CALIBRATION

05IP9–02

1.   INITIALIZATION OF TORQUE SENSOR ZERO POINT CALIBRATION SIGNAL

NOTICE:

Under the following conditions, perform torque sensor zero point calibration after initializing the torque sensor zero point calibration signal in the ECU:

- **The steering column assy (containing the torque sensor) has been replaced.**
- **The power steering ECU assy has been replaced.**
- **The steering wheel has been replaced.**
- **The steering gear assy has been replaced.**
- **There is a difference in steering effort between right and left.**

(a)   Center the steering wheel and align the front wheels straight ahead.

(b)   Connect the hand–held tester to the DLC3.

(c)   Turn the power switch on (IG) and then initialize the torque sensor zero point calibration signal by following the tester screen.
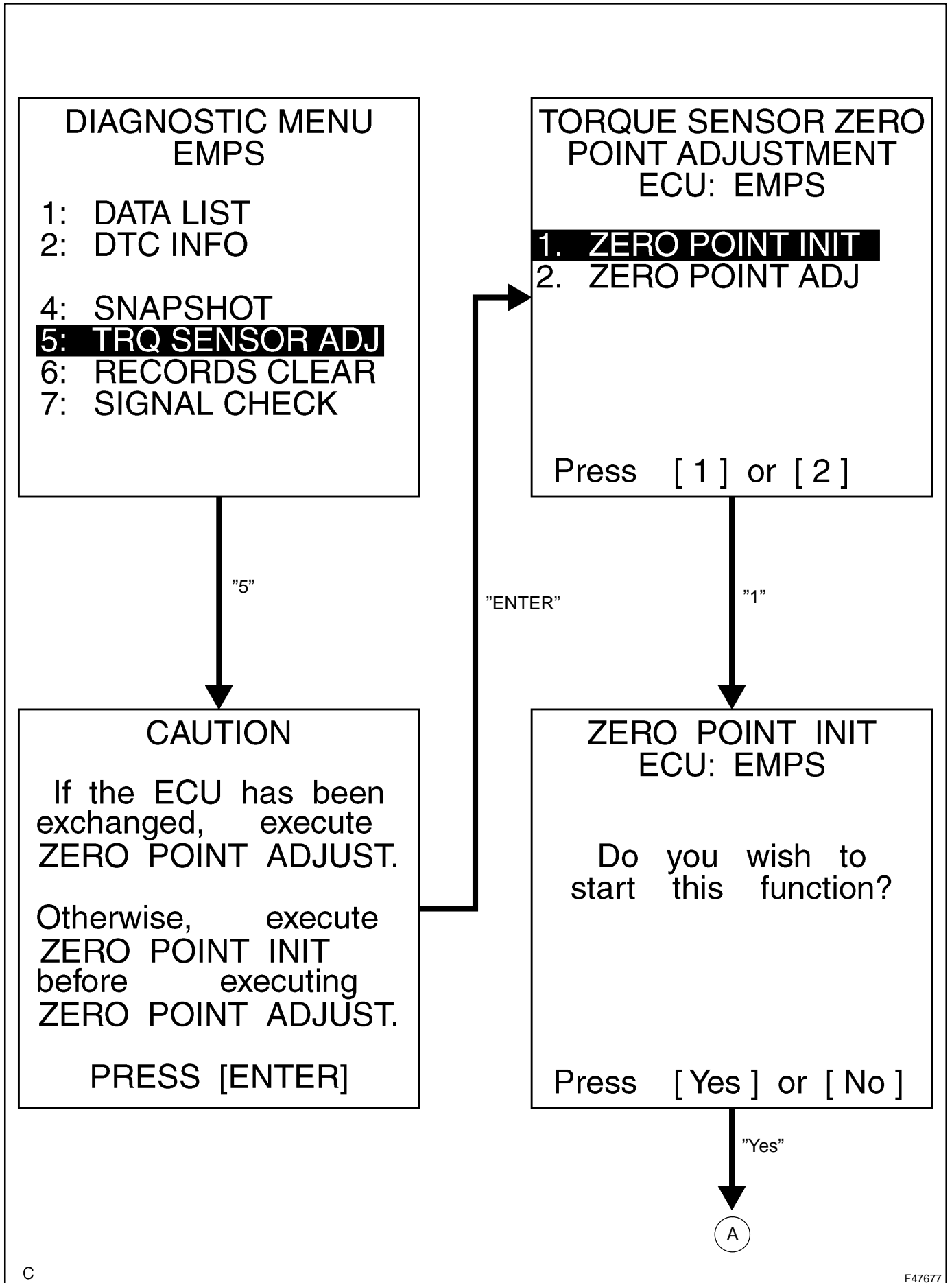
NOTICE:

Do not turn the steering wheel while initializing the zero point calibration signal.

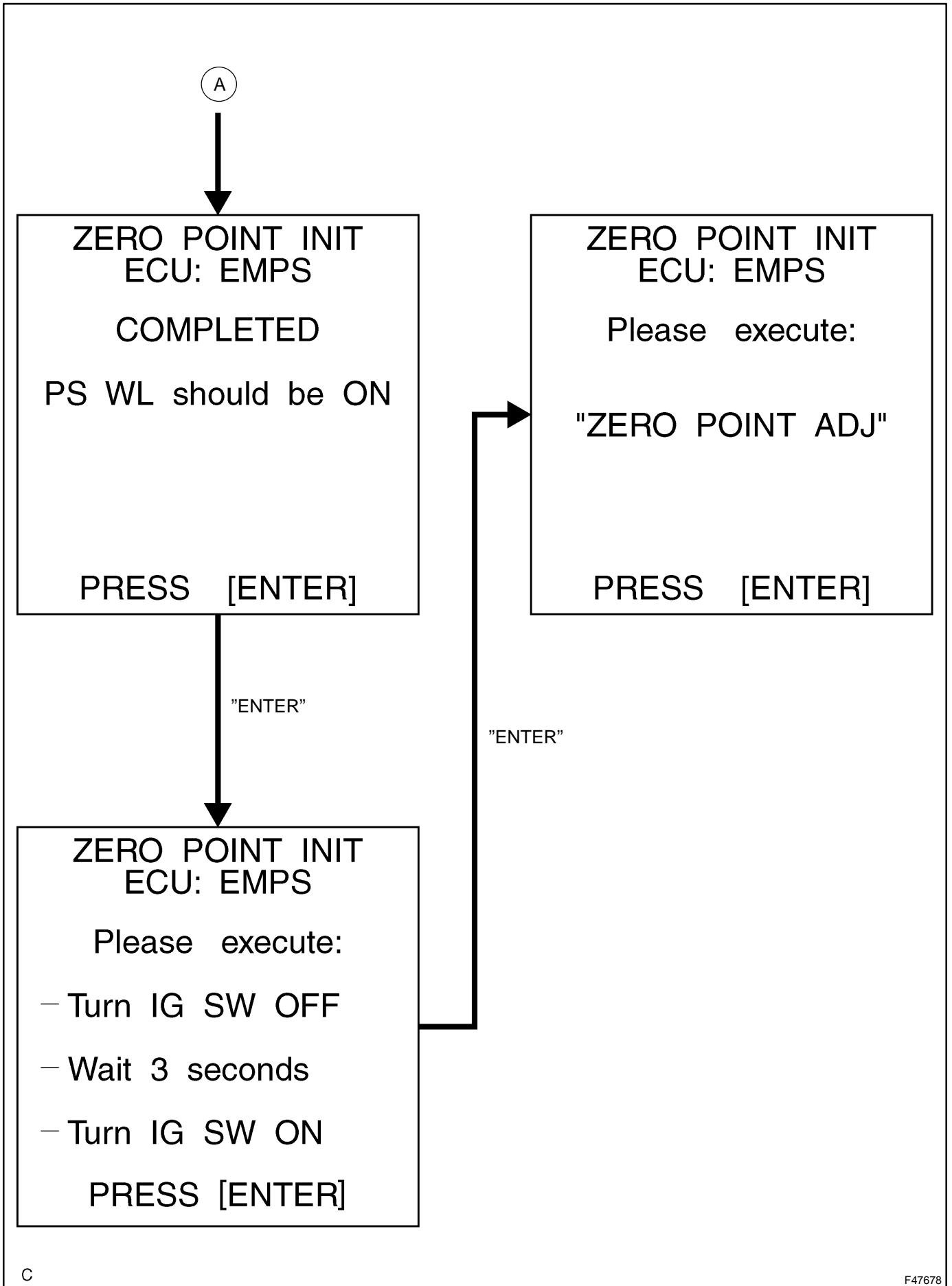(d)   Perform steering zero point calibration after turning the power switch off.

NOTICE:

Zero point calibration cannot be carried out with the power switch on (IG) after initialization of the zero point calibration signal is completed.

```
┌──────────────────────────────┐      ┌──────────────────────────────┐
│     DIAGNOSTIC MENU          │      │  TORQUE SENSOR ZERO          │
│         EMPS                 │      │   POINT ADJUSTMENT           │
│                              │      │     ECU:  EMPS               │
│  1:  DATA LIST               │      │                              │
│  2:  DTC INFO                │      │  ▌1.  ZERO POINT INIT▐       │
│                              │      │   2.  ZERO POINT ADJ         │
│  4:  SNAPSHOT                │      │                              │
│ ▌5:  TRQ SENSOR ADJ▐         │      │                              │
│  6:  RECORDS CLEAR           │      │                              │
│  7:  SIGNAL CHECK            │      │    Press   [ 1 ]  or  [ 2 ]  │
└──────────────────────────────┘      └──────────────────────────────┘
```

"5"   "ENTER"   "1"

```
┌──────────────────────────────┐      ┌──────────────────────────────┐
│        CAUTION               │      │   ZERO  POINT  INIT          │
│                              │      │      ECU: EMPS               │
│  If  the  ECU  has  been     │      │                              │
│ exchanged,      execute      │      │                              │
│ ZERO  POINT  ADJUST.         │      │   Do   you   wish   to       │
│                              │      │  start   this   function?    │
│ Otherwise,      execute      │      │                              │
│ ZERO  POINT  INIT            │      │                              │
│ before       executing       │      │                              │
│ ZERO  POINT  ADJUST.         │      │                              │
│                              │      │   Press   [ Yes ]  or  [ No ]│
│    PRESS  [ENTER]            │      │                              │
└──────────────────────────────┘      └──────────────────────────────┘
```

"Yes"

(A)

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Ⓐ

```
ZERO  POINT  INIT
    ECU: EMPS

    COMPLETED

PS  WL  should  be  ON




PRESS   [ENTER]
```

"ENTER"

```
ZERO  POINT  INIT
    ECU: EMPS

  Please  execute:


  "ZERO  POINT  ADJ"




  PRESS   [ENTER]
```

"ENTER"

```
ZERO  POINT  INIT
    ECU: EMPS

  Please  execute:

– Turn  IG  SW  OFF

– Wait  3  seconds

– Turn  IG  SW  ON

  PRESS  [ENTER]
```
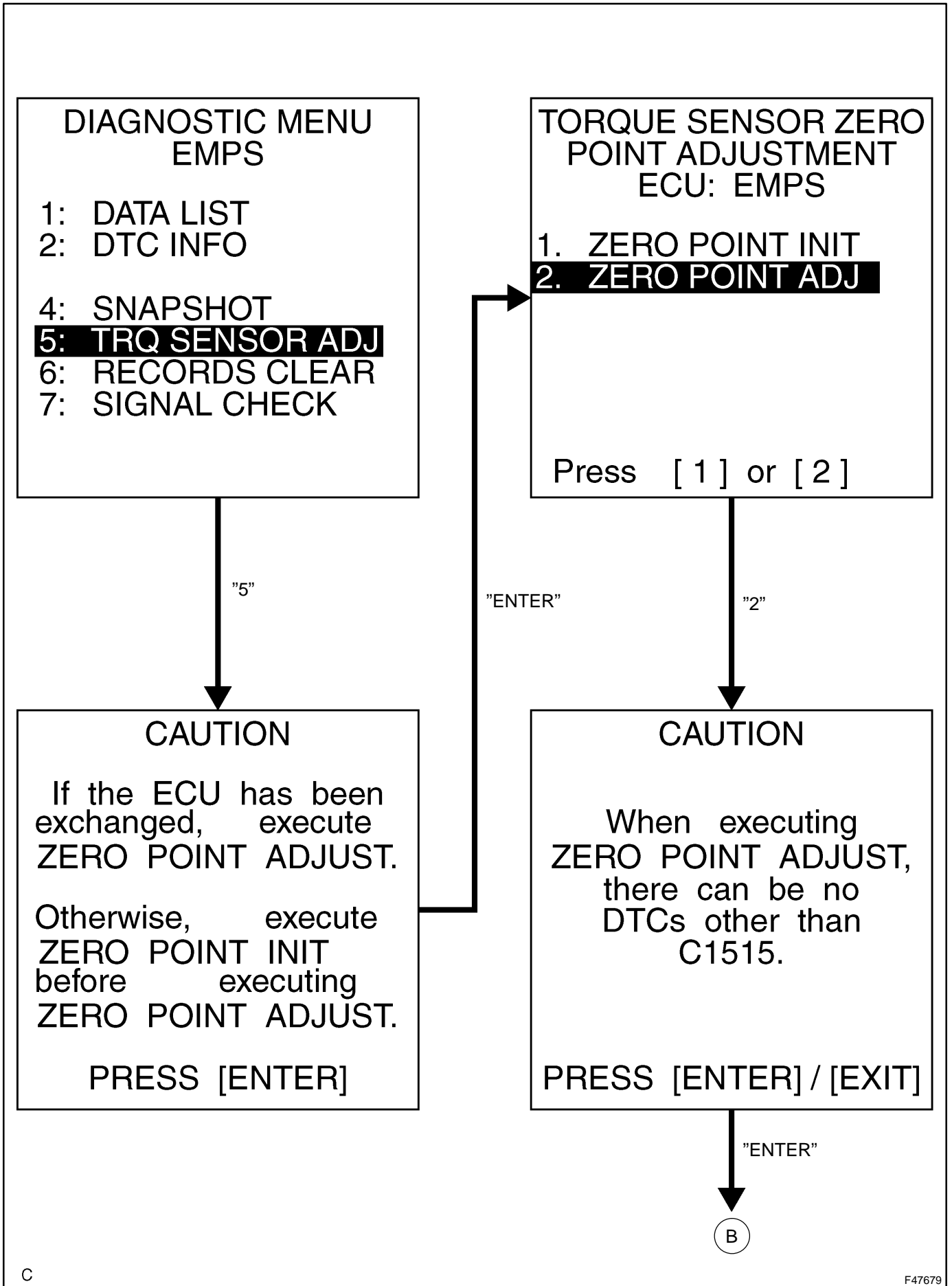
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2. TORQUE SENSOR ZERO POINT CALIBRATION

(a) Center the steering wheel and align the front wheels straight ahead.

(b) Connect the hand–held tester to the DLC3.

(c) Turn the power switch on (IG) and then perform the zero point calibration by following the tester screen.

NOTICE:

*   **The vehicle is stopped.**
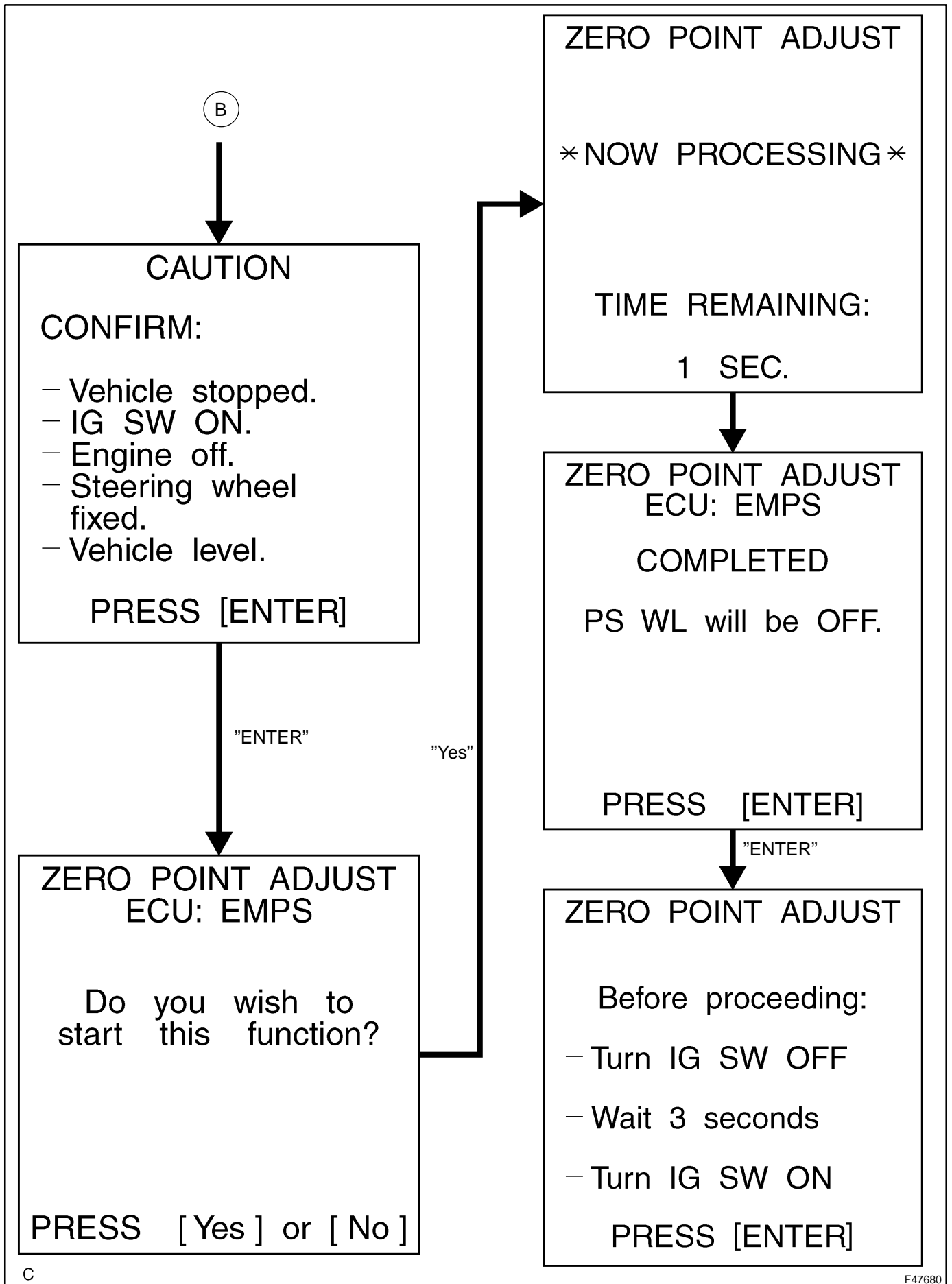*   **Do not start the engine. (Do not turn the power switch on (READY).)**
*   **Do not turn the steering wheel.**
*   **The vehicle is on level ground.**

(d) Confirm that no DTCs are output after completing the operation.

    (1) When DTC C1515 is output, see page 05–1231.

    (2) When DTC C1516 is output, see page 05–1232.

    (3) When DTC C1534 is output, see page 05–1235.

```
┌─────────────────────────┐     ┌─────────────────────────┐
│   DIAGNOSTIC MENU       │     │  TORQUE SENSOR ZERO     │
│        EMPS            │     │   POINT ADJUSTMENT      │
│                         │     │      ECU: EMPS          │
│  1:  DATA LIST          │     │                         │
│  2:  DTC INFO           │     │  1.  ZERO POINT INIT    │
│                         │     │  2.  ZERO POINT ADJ     │
│  4:  SNAPSHOT           │     │                         │
│  5:  TRQ SENSOR ADJ     │     │                         │
│  6:  RECORDS CLEAR      │     │                         │
│  7:  SIGNAL CHECK       │     │   Press  [ 1 ] or [ 2 ] │
└─────────────────────────┘     └─────────────────────────┘
```

"5"   "ENTER"   "2"

```
┌─────────────────────────┐     ┌─────────────────────────┐
│       CAUTION           │     │       CAUTION           │
│                         │     │                         │
│  If the ECU has been    │     │   When  executing       │
│  exchanged,   execute   │     │ ZERO POINT ADJUST,      │
│  ZERO POINT ADJUST.     │     │  there can be no        │
│                         │     │  DTCs other than        │
│  Otherwise,   execute   │     │      C1515.             │
│  ZERO POINT INIT        │     │                         │
│  before   executing     │     │                         │
│  ZERO POINT ADJUST.     │     │                         │
│                         │     │                         │
│   PRESS [ENTER]         │     │ PRESS [ENTER] / [EXIT]  │
└─────────────────────────┘     └─────────────────────────┘
```

"ENTER"

(B)

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B

CAUTION

CONFIRM:

– Vehicle stopped.
– IG SW ON.
– Engine off.
– Steering wheel fixed.
– Vehicle level.

PRESS [ENTER]

"ENTER"

"Yes"

ZERO POINT ADJUST
ECU: EMPS

Do you wish to start this function?

PRESS [Yes] or [No]

C

ZERO POINT ADJUST

✳NOW PROCESSING✳

TIME REMAINING:

1 SEC.

ZERO POINT ADJUST
ECU: EMPS

COMPLETED

PS WL will be OFF.

PRESS [ENTER]

"ENTER"

ZERO POINT ADJUST

Before proceeding:

– Turn IG SW OFF

– Wait 3 seconds

– Turn IG SW ON

PRESS [ENTER]

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