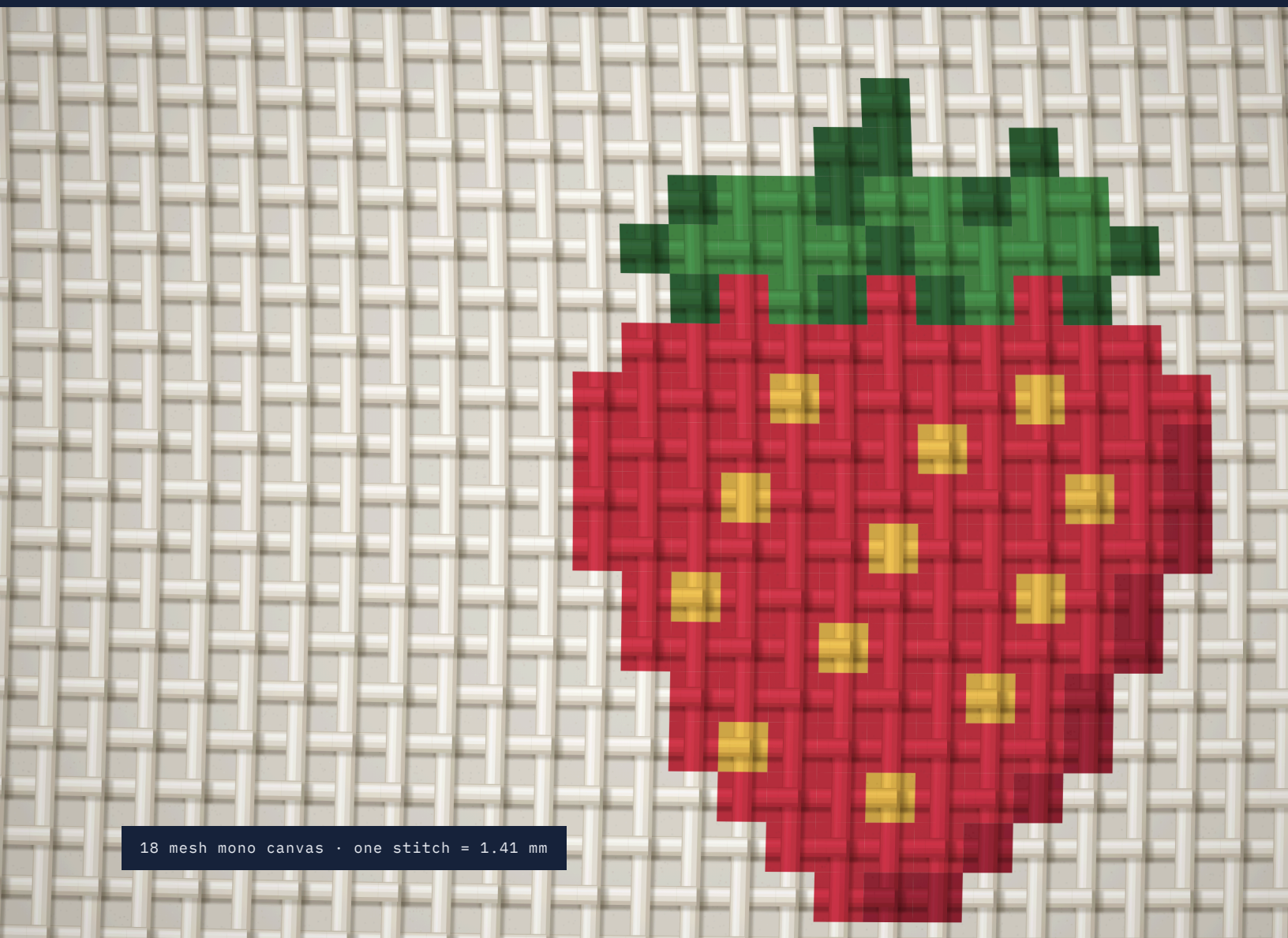
MeshMatch

Private beta · 2026

Every color on its own stitch.

MeshMatch Studio measures the canvas taped to your xTool, fits your design to its real threads, and hands xTool Studio a print that lands where it should, even when the canvas is warped.

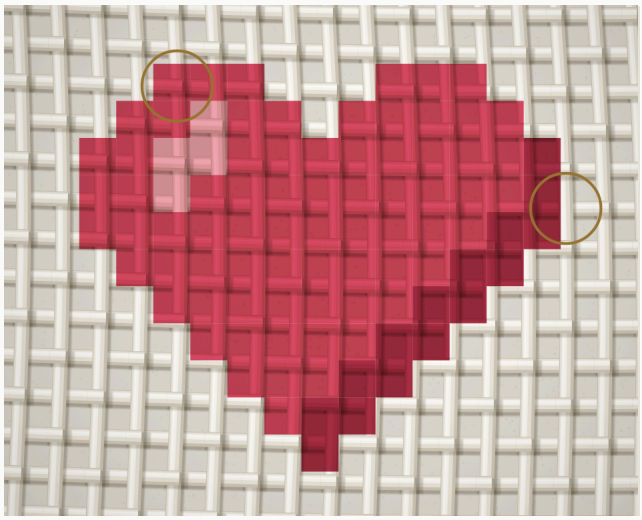


18 mesh mono canvas · one stitch = 1.41 mm

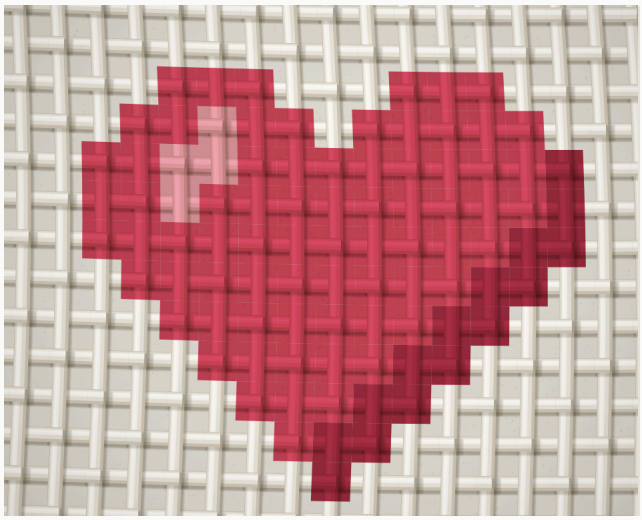
WHY WE MADE IT

Real canvas is never quite square.

An xTool prints exactly where it's told. The trouble is the canvas. Taped to the bed, it skews and bows, and its threads are never quite where the label says. A design printed straight from xTool Studio starts on its stitches and drifts off them as it goes.



Printed straight On its stitches at the top left (circled), half a stitch off by the bottom right.



Printed with MeshMatch Every color follows the threads it belongs to.

17.69

threads per inch on canvas sold as 18 mesh. Two we measured came in at 17.64 and 17.69.

1 mm

of drift across three inches when a design is printed straight. One stitch is 1.41 mm.

±0.35 mm

of room for each color on 18 mesh before it reaches the next stitch.

$75+

for a good blank canvas, so one misprint can cost more than the design.

The old ways

Print the design on paper, lay the canvas over it, nudge and tape. Or print straight and hope, then touch up by hand. Both take time and a steady eye, and neither accounts for a canvas that measures 17.69 instead of 18 or bows toward one corner.

What we wanted

Tape the canvas down, take one set of photos, and have every color land on its own stitch the first time, with no paper to line up and no numbers to type. We built MeshMatch to do that, together with StitchJLM, a needlepoint shop that prints its own canvases on an xTool M2.

HOW IT WORKS

From taped canvas to print

MeshMatch Studio runs beside xTool Studio on your Mac and uses your xTool's own close-up camera, so there's nothing extra to buy. The canvas stays taped in place from the photos to the print.

1

MeshMatch Studio
Setup

Pick your design

Drop in a pixel-art PNG. MeshMatch checks it's one color per stitch, removes a solid background, tidies stray shades, and lays out color swatches and your shop logo if you want them.

2

xTool Studio
Canvas Capture

Tape the canvas and press Close-up stitching

In xTool Studio, drag the box a little past every edge of the canvas. MeshMatch picks up the photos the moment Studio saves them.

3

MeshMatch Studio
Mesh Analysis, Match

MeshMatch finds every thread

Mesh Analysis shows the canvas outline, its size and its real thread count. The Match Engine fits your design to this canvas's own threads, centered by thread count and following any warp.

4

MeshMatch Studio
Match Preview

See it on your canvas, then check everything

Match Preview lays the design over the photo of your actual canvas, with a close-up loupe, and lists every check. If one fails, you can't print until it's fixed, and the message says how to fix it.

5

xTool Studio
Print

Open in xTool Studio and print

The job opens in xTool Studio already placed, sized and locked, set to ink printing. There are no coordinates to type and nothing to resize. Accept Studio's height measurement and press print.

ONCE PER MACHINE

A five-minute machine test on a blank scrap of canvas measures where your xTool's ink head prints and where each ink color lands. MeshMatch keeps a separate result for each machine, and won't hand you a print from a machine that hasn't had its test.

FEATURES

What MeshMatch takes care of

The checks a canvas painter would make by eye, done for you on the canvas you just taped down.

FIT

Follows the real threads

MeshMatch measures the canvas you taped down, including its real thread count and any skew or bow, and fits the design to it. Stitch 50 lands as close as stitch 1.

LAYOUT

Centered by thread count

The design goes in the middle of the canvas, counted in threads the way a stitcher would count it.

EXTRAS

Swatches and your logo in the corners

One swatch per color, with like colors grouped, and your shop logo, each in the corner you choose, 25 mm from the canvas's real corner. MeshMatch finds that corner even under the finishing tape.

DESIGNS

Cleaned up before printing

If a design was saved on white or as a JPG, MeshMatch removes the background (you can switch this off) and merges near-duplicate shades back into the color you drew.

HAND-OFF

Opens in xTool Studio, already placed

Right position and size, locked and set to ink printing. In one of our tests, typing the position by hand put a correct plan 0.2 to 0.35 mm low. With MeshMatch there's nothing to type.

CHECKS

Holds back a bad print

Machine set up, canvas blank, whole canvas in the photos, mesh matches the design, design fits, extras clear of the tape, threads found under the design. A failed check stops the print and says how to fix it.

MACHINE

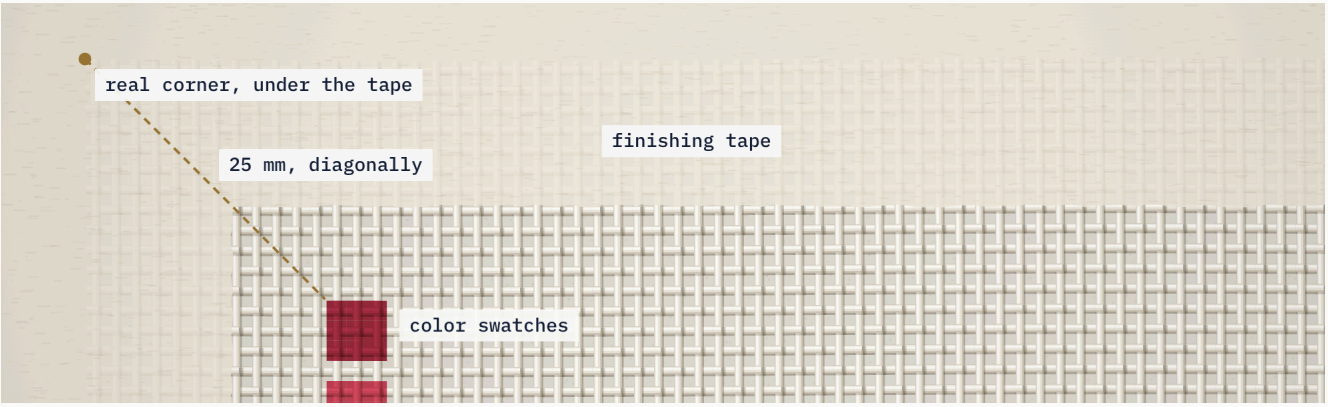
A setup for each machine

The machine test measures where your xTool prints and where each of eight ink colors lands next to black. Each machine keeps its own result.

INK

Fills the whole stitch

Ink can land a little short of a stitch's edges. The optional ink fill test lets you draw colors slightly wider to cover it. Where two colors meet, the darker one keeps its edge.



A canvas corner, to scale The real edge sits under the finishing tape, several threads past the last clear thread. Swatches and logo are measured from that corner, diagonally.

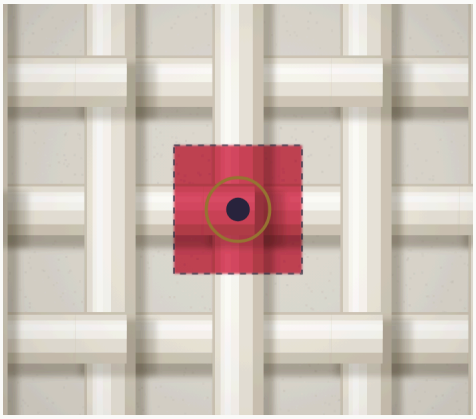
RESULTS

Measured stitch by stitch

After each test print we photograph the canvas again and measure where the ink landed compared with the threads it was meant for.

0.13 mm

Median distance between a stitch's ink and its thread crossing, across 382 single stitches of a 53 × 53 design on a real canvas. 98% landed within 0.35 mm.



- Half of all stitches landed inside the small circle
- 98% inside the large one. The square is one stitch.

TEST ON AN XTOOL M2	RESULT
Holiday sweater tree, after the machine test, opened directly in xTool Studio	red edges centered on their stitches
Reindeer sweater, 53 × 53 stitches with swatches and logo, on "18 mesh" canvas that measured 17.69	98% within 0.35 mm median 0.13 mm
A dot on every crossing across three inches	median 0.20 mm
Eight ink colors, each measured against black beside it	all within 0.1 mm
Reindeer rows on a canvas lifted at one edge	up to 0.55 mm off

The last row is why MeshMatch asks you to tape every edge. A canvas that lifts off the bed is the biggest source of error left; the M2 itself is accurate to about ±0.2 mm.

FIELD GUIDE

Printing needlepoint on an xTool

What we learned from measuring hundreds of printed stitches. MeshMatch handles much of this for you. The rest is habit, and most of it applies whatever software you use.

THE CANVAS

Tape every edge flat

A canvas lifted at one edge printed up to 0.55 mm off top to bottom. Flat on the paper with every edge taped matters more than anything else here.

Start on blank canvas

Old ink hides threads. For tests, a 4 inch blank scrap is all you need.

Box past every edge

Drag Close-up stitching a little past all four sides. A canvas edge outside the photos means its center and corners can't be found.

BETWEEN PHOTO AND PRINT

Don't touch the canvas

It's measured where it lies. If it moves, the measurement no longer matches it.

Take a fresh capture every time

Each Close-up stitching capture replaces the last. Printing from photos of an earlier canvas puts the design in the wrong place.

Let Studio measure the height

When the job opens, xTool Studio offers to measure the canvas height. Accept it; the ink head needs to know where the canvas is.

Avoid typing coordinates

A correctly planned print, typed by hand, landed 0.2 to 0.35 mm low. A job that opens already placed and locked avoids that.

YOUR DESIGNS

Draw for the mesh you print on

An 18 mesh design belongs on 18 mesh canvas. Real canvas often measures a little off its label, which is fine when the print follows the actual threads.

One block of color per stitch

Pixel art, one solid color per stitch, ideally 300 dpi for 18 mesh, on a transparent background. Smoothed or resized art blurs across stitches.

Keep extras clear of the tape

Finishing tape covers about 12 mm. Real canvas runs 7 to 11 mm past the threads you can see clearly, so measure swatch and logo spacing from the real corner.

YOUR MACHINE

Calibrate each machine

Where the ink head prints compared with the camera is measured per machine, not assumed. Test each one, and again after it's moved or serviced. Colors can sit a little apart too: we've seen dark green about 0.2 mm higher than red.

Ink lands a little short

Round threads leave ink 0.07 to 0.33 mm short of a stitch's side edges. Drawing colors a little wider, by an amount you pick by eye from a test card, fills the crossing.

WHO IT'S FOR

For makers and shops printing on an xTool M2

Makers

You stitch your own designs and want them printed right the first time, without having to learn the technical side of your printer.

Needlepoint shops

You print canvases to sell. MeshMatch adds your logo and color swatches the same way on every canvas, catches problems before they cost you a canvas, and Print again starts the next copy of a best seller from the last one.

How it compares	Print straight from xTool Studio	Paper, then align and tape	MeshMatch
Follows a warped or skewed canvas	No	By eye	**Thread by thread**
Uses the canvas's real thread count	No	By eye	**Measured**
Design centered by thread count	No	By hand	**Automatic**
Swatches and logo a set distance from the corner	By hand	By hand	**Automatic**
Each machine calibrated, every ink checked	No	No	**Yes**
Stops a bad print before it happens	No	No	**Seven checks**
Numbers to type	X and Y	X and Y	**None**

WORKS WITH

xTool M2 with the inkjet module, xTool Studio (free from xTool), and a Mac.

TESTED ON

18 mesh mono canvas so far. Other canvas types are in testing.

COMING NEXT

Windows, 13 and 10 mesh, interlock and ecru canvas, then more xTool machines, starting with the O1 Omni.

PLANS

Monthly subscription

One monthly price covers every canvas you print and every feature. Support for new canvas types and machines is included as it's added.

FOUNDING MEMBERS

MeshMatch Studio monthly

Private beta members lock in a founding-member rate. Shops running several machines can ask us about a shop plan.

- Unlimited canvases
- Color swatches and your shop logo
- Opens in xTool Studio, placed and locked
- New canvas types and machines as they're added
- Every check, preview and close-up loupe
- Machine test and ink fill test for each machine
- Projects, print history and Print again
- Email support from people who print needlepoint

What do I need?

An xTool M2 with the inkjet module, xTool Studio, a Mac, blank canvas, and designs as pixel-art PNGs. For setup, a blank scrap about 4 by 4 inches.

Does MeshMatch control my xTool?

No. MeshMatch prepares the job and xTool Studio prints it, the same way you print today.

Do I need extra hardware?

No. MeshMatch uses your xTool's own close-up camera through Close-up stitching in xTool Studio.

Can I use my own designs?

Yes. Any pixel-art design with one color per stitch. MeshMatch checks it and cleans up backgrounds and stray shades.

How accurate is it?

On real 18 mesh canvas, 98% of stitches within 0.35 mm and a median of 0.13 mm. Tape every edge flat for results like these.

What happens to my photos?

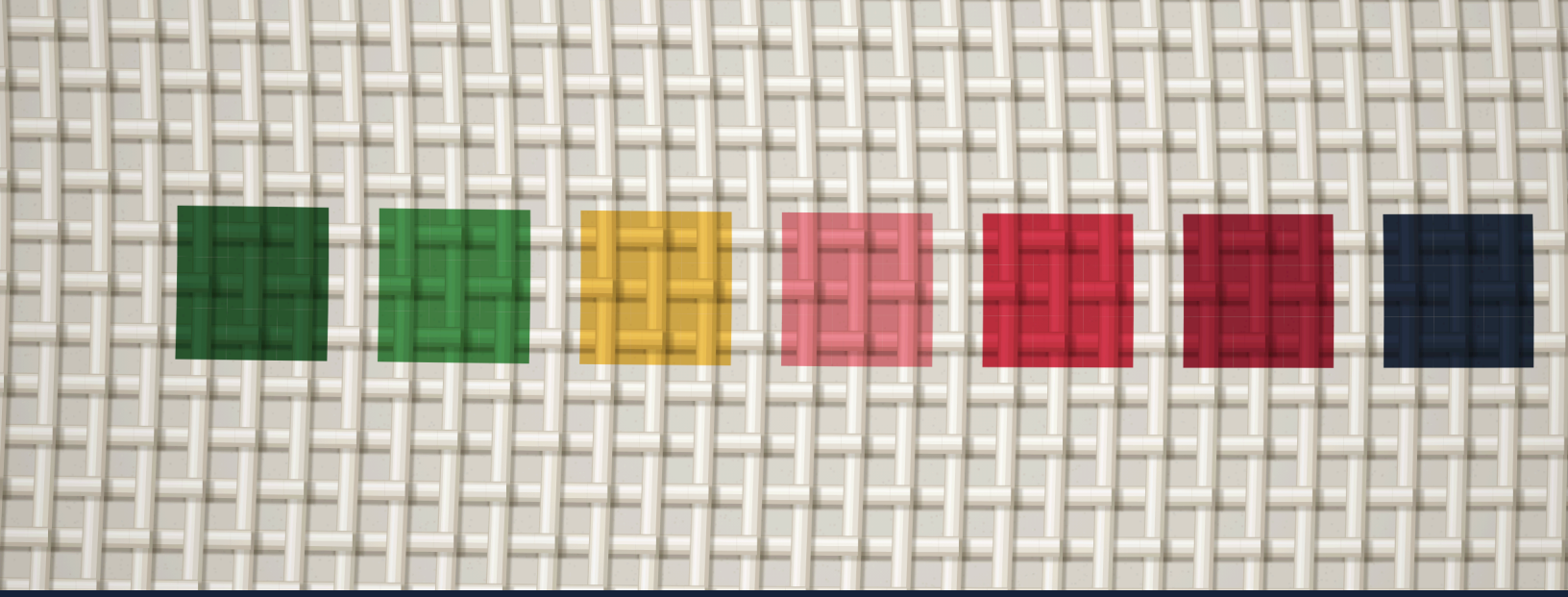
Your canvas photos are used only to fit your design. Any that reach our server are deleted within a day. Your designs stay yours.

Is my machine supported?

The M2 with the inkjet module, today. The O1 Omni is next. Tell us what you print on; that decides what comes after.

Can I cancel?

Yes. It's month to month.



Join the private beta.

MeshMatch is opening to a small group of needlepoint makers and shops with an xTool M2. Beta members lock in founding-member pricing.

WRITE TO US

hello@stitchjlm.com

Tell us your xTool model and the canvas you use most.

MeshMatch

MeshMatch is independent software and is not affiliated with or endorsed by xTool. xTool, xTool M2 and xTool Studio are trademarks of their respective owners. Results are from tests on an xTool M2 with 18 mesh mono canvas; yours depend on canvas, machine and setup. Canvas pictures are illustrations. © 2026 MeshMatch. All rights reserved.