

Teleflex®

MARINE

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*Before you do it your way,
please try it our way*



INSTALLATION INSTRUCTIONS

SUPPLEMENTAL



SmartStick™

Autopilot Rudder Reference

TOOLS REQUIRED

- 5/8" Wrench
- 5/16" Wrench
- 11/32" Wrench
- 3/32" Allen Key
- Torque Wrench

INSTALLATION INSTRUCTIONS

- 1** Remove the nuts and washers (item 1 and 2) from the steering cylinder rod. Discard washers (item 2) as they will not be used in the SmartStick installation.
- 2** Install brackets (item 3) onto the ends of the cylinder support rod. Re-install the nuts (item 1) and torque to 33 in/lbs (3.82 Nm).
- 3** Install the sensor (item 4) behind the brackets as shown in figures A and B.
- 4** Mount the magnet (item 5) to the center of the cylinder body with the arrow pointed in the same direction as the arrow on the sensor.
- 5** Turn steering cylinder so that the magnet arrow and the sensor decal arrow are nearest each other.

- 6** Without changing the position along the length of the cylinder, **rotate** the magnet on the cylinder so that the arrows on the sensor and magnet are as closely lined up as possible.
- 7** Tighten band clamp to 3 in/lbs (0.35 Nm) to secure the magnet in position.

NOTICE

Correct installation of the magnet is important to the overall operation of the autopilot.

NOTICE

Over tightening clamp may cause magnet to break.

- 8** Connect Rudder Reference to autopilot as per autopilot installation instructions. Refer to Table 1 to ensure correct application.

- 9** Move the steering cylinder from hard over to hard over to confirm that the autopilot receives a signal from the sensor at ALL cylinder positions.
- 10** Install strain relief (item 6).

NOTICE

Failure to install the strain relief may result in irreparable damage to the sensor.

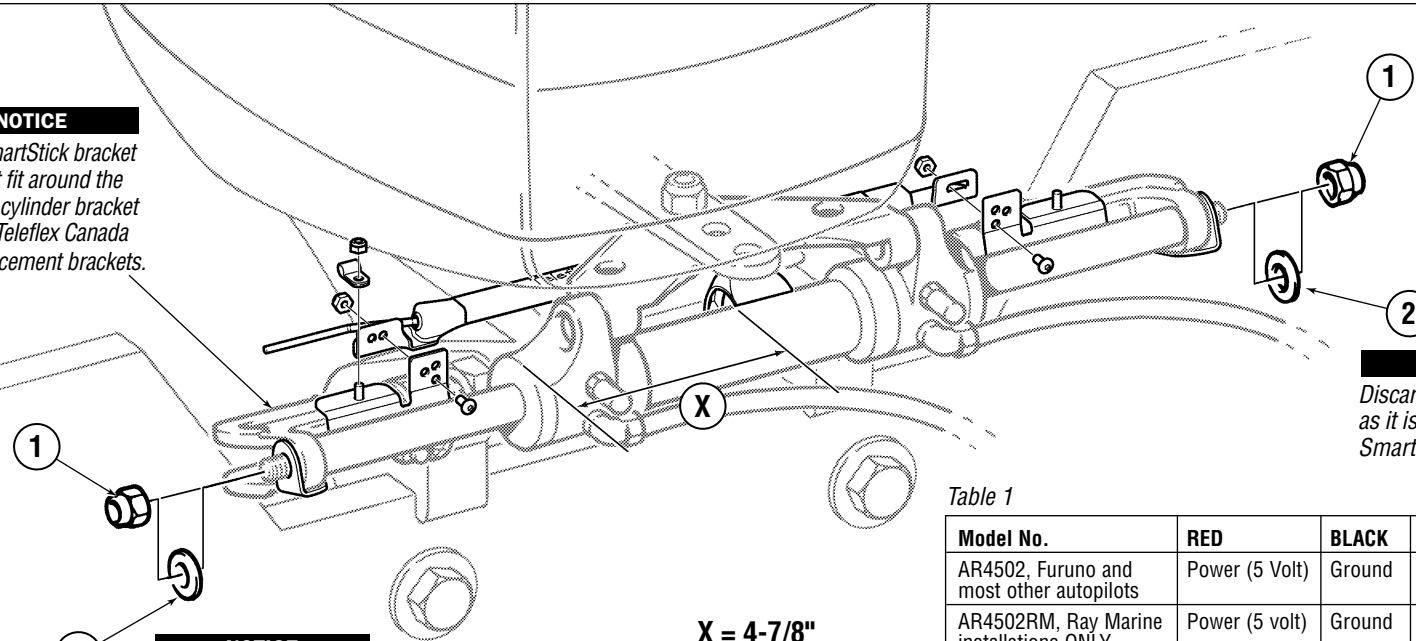
- 11** Using an assistant, turn steering wheel hard-over to hard-over while inspecting for interference of the SmartStick with ANY other object. Check steering in ALL engine trim/tilt ranges and throughout the entire steering arc. Any interference MUST be corrected prior to use.

Figure A

NOTICE
DO NOT install the sensor in front of the mounting bracket. Doing so will result in interference with the steering cylinder (refer to Figure B). Be sure to check for interference at all engine positions before proceeding.

NOTICE
 If the SmartStick bracket does not fit around the steering cylinder bracket contact Teleflex Canada for replacement brackets.

CAUTION
 The SmartStick rudder reference unit will **ONLY** mount to Evinrude and Yamaha 4-Stroke engines when using a HC5358 front mount cylinder.



NOTICE
 Discard item 2 after removal as it is **NOT** to be used when SmartStick is installed.

X = 4-7/8"

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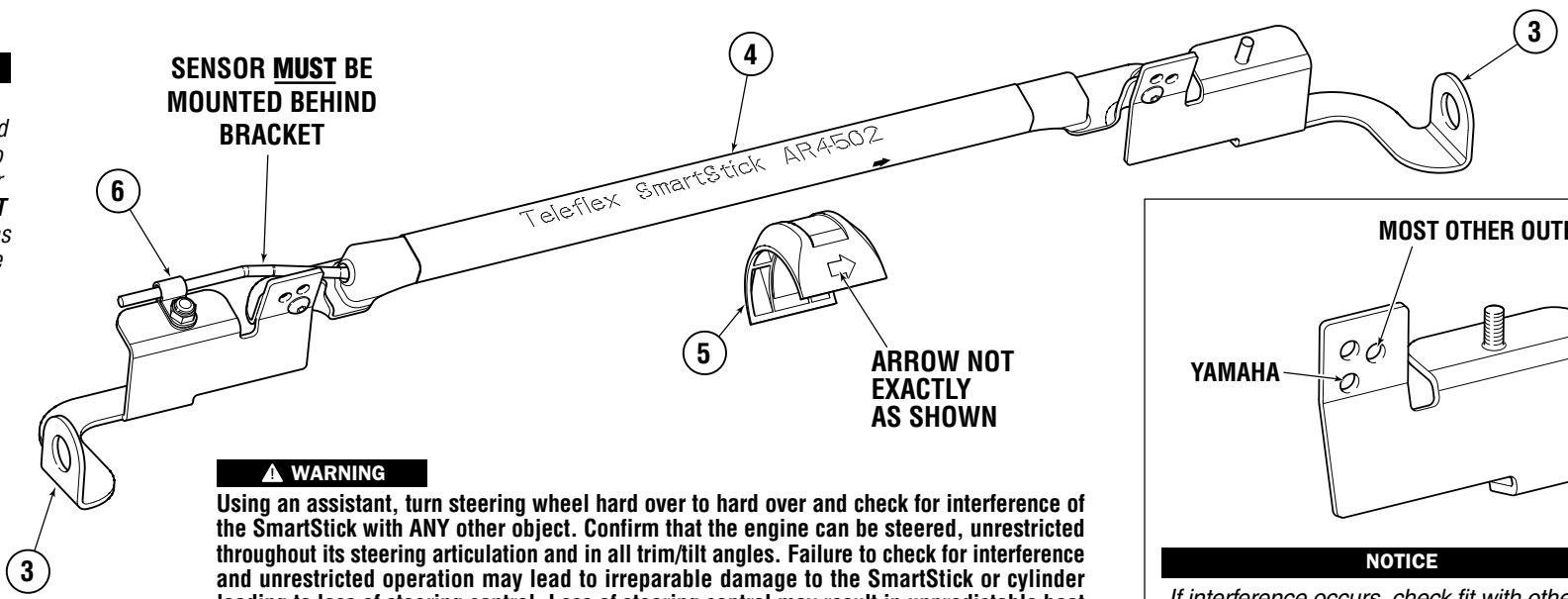
Table 1

Model No.	RED	BLACK	WHITE
AR4502, Furuno and most other autopilots	Power (5 Volt)	Ground	Signal (0.5 V – 4.5 V)
AR4502RM, Ray Marine installations ONLY	Power (5 volt)	Ground	Signal (2.2 V – 2.8 V)
AR4502SI, Simrad installations ONLY	N/A	Ground	Signal (2800 – 4000 Hz)

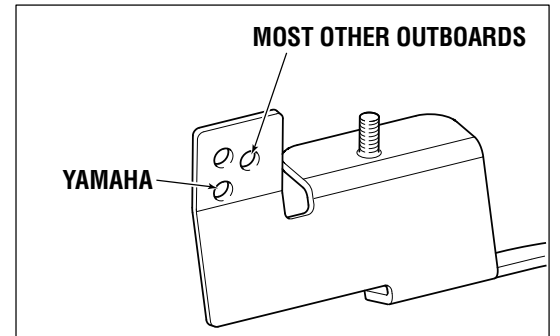
Figure B

NOTICE
 The sensor (item 4) may be mounted in an inverted/flipped position to allow the cable to exit on the port side. In either case the magnet arrow **MUST** point in the same direction as the arrow on the decal of the sensor.

SENSOR MUST BE MOUNTED BEHIND BRACKET



WARNING
 Using an assistant, turn steering wheel hard over to hard over and check for interference of the SmartStick with **ANY** other object. Confirm that the engine can be steered, unrestricted throughout its steering articulation and in all trim/tilt angles. Failure to check for interference and unrestricted operation may lead to irreparable damage to the SmartStick or cylinder leading to loss of steering control. Loss of steering control may result in unpredictable boat behavior, resulting in property damage, personal injury and/or death.



NOTICE
 If interference occurs, check fit with other holes.