



Automated Flagger

Technical Specification for Automated Flagger Assistance Device (AFAD)
Revision 00609

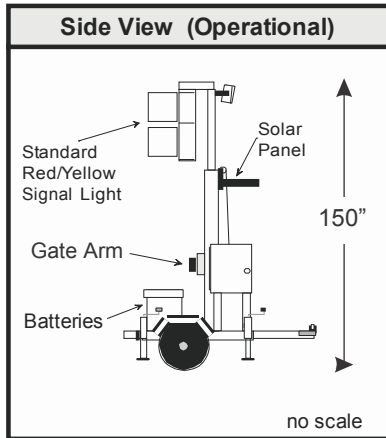
Automated Flagger - Model AF-100 Signal Trailer

June 9, 2010
Subject to Change without notice

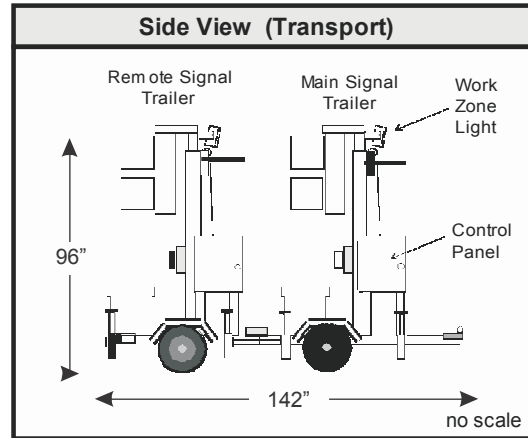
Note: Automated Flagger System consists of two AF-100 Signal Trailers

Specifications

The Automated Flagger, System AF-100 is self-contained and includes two Signal Trailers, each with Red/Yellow Lens Signal Light and Gate Arm.



AF-100 Signal Trailer



AF-100 System

Specification for Red/Yellow Lens Automated Flagger Assistance Device Model: AF-100 Signal Trailer

AF-100 Signal Trailer:

Controller:

*Each Signal Trailer includes a Controller featuring three microcontrollers. The main CPU controls the signal lights and general operating functions. An Conflict Monitor microcontroller monitors the system for power issues, Signal Lamp failures, Conflicting Signals and power issues. An independent microcontroller controls the Gate Arm function.

*Each Controller features a 4 line LCD which displays:

- Signal Trailer Voltage
- Instructions for changing Programs
- Program in use
- Lamp failure
- Signal Conflict
- Radio Signal status

*The Controller features 3 program modes:

- Single Operator for two Signal Trailers
 - Single Operator for one Signal Trailers
 - Flash Yellow program for Haul Roads and Pedestrian Crossings
- (All programs are set via a single button (with 5 second safety delay). All program changes must be made when the unit or units are in Red Signal/ Gate Arm down status)

*The Controller features Red and Yellow Signal Light monitor lamps on the Controller Panel

*The Controller features metal "Vandal Proof Switches" for all control functions.

- *The Controller is housed in a lockable all metal sealed NEMA rated cabinet.
- *The Controller wiring meets applicable SAE, UL and ITE standards.
- *The Controller contains no screw type terminal connections or other open connections which are subject to failure in harsh environments conditions and/or vibration.
- *The Controller features a single Amphenol multipin connector for all electronic connection to the Controller. This feature simplifies replacement of Controller in the field without special tools or training.

Power Supply:

- *Each Signal Trailer feature 3 - 12 volt Deep Cycle 115 amp hour Batteries.
- *Each Signal Trailer features an SP-80 solar Panel and Charge Controller
- *Each Signal Trailer features a 110 VAC - 10 amp battery charger with 110 VAC connector accessible from the outside of the Battery Cabinet.
- *Each Signal Trailer features a lockable, plastic composite Battery Cabinet.

LED Signal Lights:

- *The Signal Housing of the Signal Trailer includes a 12" Red and a 12" Yellow (Amber) Signal Light
- *Signal Lights are 12 Volt, ITE standard compliant, Light Emitting Diodes (LED)
- *The Signal Housing are MUTCD compliant with aluminum construction.
- *The Signal Housing includes a compliant back plate.
- *A 5 inch amber LED is mounted on the back side of the Signal Housing and indicates the status of the Amber Signal Light to an operator within the work zone.

Gate Arm

- *The Gate Arm measures 8 ft in length (plus a 2 ft flag extension), and 5 ½" in height. (Exceeding the 4" minimum MUTCD requirement).
- *The Gate Arm is counter balanced to reduce power needed to raise and lower.
- *The Gate Arm is covered with MUTCD specified 4" x 16" alternating red and silver retro reflective sheeting.
- *The Gate Arm folds in half to store in place.

Radio System:

- *All radios are high performance, frequency hopping spread spectrum transceivers operating under FCC part 15.247 regulations for the 900 MHZ band.
- *Qualified for operation in a temperature range of -40C to +80C.
- *Features FHSS technology with Data-Encryption Standards and proprietary software synchronization.

Radio Remote Pendant:

- *The Radio Remote Pendant is housed in an all-aluminum sealed housing
- *The Radio Remote Pendant features stainless steel "Vandal Proof Switches"
- *The Radio Remote Pendant features switches for Signal Sequence and Emergency Horn.
- *External Antenna for extended operational distance.
- *The Radio Remote Pendant features an 18,400 mAh, Ni-MH battery pack for 2-4 year operation
- *In addition each controller features a manual backup switch to operate the Signal Trailer and/or System in the event of a Radio Remote Pendant Failure.
- *A battery pack charger with 110VAC and 12 VDC connections is provided.

Trailer Frame:

- *The Signal Trailer frame features a 2" X 4" welded tubing frame with dimension of 48" long and 52" wide.
- *The Main Signal Trailer features a 2" X 4" X 40" (length) steel tubing tongue with 2" X 2" steel tubing braces and 4" riser for 2" Ball Hitch Coupler.
- *The trailer features a telescoping Signal Light Mast constructed of 2" X 1 1/2" square steel tubing with braking winch
- *The Signal Trailer features a 12 volt trailer lighting system complying with Federal Motor Carrier Safety Regulations 393.
- *The Signal Trailer will be primed with Epoxy Primer and painted with Marine Grade Federal Standard 595a "Highway Orange" polyurethane paint.
- *The Signal Trailer features a 2500lbs rated axle and 13" tires.
- *The Signal Trailer features (2) swivel screw style jacks to level the trailer.

Operation Manual:

Each Signal Trailer and/or System will come with a complete operation manual

Warranty:

Each Signal Trailer and/or System come with a one year limited manufacturer warranty.

AF-100 Optional Equipment:

Part Number	Description
SJ	Standard swivel screw jack for leveling the trailer. (Note: 2 standard jacks are standard equipment with each Signal Trailer. Up to four swivel jacks can be used per Signal Trailer.
EJ	Extended heavy duty jack with drop down extension for faster set up and extended length, (for applications with severe shoulder drop offs)
EH	120 dB Emergency Horn, for signal change notification and warning to workers in the work zone.
WP	Wired Pendant with 25' Cable for backup to Radio Remote Pendant in the event of a Radio Remote Pendant failure.
LBS.	Lock Bar System. An integrated system consisting of two lock bars, 2" ball hitch and 48" Remote Signal Trailer Tongue extension that allows the two Signal Trailers in a System to be towed (and backed) as one unit.
PWS	Push Wheel Set. A set of two 4, 10" diameter wheels to be attached to the front and rear of a Signal Trailer to aid in moving applications where the Signal Trailer needs to be pushed or pulled by hand. One stationary and one swivel wheel and adjustable height hardware provided.
HDM	Heavy Duty Signal Light Mast. 4" square tubing base with 3" mast extension.
HDWheel	Set of heavy duty 14" wheels and tires (ST205/75D-14)
HDAXle	Heavy Duty 3500lb axle.
GASS	Gate Arm Slip System. Mechanism that allow the Gate Arm to slip and not damage a vehicle if the arm is lowered onto the vehicle. Also pivots if Gate Arm is hit.

Limited Warranty, Disclaimer, Limitation of Liability

Manufacturer will replace or repair free of charge any part of the Automated Flagger System AF-100 that are defective in workmanship and materials for a period of 12 months from date of purchase**. All Manufactures products requiring warranty service shall be transported or shipped freight prepaid to Manufacturers approved repair facility. Notification of the defect or problem, and name, e-mail address, and telephone number of the customer requiring warranty service must be included. Manufacturer is not responsible for removal and shipment of the Manufacturers product to the service center or for the reinstallation of the Manufacturers product upon its return to the customer, or any incidental or consequential damages resulting from the defect, removal, reinstallation, shipment or otherwise. If a problem is determined by the Manufacturer, not to be due to a defect in workmanship or materials, then the customer will be responsible for the cost of any necessary repairs. This LIMITED WARRANTY represents Manufacturers sole and exclusive warranty obligation with respect to Manufactures products. Manufactures liability to a customer, or any other person shall not exceed Manufactures/Dealers sales price of the applicable Manufacturers product. **MANUFACTURER/DEALER DISCLAIMS ALL OTHER EXPRESSED AND IMPLIED WARRANTIES INCLUDING THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY.**

A new product inspection form/warranty registration must be completed in its entirety and submitted to Manufacturer within 30 days of purchase to qualify for any warranty consideration.

Northwest dealer/distributor: Far West, Inc., P.O. Box 345, Cornelius Oregon 97113 U.S.A.

E-mail address: info@highwayflaggers.com

** Battery(s) and L.E.D. lamp(s) repair is limited to 90 days.