Raven Radar™ Installation Manual

016-0159-811 Rev. C *05/15* *E22503*

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1. INSTALLATION

For mounting the radar, the following guidelines will assure proper installation. It is suggested that a large, heavy mounting bracket (optional, P/N 107-0159-693) be attached to the vehicle frame for mounting the radar. See Figure 5 on sheet 3 for details on fabricating this bracket.

1) Park vehicle on level surface.

2) Select mounting method by considering the following:

- **a)** The line of sight from the lens to the ground must not be obstructed by structures or tires. Crop foliage must not come closer than 20 inches to the bottom of the radar. See Figures 1 and 2.
- **b)** The radar lens must be parallel to the ground from front to back. Radar can be tilted out 0-15 degrees to provide more clearance and miss obstructions. See Figure 3.

NOTE: The radar must be mounted so that the length of the radar is parallel with direction of travel.

3) Align mounting bracket parallel to the ground.

4) Bolt mounting bracket to equipment.

5) Bolt radar to mounting bracket using mounting hardware. See Figure 4.

6)

- **a)** For SCS 400, SCS 500, SCS 700 PGM A thru D, and SCS 440 PGM A thru D, connect radar with radar adapter (P/N 063-0159-590) to console. See Figure 6.
- **b)** For all other consoles, connect radar with radar interface cable (P/N 115-0159-539) to the console. See Figure 7.

NOTE: If radar interface cable (P/N 115-0159-539 is not connected between console and radar, the radar will not function.

CAUTION: The connection of the radar power in reverse polarity could result in damage to the radar.

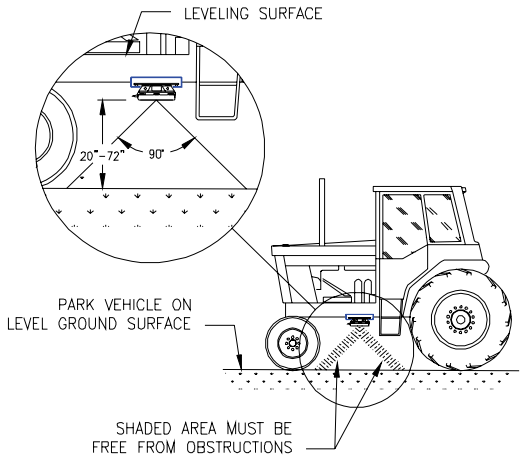

FIGURE 1

DIAGRAM OF RADAR PATTERN

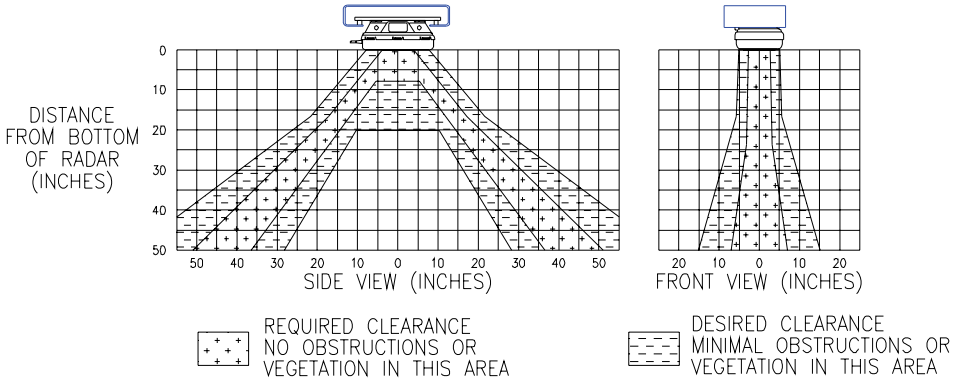

FIGURE 2

OPTIONAL MOUNTING CONFIGURATION

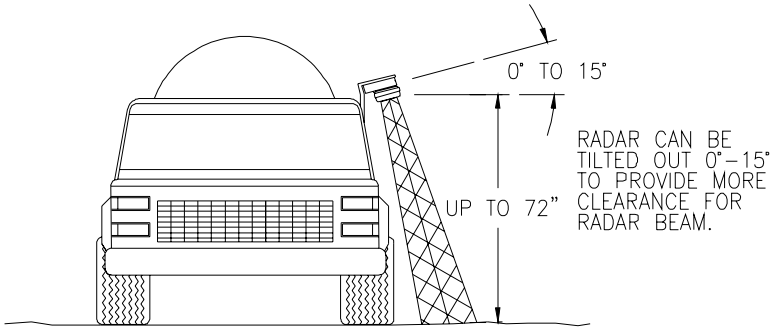

FIGURE 3

ATTACHMENT OF RADAR TO BRACKET

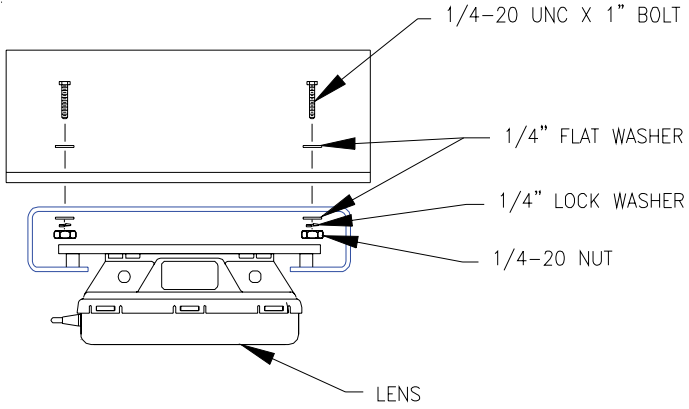

FIGURE 4

MOUNTING BRACKET

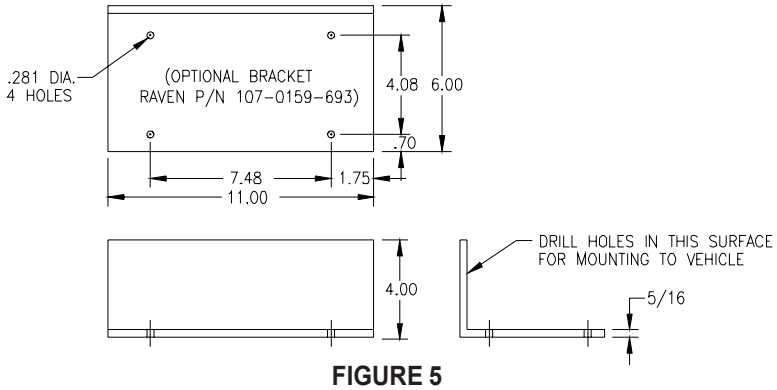

FIGURE 5

RADAR CABLING

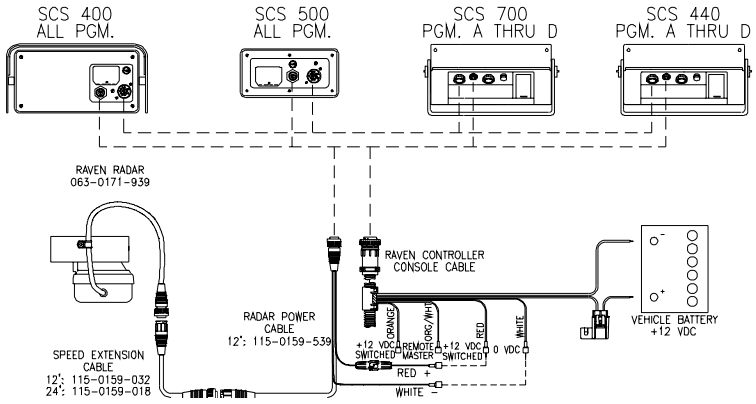

FIGURE 6

RADAR CABLING

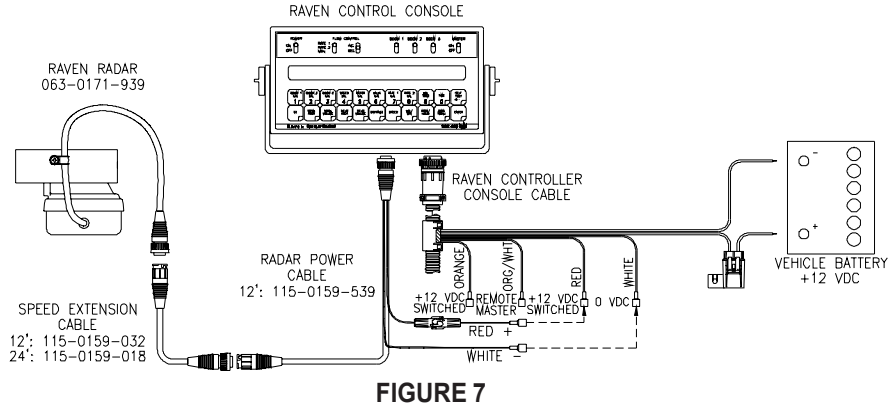

FIGURE 7

2. CALCULATION OF SPEED CAL FOR ALL CONSOLES (EXCEPT SCS 400)

The switches and keys referred to below are on the Raven SCS Console. Use steps 1 and 2 if Console has SP1/SP2 select.

NOTE:	Numbers in brackets [ ] are metric equivalents.

1) Reset console according to the instruction manual.

2) Complete INITIAL CONSOLE PROGRAMMING, in the Installation and Service Manual for your console. Select SP2 for correct operation of radar. If your console does not have SP1/SP2 select, you must either update your console's program or use a radar adapter (P/N 063-0159-590).

3) For all consoles except SCS 500/550, enter a SPEED CAL number of 598 [152] in key labelled

. For SCS 500/550 console, enter a SPEED CAL number of 299 [76] in key labelled

.

4) Set POWER switches to ON, all other switches to OFF.

5) Enter "0" in key labelled

.

6) Drive 1 mile [1 kilometer]. To achieve the most accurate calibration, accelerate and decelerate slowly.

CAUTION:	Do not use vehicle odometer to determine distance. Use section lines or highway markers.

7) Read DISTANCE by depressing key labelled

.
DISTANCE display should read a value of approximately 5280 [1000]. If it reads between 5260-5300 [990-1010], the SPEED CAL is 598 [152].

If the DISTANCE display reads any other value, divide SPEED CAL by the value observed in DISTANCE, then multiply by 5280 [1000]. This will give you the correct value to enter for SPEED CAL. Round off to the nearest 3 digit number.

EXAMPLE: Assume DISTANCE reads 5000 [980].

ENGLISH UNITS:	METRIC UNITS:
$\frac{598 \times 5280}{5000} = 631.48$	$\frac{[152] \times [1000]}{[980]} = [155]$

The number to enter for SPEED CAL is 631 [155].

8) Recheck the new SPEED CAL calculated in Step 7 as follows:

a) Enter the new SPEED CAL number as in Step 3.

3. CALCULATION OF SPEED CAL FOR ALL SCS 400 CONSOLES

1) Set MAN/AUTO switch to MAN, POWER switch to ON, MASTER switch to OFF, and BOOM switches to OFF.

2) Enter 990 as boom length in key labelled BOOM 1 / 1 .

3) Enter "0" in keys labelled: BOOM 2 / 2, BOOM 3 / 3, METER CAL / 5, SET RATE / 6, TIME / 7, TOTAL AREA / 0

4) Enter SPEED CAL number of 598 [1520] in ley labelled: SPEED CAL / 4

5) Turn MASTER and BOOM 1 switches to ON.

6) Drive 1 mile. To achieve the most accurate calibration, accelerate and decelerate slowly.

> **CAUTION:** Do not use vehicle odometer to determine distance. Use section lines or highway markers.

7) Read TOTAL ACRES by depressing key labelled: TOTAL AREA / 0

The TOTAL AREA should read a value of approximately 10.0. If it reads 9.9, 10.0, or 10.1, the SPEED CAL for your vehicle is correct.

If the TOTAL AREA display reads any other value, divide the SPEED CAL number by the value observed in TOTAL AREA, then multiply by 10. This will give you the correct value to enter for the SPEED CAL. Round off to the nearest 3 digit number.

EXAMPLE: Assume SPEED CAL is 598 and TOTAL AREA reads 9.3.

$$\frac{598}{9.3} = 64.3 \times 10 = 643$$

The number to enter for SPEED CAL is 643.

8) Recheck the new SPEED CAL calculated in Step 7 as follows:

- **a)** Zero out TOTAL AREA display as in Step 3.
- **b)** Enter the new SPEED CAL number as in Step 4.
- **c)** Repeat Steps 5, 6, and 7.

RAVEN

Limited Warranty

What Does this Warranty Cover?

This warranty covers all defects in workmanship or materials in your Raven Applied Technology Division product under normal use, maintenance, and service when used for intended purpose.

How Long is the Coverage Period?

Raven Applied Technology products are covered by this warranty for 12 months from the date of retail sale. In no case will the Limited Warranty period exceed 24 months from the date the product was issued by Raven Industries Applied Technology Division. This warranty coverage applies only to the original owner and is non-transferable.

How Can I Get Service?

Bring the defective part and proof of purchase to your Raven dealer. If the dealer approves the warranty claim, the dealer will process the claim and send it to Raven Industries for final approval. The freight cost to Raven Industries will be the customer's responsibility. The Return Materials Authorization (RMA) number must appear on the box and all documentation (including proof of purchase) must be included inside the box to be sent to Raven Industries.

What Will Raven Industries Do?

Upon confirmation of the warranty claim, Raven Industries will (at our discretion) repair or replace the defective product and pay for the standard return freight, regardless of the inbound shipping method. Expedited freight is available at the customer's expense.

What is not Covered by this Warranty?

Raven Industries will not assume any expense or liability for repairs made outside our facilities without written consent. Raven Industries is not responsible for damage to any associated equipment or products and will not be liable for loss of profit, labor, or other damages. The obligation of this warranty is in lieu of all other warranties, expressed or implied, and no person or organization is authorized to assume any liability for Raven Industries.

Damages caused by normal wear and tear, misuse, abuse, neglect, accident, or improper installation and maintenance are not covered by this warranty.

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RAVEN

Extended Warranty

What Does this Warranty Cover?

This warranty covers all defects in workmanship or materials in your Raven Applied Technology Division product under normal use, maintenance, and service when used for intended purpose.

Do I Need to Register My Product to Qualify for the Extended Warranty?

Yes. Products/systems must be registered within 30 days of retail sale to receive coverage under the Extended Warranty. If the component does not have a serial tag, the kit it came in must be registered instead.

Where Can I Register My Product for the Extended Warranty?

To register, go online to www.ravenhelp.com and select Product Registration.

How Long is the Extended Warranty Coverage Period?

Raven Applied Technology products that have been registered online are covered for an additional 12 months beyond the Limited Warranty for a total coverage period of 24 months from the date of retail sale. In no case will the Extended Warranty period exceed 36 months from the date the product was issued by Raven Industries Applied Technology Division. This Extended Warranty coverage applies only to the original owner and is non-transferable.

How Can I Get Service?

Bring the defective part and proof of purchase to your Raven dealer. If the dealer approves the warranty claim, the dealer will process the claim and send it to Raven Industries for final approval. The freight cost to Raven Industries will be the customer's responsibility. The Return Materials Authorization (RMA) number must appear on the box and all documentation (including proof of purchase) must be included inside the box to be sent to Raven Industries. In addition, the words "Extended Warranty" must appear on the box and all documentation if the failure is between 12 and 24 months from the retail sale.

What Will Raven Industries Do?

Upon confirmation of the product's registration for the Extended Warranty and the claim itself, Raven Industries will (at our discretion) repair or replace the defective product and pay for the standard return freight, regardless of the inbound shipping method. Expedited freight is available at the customer's expense.

What is Not Covered by the Extended Warranty?

Raven Industries will not assume any expense or liability for repairs made outside our facilities without written consent. Raven Industries is not responsible for damage to any associated equipment or products and will not be liable for loss of profit, labor, or other damages. Cables, hoses, software enhancements, and remanufactured items are not covered by this Extended Warranty. The obligation of this warranty is in lieu of all other warranties, expressed or implied, and no person or organization is authorized to assume any liability for Raven Industries.

Damages caused by normal wear and tear, misuse, abuse, neglect, accident, or improper installation and maintenance are not covered by this warranty.