

REVISION 1.0 / ORIGINAL ATARI VECTOR ARCADE HARDWARE

Black Widow installation guide

BLACK WIDOW

FREE PLAY + HIGH SCORE SAVE KIT

ORIGINAL ATARI VECTOR PCB / 6502 CPU



STANDARD + WI-FI EDITIONS

Board identification • 6502 removal • C2 riser clearance • Pin 1 orientation • Testing and support

Before you begin

ONE 6502 DAUGHTER CARD - ORIGINAL ATARI BOARD

The kit installs on a compatible Atari Black Widow vector PCB at the original 6502 socket. The original source specifies a clearance riser at **C2** because of nearby test points. Use the supplied riser or compatible 40-pin raised socket as documented.

SAFETY FIRST

- Turn off and unplug the cabinet before handling any PCB, cable, socket, or processor.
- Use static-safe handling. CRT vector displays may retain dangerous voltage even with power disconnected; do not service the monitor.

PREPARATION CHECKLIST

- Confirm Black Widow runs properly before installing the upgrade.
- Photograph every cable connection and label each plug before moving the PCB.
- Identify the original 6502 socket at C2 and check that it is a serviceable 40-pin socket.
- Inspect the surrounding test points and supplied riser before installation.
- Prepare a dry, static-safe workbench and a suitable IC removal tool.

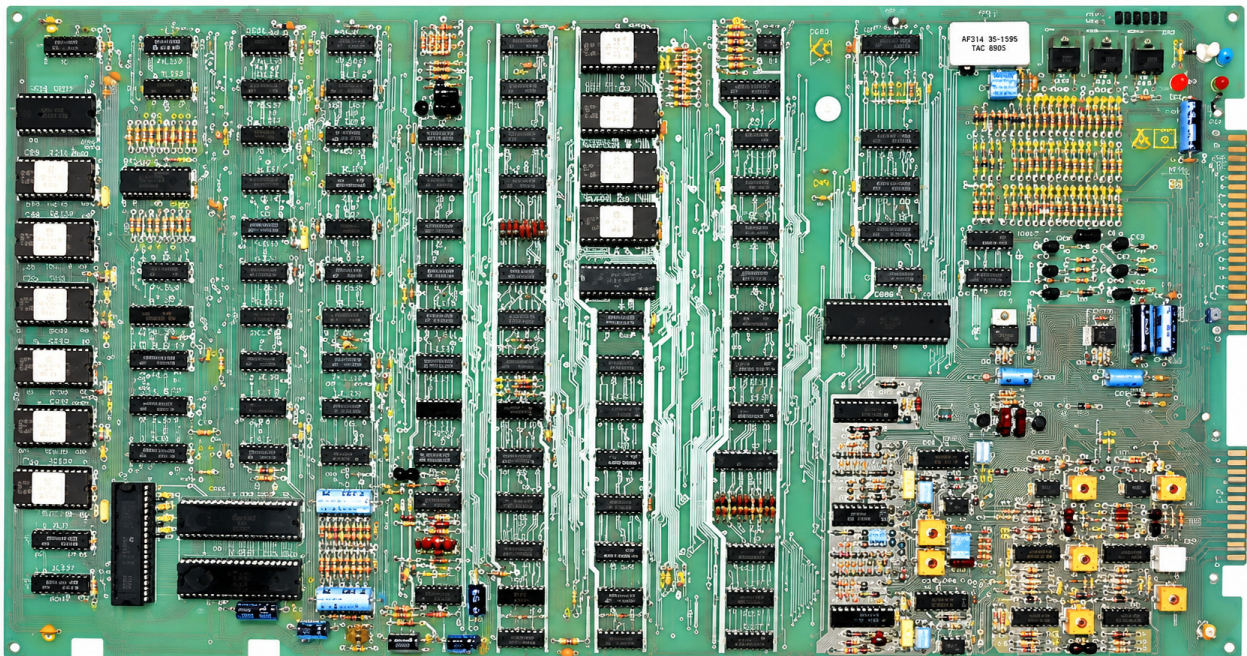
WHAT'S INCLUDED / CPU REQUIREMENT

Base kit: **1 × HighScoreSaves 6502 daughter PCB**. A compatible **6502 CPU** is required: transfer the original socketed processor or use the ordered CPU option. The source also documents a clearance riser, which may be a small PCB or a 40-pin machine-pin socket.

Identify the original Black Widow PCB

Confirm that your cabinet contains a compatible original Atari Black Widow vector CPU PCB. Compare your board, connectors, and processor area with the photograph below before proceeding.

ORIGINAL BLACK WIDOW VECTOR PCB

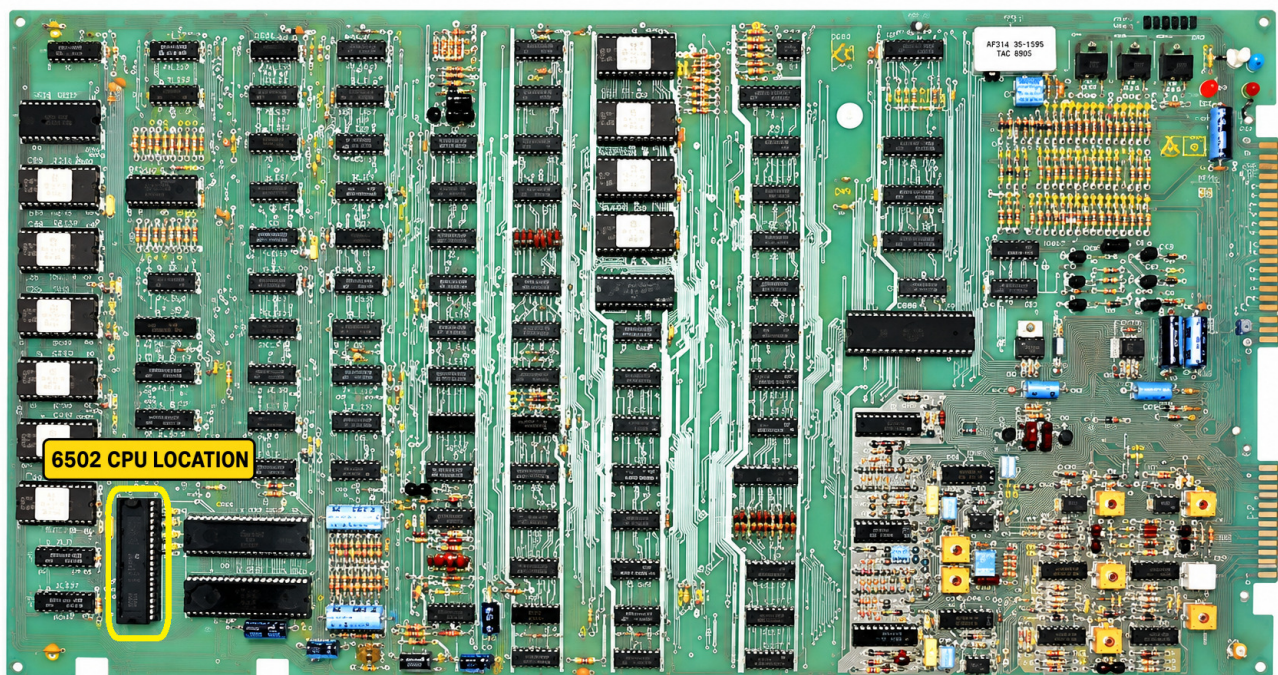


MATCH YOUR ORIGINAL PCB BEFORE INSTALLING

Use the component layout and original socket position to confirm compatibility. Installation is specific to an original **Black Widow vector PCB** with a socketed 6502 at **C2**. If your board or processor position differs, stop and confirm compatibility with HighScoreSaves.

Locate and remove the 6502 at C2

On the Black Widow PCB, locate the socketed 6502 CPU at **C2**. Photograph its notch and Pin 1 direction. With cabinet power disconnected, lift the processor evenly from the original 40-pin socket.



PROTECT THE ORIGINAL 6502 AND SOCKET

Use a proper IC puller or suitable method and lift a small amount at each end until the CPU is free. Avoid bending pins or damaging the socket. If the processor is soldered directly to the board, stop: a qualified technician must install a compatible 40-pin socket before the kit can be fitted.

Protect the nearby test points

The original installation guide warns that the underside of the daughter card **must not contact nearby test points**. A compatible riser is required for clearance above those points at the vacated CPU socket C2.

TEST POINTS NEAR THE CPU SOCKET



REQUIRED CLEARANCE AND RISER CHECK

Use the supplied riser PCB or approved compatible raised 40-pin machine-pin socket at **C2**, aligned with the original CPU socket and Pin 1 orientation. Inspect that all pins engage straight and the assembled kit sits high enough to avoid contact with nearby test points. **Do not bend or short the test points** to create space.

DO NOT APPLY POWER UNTIL CLEARANCE IS VERIFIED

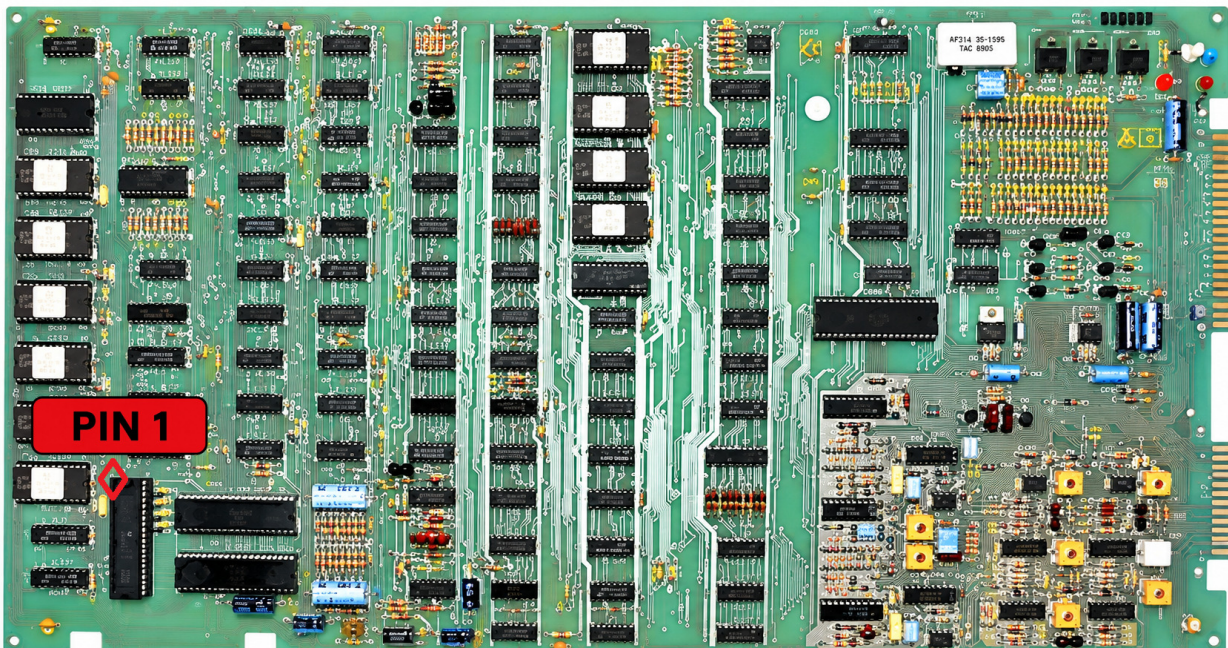
If the riser, header pins, socket, or underside clearance appears uncertain, stop and contact HighScoreSaves before powering the cabinet.

STEP 3 / CPU TRANSFER AND ORIENTATION

Fit the 6502 and verify Pin 1

The photograph marks the **Pin 1 end of the original 6502** before removal. Transfer the processor to the save-kit socket and match its notch and Pin 1 to the markings on your actual daughter card.

ORIGINAL 6502 PIN 1 LOCATION



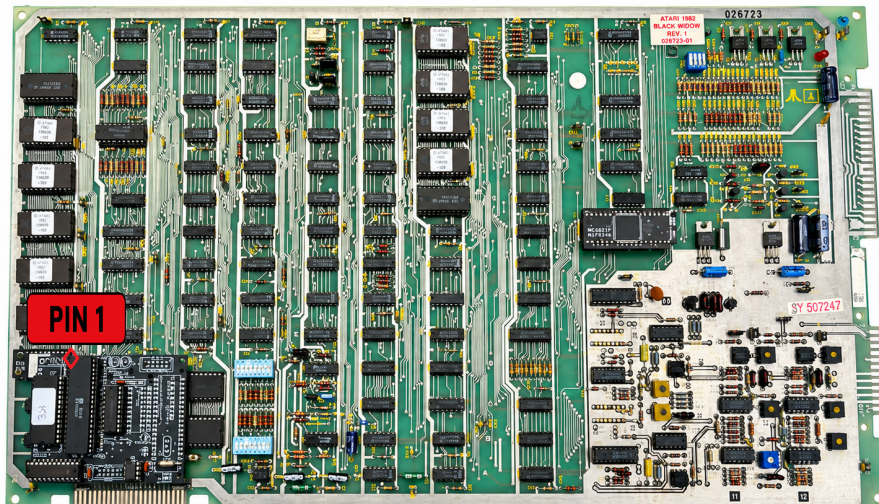
PIN 1 DIRECTION IS CRITICAL

The image above identifies Pin 1 on the original board, **not** the daughter-card socket. Match the notch and pin markings on both the physical processor and kit before seating the CPU. Ensure all 40 leads align and enter the socket without force. Use the clearance riser at C2 before installing the complete assembly.

Install and inspect the daughter card

With the 6502 correctly seated on the kit, fit the complete daughter-card assembly into the riser at C2. Keep Pin 1 aligned, press evenly, and verify the riser lifts the kit clear of every nearby test point.

BLACK WIDOW DAUGHTER CARD INSTALLED AT C2



INSPECTION BEFORE REINSTALLING THE BOARD

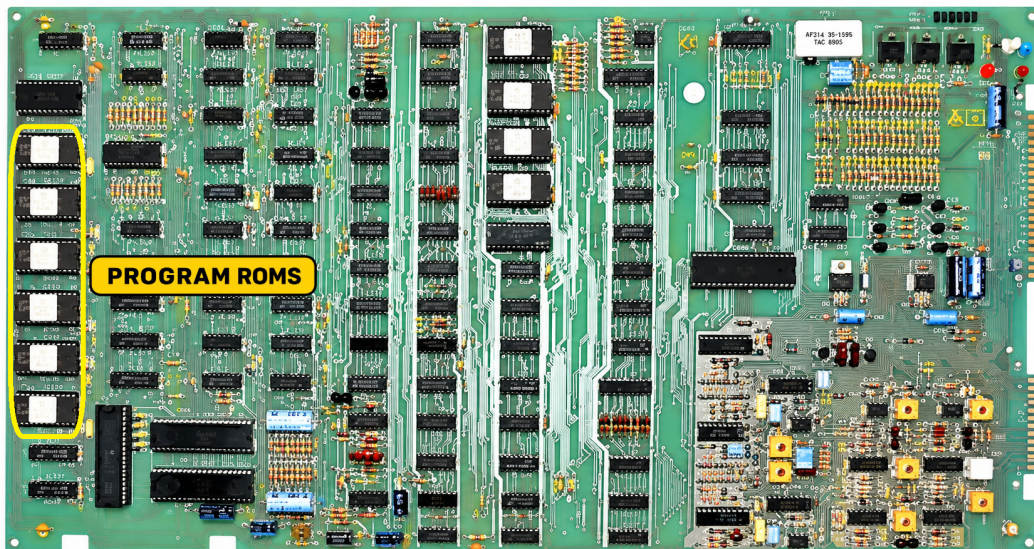
- All 40 CPU pins enter the save-kit processor socket fully and straight.
- Save-kit pins and the C2 riser line up with the original 6502 socket.
- No test points, solder leads, or adjacent components touch beneath the kit.
- All original arcade harnesses and connectors are restored in their photographed orientation.

Optional program ROM removal

OPTIONAL - NOT REQUIRED TO PLAY

The original Black Widow program ROMs may remain installed when fitting and testing the Free Play and High Score Save Kit. Removal is optional and should only be attempted when supported for the exact PCB revision.

ORIGINAL BLACK WIDOW PROGRAM ROMS



BEFORE REMOVING ANY OPTIONAL ROMS

- Confirm your board revision and supported ROM Saver instructions first.
- Identify the correct sockets; do not remove other chips by appearance.
- Label and store removed original ROMs in static-safe packaging.

DO NOT GUESS ROM COUNTS OR SOCKET POSITIONS

The highlighted ROMs are a visual reference only. Confirm exact removal sockets with HighScoreSaves.

STEP 6 / FINAL INSPECTION AND TESTING

Final inspection and first power-on

BEFORE POWERING ON

- Check CPU notch/Pin 1 orientation and all processor pins.
- Confirm the C2 riser is fully seated and the underside clears all test points.
- Verify the daughter card is level and no socket pins are bent.
- Restore each cable and connector to its original position.

FIRST START / GAMEPLAY TEST

Reinstall the PCB in the cabinet and apply power. Confirm Black Widow starts normally, Free Play or coin settings operate as expected, and a qualifying high score remains saved after a complete power cycle. If the machine fails to boot, shut power off and recheck the CPU, riser, clearance, and cable orientation.

IF THE GAME DOES NOT START

Turn the cabinet off and unplug it. Inspect all **6502 pins**, the **C2 riser**, Pin 1 orientation, nearby test points, and original cabling. Do not operate if a component, pin, or test point could short against the daughter card.

OPEN THE SETTINGS MENU

From cabinet power-off, hold **Player 1 Start** for approximately **4 seconds** while switching the machine on; release when the on-screen prompt instructs you. Menu options can enable or disable the startup entry period.

Wi-Fi-enabled kit setup

AFTER THE PHYSICAL INSTALLATION

First confirm the kit boots and stores local scores. The Wi-Fi edition adds online score upload using its module and your private account keys; a Standard kit does not need a wireless connection.

1

Obtain your private PK and SK keys

Check the setup emails from HighScoreSaves for your account information and the personalized PK and SK keys. Keep both private.

2

Enter the keys in the kit settings

In the Black Widow kit menu, enter the PK and SK exactly, enable the online setting as instructed (commonly ON-T), and save the settings.

3

Connect the module to 2.4 GHz Wi-Fi

Connect a phone or computer to the module's temporary Wi-Fi network, open **192.168.4.1**, and select your compatible 2.4 GHz home network.

4

Submit and confirm an online score

After reconnecting the arcade to your home network, enter initials for a qualifying score and check your personal online high score page for the result.

[FULL SETUP INSTRUCTIONS \(CLICK TO OPEN\)](#)

Helpful resources and support

Open these HighScoreSaves resources for verified product details, Atari hardware references, the Wi-Fi setup procedure, and technical support. Resource titles below are clickable.

Black Widow kit product page

- › Kit features, compatible hardware, and current options

Black Widow PCB compatibility

- › Board identification and pre-install requirements

Atari Black Widow operator manual - TM-234

- › Original cabinet information, operator tests, and parts

Atari Black Widow schematics - SP-234

- › Original Atari vector PCB drawings and hardware reference

Wi-Fi-enabled kit setup instructions

- › PK/SK keys, 2.4 GHz network setup, and score tests

HighScoreSaves kit tips and tricks

- › Additional operator and kit troubleshooting information

Installation guides library

- › Other HighScoreSaves arcade PCB installation guides

Contact HighScoreSaves support

- › Help with C2, the riser, or uncertain processor orientation