

eDriveXD Installation Notes

A. About these installation notes

These (temporary) eDriveXD Installation Notes apply to eDriveXD ('eDXD') installations in two different ways. They apply *in full* to eDXD installations in machines that do not have eDriveTC ('eDTC') already installed ('No TC' is used in these notes). They apply *in part* to machines that do have eDriveTC already installed ('Upgrade' is used in these notes). The differences in use of these notes is explained below and 'No TC' and 'Upgrade' are used throughout where necessary.

No TC: For installations where there is no eDTC already installed, the following applies.

- These installation notes supplement the **Automated Steering Hydraulic Installation Kit** document (example shown at right) supplied with your eDriveXD (No TC) kit. That installation guide provides the parts list and instructions for the hydraulics part of your eDriveXD installation.
- Sections B1 and B2 list, respectively, the parts supplied for the steering wheel switch (SWS) installation* and the ECU and cabling installation and connections.
- Sections C1 to C3 provide general installation instructions for:
 - The hydraulic kit (mainly refers to the **Automated Steering Hydraulic Installation Kit** guide shown above).
 - The steering wheel switch (SWS) kit (*bag EDX-SWS 710-065-000). This section includes several examples of the key points of SWS installations.
 - The ECU mounting bracket/ECU (includes example installations).

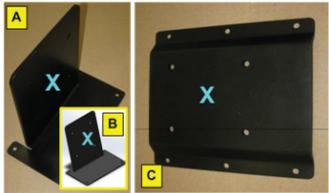


Upgrade: On machines that already have an eDTC installed (so already have the auto-steer hydraulics and an SWS) you will not need a copy of the original TC installation guide (example shown above at right) so it isn't supplied, and you can disregard sections B1, C1 and C2 of this document: only B2 and C3 are applicable to upgrades.

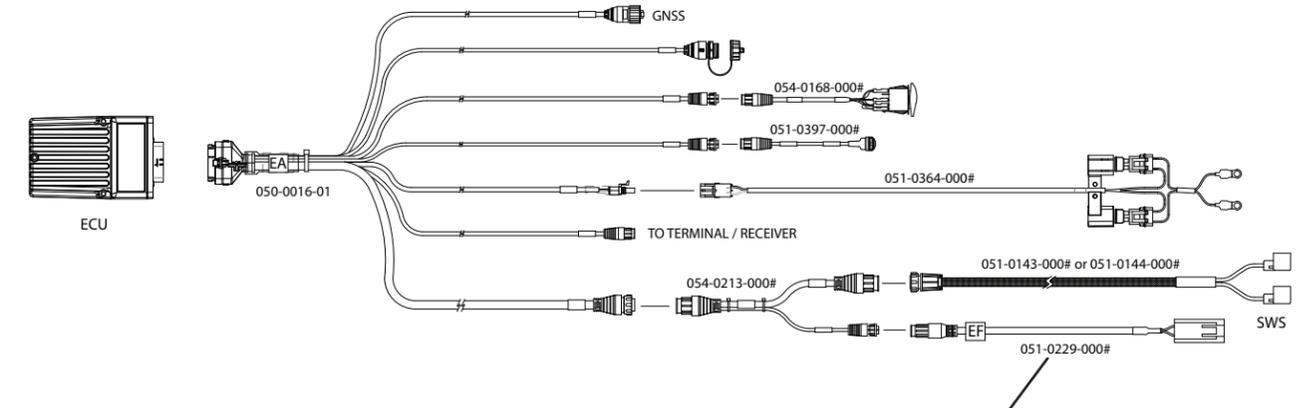
B1. SWS installation parts - No TC

Part Number	Description and comments	Photograph
478-0008	Magnet, flex - 1/2" W x 1" L x 1/8"thk, plain 1 (Only one may be required for your installation)	
675-0077	Epoxy, Hardman 04001 - single double bub (For attaching magnets and, in some installations, the switch bracket 602-1062)	
602-1062	Bracket, steering wheel switch mounting	
726-1054	Assembly, steering wheel switch/sensor cable (Connect to 051-0229-000# - see B2)	
677-2002	Tie strap, 7" releasable	

B2. ECU installation parts - No TC and Upgrades (for connections, see D. eDriveXD Connections, page 10)

Part Number	Description and comments	Photograph
806-1046-000	Controller (ECU - eDXD) Replaces ECU (TC) 806-1007-000	
640-0091-000 <i>or*</i> 640-0152-000 <i>or*</i> 640-0090-000	ECU mounting bracket, straight (90°) - A ECU mounting bracket, slanted (> 90°) - B (inset) ECU mounting bracket, flat - C	
(* Kit dependent)	(One kit-dependent bag [710-0123, 710-8001 or 710-8002], containing ECU and bracket mounting hardware, is also supplied)	X marks the mounting face
051-0377-000 or 050-0016-01	ECU main cable (MAX/STX)* or ECU main cable (REBEL)* <i>*Your kit will include one of these cables.</i>	 
051-0364-000	Power cable, 4.5 m Connects ECU main cable to battery	
054-0213-000	Interface cable adapter cable (Use with existing interface cable 051-0144 [or 15' 051-0143] shown here)	
051-0397-000	Steering remote engage ('RMT' - new cable) Engages auto-steering system by button push	
054-0168-000	3-position power switch (can mount using 640-0180 or 640-0177).	

REBEL



051-0229 connects to SWS switch cable (3 below - part no. 726-1054) replacing cable (2) that connected to eDriveTC (1)

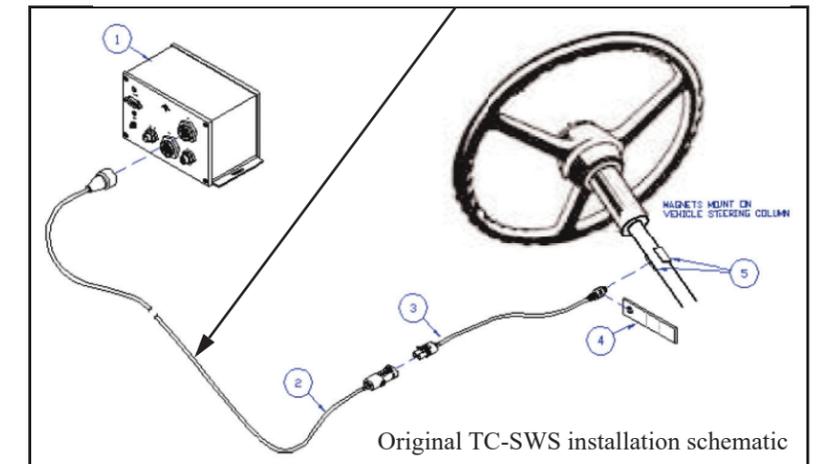


Table C3-1: Example ECU installations (continued)

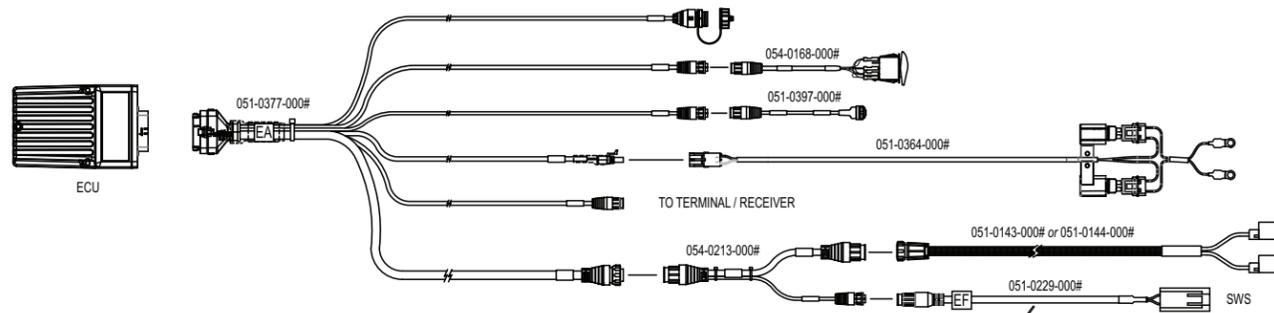


Example E (MF8600): This installation used the ‘slanted’ floor bracket (> 90°, labeled B in B2 on page 2). Floor space restrictions dictated that the bracket/ECU be mounted behind the driver’s seat. The bracket’s long sides are perpendicular to the machine’s fore/aft centerline. The slanted mounting face compensates for the mounting platform’s dip toward the back of the seat. The ECU top (ribbed, labeled face) will be forward and the connector to left or right.

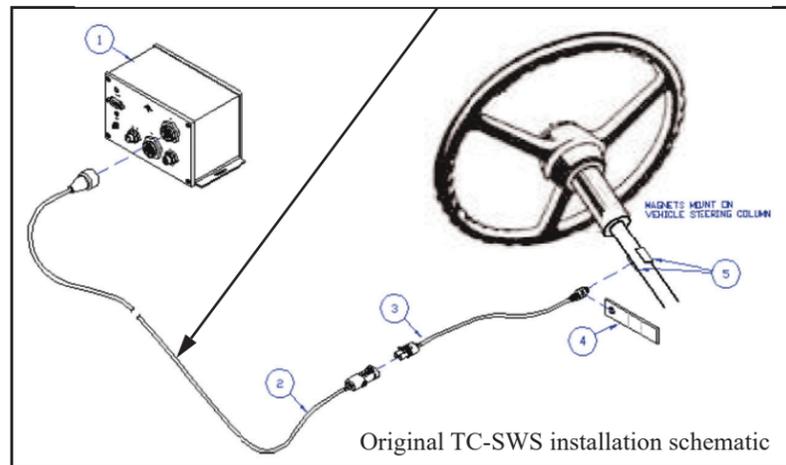
With the ECU mounting bracket correctly installed, it is impossible to mount the ECU incorrectly. Just consider where the main cable will (or does) come into/go out of the cab relative to the ECU connector socket.

D. eDriveXD Connections

MAX/STX



051-0229 connects to SWS switch cable (3 below - part no. 726-1054) replacing cable (2) that connected to eDriveTC (1)



Original TC-SWS installation schematic

Part Number	Description and comments	Photograph
640-0180-000	MAX/STX Switch bracket (mount 054-0168, if applicable/necessary). Supplied with all kits.	640-0180-000
640-0177-000	Switch bracket (mount 054-0168, if applicable/necessary). Supplied with AC110 interface kits only (has extra power switch hole—for the AC110).	640-0177-000
607-0023-01	REBEL Switch bracket (mount 054-0168, if applicable/necessary).	
051-0229-000#	SWS cable (For upgrades this cable replaces the existing cable from the switch cable to the eDriveTC)	

C1. Hydraulics Installation - No TC

Follow the instructions in the accompanying **Automated Steering Hydraulic Installation Kit** guide.

WARNING:

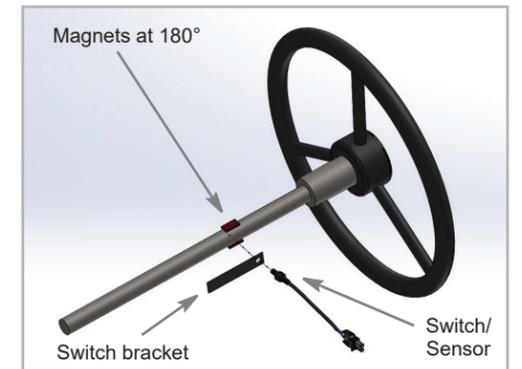
Heed all relevant warnings in the installation guide just as they are provided. Warnings relate to:

- High-pressure fluid hazards
- Hydraulic system contamination

C2. Steering Wheel Switch (SWS) Installation - No TC

The key points of an SWS installation are:

- Gaining access to the steering shaft (see examples in Table C2-1).
- Deciding where and how to fix the steering wheel switch bracket and steering wheel switch/sensor assembly (see examples in Table C2-2).
- Modifying the switch bracket to hold the switch/sensor (just ‘switch’ from now on) in the right place (see examples also in Table C2-2).
- Attaching magnets (or parts of magnets) to the steering shaft, 180° apart, and aligned with the mounted switch sensor tip (see examples in Table C2-3).
- Setting the switch/sensor tip relative to the magnets.

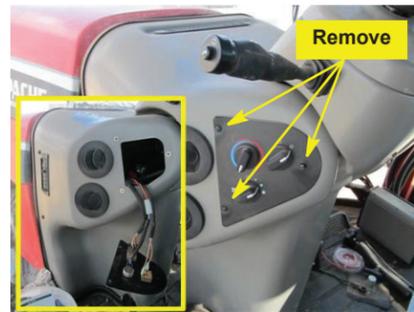


The following sections provide examples of the key points and will assist you with your installation decisions.

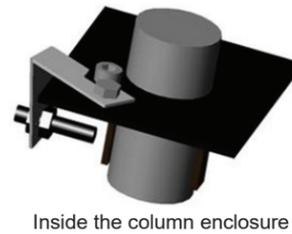
1. Gain access to the steering shaft.

This step may require full or partial dismantling of the steering column (or other steering console parts). It may also require drilling of the steering shaft column/shield (see Example C, table C2-1 following).

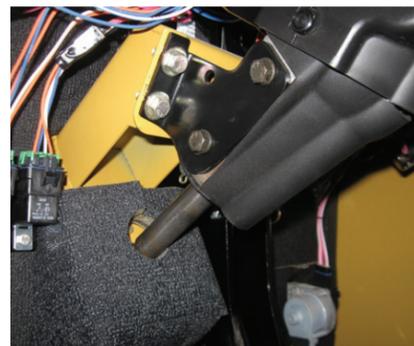
Table C2-1: Example steering shaft access requirements



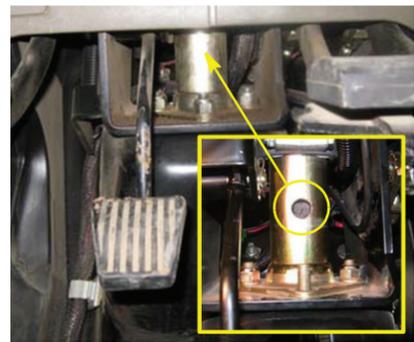
Example A (AP20AS): The AP20AS models have only limited access to the steering shaft without major dismantling of the steering column enclosure. You can, however, access the steering shaft through the opening behind the climate control knobs. Inside the enclosure, you can manipulate the magnets and the switch sensor into position on and near the shaft respectively (see picture at right) without a clear view of the shaft and the items you are placing.



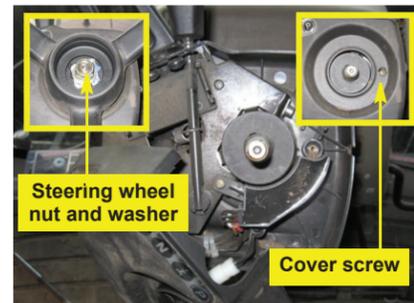
Inside the column enclosure



Example B (SC4640): The steering shaft is easily accessed near the cab floor, no column dismantling is required.



Example C (CSTX-2, wheel machines): This installation required the drilling of a 3/8" hole in the metal shield surrounding the steering shaft.



Example D (CSTX-2, Quadtrac machines): This installation required removal of the steering wheel. The switch works with the steering shaft's magnetic ring (so supplied magnets are not used).

Table C3-1: Example ECU installations (continued)

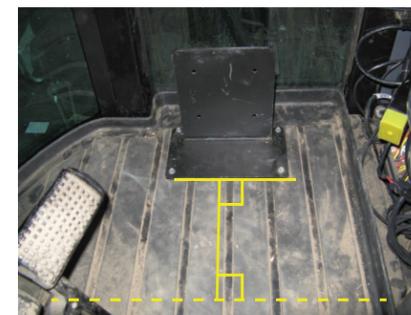


Example A (JD8000): The 90° floor-mounted bracket (labeled A in B2 on page 2) is the most commonly used ECU bracket. In this installation, the bracket is mounted to the left of the driver's seat on the cab floor. The one-inch tabs are toward the driver's seat and the bracket is set with its long side parallel to the machine's fore/aft centerline.

The ECU will be mounted against the face above the internal angle (at X - the mounting face).



Example B (NH8070): Underfloor clearance requirements dictated that the bracket be installed in this cab area. The bracket is set with its long side parallel to the machine's fore/aft centerline.



Example C (AP05AS): A neat, 'squared away' bracket/ECU installation. The bracket's long edge is parallel to the machine's fore/aft centerline (the mat ribs were taken as perpendicular to the machine's fore/aft centerline so the bracket's long side is parallel to it).



Example D (JD4040 and JD7010, standard [non-articulated] machines—eDriveX installation shown): With no suitable floor space available, the 'flat' bracket (labeled C in B2 on page 2—provided as required) is used. The bracket must be installed with its mounting face ('out-bulge') vertical and its long sides parallel to the floor. (Nuts, bolts and washers will be provided for this 'non-floor' mounted bracket.)



Note: The bracket/ECU could be mounted anywhere within the marked area—so long as its mounting face is vertical and long sides parallel to the floor.

4. Set the switch/sensor.

Complete the installation by setting the switch's sensor tip to 1/8" to 1/4" from the magnets by final manipulation of the bracket and using the adjustment nuts on the switch.

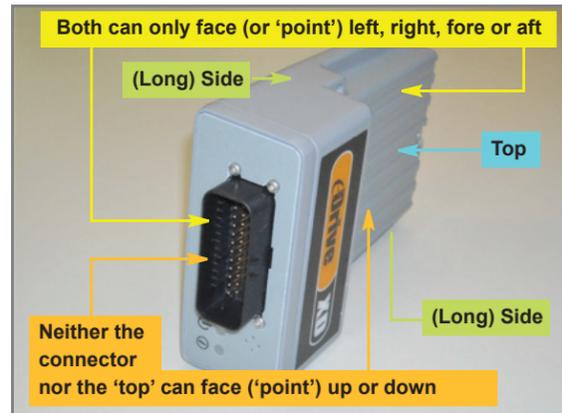
C3. ECU Installation - No TC and Upgrade

WARNING:

Before you perform any drilling, cutting or fastening, ensure that no other machine components, such as hydraulic hoses or electrical wiring, will be damaged. Failure to follow this warning may cause physical injury and/or damage to the machine.

The key points of an ECU installation are:

- Selecting the right location for the ECU bracket/ECU (one where it's safe to drill/self-drill for the bracket—see warning above and first example in Table C3-1).
- Ensuring the correct orientation/alignment of the ECU bracket. This controls the orientation/alignment of the ECU—see picture at right and warning below. **Note:** The ribbed, labeled face of the ECU is regarded and referred to as the 'Top'.
- Mounting of the ECU on its bracket so that the main cable—however routed into the cab—will most easily connect at the ECU's single connector socket.



WARNING:

There are restrictions on how the ECU can be mounted and accurate automated steering will not be achieved if the ECU is mounted incorrectly. Correct mounting (orientation and alignment) of the ECU is dependent on the correct installation of its mounting bracket: **if the bracket is installed correctly, it is impossible to install the ECU incorrectly. The bracket must be installed with its mounting face vertical and its long side either parallel with or perpendicular to the machine's fore/aft centerline.** Installed that way, when the ECU is mounted on its bracket, both the 'top' (the ribbed, labeled side) and the connector socket of the ECU will face (or 'point') left, right, forward or aft. In other words, one long side of the ECU will face the floor and, like its bracket, be either parallel with or perpendicular to the machine's centerline. (**Note:** the slight variation from the vertical with the slanted mounting bracket [labeled B in B2 on page 2] will not affect steering performance; the bracket is designed to 'sit' on an un-level surface and compensate for it.)

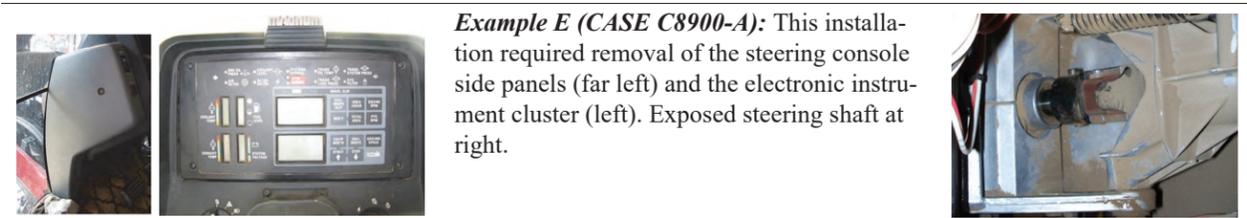
NOTE: You can use any cab feature (for example, seat mounting box, floor mat rib) that you consider to be perpendicular or parallel to the machine's centerline to similarly align your bracket.

Table C3-1: Example ECU installations



Example - All installations: Before drilling (or using self-drilling screws) in the cab, make certain there is nothing that can be damaged by the drilling or by any self-drilling screws used to secure the ECU mounting bracket. Secure anything that could be damaged away from where the screws come through. See figure at left for an example of a pre-drilling check; it shows an under-floor cabling compartment.

Table C2-1: Example steering shaft access requirements (continued)



Example E (CASE C8900-A): This installation required removal of the steering console side panels (far left) and the electronic instrument cluster (left). Exposed steering shaft at right.

2. Find switch bracket fixing point, modify bracket.

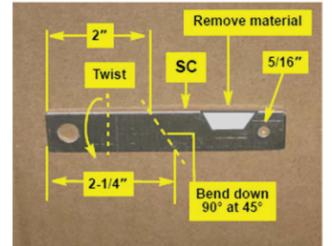
Select a location for mounting the steering wheel switch bracket and switch (for example, [i] using an existing bolt or nut, [ii] creating a mounting location [by drilling], [iii] using epoxy to secure the bracket to a suitable fixture). This step will probably involve some modification (drilling, cutting, bending, twisting) of the switch bracket.

- NOTE:**
- (i) You will attach the magnets to the steering shaft to align with the switch/sensor tip. You need to be sure that any operator adjustments to the steering column (tilt, for example) will not change the position of the magnets so that they no longer align with the sensor tip.
 - (ii) Having decided where you will mount the switch bracket /switch assembly and where the sensor tip will be, install the magnets before installing and securing the switch bracket.
 - (iii) In the various example photos in this section, ignore the callouts/IDs—for example SF and SC; your kit table B1 does not use these callouts/IDs.

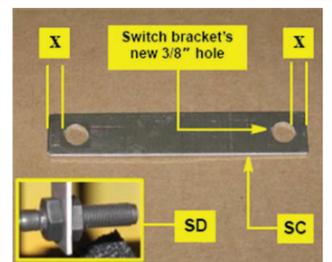
Table C2-2: Example switch locations and bracket modifications



Example A (AP20AS): In this installation you install the modified switch bracket (at right—drilled, cut, twisted and bent) in the spare hole beside the left front steering column bolt (at left) inside the steering column enclosure accessed through the opening behind the climate controls panel (see Example A in Table C2-1).



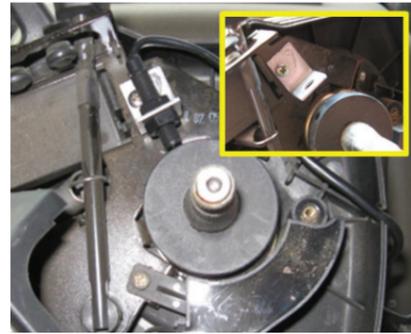
Example B (SC4640): This installation mounted the slightly modified bracket (drilled) using an existing bolt in a steering column support bracket.



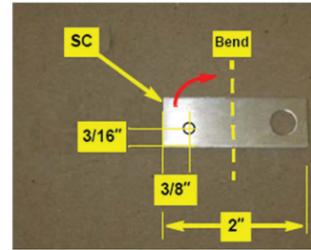
Example C (CSTX-2, wheel machines): This installation required only minor modification of the switch bracket (drill and bend). The bracket is mounted on an existing stud.



Table C2-2: Example switch locations and bracket modifications (continued)



Example D (CSTX-2, Quadtrac machines): This installation required cutting, drilling and bending. The bracket is mounted using an existing screw.



Example E (CASE C8900-A): This installation did not require modification of the switch bracket. But it did require use of some of the magnets' epoxy to stick the switch bracket to the (thoroughly cleaned) cast alloy steering column mounting.



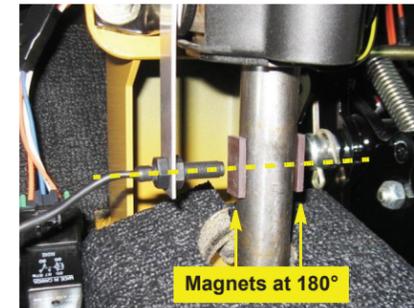
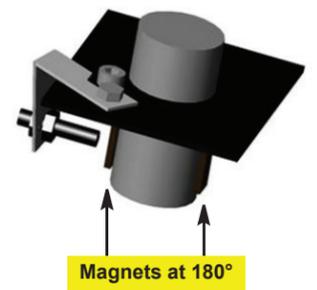
3. Install magnets on the shaft.

Having determined where the switch bracket and sensor (tip) will be situated, install the magnets on the steering shaft 180° apart and with their vertical center in line with where the sensor tip will be (it's usually easier to attach the magnets without the switch already in place).

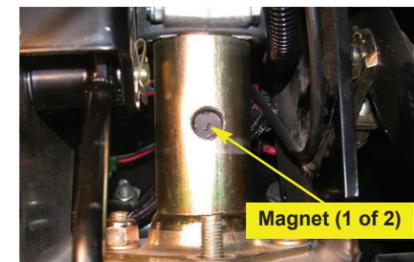
Table C2-3: Example magnet attachments



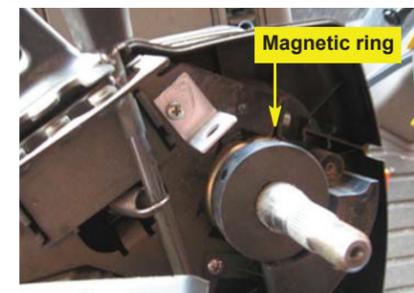
Example A (AP20AS): Access the steering shaft through the opening behind the climate control knobs. Inside the enclosure, with the switch bracket temporarily removed, you can manipulate the magnets into position on the shaft.



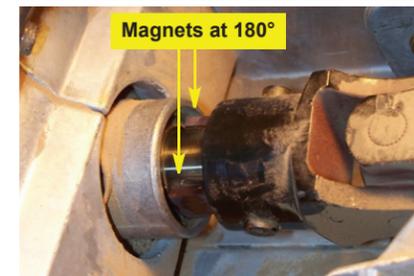
Example B (SC4640): Center the magnets vertically on the switch sensor tip.



Example C (CSTX-2, wheel machines): Cut a magnet into two small round magnets and install them through the 3/8" hole drilled in the outer shield.



Example D (CSTX-2, Quadtrac machines): The switch (not shown) works with the steering shaft's magnetic ring so the supplied magnets are not used.



Example E (Case C8900-A): After removal of the steering console side panels and the electronic instrument cluster, stick the magnets to the exposed shaft.