

CAM-SHELL
SEMI-AUTOMATIC SCREEN PRINTING MACHINE



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Grafica Flextronica takes pride in introducing the finest, most flexible range of trouble free flatbed screen printing machine. "**CAM-SHELL**" is easy to set up, easy to control, heavy duty and durable construction gives maximum stability at full production speed with top quality prints and with accuracy required for high quality screen printing. Squeegee head on solid steel shaft with linear bearing motion give accurate and vibration free squeegee movement is designed with outstanding features your benefits. Fast set up reliable **production**: An important factor necessary to achieve high productivity is fast set up times is designed for fast and easy set up. The machine is designed for easy control & to minimize down time and keep the machine fully operational at all times.

STANDARD FEATURES:

Fully adjustable squeegee and flood have synchronized vertical movement, pneumatically operated. Squeegee pressure and angle is fully adjustable. Perfect print result with accurate squeegee pressure for uniform deposit across the entire printing area. Calibrated air pressure regulator unit with meter.

Adjustable squeegee & flood stroke via two sliding sensors located on top of the machine allow an easy and quick adjustment for squeegee & flood stroke length

Adjustable squeegee & flood speed via AC geared motor (pre lubricated) coupled with AC frequency inverter (sensor less vector control inverter to maintain constant torque and constant speed). This system offers the possibility of infinite variable and independent print and flood speeds

Adjustable squeegee skew angle

Honey comb vacuum bed heavy duty with stainless steel top, perfectly flat and rigid vacuum base.

Three operating cycles automatic with dwell timer, single cycle and manual Independent motors for vacuum & printing

Safety bar

Micro registration for printing table, micrometer screws assure accuracy with 3 point control to easily and quickly adjust to copy registration

Squeegee pressure equalizer for perfect print result & accurate repeatable ink deposit can be achieved by a pneumatic squeegee pressure equalizer. This device which uses pneumatic pressure to equalize squeegee pressure along the squeegee rubber

Heavy duty extruded squeegee holder gives equal pressure ensures even ink thickness all over the printing area

Special aluminum extruded flood bar designed to give good ink release all over the screen. This helps reduce ink thickness and increase the quality of fine lines and halftone printing. For ceramic inks hard stainless steel blade is provided to increase the life of flood bar and maintains proper ink thickness all over

Cycle Counter to check the print runs with resetting option

Two print cycles i.e. print and flood or flood and print

Heavy duty and durable construction ensures vibration free operation and accurate printing at full production speed

Adjustable peel off system with variable timer ensures good & sharp print results

Castor wheel for easy mobility

COMPARE THIS HIGH-TECH FEATURE TO THE COMPETITION WHICH IS INTRODUCED FOR THE FIRST TIME

Man machine interface with programmable logical controller

Soft touch keyboard

Four lines LCD display

User friendly operating panel with help menu

Multiple printing strokes with flood without flood. This feature allows operator to program the cycle for printing more than one time on same object with flood or without flooding screen with ink after every print cycle. Print cycle is programmable from 1 to 9

Flood options this feature allows operator to program flood option i.e. flood screen after every three print cycle or not to flood the screen after three print cycle. Print cycle is programmable from 1 to 9

OPTIONAL FEATURES:

Auto take off system

With Light Table

TECHNICAL DATA:

	GF-2030 CS	GF-3040 CS	GF-4060 CS
Print Area	20" x 30"	30" x 40"	40" X 60"
Screen Frame Size	Min 20" x 22" OD Max 36" x 46" OD	Min 20" x 22" OD Max 46" x 56" OD	Min 20" x 22" OD Max 64" x 84" OD
Screen Frame Thickness	1" ~ 1.5"	1" ~ 1.5"	1.5" ~ 2"
Bed Size	38" x 48"	47" x 55"	58" x 86"
Bed Movement	± 10 mm	± 10 mm	± 10 mm
Printable Object Thickness	0 ~ 20 mm	0 ~ 20 mm	0 ~ 20 mm
Cycle Speed (Non-Stop)	1000 / Hour	1000 / Hour	650 / Hour
Compressed Air	Max. 6 kg / cm ² / 5.5 Lit / Min	Max. 6 kg / cm ² / 5.5 Lit / Min	Max 10kg / cm ²
Power Supply (Servo Stabilized)	220 V AC / 32 Amps / 1 PH / 50 Hz	220 V AC / 32 Amps / 1 PH / 50 Hz	220 V AC / 32 Amps / 1 PH / 50 Hz
Power Consumption	4.5 HP / 3.7 kW	4.5 HP / 3.7 kW	6 HP / 5 kW
Overall Dimension	6.0' (L) x 6.5' (D) x 4.5' (H)	6.0' (L) x 6.5' (D) x 4.5' (H)	8.2' (L) x 7.8' (D) x 4.5' (H)

- Technical data subject to change without notice
- We accept any custom sized orders
- Air Compressor, Servo Stabilizer, Squeegee Rubber, Screen Frame and other consumables are not Supplied along with the machine, should be Procure before Installation By the Customer (Cost to Customer Account)

GRAFICA FLEXTRONICA

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ARE YOU UNABLE TO KEEP MINIMUM OFF-CONTACT DISTANCE OF 2 ~ 3 MM ON YOUR EXISTING PRESS

Grafica Flextronica introduces for the first time a unique aluminum frame profile which allows screen printers to overcome the problem of higher off contact on our Screen Printing Machines.

As usual the frame is rested on top of the frame holder as shown in Fig 1. Normally the frame holder ranges from 3 ~ 5 mm thick to have good stability. Also one has to ensure that the frame holder should not bang with the vacuum bed, hence some gap is kept which further increases the off contact distance between the substrate and the fabric. In this case the off contact ranges from 4.0 ~ 6.5 mm minimum. If one uses metalized polyester or high tension screens than off contact of 2 ~ 3 mm is impossible. It is also difficult to maintain minimum off contact distance when printing smaller substrates on large presses. As in case of sun board, sun pack and acrylic of 1.5 ~ 3.0 mm thick high off contact is automatically avoided due to material thickness but not in case of paper or thin materials.

In some case even other screen printing machine manufactures design the equipment where the maximum recommended frame size is bigger than the vacuum bed so that minimum off contact can be maintained and the frame holder do not bang the vacuum bed. But for this reason it becomes difficult for the operator to slide the off contact sliding scale to adjust the off contact distance between the frame and the substrate.

Considering all the above factors this aluminum profile has been designed extensively for our screen printing machines only where there are three advantages for the screen printers.

1. Slot provided in the aluminum section so that the frame can be pushed in the frame holder easily (see Fig 2). As all our new machines are now designed with front loading option where it also reduces job change over time.
2. Minimum off contact is possible as we use the slot to rest the frame (see Fig 2). Hence no obstruction from the bottom which causes higher off contact.
3. We provide vacuum bed size same as per recommended maximum frame size so that sliding the off contact adjustment scale becomes more convenient.

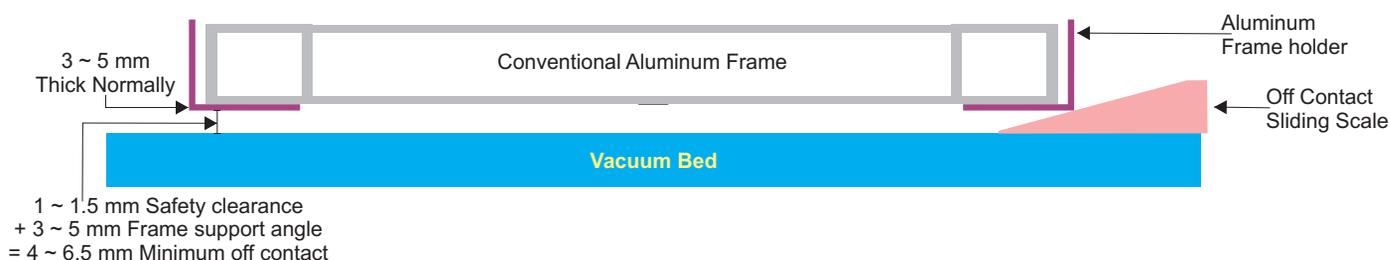


Fig 1

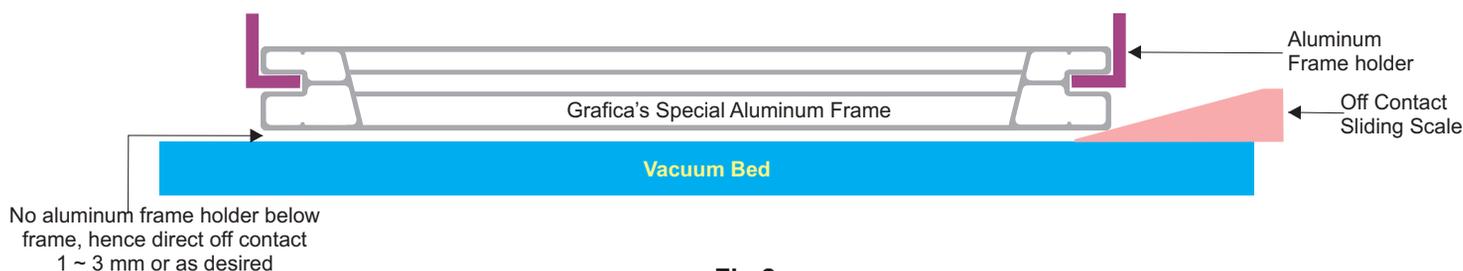


Fig 2

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ADVANCE FLOOD BAR™

After a long research analysis it takes pride to introduce our **Advance Flood Bar™** concept in all our screen printing presses.

Our **Advance Flood Bar™** eliminates these crucial and major problems faced by today's challenging screen printing industry. Where price matters a lot.

1. Smudgy prints
2. Ink smearing
3. Excess ink deposition
4. Uneven ink film layer
5. Voids/Skipping
6. Loss of sharpness
7. Dot gain and much more...

In today's competitive world one has to control a lot on rejections which mainly occur due to lack of proper tools used in screen printing process. One of the major tools in screen printing process that has always been neglected by screen printers is a flood bar.

Majority of screen printers does not pay much attention towards flooding process and flood bars, for manual screen printing squeegees are normally used in place of flood bars.

Most essentials to every screen printing press are the ability to flood stroke. A flood stroke is easily accomplished by coating the inside of the screen uniformly without forcing the ink through the screen. Flooding the screen ensures wetting and proper ink supply to every part of the screen. Programmable flooding options is a standard feature in few of our screen presses and is most useful for halftone printing to control proper deposit of ink and extreme sharpness of the dot structure.

The purpose of flooding the ink is to uniformly fill the open mesh apertures with ink prior to the print stroke. Proper flooding helps to produce a uniform ink layer on the print, while retarding any ink residue that remains from previous print strokes from drying into the thread crossings in the open mesh due to solvent evaporation.

These four main factors which has a major and direct impact on the print results:

Flood Bar Edge Shape Most flood bar are thin metal or plastic bar that spreads a thin film of ink uniformly over the printing screen, in the opposite direction of and preceding the printing stroke. The profile of the flood bar edge, whether sharp or rounded, will affect quality. Any variance in edge evenness, or other imperfection, will produce inconsistent flood coat action.

Flood Bar Angle The angle of the flood bar during printing affects the amount of ink deposited and the quality of printing.

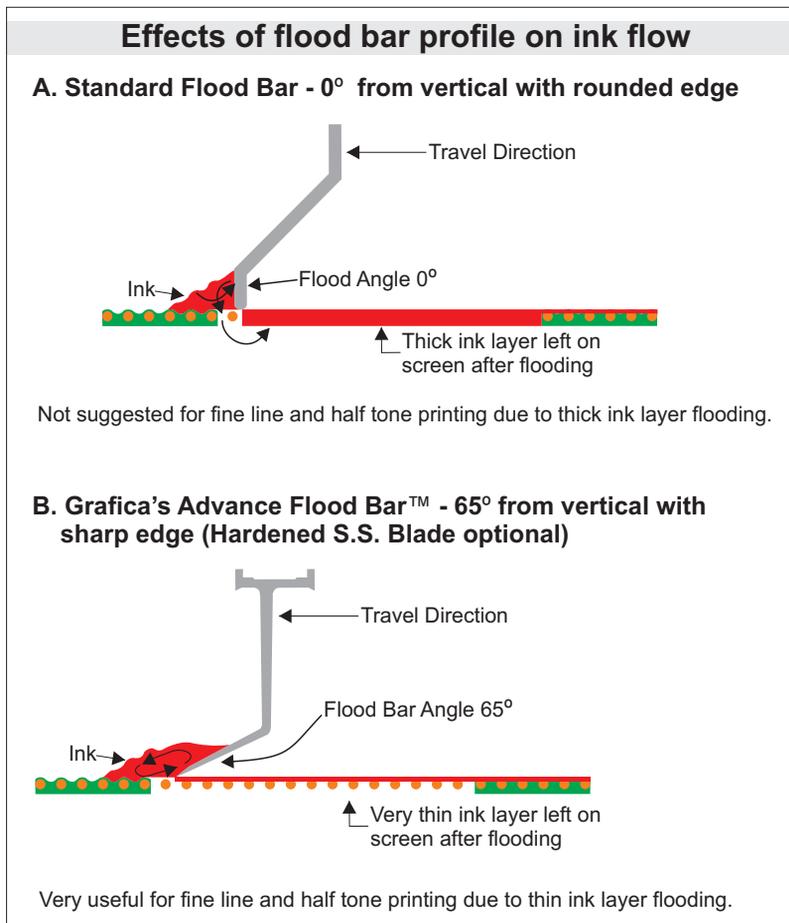


Fig. 1

ADVANCE FLOOD BAR™

Flood Bar Stroke Speed The speed of the flood bar, either fast or slow movement, affects the quality and amount of ink deposited.

Flood Bar Pressure The pressure of the flood bar affects uniformity of the flood coat, ink deposit and final image quality.

The function of the flood bar (known sometimes as a flood coater, flood blade or scraper) is intended to refill or coat the screen by pushing back the ink to the start of the image in readiness to begin the next print cycle.

Unfortunately, this flooding action is one of the most misunderstood operations in the entire process when combating on press distortion and unacceptable print quality. This particular device has almost the same degree of ink control as that of a squeegee, yet it is often looked upon for none other than what the name implies "a weird looking thing that simply floods the screen."

Normally other press manufacturers supply flood bars by positioning a metal blade to flood the screen at zero degrees vertical (perpendicular to the screen, Fig. 1 A), will essentially push the printing ink and leaving a thick layer on top of the mesh. The specific amount left relates directly to the flood bars settings, such as: speed, pressure, angle, etc. In most cases, these settings are considered for large print areas, reversed out copies and the like. One should consider that under normal circumstances, most so called "standard" type flood bars inflict more pressure to the screen than is genuinely needed. The real amount is rarely quantified and subsequently will contribute to inconsistent ink deposition. The squeegee will deposit any ink laying on top of the screen, in addition to the ink outside the fabric/stencil openings. Of course, it cannot deposit more than the amount left, but it could transfer a lot less if the correct parameters were set.

When printing fine line, halftone work, it's another story. Our **Advance Flood Bar™** is specifically profiled with 65 degree angle and if in conjunction with appropriate speed and pressure, one could then reduce the total quantity of ink left on the screen down to a more manageable amount without pushing any through the mesh (Fig. 1 B). After all is said and done, the squeegee will print the surplus the flood bar leaves behind, on, and inside the screen. It cannot transfer more than what is present, but if a suitable flooding condition was set to reduce the quantity, the squeegee would then print a much lighter deposit without having to make changes affecting the blade's physical state.

This exemplified nicely how the flood bar functions by its profile shape; pressure, angle and speed can be just as important as the squeegee, requiring deposit flexibility with various surface finishes. The flood bar has another startling advantage over a squeegee. Any adjustments made to the squeegee once printing has started will always affect registration in one form or another, but changing any of the flood bar settings (or profile shape) will not influence registration. This is because lengthy flooding simply takes place without substrate contact, which is of course, outside the printing part of the print cycle. Therefore, when attempting to enhance image definition or coating deposit during the print run, consider the flood bar adjustments first. Do not underestimate the flood bar significance as major benefits to improve print behavior and quality. The flood bar is a very powerful tool. It can be an enormous benefit providing it is used correctly.

A practical trial has shown that it becomes difficult to measure the amount of ink film laid by zero degree vertical flood bar after flooding the screen. Even by using our **Advance Flood Bar™** one cannot measure the ink film layer, but can definitely understand the pressure set by visually seeing after flooding the screen, which in normal course is difficult with zero degree vertical flood bar as this leaves a thick layer of ink where one cannot see the image after flooding due to ink filled over the screen but with our **Advance Flood Bar™** one can almost see the image clearly after flooding the ink and can judge the pressure as **Advance Flood Bar™** leaves a very thin layer of ink film thickness over the screen. This in some percentage helps the operator to maintain repetition accuracy, which in turn maintains quality and consistency whenever the job is reprinted.

Using our Advance Flood Bar™ with UV inks plays major roll in reducing ink consumption and gains control on deposition of ink film layer, increases quality consistency, increases production speed due to lesser ink deposition which in turn enhances curing time, maintains dot gain in long production runs and color consistency.

For ceramic inks we a special flood bar design which has a hardened s. s. blade for better and longer durability.

GRAFICA FLEXTRONICA

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