

Install Guide

FarmDefender™ FD-22 — UTV sprayer

Version	v1.1
Revised	2026-08-14
Applies to	FD-22 2-camera UTV kits with Capstan PinPoint III nozzle control

FarmDefender™ FD-22 — Install Guide

Machine: UTV sprayer — 13 nozzles @ 20" spacing (21'8" boom) **Document version:** 1.1 (2026-08-14)

The kit ships fully built. Your install is mounting the two cameras and the Central Hub, plugging in labeled, gender-keyed cables, and powering it from your machine. Two cameras land straight on the Central Hub — no boom switches. Nozzle control runs over CAN to your Capstan PinPoint III.

Kit contents

Every component that ships with one system:

Qty	Item	SKU
1	Central Hub (nozzle-control + PoE)	FD-CH-V2
2	Weed Detector camera (L + R) — includes metal bracket, preset 50° down-tilt	FD-WD
1	FarmLink connectivity unit (WiFi + cellular uplink)	FarmLink Lite
1	12V->48V converter	FD-PWR-CONV-01
1	GPS antenna + SMA cable	FD-ANT-GPS
2	Ethernet cable, 6.0 m (camera runs)	FD-ETH-6.0M
1	Ethernet cable, 2.0 m (FarmLink -> Hub)	FD-ETH-2.0M
1	Power cable, 4.0 m	FD-PWR-4.0M

You supply: the camera mounting hardware (see below), the 12V feed and breaker/disconnect, wire-management consumables (loom, ties), and — through Capstan — all PinPoint III hardware (VCMs, hub, and the CAN harness). You connect the FarmDefender Central Hub to your existing PinPoint III over one CAN cable.

If anything is missing or damaged, **stop and call (406) 271-6400** before starting the install.

Serial numbers: each case has a printed label. The system serial and Central Hub serial are on the Central Hub; the cameras and FarmLink carry their own. Have them handy when you contact support.

Mount the cameras

Each camera ships with its **metal bracket, preset to a 50° down-tilt**. We do **not** supply a mounting kit — fasten the brackets to your machine with hardware suited to your UTV and boom.

Aim geometry, both cameras:

- **Height:** about **1.5 m off the ground** — hold close to this; the 1.5 m height is

what gives full coverage at 20" nozzle spacing.

- **Down-tilt: 50° below horizontal** – the bracket is preset to this angle.
- **Lateral:** one camera per half of the boom, roughly **±65" from boom center**, lens pointing forward-down and unobstructed.

Height and tilt **can** be different if your machine needs it – just tell us the actual numbers and we set them in the software. Default to 1.5 m / 50° unless there's a reason not to.

Side view (one camera)

[cam] 50 deg down

1.5 m \

-----\----- ground

Top view - coverage

L cam (-65°) R cam (+65°)

=====

1 2 3 4 5 6 | 7 8 9 10 11 12 13

|-- L: 1-6 --| -- R: 7-13 --|

Full aim geometry – height, 50° tilt, and per-camera nozzle coverage – is on the Camera Aim Geometry drawing at the back of this guide.

- **Left camera** covers nozzles **1-6**.
- **Right camera** covers nozzles **7-13** (nozzle 7 = centerline).

Mount everything else

- **Central Hub** — on the boom rack or bed frame, sheltered, alongside your Capstan PinPoint III ECU. Glands down.
- **FarmLink unit** — high and sky-visible (roof / ROPS / front rack) for cellular + GPS.
- **Converter** — near the 12V feed, dry and sheltered.
- **GPS antenna** — roof or rack, clear sky view.

Wire

All hub connections are on **one end** of the Central Hub and are gender-keyed – you can't put anything in the wrong place **except the two CAN connectors**, so get those right:

- **CAN port marked "1"** = **can1** — nozzle CAN to **Capstan PinPoint III**. The Capstan harness goes here.
- **Unlabeled CAN port** = **can0** — ISOBUS. Not nozzle control; leave the Capstan harness off this one.

CAN termination: the Central Hub has terminators enabled internally on both CAN lines. Connecting the Hub adds an end terminator to that bus; disconnecting it takes one away. On the ISOBUS side that means pulling the terminator off the stub at the PinPoint III hub when you connect us – and putting it back if the Hub ever comes off.

Match the printed cable labels; push each connector to seat until it clicks. Run cables in loom, tie every 12-18", leave ~6" of slack at each connector, and let cables curve — don't pinch — at any fold or pivot.

- **Cameras + FarmLink -> Central Hub:** all three land on identical Hub **PoE ports** — one **FD-ETH-6.0M** from each camera, and the **FD-ETH-2.0M** from the FarmLink. Any of the three PoE ports works for any of them.
- **Central Hub -> Capstan PinPoint III:** the Capstan CAN harness from the Hub's **CAN "1"** port to your PinPoint III hub — this carries the spray commands.
- **Power:** **FD-PWR-4.0M** from the converter to the Central Hub.

Power

- 12V machine power -> **your breaker / disconnect** (your system on/off switch) -> our 12V->48V converter.
- Converter 48V output -> Central Hub (which also powers both cameras over PoE).

Our converter is fused — you don't need to add a fuse. All FarmDefender connectors are gender-keyed.

First boot

1. Visual check — every connector mated, no exposed conductors.
2. UTV ignition on, then close your breaker — the system powers up automatically.
3. Wait a minute — boot is automatic.
4. On your tablet, join the FarmLink WiFi network — its **name and password are printed on the FarmLink unit's label** — and open **<http://farmdefender.local:8080>** to confirm both cameras are online.

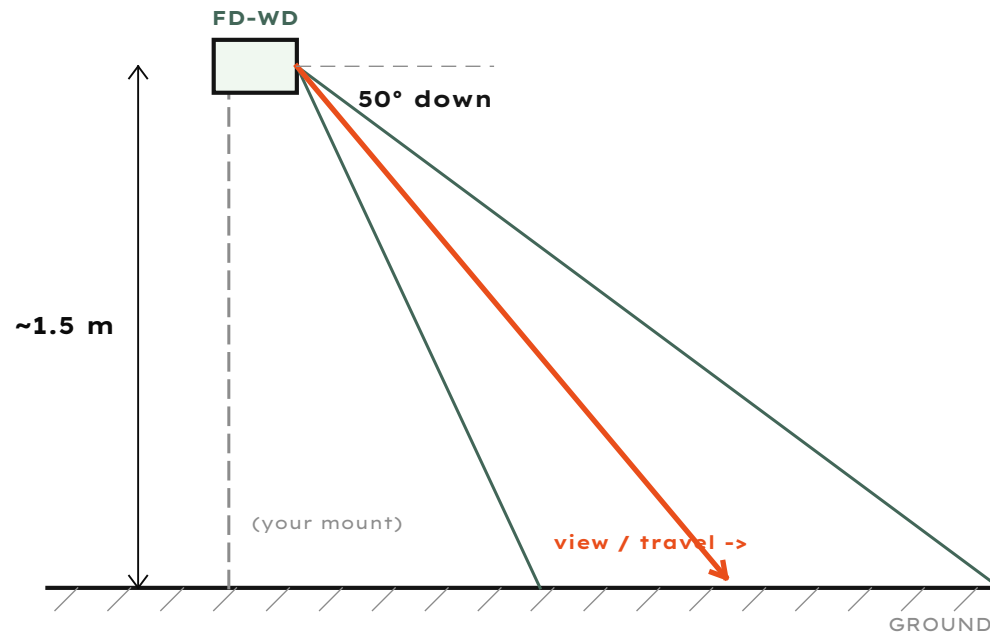
If anything looks wrong (no power lights, smoke, obvious damage), **stop** and call **(406) 271-6400** before spraying. Operating instructions live in the digital user manual — link emailed at ship time.

FarmTech Solutions, Inc. · Choteau, Montana · (406) 271-6400 · support@farmtech.us

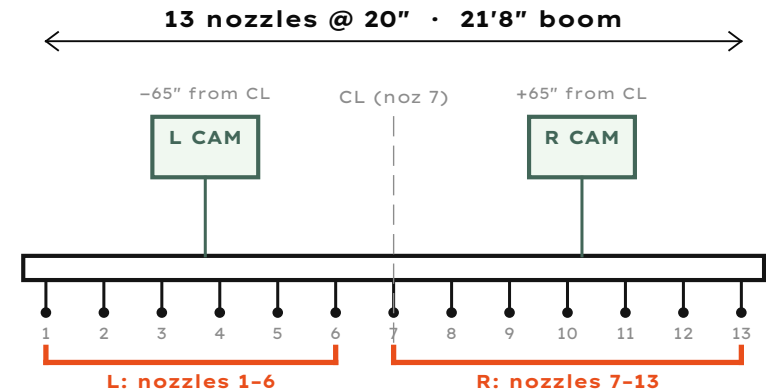
CAMERA AIM GEOMETRY

Both cameras identical. We supply the metal brackets (preset to 50°); you supply the mounting hardware.

SIDE VIEW



TOP VIEW — COVERAGE



Hold ~1.5 m height for full coverage at 20" spacing. Brackets are preset to 50° down-tilt.

If your machine forces a different height or angle, install it and send us the numbers — we set them in software.



FarmTech Solutions, Inc.

Choteau, Montana USA
support@farmtech.us · (406) 271-6400

PROJECT

FarmDefender FD-22

UTV Sprayer — 2-camera kit

13 nozzles @ 20" · 21'8" boom

TITLE

CAMERA AIM GEOMETRY — INSTALL DRAWING

DWG NO.

FT-FD22-2026-001

DRAWN BY

D. WEIST

APPROVED BY

REV

A

DATE

2026-08-14

SCALE / SHEET

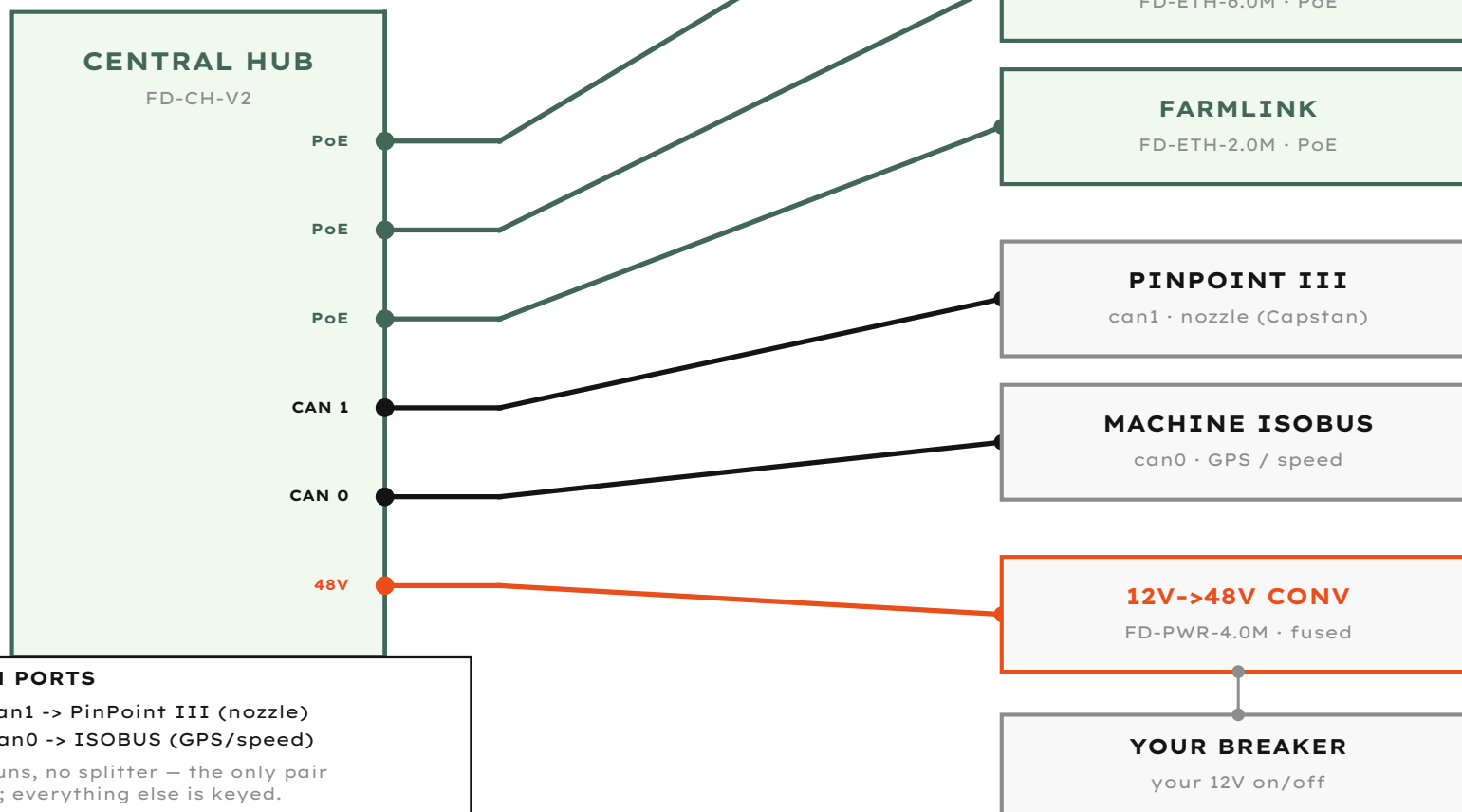
NTS 1 OF 2

SYSTEM WIRING

All connectors land on ONE end of the Central Hub — each cable is its own direct run (no splitters), gender-keyed.

LEGEND

- Ethernet / PoE (FarmTech-supplied)
- 48V power (FarmTech-supplied)
- CAN — can1 nozzle / can0 ISOBUS
- 12V feed / switch (you supply)



THE TWO CAN PORTS

Marked "1" = can1 -> PinPoint III (nozzle)
Unlabeled = can0 -> ISOBUS (GPS/speed)

Two separate runs, no splitter — the only pair you can mix up; everything else is keyed.



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UTV Sprayer — 2-camera kit
13 nozzles @ 20" · 21'8" boom

TITLE

SYSTEM WIRING — INSTALL DRAWING

DWG NO.

FT-FD22-2026-002

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A

DATE

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SCALE / SHEET

NTS 2 OF 2