

the time between Filling and Sealing operations thereby greatly reducing the exposure time to ambient conditions.

A specially designed synchronized mechanical movement coupled with the conveyor belt system and a bottle staging mechanism ensures smooth running of the machine. A 'No Bottle -No Fill' arrangement through a Photo sensor prevents the spillage of liquid if the bottles are not conveyed below the filling nozzles.

The staged bottles are filled at a time with a predetermined volume. The machine has provision for fixing appropriate sizes of syringes to fill bottles of different capacities while the conveyor can be adjusted to accommodate bottles of various sizes. The machine can fill a minimum volume of 10 ml and maximum of 1000 ml by changing the syringes.

OPERATION

Cleaned empty bottles are conveyed to the filling machine through an SS Slat Conveyor. The pneumatically operated bottle stopper stops a set of bottles to fill pre-determined volume. After completing the filling operation, the stopper withdraws itself from its position and allows the filled bottles to go further on the conveyor for the sealing operations. Filled bottle picks up the cap from the cap shoe before the sealing operation.

The filling unit and the S.S. slat conveyor are provided with variable speed drive mechanisms to adjust the speed suitable for different products and bottles.

The guide rails of the slat chain conveyor can be adjusted to accommodate various shapes and diameter of bottles. A limit switch with actuator mechanism is provided to sense bottle toppling. The sealing unit is also provided with a variable speed mechanism for speed adjustment.

SALIENT FEATURES

- ⇒ Monoblock configuration with filler and capper.
- ⇒ No Bottle - no fill arrangement.
- ⇒ No Cap - no seal arrangement.
- ⇒ Production Counter.
- ⇒ Machine designed to seal ROPP / Screw/CRC caps by changing the sealing head.
- ⇒ Machine can be supplied with acrylic hood as an option.



TECHNICAL SPECIFICATIONS : Linear Liquid Filling and Capping Machines

Electricals	2-Head Filling and Single Head Sealing	4-Head Filling and 4-Head Sealing	6-Head Filling and 6-Head Sealing
Filling Unit Drive Motor	0.5 HP/415V/3 Phase	1 HP/415V/3 Phase	1.5 HP/415V/3 Phase
Sealing Unit Drive Motor	1 HP/415V/3 Phase	1.5 HP/415V/3 Phase	1.5 HP/415V/3 Phase
Sealing Head Lifting Motor	-	0.5 HP/415V/3 Phase	0.5 HP/415V/3 Phase
Overall Dimensions			
Length	3000mm	3200mm	3200 mm
Width	1000mm	1150 mm	1150 mm
Height	2200mm	2600 mm	2600 mm

MACHINES CAN BE SUPPLIED FOR 380 VOLTS 3PHASE 50 Hz OR 220 VOLTS 3PHASE 60 Hz AS PER CLIENT'S REQUIREMENTS

Anchor Mark Private Limited offers comprehensive technical consultancy and advisory assistance if required. Necessary personnel training and assistance are provided as after-sales support.

As the design and manufacture of ANCHOR MARK PRIVATE LIMITED machines are subject to continual improvement, the product supplied may differ in some details from the specifications and illustrations given herein.



Automatic Liquid Filling, Capping and Sealing Machines

AUTOMATIC LIQUID FILLING LINES

Turtable (Unscrambler)

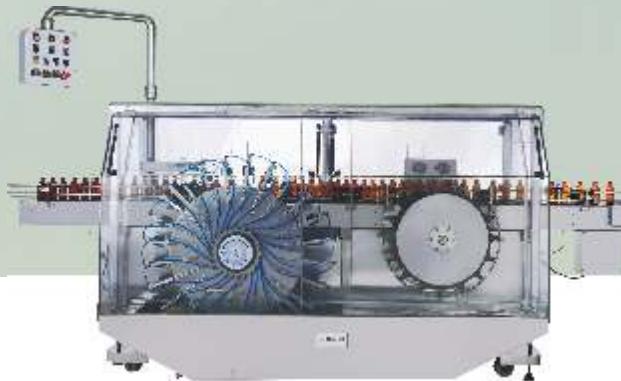
Turtable (Unscrambler) is the most convenient and versatile unit for accumulating or transferring the bottles from one machine to another and provide a continuous flow of bottles for feeding.

The Turtable works on rotary principle and is available in sizes of 30", 36" and 48" diameter.

The Turtable consists of a rotary stainless steel (S.S.) Plate. S.S. Structure, bottle guide rail with spring strip, reduction gear with motor and variable frequency drive arrangement.



Automatic Water Jet Bottle Cleaning Machine



Water Jet Bottle cleaning machine is suitable for rinsing bottles with pressurized water and/or air wash.

Machine consists of SS Slat conveyor belt and Vertical Rotary bottle infeed Carrousel wheel. The synchronized rotary carrousel wheel feeds the bottle one by one into the pocket. A nozzle is positioned directly below the bottle neck which sprays the rinsing medium i.e. pressurized fresh water, hot water and compressed air into the bottle.

After rinsing, the bottles are conveyed in upright position and transferred to discharge end of Slat Conveyor. The nozzle ensures that rinsing media reaches all bottle areas.

The bottles are passed through another Carrousel Wheel for draining the residual water from the washed bottles.

Machine is fully covered with polycarbonate hood. The machine is supplied with two monoblock centrifugal pump, water holding tank, 3 KW water immersion heater, spillage tray and necessary interconnecting pipe line. A 20 micron Cartridge Type water filter is provided for re-circulating water. Speed of the machine can be regulated through variable frequency drive provided.

Empty Bottle Inspection Unit



The unit consists of a slat conveyor, a magnifying glass and lighting arrangement.

The bottles are inspected for cracks or foreign particles while they are conveyed from the washing machine to the filling machine.

ROTOFILL-FS Series Automatic Rotary Liquid Filling, Capping and Sealing Machines

ROTOFILL-FS series works on the volumetric positive displacement principle. The Machine is a combination of Rotary type Volumetric Filling and ROPP/Screw/CRC Cap sealing arrangement to meet high-speed production requirements.

ROTOFILL-FS series are manufactured in 2, 4, 6, 8, 12, 16, 20, 24 & 28 filling head configurations.

Air Jet Bottle Cleaning Machine Vertical Carrousel Design

The Air Jet Bottle cleaning machine is suitable for rinsing bottles with compressed air and suction arrangement for dust collection.

The machine consists of a S.S. slat conveyor belt & vertical rotary carrousel wheel. Bottles are passed through the S.S. slat conveyor which feeds the bottle to the synchronized rotary carrousel wheel. Bottles are subjected to positive pressure with stage-wise filtered compressed air for blowing & loosening particulate matter, if any. Dust particles that are set loose are collected under negative pressure by the Suction Blower provided.

Online Ionizer can be provided as option for removal of static charge.

After rinsing, the bottles are conveyed in upright position and transferred to the discharge end through S.S. Slat Conveyor to the filling machine.

The machine is fully covered with an acrylic hood. The machine is provided with a dust collection chamber with filter bag and a suction blower unit inbuilt in the machine. Speed of the machine can be regulated through the Variable Frequency Drive Unit provided.



TECHNICAL SPECIFICATIONS :

Model	AJBC80	AJBC120
Output	40 to 80 BPM	80 to 120 BPM
Connected Load	4 HP	4.5 HP
Overall Dimensions (Approx) in mm	1830(L) x 1150 (W) x 1760 (H)	1830 (L) x 1150 (W) x 1760 (H)
Net Weight (Approx)	550 kg	650 kg

* The output depends on bottle / container's neck diameter.

* Input power supply is 415 volt, 3 phase, 50 cycles.

Automatic Volumetric Linear Liquid Filling, Capping & Sealing Machine



The LINOFLILL series machines are available in 2, 4 and 6-head filling unit configurations with corresponding 1, 4 and 6-head sealing unit. The Linear Filling and Rotary Sealing Units with Cap Feeding Hopper are mounted on a single body which reduces

TECHNICAL SPECIFICATIONS: Automatic Liquid Packaging Line Machines

TURNTABLE

Size	36"	48"
Main Drive	0.5 HP	1 HP
Overall Dimensions (in mm)	950 (L) x 950 (W) 1200 (H)	1250(L) x 1250 (W) 1200 (H)
Weight (net)	120 kg. approx.	130 kg. approx.

* Input power supply is 220 volt, 1 phase, 50 cycles.

EMPTY BOTTLE INSPECTION UNIT

Main Drive Motor	0.5 HP
CFL (Illumination)	11 Watt
Overall Dimensions (in mm)	(Length can vary as per room layout) x 400 (W) x 1300 (H)
Weight	100 kg. Approx.

* Input power supply is 220 volt, 1 phase, 50 cycles.

AUTOMATIC WATER JET BOTTLE WASHING MACHINE

	120 BPM	240 BPM
Main Drive Motor	1 HP	1 HP (2nos.)
Conveyor Drive Motor	0.5 HP	0.5 HP (2nos.)
Heater	3 kW	3 kW (2nos.)
Water Transfer Pump	1 HP	1 HP (2nos.)
Water Re-circulation Pump	0.25 HP	0.25 HP (2nos.)
Overall Dimensions (in mm)	3200 (L) x 1300 (W) 1750 (H)	3200(L) x 1850 (W) 1750 (H)
Weight (net)	1560 kgs. approx.	3000 kgs. approx.

* Input power supply is 415 volt, 3 phase, 50 cycles.

FILLED BOTTLE INSPECTION TABLE

Single Track Inspection Table for FS-80, FS-100 and FS-120 Machines	
Main Drive Motor	0.5 HP
CFL (Illumination)	11 Watt
Overall Dimensions (in mm)	(Length can vary as per room layout) x 610 (W) x 1300 (H)
Weight	250 kg. Approx.
Four Track Inspection Table for FS-180, FS-240, FS-300 and FS-360 Machines	
Main Drive Motor	1 HP
CFL (Illumination)	11 Watt
Overall Dimensions (in mm)	(Length can vary as per room layout) x 915 (W) x 1300 (H)
Weight	275 kg. Approx.

* Input power supply is 220 volt, 1 phase, 50 cycles.

AUTOMATIC DOSAGE CUP PLACING AND PRESSING UNIT

Main Drive Motor	1 HP
Hopper Drive Motor	0.25 HP
Overall Dimensions (in mm)	1830 (L) x 800 (W) x 2440 (H)
Weight	1250 kg. approx.

* Input power supply is 415 volt, 3 phase, 50 cycles.

Rotofill FS-360



ROTOFILL-FS series confirms to cGMP requirements as it ensures contamination-free filling because the capping is immediate after filling and does not permit exposure of the liquid.

ROTOFILL-FS series are suitable for filling and sealing products like Pharmaceuticals, Pesticides, Cosmetics, Beverages.etc.

ROTOFILL-FS series machines can be used for filling glass, PET, plastic bottles and cans etc. The design of ROTOFILL-FS series is such that it enables easy changeover and cleaning.

OPERATION

Washed empty bottles are conveyed to the machine through stainless steel (SS) slat conveyor. The infeed worm moves the bottles and feeds them into the starwheel which in turn, leads the bottles to the lifting platform of the filling section. The bottles are lifted and centred below the filling nozzles by a guide which orients the bottles below the nozzle.

The sensor provided acknowledges the presence of bottle and actuates the pneumatic cylinder to rotate the valve in the discharge position to dispense the pre-determined volume of the liquid into the bottles. A stainless steel container is fitted in the centre of the machine to transfer the liquid into the syringes mounted on rotor blocks. The liquid is transferred from the storage tank through a stainless steel pipeline connected to solenoid valve. This enables immediate filling of the liquid tank as soon as the level decrease.

Pistons of the syringes move up and down on a cam track while they suck liquid from the filler tank into the syringes through rotary valves. After the liquid fills into the bottles, the bottle-holding platform lowers the bottles and transfers them to the sealing head via the intermediate star wheel. The bottle picks up the cap from the shoe of the chute which is connected to the hopper of the capping section.

Caps can be loaded to the hopper either manually or through a cap loading unit.

As the bottles move below the sealing heads, they seal the bottles and later conveys them to the slat conveyor for onward transfer to the inspection machine.

SALIENT FEATURES

- ⇒ Can be operated by a single operator.
- ⇒ All contact parts in SS 316 or 316 L as per client's requirement.
- ⇒ Non-contact parts covered with SS 304.
- ⇒ Safety hood to prevent flying of glass particles in case of bottle breakage.
- ⇒ Rotary valve design for better accuracy of 1%.
- ⇒ Machine is designed to seal ROPP / Screw/CRC caps by changing the sealing head.
- ⇒ No bottle - No fill arrangement to avoid spillage of liquid.
- ⇒ No bottle - No cap system to avoid wastage of liquid.
- ⇒ Solenoid valve to control the level of the liquid in the filler tank.
- ⇒ The production counter facilitates estimation of the exact production at the end of the shift/ day.
- ⇒ Programmable Logic Control (PLC) and HMI with display and hooter system to identify fault or malfunctioning of the machine.
- ⇒ TRIROLLER ROPP Capping Heads available as option.
- ⇒ Automatic dosage adjustment arrangement through servo motor controls available as option.
- ⇒ Vibratory Cap Feeder available as option.
- ⇒ Automatic Cap Loading unit available as option.



Cap Loading Unit



Filled Bottle Inspection table

The filled bottles are conveyed to the slat conveyor of the inspection unit. The bottles pass through the inspection unit in a tilted position and rotate through a specially designed conveyor track. The unit is provided with magnifying glass and a lighting arrangement. Since the bottles are rotating in a tilted position, the operator inspecting the bottles can identify any foreign particles, cap rejection and cracks in the bottles without picking them. The rejected bottles are picked up and kept in a separate rejection tray provided at the side of the inspection table.



Automatic Dosage Cup Placing and Pressing Machine

The Dosage Cup Placing machine consists of stainless steel slat conveyor, rotary hopper, chute with shoe and cup pressing rollers. The speed can be controlled thorough the variable frequency drive provided. After inspection, the sealed bottles are conveyed to the Dosage Cup Placing and Pressing machine where dosage cups are placed on the sealed bottles and pressed by the pressing rollers. The bottles are then conveyed onward to packing line.

Vibratory Cap Feeder available as option.

Automatic Liquid Filling, Capping & Sealing Machines



ROTOFILL FS-120

ROTOFILL FS-180

TECHNICAL SPECIFICATIONS: ROTARY LIQUID FILLING, CAPPING AND SEALING (MONOBLOCK) MACHINES

Model	FS-40	FS-80	FS-100	FS-120	FS-180	FS-240	FS-300	FS-360
Main Drive Motor	1 H.P.	2 H.P.	2 H.P.	3 H.P.	3 H.P.	5 H.P.	5 H.P.	5 H.P.
Sealing Head Lifting Motor *	-	0.5 H.P.	0.5 H.P.	0.5 H.P.	0.5 H.P.	0.5 H.P.	0.5 H.P.	0.5 H.P.
Hopper Motor*	0.25 H.P.	-	-	-	-	-	-	-
No. of Filling Heads	2	4	6	8	12	16	20	24
No. of Sealing Heads	1	4	6	8	8	12	12	16
Output	25 -40 (BPM)	40 -80 (BPM)	60 -100 (BPM)	80 -120 (BPM)	100 -180 (BPM)	150 -240 (BPM)	180 -300 (BPM)	240 -360 (BPM)
Overall Dimensions								
Length	1830 mm	2500 mm	2500 mm	2500 mm	2500 mm	3815 mm	3815 mm	4700 mm
Width	950mm	1300 mm	1300 mm	1400 mm	1625 mm	2050 mm	2300 mm	2630 mm
Height	2240mm	2500 mm	2500 mm	2500 mm	2500 mm	2650mm	2650mm	2650mm
Weight	1500 Kg	2150 Kg	2250 Kg	3000 Kg	3250 Kg	4250 Kg	5000 Kg	6000 Kg

* All motors are 415 Volts. 3 phase, 50 cycles, 1440 RPM

POWER SUPPLY:

3 Phase, 415 Volts, 50 Hz

FILLING RANGE:

15ml. to 500 ml.

ACCURACY:

±1 % of the volume to be filled

DIRECTION OF MOVEMENT:

Left to Right.

BOTTLE SPECIFICATIONS

Body Diameter: 28mm to 75mm

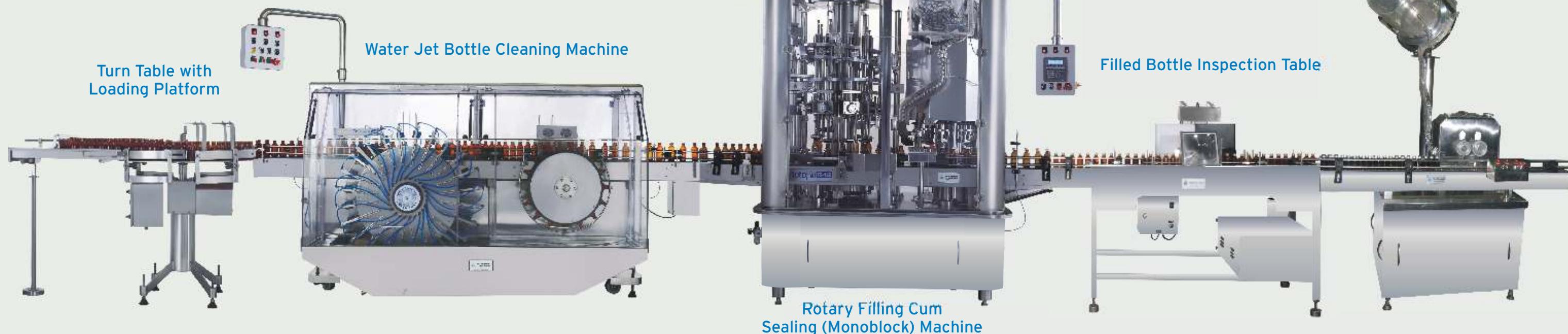
Bottle Neck Diameter: 22 mm, 25mm, 28mm & 32 mm

Height: 55 mm to 200 mm ±1mm

* Appropriate change parts with syringes are required for different fill volumes and bottle sizes.

Typical Liquid Filling and Capping Line

Dosage Cup Placing and Pressing Machine



Turn Table with Loading Platform

Water Jet Bottle Cleaning Machine

Rotary Filling Cum Sealing (Monoblock) Machine

Filled Bottle Inspection Table