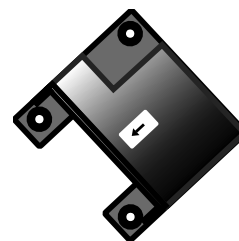


MIDWEST TECHNOLOGIES COMPACT II RADAR GROUND SPEED SENSOR



The Midwest Technologies Compact II Radar is a non-contact speed device primarily designed as a ground speed sensor for off-highway applications. The radar sensor can be used in a wide range of applications. The following guidelines are given for consideration in the application of the radar sensor.

SURFACE

For proper operation of the radar sensor, the target surface must be a good radar reflector. While the radar sensor can operate properly on many surfaces, wet surfaces or standing water should be avoided.

NOTE: Operating the Compact II radar sensor over surfaces such as concrete may seriously degrade the performance of the radar sensor. For those applications requiring full time operation on poor reflective surfaces, Midwest Technologies recommends the use of the RVS II Radar (PN 120-0001-Kit).

For more information, contact your local TeeJet/Mid-Tech sales representative.

INSTALLATION

There are several considerations to keep in mind when preparing to install the Compact II radar. (See Figures 1 & 2)

1. Make sure that the vehicle is parked on a level surface.
2. The radar sensor should have an unobstructed view of the ground.
3. The radar sensor should be mounted on a rigid surface to minimize vibration.

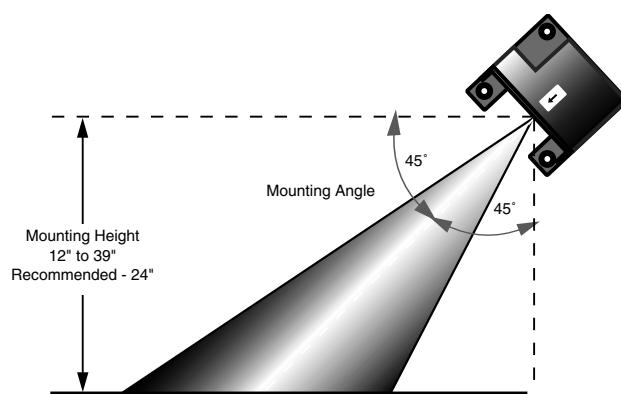
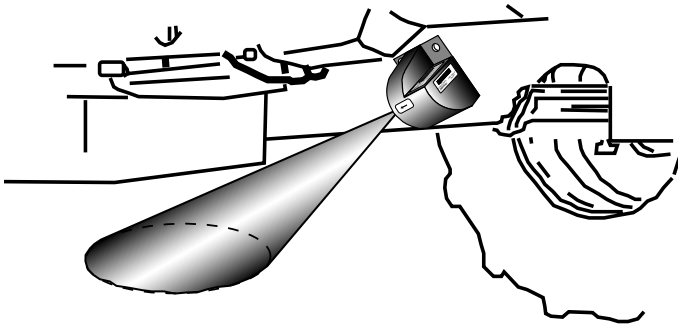


Fig. 1 - Mounting Guideline

4. The recommended mounting angle is 45° from the horizontal. Changing the mounting angle will cause the output signal frequency to change and may degrade the performance of the Compact II radar.
5. The mounting distance from the center of the radar sensor cover to the target can vary. The closer the radar sensor is mounted to the target, the stronger the returned signal will be. The recommended mounting height is 24 inches, from the center of the radar sensor cover, perpendicular to the travel of the target area.
6. No fluids should drip on the radar sensor face.
7. The radar sensor should be mounted away from all heat sources.
8. The radar sensor should be mounted in a way to protect it from stubble and debris.
9. It is recommended that the Compact II radar be installed facing the rear of the vehicle. However, in some cases it may be necessary to mount the radar sensor facing forward.



**Fig. 2 - Radar Mounting
Facing Rearward**

Figure 4 is an alignment and drill template that can be used to set the angle of the radar sensor and mark the locations for the mounting holes. Cut out one of the templates and place it on the vehicle frame at the location you have chosen. (See Figure 2) Turn the template until the appropriate dotted line is level as determined with a carpenter's level (See Figure 3). Tape the template to the frame and mark the center points of the three holes that line up with the mounting holes of the radar sensor.

NOTE: The three holes to be used will depend upon the direction the radar sensor is pointed. Midwest Technologies recommends that the radar be installed facing rearward.

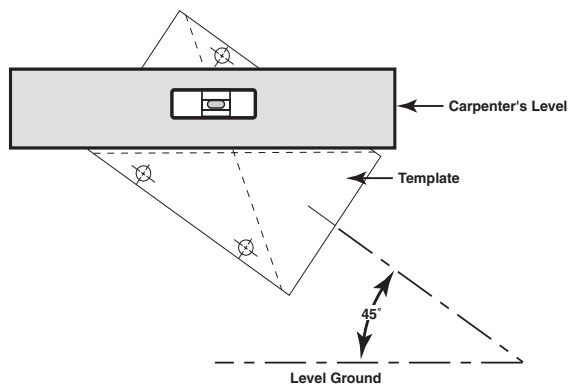


Fig. 3 - Setting Alignment and Drill Template

Drill 3/8" holes at the marked locations. The holes can be oveled out to allow adjustment to 45° angle.

Mount the radar sensor on the vehicle frame using the hardware kit provided.

NOTE: After the radar sensor has been installed it must be calibrated. Refer to your control console user guide for instructions on how to calibrate the radar.

Route the radar sensor cable to the control console and connect it to the speed input. Before securing the cable, check for vibration problems. Excessive vibration of the radar sensor may cause speed readings above zero when the vehicle is standing still. Watch the ground speed reading while slowly increasing engine speed to approximately 1800 RPM. If the ground speed reading goes above zero, the radar sensor must be relocated to an area less susceptible to engine vibration. When an acceptable location has been found and tested, secure the radar sensor cable where it will not be damaged.

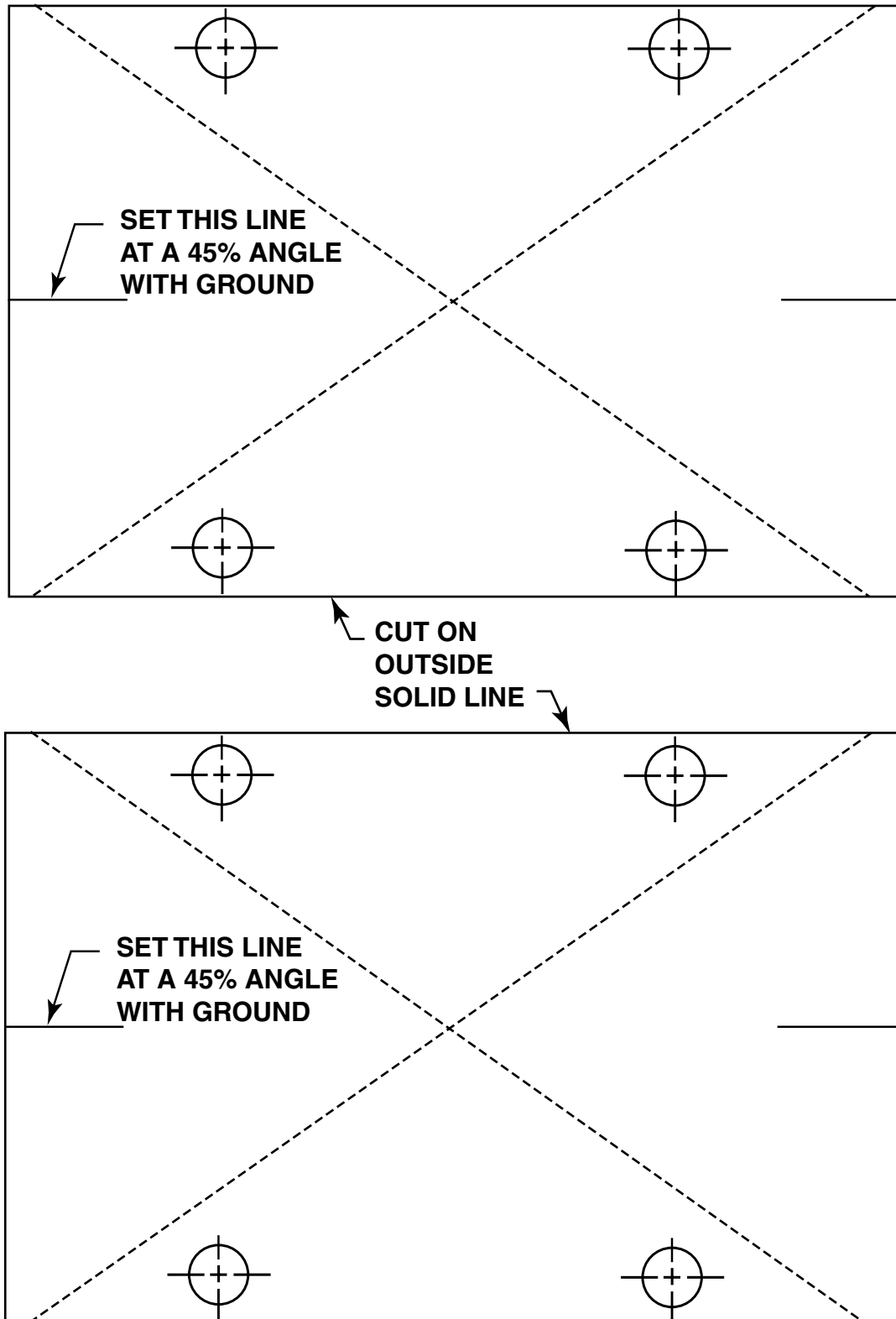


Fig. 4 - Alignment and Drill Template

SPECIFICATIONS

MIDWEST TECHNOLOGIES

COMPACT II RADAR

GROUND SPEED SENSOR

Velocity Range	0.2 to 39 mph	Electrical Protection	Signal to ground & signal to power supply protection Electrical transient protection per ASAE EP-455 Standard
Mounting Angle	45° depressed below horizontal, rearward-facing (preferred) or forward-facing		
Mounting Height	12 to 39 inches above the ground or above the top of the crop. Typical mounting height 24 inches	Step Response	≤ 200 milliseconds delay
		Start/Stop Delay	≤ 25 cm
Mounting Fasteners	Three (3) 8 mm bolts	Microwave Frequency	24.125 GHz (standard) 24.300 GHz (UK) Tolerance ± 25 MHz
Overall Dimen.	4 in. X 4 in. X 4 in.		
Weight	1 lb.	Microwave Power	5 mW, nominal
Connector	Packard WeatherPack (square) PN 12015024 Pin A - +12V DC (nominal 12V battery voltage) Pin C - Speed Signal Output Pin D - Ground 15 inch cable length	Regulatory Compliance	
Electrical Supply	150 mA @ 12V DC +9 to 16V DC input voltage range		Environmental • ASAE EP-455: includes standards for reverse polarity, electrical transients) such as load dump, inductive load switching), chemical corrosion, dust, salt spray, rain, wash, mechanical shock, and vibration
Output Frequency	57.42 Hz/mph (128.4 pulses/meter) @ 45° mounting angle Other frequencies are available by custom order		Electro-Magnetic Compatibility • CE • CSA • FCC
Square Wave Output	Z OH ≈ 1000 ohms Z OL ≤ 100 ohms V OH ≈ +V (battery)-1.0V V OL ≤ 1.0 V at 15 mA I out (max.) = 22 mA	Storage Temperature	-40C to +85C
		Operating Temperature	-30C to +70C

Specifications furnished are believed to be accurate and reasonable. However, all specifications data is subject to change without notice.



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