

RETICLE RED TUTORIAL

Depth Studio

**Photos into 16-bit depth maps,
height maps into STL and OBJ solids.**

Recorded on the live site · a star plaque relief

reticle-red.com/depth-studio

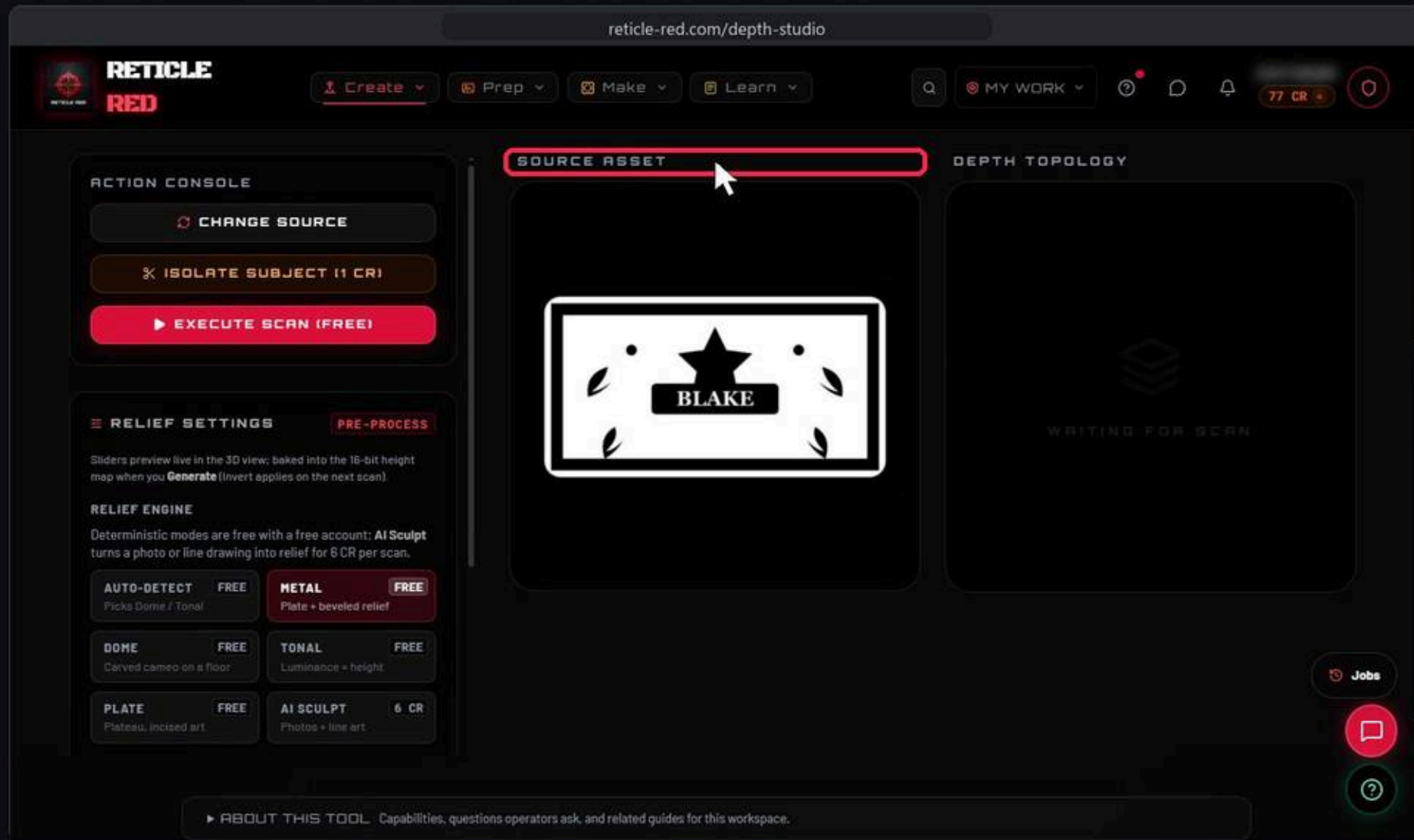
PART 1 OF 2

From a photo

Engines, pre-process settings, a free scan and the 16-bit PNG

RETICLE RED · DEPTH STUDIO TUTORIAL

From a photo — Engines, pre-process settings, a free scan and the 16-bit PNG



STEP 1 OF 5

From Photo

A photo or line drawing, JPG or PNG, up to 2048 px.

The star plaque sample.

CLOSE-UP

SOURCE ASSET

RETICLE RED · DEPTH STUDIO TUTORIAL

From a photo — Engines, pre-process settings, a free scan and the 16-bit PNG

reticle-red.com/depth-studio

**RETICLE
RED**

Create

Prep

Make

Learn

Q

MY WORK

?

77 CR

map when you **Generate** (Invert applies on the next scan)

RELIEF ENGINE

Deterministic modes are free with a free account: **AI Sculpt** turns a photo or line drawing into relief for 6 CR per scan.

AUTO-DETECT

FREE

Picks Dome / Tonal

METAL

FREE

Plate + beveled relief

DOME

FREE

Carved cameo on a floor

TONAL

FREE

Luminance + height

PLATE

FREE

Plateau, incised art

AI SCULPT

6 CR

Photos + line art

SMOOTHING

0PX

RELIEF CONTRAST

1.0

Height contrast curve. Below 1 lifts low reliefs (more raised material); above 1 deepens valleys for a crisper engraving.

EDGE BEZEL (ROUND)

0PX

Circular fade to the floor at the edge — the struck-medallion look that also prevents charring at the rim. Leave at 0 for rectangular work.

INVERT DEPTH

Reversed engraving (not ink) instead of raised relief

SOURCE ASSET



DEPTH TOPOLOGY



Jobs

?

► ABOUT THIS TOOL

Capabilities, questions operators ask, and related guides for this workspace.

STEP 2 OF 5

Relief Engine

Auto-Detect, Metal, Dome, Tonal, Plate: free.

AI Sculpt: 6 CR (Fast or HD Relief).

CLOSE-UP

RELIEF ENGINE

Deterministic modes are free with a free account: **AI Sculpt** turns a photo or line drawing into relief for 6 CR per scan.

AUTO-DETECT	FREE	METAL	FREE
Picks Dome / Tonal		Plate + beveled relief	
DOME	FREE	TONAL	FREE
Carved cameo on a floor		Luminance + height	
PLATE	FREE	AI SCULPT	6 CR
Plateau, incised art		Photos + line art	

RETICLE RED · DEPTH STUDIO TUTORIAL

From a photo — Engines, pre-process settings, a free scan and the 16-bit PNG

**RETICLE
RED**

Create

Prep

Make

Learn

Q

MY WORK

?

77 CR

map when you **Generate** (Invert applies on the next scan).

RELIEF ENGINE

Deterministic modes are free with a free account: **AI Sculpt** turns a photo or line drawing into relief for 6 CR per scan.

AUTO-DETECT **FREE**
Picks Dome / Tonal

METAL **FREE**
Plate + beveled relief

DOME **FREE**
Carved cameo on a floor

TONAL **FREE**
Luminance = height

PLATE **FREE**
Plateau, incised art

AI SCULPT **6 CR**
Photos + line art

SMOOTHING

8PX

RELIEF CONTRAST

1.0

Height contrast curve. Below 1 lifts low reliefs (more raised material); above 1 deepens valleys for a crisper engraving.

EDGE BEZEL (ROUND)

0PX

Circular fade to the floor at the edge — the struck-medallion look that also prevents charring at the rim. Leave at 0 for rectangular work.

INVERT DEPTH

Recessed engraving (cut in) instead of raised relief.

SOURCE ASSET



DEPTH TOPOLOGY



Jobs

► ABOUT THIS TOOL

Capabilities, questions operators ask, and related guides for this workspace.

STEP 3 OF 5

Pre-process settings

Smoothing, Relief Contrast, Edge Bezel.

Invert Depth: a recessed engraving.

CLOSE-UP

map when you **Generate** (Invert applies on the next scan).

RELIEF ENGINE

Deterministic modes are free with a free account: **AI Sculpt** turns a photo or line drawing into relief for 6 CR per scan.

AUTO-DETECT **FREE**
Picks Dome / Tonal

METAL **FREE**
Plate + beveled relief

DOME **FREE**
Carved cameo on a floor

TONAL **FREE**
Luminance = height

PLATE **FREE**
Plateau, incised art

AI SCULPT **6 CR**
Photos + line art

SMOOTHING

8PX

RELIEF CONTRAST

1.0

Height contrast curve. Below 1 lifts low reliefs (more raised material); above 1 deepens valleys for a crisper engraving.

EDGE BEZEL (ROUND)

0PX

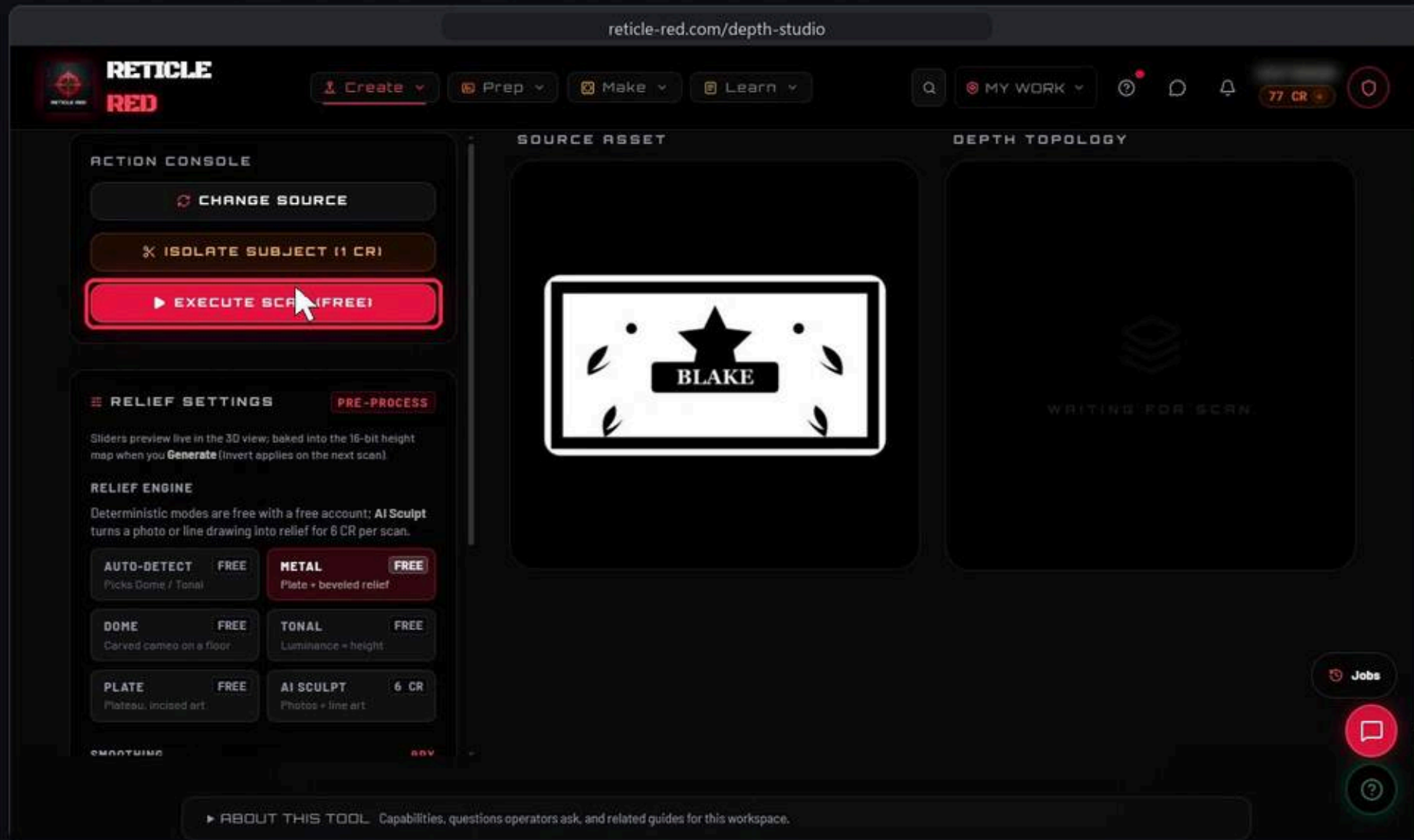
Circular fade to the floor at the edge — the struck-medallion look that also prevents charring at the rim. Leave at 0 for rectangular work.

INVERT DEPTH

Recessed engraving (cut in) instead of raised relief.

RETICLE RED · DEPTH STUDIO TUTORIAL

From a photo — Engines, pre-process settings, a free scan and the 16-bit PNG



STEP 4 OF 5

EXECUTE SCAN (FREE)

Every scan runs on our servers: a free account.

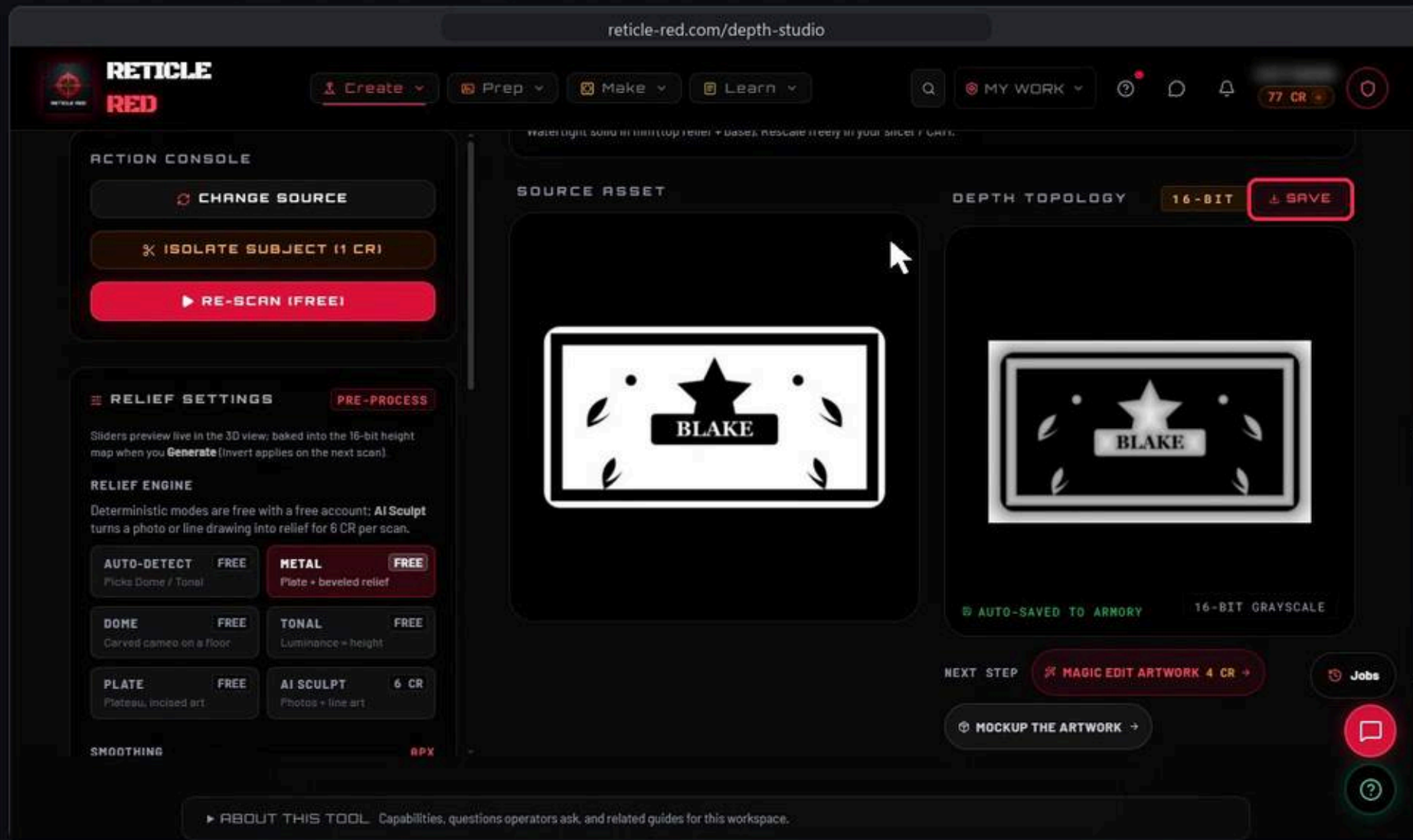
Metal is free.

CLOSE-UP

▶ EXECUTE SCAN (FREE)

RETICLE RED · DEPTH STUDIO TUTORIAL

From a photo — Engines, pre-process settings, a free scan and the 16-bit PNG



STEP 5 OF 5

SAVE: the 16-bit PNG

Grayscale, 16-bit.

LightBurn: Grayscale, or 3D Slice mode.

CLOSE-UP



PART 2 OF 2

Test a depth map

3D preview, remap, invert and the STL/OBJ mesh export

RETICLE RED · DEPTH STUDIO TUTORIAL

Test a depth map — 3D preview, remap, invert and the STL/OBJ mesh export

The screenshot displays the Reticle Red Depth Studio web application interface. At the top, the URL is `reticle-red.com/depth-studio`. The navigation bar includes the Reticle Red logo, a 'Create' dropdown, and buttons for 'Prep', 'Make', and 'Learn'. A search icon and a 'MY WORK' dropdown are also present, along with a user profile icon showing '77 CR'. The main interface is divided into several sections:

- FROM PHOTO / TEST DEPTH MAP:** Two tabs at the top, with 'TEST DEPTH MAP' selected and highlighted with a red box.
- SEE REAL ENGRAVINGS + SETTINGS FROM OPERATORS →:** A link below the tabs.
- ACTION CONSOLE:** Located on the left, it contains three buttons: 'CHANGE SOURCE', 'ISOLATE SUBJECT (1 CR)', and 'RE-SCAN (FREE)'.
- RELIEF SETTINGS:** A section on the left with a 'PRE-PROCESS' toggle. It includes a note about sliders previewing live in the 3D view. Below this are four options: 'AUTO-DETECT' (FREE), 'METAL' (FREE), 'DOME' (FREE), and 'TONAL' (FREE), each with a brief description.
- WORKSPACE VISUALIZER:** The central area, featuring a 3D view toggle set to '2D'. It includes an 'EXPORT 3D MESH' section with sliders for 'RELIEF HEIGHT' (set to 12 mm) and 'OUTPUT SIZE (LONG EDGE)' (set to 100 mm). Below these sliders, the output solid dimensions are shown as `~100 × 56.3 × 15 mm (W × H × height, incl. 3 mm base)`. There are buttons for 'STL' and 'OBJ' exports. A note states: 'Watertight solid in mm (top relief + base). Rescale freely in your slicer / CAM.'
- SOURCE ASSET / DEPTH TOPOLOGY:** Two sections at the bottom right, with '16-BIT' selected under 'DEPTH TOPOLOGY'.
- Footer:** A link 'ABOUT THIS TOOL' with the text 'Capabilities, questions operators ask, and related guides for this workspace.'

STEP 6 OF 11

Test Depth Map

Free, no account.

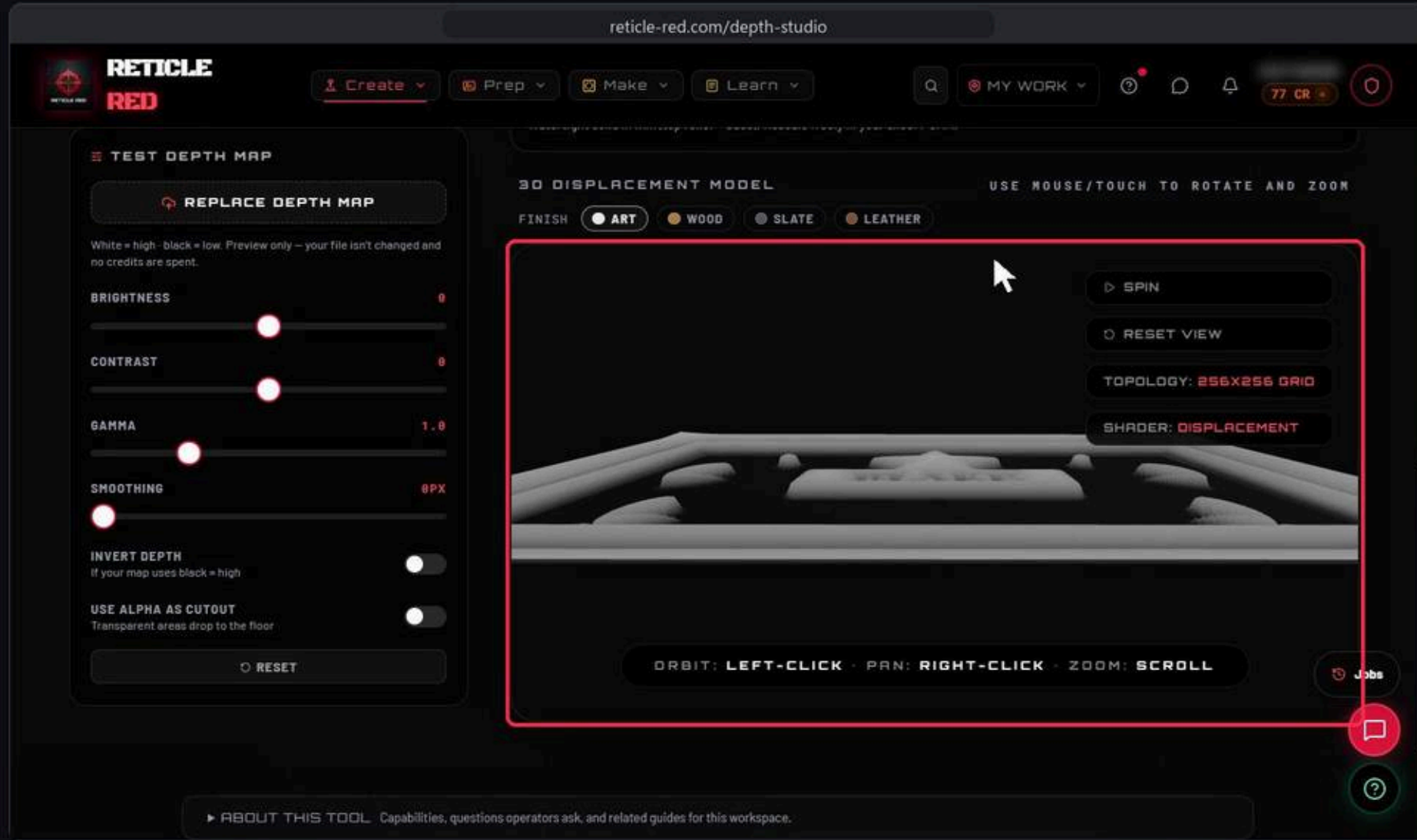
White = high, black = low. Your file isn't changed.

CLOSE-UP

TEST DEPTH MAP

RETICLE RED · DEPTH STUDIO TUTORIAL

Test a depth map — 3D preview, remap, invert and the STL/OBJ mesh export



STEP 7 OF 11

3D preview

Finishes: Art, Wood, Slate, Leather.

Pause, drag to orbit, Reset 3D view.

CLOSE-UP



RETICLE RED · DEPTH STUDIO TUTORIAL

Test a depth map — 3D preview, remap, invert and the STL/OBJ mesh export

The screenshot shows the Reticle Red Depth Studio interface. The top navigation bar includes the Reticle Red logo, a 'Create' button, and tabs for 'Prep', 'Make', and 'Learn'. A search bar and a 'MY WORK' button are also present. The main interface is divided into two main sections. On the left, a panel titled 'TEST DEPTH MAP' is highlighted with a red border. This panel contains a 'REPLACE DEPTH MAP' button, a text description 'White = high - black = low. Preview only — your file isn't changed and no credits are spent.', and four sliders: 'BRIGHTNESS' (set to 0), 'CONTRAST' (set to 0), 'GAMMA' (set to 1.0), and 'SMOOTHING' (set to 8PX). Below these sliders are two toggle switches: 'INVERT DEPTH' (disabled) and 'USE ALPHA AS CUTOUT' (disabled). A 'RESET' button is at the bottom of this panel. The central area displays a '3D DISPLACEMENT MODEL' of a mechanical part. Above the model, there's a note: 'Watertight solid in mm (top relief + base). Rescale freely in your slicer / CAM.' Below the model, there are buttons for 'FINISH' (ART, WOOD, SLATE, LEATHER), 'SPIN', 'RESET VIEW', 'TOPOLOGY: 256X256 GRID', and 'SHADER: DISPLACEMENT'. At the bottom of the central area, there's a control bar with 'ORBIT: LEFT-CLICK', 'PAN: RIGHT-CLICK', and 'ZOOM: SCROLL'. A 'Jobs' button is located at the bottom right of the central area. The bottom of the interface has a link to 'ABOUT THIS TOOL'.

STEP 8 OF 11

Brightness, Contrast, Gamma, Smoothing

Remaps the values live.

CLOSE-UP

This is a close-up view of the 'TEST DEPTH MAP' panel. It shows the 'REPLACE DEPTH MAP' button, the text 'White = high - black = low. Preview only — your file isn't changed and no credits are spent.', and the four sliders: 'BRIGHTNESS' (set to 0), 'CONTRAST' (set to 0), 'GAMMA' (set to 1.0), and 'SMOOTHING' (set to 8PX). Below these sliders are two toggle switches: 'INVERT DEPTH' (disabled) and 'USE ALPHA AS CUTOUT' (disabled). A 'RESET' button is at the bottom of the panel.

RETICLE RED · DEPTH STUDIO TUTORIAL

Test a depth map — 3D preview, remap, invert and the STL/OBJ mesh export

The screenshot shows the Reticle Red Depth Studio interface. The top navigation bar includes the Reticle Red logo, a 'Create' dropdown, and buttons for 'Prep', 'Make', and 'Learn'. A search icon and a 'MY WORK' dropdown are also present. The main interface is divided into two main sections. On the left, the 'TEST DEPTH MAP' panel is highlighted with a red border. It contains a 'REPLACE DEPTH MAP' button, a warning message, and sliders for 'BRIGHTNESS', 'CONTRAST', 'GAMMA', and 'SMOOTHING'. Below these are two toggle switches: 'INVERT DEPTH' and 'USE ALPHA AS CUTOUT'. A 'RESET' button is at the bottom of this panel. The central area displays a '3D DISPLACEMENT MODEL' of a mechanical part. Above the model are buttons for 'FINISH' (ART, WOOD, SLATE, LEATHER) and a 'USE MOUSE/TOUCH TO ROTATE AND ZOOM' instruction. To the right of the model are buttons for 'SPIN', 'RESET VIEW', 'TOPOLOGY: 256X256 GRID', and 'SHADER: DISPLACEMENT'. Below the model, a control bar shows 'ORBIT: LEFT-CLICK · PAN: RIGHT-CLICK · ZOOM: SCROLL'. At the bottom right, there are buttons for 'Jobs', a chat icon, and a help icon. A footer link 'ABOUT THIS TOOL' is at the bottom left.

reticle-red.com/depth-studio

RETICLE RED

Create Prep Make Learn

MY WORK

77 CR

TEST DEPTH MAP

REPLACE DEPTH MAP

White = high · black = low. Preview only — your file isn't changed and no credits are spent.

BRIGHTNESS 0

CONTRAST 0

GAMMA 1.0

SMOOTHING 8PX

INVERT DEPTH If your map uses black = high

USE ALPHA AS CUTOUT Transparent areas drop to the floor

RESET

3D DISPLACEMENT MODEL

USE MOUSE/TOUCH TO ROTATE AND ZOOM

FINISH ART WOOD SLATE LEATHER

SPIN

RESET VIEW

TOPOLOGY: 256X256 GRID

SHADER: DISPLACEMENT

ORBIT: LEFT-CLICK · PAN: RIGHT-CLICK · ZOOM: SCROLL

Jobs

ABOUT THIS TOOL Capabilities, questions operators ask, and related guides for this workspace.

STEP 9 OF 11

Invert Depth · Use Alpha as Cutout

For maps that use black for high.

CLOSE-UP

This is a close-up view of the 'TEST DEPTH MAP' panel. It shows the 'REPLACE DEPTH MAP' button, the warning message, and the sliders for 'BRIGHTNESS', 'CONTRAST', 'GAMMA', and 'SMOOTHING'. The 'INVERT DEPTH' and 'USE ALPHA AS CUTOUT' toggle switches are also visible, along with the 'RESET' button at the bottom.

TEST DEPTH MAP

REPLACE DEPTH MAP

White = high · black = low. Preview only — your file isn't changed and no credits are spent.

BRIGHTNESS 0

CONTRAST 0

GAMMA 1.0

SMOOTHING 8PX

INVERT DEPTH If your map uses black = high

USE ALPHA AS CUTOUT Transparent areas drop to the floor

RESET

RETICLE RED · DEPTH STUDIO TUTORIAL

Test a depth map — 3D preview, remap, invert and the STL/OBJ mesh export

The screenshot shows the Reticle Red Depth Studio interface. The top navigation bar includes the Reticle Red logo, a 'Create' dropdown, and buttons for 'Prep', 'Make', and 'Learn'. A search icon and a 'MY WORK' dropdown are also present. The main interface is divided into two main sections: 'TEST DEPTH MAP' on the left and 'EXPORT 3D MESH' on the right. The 'TEST DEPTH MAP' section includes a 'REPLACE DEPTH MAP' button, a text box explaining that white represents high and black represents low, and sliders for 'BRIGHTNESS', 'CONTRAST', 'GAMMA', and 'SMOOTHING'. There are also toggle switches for 'INVERT DEPTH' and 'USE ALPHA AS CUTOUT', and a 'RESET' button. The 'EXPORT 3D MESH' section is highlighted with a red box and contains a 'RELIEF HEIGHT' slider set to 12 mm, an 'OUTPUT SIZE (LONG EDGE)' slider set to 100 mm, and a text box showing the output solid dimensions: ~100 x 56.3 x 15 mm (W x H x height, incl. 3 mm base). Below this are buttons for 'STL' and 'OBJ' export. The bottom section of the interface includes a '3D DISPLACEMENT MODEL' with a 'FINISH' dropdown (set to 'ART'), a 'SPIN' button, a 'RESET VIEW' button, and a 'TOPOLOGY: 256X256 GRID' label. A 'Jobs' button and a help icon are also visible.

reticle-red.com/depth-studio

RETICLE RED

Create Prep Make Learn

MY WORK

77 CR

TEST DEPTH MAP

REPLACE DEPTH MAP

White = high · black = low. Preview only — your file isn't changed and no credits are spent.

BRIGHTNESS 0

CONTRAST 0

GAMMA 1.0

SMOOTHING 8PX

INVERT DEPTH If your map uses black = high

USE ALPHA AS CUTOUT Transparent areas drop to the floor

RESET

EXPORT 3D MESH

RELIEF HEIGHT 12 MM

OUTPUT SIZE (LONG EDGE) 100 MM

Output solid: ~100 × 56.3 × 15 mm (W × H × height, incl. 3 mm base)

STL OBJ

Watertight solid in mm (top relief + base). Rescale freely in your slicer / CAM.

3D DISPLACEMENT MODEL USE MOUSE/TOUCH TO ROTATE AND ZOOM

FINISH ART WOOD SLATE LEATHER

SPIN

RESET VIEW

TOPOLOGY: 256X256 GRID

Jobs

ABOUT THIS TOOL Capabilities, questions operators ask, and related guides for this workspace.

STEP 10 OF 11

Export 3D Mesh

Relief Height 2–40 mm on a 3 mm base.

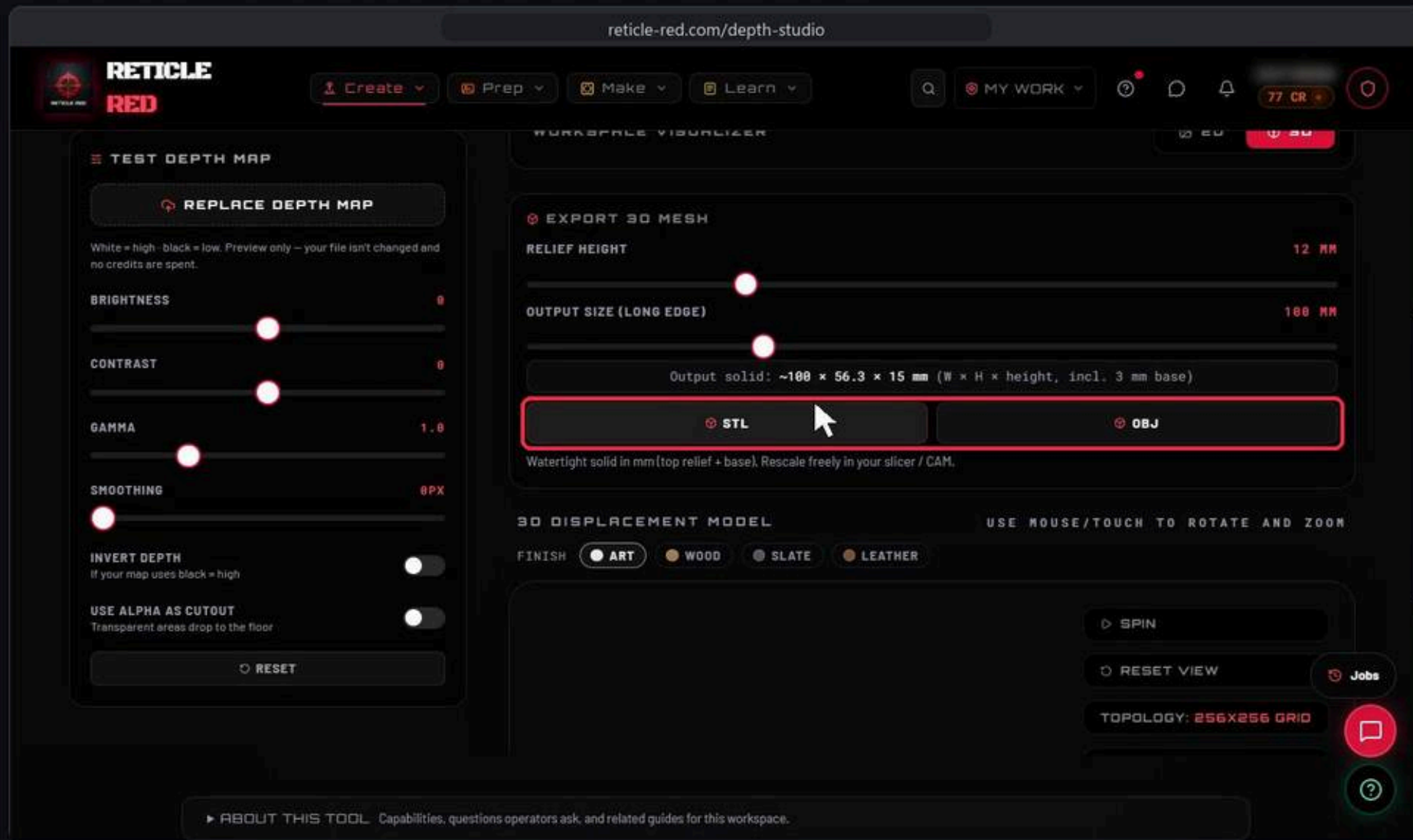
Output Size: the long edge. The readout shows the solid.

CLOSE-UP

This close-up view shows the 'EXPORT 3D MESH' section. It features a 'RELIEF HEIGHT' slider set to 12 mm, an 'OUTPUT SIZE (LONG EDGE)' slider set to 100 mm, and a text box displaying the output solid dimensions: ~100 × 56.3 × 15 mm (W × H × height, incl. 3 mm base).

RETICLE RED · DEPTH STUDIO TUTORIAL

Test a depth map — 3D preview, remap, invert and the STL/OBJ mesh export

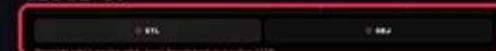


STEP 11 OF 11

STL or OBJ

Measured: see the readout.

CLOSE-UP



Your relief, ready to carve

Create → Depth Studio

Free engines with a free account; Test Depth Map and mesh export need none.

More tutorials: reticle-red.com/tutorials

Narration: AI voice (ElevenLabs). Screens: the real reticle-red.com.