.5 HP- 01 No.      0.5 HP- 02 Nos.
	Conveyor Motor	0.5 HP. – 01 No.      0.5 HP- 01 No.
	Servo Motor	750 Watt – 01 No.      750 Watt – 02Nos.
Height of Conveyor (mm)	860 ± 50 mm	

### SALIENT FEATURES

- » Latest Servo driven augur mechanism
- » Drip and dust free filling mechanism
- » ± 3 % Filling accuracy on single dose.
- » Indexing or Conveyor based intermittent mechanism
- » All contact parts in SS 316
- » Adjustable height of conveyor belt.
- » Hopper level sensor with indicator
- » Automatic powder transfer system can be
- » Machine operation with PLC and Touch Screen HMI.

Ambient Conditions	
Temperature of the filling room	24-28 C depending upon the product nature
Humidity of the room	<45% RH depending upon the product nature
Dust Extraction	Of adequate suction power

Utility Requirement	
Electric Supply	3 Phase + Neutral + Earthing
Electric Load	1.5 Kw      3.0 Kw
Air Consumption	1-2 CFM @4-6 kg      2-4 CFM @4-6 kg

\* Depend on Product nature, neck size of bottle & ambient conditions

## POWDER TRANSFER SYSTEM



Technical Specifications	
MOC	316 L
Temperature range	0-60 °C
Weight	21 Kg
Finish	0.6 Ra
Feed pressure (Max.)	7 Bar
Feed pressure range	4-6 Bar
Air consumption range	10-12 CFM
Vacuum range	0.6-0.75 bar
Noise level range	69-77 dBA
Filter area	0.06 m <sup>2</sup>
Min particle size	5.0 µm
Material batch volume	3 Liter

### SALIENT FEATURES

- » Advanced system working on air flow principle
- » Easy to integrate and operate
- » Can be easily interlocked with the base system
- » Very uniform product transfer
- » Very low noise level, low power consumptions.

## DUST EXTRACTOR

Technical Specifications	
MOC	SS 316
Capacity	117 CFM
Vacuum	125 Bar
Pressure	140 Bar
Dimensions	400 x 600 x 1600mm
Electrical Specifications	1 HP / 415 V

Utility requirement	
Electrical supply	3Ø + Neutral + Earthing
Electrical load	1.11Kw

### SALIENT FEATURES

- » Compact and elegant design
- » Easy to integrate and operate with any equipment
- » Easy filter bag shaking system
- » Unique powder container removal
- » Very low noise level, low power consumptions.
- » Auto filter bag shaking (optional)



## AUTOMATIC MULTI HEAD SCREW CAPPING MACHINE

NASCM



Technical Specifications				
Model	NASCM-100	NASCM-150	NASCM-200	NASCM-250
No. of sealing head	4 Nos.	6 Nos.	8 Nos.	12 Nos.
Output/Hour*	3600 to 5000	3600 to 6500	4000 to 8000	5000 to 10000
Direction of Movement	Left to Right			
Electric Specifications	Main Motor	1.5 HP / 415 Volts / 50 Hz		2 HP / 415 Volts / 50 Hz
	Cap Feeding Bowl	300 Watt		
Height of Conveyor	860 ± 50 mm			
Change parts required	(A) Container: Star Wheel, Back Guide, Feed Worm			
	(B) Cap : Chuck, Delivery Chute, bowl & Cap Star wheel			

Input Specifications		
Screw Cap	Diameter	22 mm to 35 mm
	Height	20 to 25 mm
Container Size	Round	Diameter : Ø 28 mm to Ø 70 mm
		Respective Height : 60 mm to 160 mm
	Flat / Square	Length : 30 mm to 70 mm
		Width : 20 mm to 50 mm
		Height : 58 mm to 160 mm

Utility Requirement	
Electric Supply	3 Phase + Neutral + Earthing
Electric Load	1.5 KW
Air Consumption	0.5 CFM @ 6 kg

- Single Head Semi auto & online Auto models are available
- \* Depend on container and cap size, shape & quality

### SALIENT FEATURES

- » No container no cap arrangement
- » Rigid M.S. structure with elegantly matt finished S.S. cladding
- » Single motor synchronizes conveyor, star wheel & platform turret
- » ACVFD for speed control
- » Adjustable height of conveyor belt to align with other machines of the line
- » Unique Pick & Place type cap transfer arrangement
- » Specially designed heads for adequate torque adjustment
- » Low noise level, low power consumption
- » Universal coupling for quick and easy setting of in feed worm
- » Acrylic enclosure in SS frame (optional)
- » No cap – machine stop arrangement
- » Motorized height adjustment (optional)

# AUTOMATIC MULTI HEAD ROPP CAP SEALING MACHINE

NARCS



Technical Specifications				
Model		NARCS - 100	NARCS - 150	NARCS - 200
No. of sealing head		4	6	8
Output / Hour *		3600 to 6000	3600 to 9000	4000 to 12000
Direction of Movement		Left to Right		
Electric Specifications	Main Motor	1.5 HP / 415 Volts / 50 Hz.		2 HP / 415 Volts / 50Hz
	Cap Feeding Bowl	0.25 HP / 415 Volts / 50 Hz.		
Height of Conveyor		860 ± 50 mm		
Change parts required		A) Container: Star Wheel, Center guide, Feed Worm B) Cap: Die & Delivery Chute		

Input Specifications		
ROPP Cap	Diameter	22 mm to 32 mm
	Height	18 to 20 mm
Container Size	Round	Ø 28 mm to Ø 70 mm
		Respective Height : 60 mm to 160 mm
	Flat / Square	Length : 30 mm to 70 mm
		Width : 20 mm to 50 mm Height : 58 mm to 160 mm

Utility Requirement	
Electric Supply	3 Phase + Neutral + Earthing
Electric Load	1.5 KW

■ Single Head Semi auto & online Auto models are available  
\* Depend on container and cap size, shape & quality

## SALIENT FEATURES

- » No container no cap arrangement
- » Rigid M.S. structure with elegantly matt finished S.S. cladding
- » Single motor synchronizes conveyor, star wheel, & platform turret
- » ACVFD for speed control
- » Adjustable height of conveyor belt to align with other machine of the line
- » Sealing pressure can be varied to suit different gauges and size of caps
- » Specially designed hopper is provided to increase storage capacity of bowl
- » Low noise level, low power consumptions
- » Universal coupling for quick and easy setting of In-feed worm
- » Adjustable bottle height gauge for easy and quick setting
- » Acrylic enclosure in SS frame (optional)
- » No cap — machine stop arrangement
- » Motorized height adjustment (optional)

# INDUCTION CAP SEALING SYSTEM

Technical Specifications		
Output / Minute*	Up to 200 bottles @ 100 ml	
Seal Diameter	20mm to 80mm	
Control	User-friendly operator interface Microprocessor control	
Induction Unit consisting of	- All in one Sealing head - Self protective circuitry - Length : 5 feet - Width : 90mm - Height : 860 ± 50mm	
Conveyor Specifications	- SS structure - Delrin Chain - 0.5 HP motor with ACVFD.	
Container Size*	Round Shape	Diameter : Ø 28 mm to Ø 70 mm Respective Height : 60 mm to 160 mm
	Flat / Square	Length : 30 mm to 70 mm Width : 20 mm to 50 mm Height : 58 mm to 160 mm

Utility Requirement	
Electric Supply	3 Phase + Neutral + Earthing
Electric Load	0.5 kW

## SALIENT FEATURES

- » Air cooled system having lots of advantages on conventional water cooled system.
- » Less mechanical parts, less energy consumption, and zero maintenance.
- » Power supply with advanced IGBT circuitry.
- » Pushbutton control panel with digital meter.
- » Very compact footprint.
- » Spring mount assembly used to aid the operator in positioning the power supply over the conveyor.
- » No wad detection and rejection system (Optional)



# ONLINE WEIGHT CHECKER

Technical Specifications	
Direction	Left to Right
Speed	Available up to 200 BPM Max
Weight to be measured	5 to 100 grams
Accuracy	0.2 gram

Utility Requirement	
Electric Supply	1Ø + Neutral + Earthing
Electric Load	1 kW
Air consumption	0.5 CFM @ 4-6 kg

## SALIENT FEATURES

- » Consists of three conveyor mechanism
- » Bottle stabilizer and separator mechanism at entry (optional as per requirement)
- » Pneumatically operated diverter type rejection mechanism
- » Tower Lamp
- » MOC - SS
- » Rejection collection tray
- » 100 Product memory
- » Security level provided to ensure settings are not tampered
- » Serial communication
- » On screen statistical Data
- » High accuracy



# AUTOMATIC MEASURING / DOSING CUP PLACEMENT & PRESSING MACHINE

NMCP



# AUTOMATIC SELF ADHESIVE VERTICAL LABELING MACHINE

NASAL



### Technical Specifications

Model	NMCP - 150	NMCP - 250
Output/Minute*	Up to 120 BPM	Up to 250 BPM
Direction of Movement	Left to Right	
Electric Specifications	Conveyor Motor	0.5 HP / 415 V
	Bottle Delay Drive	0.25 HP / 415 V
	Side Belt Drives	0.25 HP / 415 V × 2
	Top Pressing Drive	0.25 HP / 415 V
	Orienter	0.25 HP / 415 V
Height of Conveyor	860 ± 50 mm	

### Input Specifications

Dosing Cup	Diameter	20 mm to 45 mm
	Height	25 mm to 40 mm
Container Size	Round	Diameter : Ø 28 mm to Ø 70 mm
		Respective Height : 58 mm to 160 mm
	Flat / Square	Length : 30 mm to 70 mm
		Width : 20 mm to 50 mm
		Height : 58 mm to 160 mm

### Utility Requirement

Electrical supply	3Ø + Neutral + Earthing
Voltage & frequency	415V / 50 Hz AC
Electrical load	2.5 kW

\* Depend on container and cup size, shape & quality

### SALIENT FEATURES

- » No container no cup arrangement.
- » SS elegantly matt finished body
- » Easy to set and operate
- » Adjustable height of conveyor belt, to align with other machine of the line.
- » Specially designed hopper for increased storage capacity.
- » Low noise level, low power consumption.
- » Unique top pressing device ensures perfect cup pressing
- » Direct cup dispensing system on container neck
- » Side belt mechanism to hold containers firmly while cup pressing
- » No container change parts required
- » No cup – Machine Stop arrangement

### Technical Specifications

Model	NASAL-150	NASAL-250
Output/Hour*	3600 to 8000 Nos	6000 to 13500
Direction of Movement	Left to Right	
Electric Specifications	Conveyor Motor	0.50 HP/ 415 Volts/ 50 Hz
	Pressing Device Motor	0.25 HP/ 220 Volts/ 50 Hz
	Sticker Roll Servo Motor	0.4 Kw Servo
	Sticker Roll Winding Motor	-
Height of Conveyor	860 ± 50 mm	

### Input Specifications

Label Specification	Length	40 mm to 140 mm
	Width	20 mm to 70 mm
	Roll Diameter	Max. 300 mm X ID 75
	Space between two lable	3 mm in anti clock wise
Container Size	Round	Ø 22 mm to Ø 70 mm
		Respective height: 40 mm to 120 mm
Minimum Thickness of Lable	70 GSM	

### Utility Requirement

Electric Supply	3 Phase + Neutral + Earthing	
Electric Load	1 kW	1.5 kW
Air Consumption	2 CFM @ 6 kg for printer or rejection device if such installed.	

\* Depend on label & container size, shape & quality

### SALIENT FEATURES

- » GMP design with complete SS structure
- » High production speed
- » PLC based operation having security package and counter
- » Product data storage facility
- » Very accurate label placement
- » Requires no bottle/label change parts
- » Very less down time for change over
- » Suitable for Glass, Pet, HDPE all kind of surfaces
- » Very compact design of applicator made of aluminium
- » Various batch code printers can be installed (optional)
- » Bar code detection, missing label detection, misprinting detection can be installed with rejection (optional)

# CONTINUOUS MOTION CARTONING MACHINE

NCC



Technical Specifications		
Model	NCC-150	NCC-200
Output / Minute*	Up to 150 CPM	Up to 200 CPM
Direction of Movement	Left to Right	
Electric Specifications	Main Motor	2 HP / 415 Volts / 50 Hz
	Vacuum Pump	1 HP / 415 Volts / 50 Hz    1.5 HP / 415 Volts / 50 Hz
Height of Conveyor	860 ± 50 mm	

Input Specifications	
Carton Length	55-65 mm for 2 chain machine
	65-180 mm for 3 chain machine
	75-210 mm for 4 chain machine
Carton Width	20 mm – 80 mm
Carton Height	15 mm – 55 mm
Carton Thickness	280 to 350 GSM (140* Pre-folded)

Utility Requirement	
Electrical supply	3 Phase + Neutral + Earthing
Electrical load	3 kW
Air Consumption	18 CFM @ 6 bar (with leaflet unit)

## SALIENT FEATURES

- » Continuous motion loading enables gradual and smooth product insertion.
- » Safety features to protect the machine against mechanical and electrical overloads.
- » Programmable operational time for key machine functions.
- » HMI enables fast and easy troubleshooting of issues reducing downtime.
- » Programmable user profiles to restrict HMI access based on user level.
- » Variable speed drive allows to match cartoning speed with upstream equipment such as a tube filling or bottle filling machine.

# TURN TABLE

NTT

Technical Specifications			
Model	NTT-30	NTT-36	NTT-42
Direction	Clockwise / Anti clock wise as per requirement		
RPM of Disk	Through ACVFD		
Electric Specification	0.5 HP / 220 V / 50 Hz		
Height of Table	860 ± 50 mm		

Input Specifications		
Container Size	Round	Diameter : Ø 22 mm to Ø 70 mm
		Respective Height : 58 mm to 160 mm

Utility Requirement	
Electrical supply	Single Phase + Neutral + Earthing
Electrical load	0.5 kW

## SALIENT FEATURES

- » Rigid MS structure with elegantly matt finished SS cladding
- » Speed control through ACVFD to match with desired line speed
- » Special self-aligning bearings ensure smooth and trouble free operation
- » Suitable for different sizes of container
- » Top plate made of aluminum



# PACKING CONVEYOR BELT

PCB



Technical Specifications	
Model	NPCB
Direction of Movement	left to right
Speed	7.5 Mtr. / Min up to 12 Feet Long
	12 Mtr. / Min from 13 Feet to 24 Feet Long
Electric Specification	0.5 HP / 220 V / 50 Hz up to 12 Feet length
Height of Conveyor	860 ± 50 mm
Belt width	9" or 12" as per requirement
Belt Detail	PVC, endless 2 ply sandwich, 2 mm thickness

Utility Requirement	
Electrical Supply	Single Phase + Neutral + Earthing
Electrical load	0.5 kW

## SALIENT FEATURES

- » Structure is made of S.S. 304, 30 mm sq. Pipe, 16 SWG with matt finish
- » Belt-alignment system for long life & aligned running of belt
- » Direct gear drive
- » Length can be made as per customer's requirement
- » Adjustable height of conveyor belt, to align with other machine of the line
- » Rigid vibration free construction for trouble free performance

■ Online Visual Bottle inspection with magnifying dome & black-white back is available



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