



# BEST ENTERPRISES

## COUNT-FILL-1703



## MATCHBOX FILLING MACHINE

*World's First Matchstick Counting System*

[www.bestenterprises.in](http://www.bestenterprises.in)



**2016** was the year when we launched the world's first matchstick counting system, that revolutionised the way matchsticks are filled. In match industries **maintaining the right stick count** is essential to pass quality checks, boost the brand value and to maximise savings.

**OTHER** filling systems (online-filling and volumetric-filling) still struggle to maintain the exact stick count, leading to undercount of sticks. When compensating for this error, **2 or 3 extra sticks are packed** into many matchboxes, which adds to a significant wastage of matchsticks.



## WHY COUNTING BASED FILLING?

Our counting system uses high quality imaging setup and real-time image processing algorithm to maintain an astounding counting speed of 325 matchsticks/second. This leads to an industry leading **counting accuracy\* of +/-2 sticks in almost every matchbox**, even at the production speed of 28 strokes/minute.

The advantages of our counting based filling system are listed below.



### Accuracy\*

+/- 2 sticks per matchbox, 98% average count per carton.



### Savings

If you save one extra stick per matchbox, it leads to saving up to 3 Lakh rupees per month.



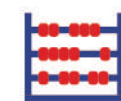
### No under-count problem\*

With counting based filling your brands can pass stringent quality checks.



### Suitable for slim boxes (20s and 25s)

You can accurately fill slim and compact boxes with stick counts of 20, 22, 25 etc



### Exact stick count

You can exactly set 39 or 40 or 41 or whatever stick count you want with the click of a button, which is not possible in volumetric filling.



### Higher tolerance to quality of sticks

Head size, roughness and weight of sticks can significantly affect the count in volumetric filling, but they are not much of a problem in counting based filling.

# SAVINGS FROM COUNTING UNIT

The biggest problem with conventional filling process is **under-count** issue. Even in online filling machines there will be under-filling because dipping machines cannot achieve 100% stick charging. To counter this problem the average count must be increased.

## Safe-Filling-Average (SFA)

The minimum stick count average required by the filling process to avoid under-count quality issues.

For example, in a volumetric filling machine making **Avg 30's matchbox**, if the counting plate is set for 30 sticks it can result in some boxes filled with 25 or 26 sticks. This leads to quality issues. So instead of setting at 30, the counting plate will be set for 34 sticks so that even if a box is under filled, it will not be lesser than 28. Even though this solves the quality issues, now the average of overall production will be increased to 34. So the safe-filling-average (SFA) of that filling machine is 34.

Which means in most of the boxes 33 or 34 sticks will be packed instead of the mentioned 30. This results in stick wastage of **more than 2 Lakh rupees every month**. Whereas in counting-based filling, there will be no under-count problem. So, you can confidently maintain the set count to 30 or even 29. Which leads to a significant amount of savings.

## Monthly savings comparison chart

Duration	Matchboxes filled	30 Avg		32 Average Count		33 Average Count		34 Average Count	
		Stick cost		Stick cost	Savings Avg32-Avg30	Stick cost	Savings Avg33-Avg30	Stick cost	Savings Avg34-Avg30
Per box	1	0.200		0.213	0.013	0.220	0.020	0.227	0.027
Per minute	476	95		102	6	105	10	108	13
Per hour	28,560	5,712		6,093	381	6,283	571	6,474	762
Per shift (8 hours)	2,28,480	45,696		48,742	3,046	50,266	4,570	51,789	6,093
Per day (16 hours)	4,56,960	91,392		97,485	6,093	1,00,531	9,139	1,03,578	12,186
Per month (25 days)	1,14,24,000	22,84,800		24,37,120	1,52,320	25,13,280	2,28,480	25,89,440	3,04,640

As you can see, by upgrading from a volumetric filling system with a safe-filling-average of 34 sticks, to a counting based filling system with a safe-filling-average of 30 sticks, you could **save up to 3 Lakh Rupees every month**.

## Safe-Filling-Average of a 30's matchbox

VOLUMETRIC FILLING	COUNT FILLING
30 to 35	29 to 31
STICK COST*	
Stick Type	Matti Kerala
Length	40 mm
Sticks / Kg	12,000
Cost / Kg (in Rupees)	80
Cost / Stick (in Rupees)*	0.006666667

\*Stick cost is calculated in May 2024 from vendors at Kovilpatti, Tamilnadu.



# OUTER BOX FEEDING UNIT

There are 2 types of outer feeding systems, **smart-camera based** and **PC based**. The smart-camera based systems are complex for a basic user. We at Best Enterprises developed the PC based system with our own custom software, which is very simple and user-friendly.

Below we have listed the highlights and advantages of our PC based outer feeding system.

-  **Add new brands in 2 minutes**  
Smart-camera systems take **30 minutes to 1 hour** to add new brands, but it only takes **2 minutes** in our PC based system.
-  **No need for an additional laptop**  
Smart-camera systems need a separate laptop and a skilled programmer for adding new brands.
-  **Simple UI**  
Anyone with basic knowledge of a computer can use our software to add new brands.
-  **Privacy of brand information**  
In smart-camera systems you must involve a third-party programmer when adding new brands. So you cannot maintain secrecy of your brand design.
-  **No storage limits**  
Basic smart-camera systems can only save upto 32 brands. But our system can save thousands of brands.
-  **Can handle complex brands**  
Our AI based algorithm can handle complex brands with almost-identical\* front and back designs.

## MACHINE SPECIFICATION

### VARIANTS

Model	Stick Length	Sticks per Box	Production Per Hour
40S-40L	39 to 42 mm	50 sticks	46 bundles
50S-46L	46 to 48 mm	50 sticks	43 bundles
70S-40L	39 to 42 mm	70 sticks	30 bundles

\*One bundle = 600 matchbox.

### PRODUCTION SPECIFICATION

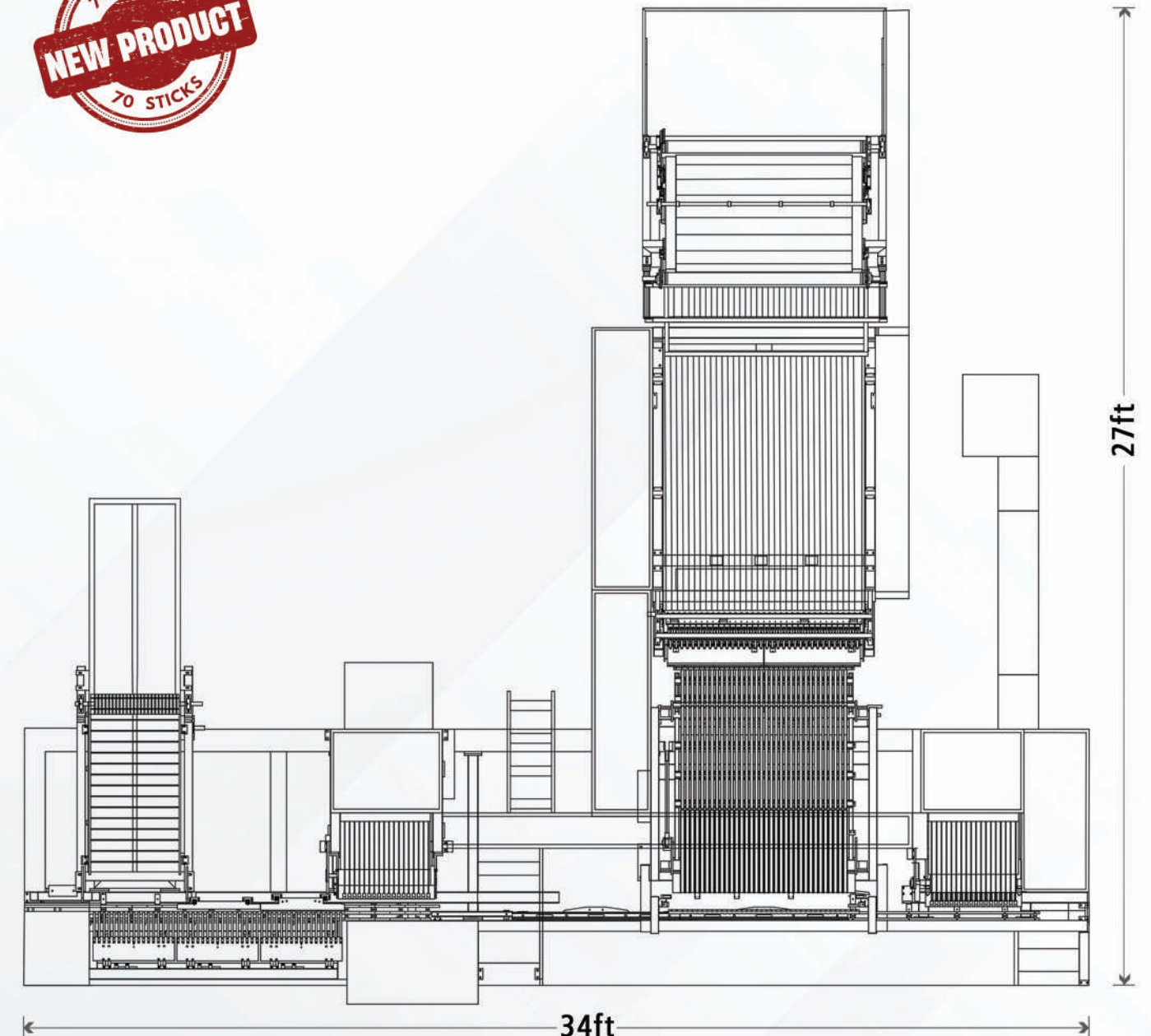
Machine Production Speed	25 - 30	Strokes Per Min.
Boxes Per Stroke	17	Boxes
Boxes Per Minute @ 25 Strokes	425	Boxes
Boxes Per Minute @ 30 Strokes	510	Boxes
Count Accuracy	± 2	Sticks Per Box

### TECHNICAL SPECIFICATION

Width x Length x Height	34 x 27 x 13 ft
Electrical Power	14 HP (3Phase, 415 V)
Minimum Air Pressure	6 Bar / 87 psi
Compressor Power	7.5 HP / 5.5 kW

If you are looking for a matchstick filling machine with remarkable production capacity, solid build quality, class-leading counting accuracy and reliable after-sales service, then look no further than our **COUNT-FILL-1703** matchstick counting and filling machine.

## MACHINE LAYOUT





TOP 10

**PACKAGING MACHINERY  
MANUFACTURERS**

2024

## ABOUT US

### Experts in Automated Vision Systems

We are in the field of Industrial Automation for over 22 years and in the last 10 years we have specialised in vision systems.

### Field Proven

Our vision systems are live in matchstick filling machines for over 7 years. Our clients have given repeat orders and positive feedback, citing the savings from accurate counting, superior design and dependable long-term support.

### Support

At our Kovilpatti branch, we have a skilled workforce of over 10+ members, including engineers, technicians, and fabricators, who are capable of resolving most issues within a few hours. Additionally, we maintain stock of necessary spares on site to minimize downtime.

### Premium Components

We use superior parts from leading manufacturers, some of them are listed below.



Enabling an Intelligent Planet



## BEST ENTERPRISES



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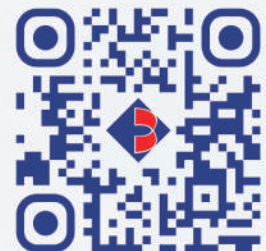
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