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Model Year Start: 2024	Model: Tacoma	Prod Date Range: [03/2024 - 12/2024]
Title: MAINTENANCE: FRONT WHEEL ALIGNMENT: ADJUSTMENT; 2024 MY Tacoma Tacoma HV [03/2024 - 12/2024]		

ADJUSTMENT

CAUTION / NOTICE / HINT

The necessary procedures (adjustment, calibration, initialization, or registration) that must be performed after completing the front wheel alignment procedure are shown below.

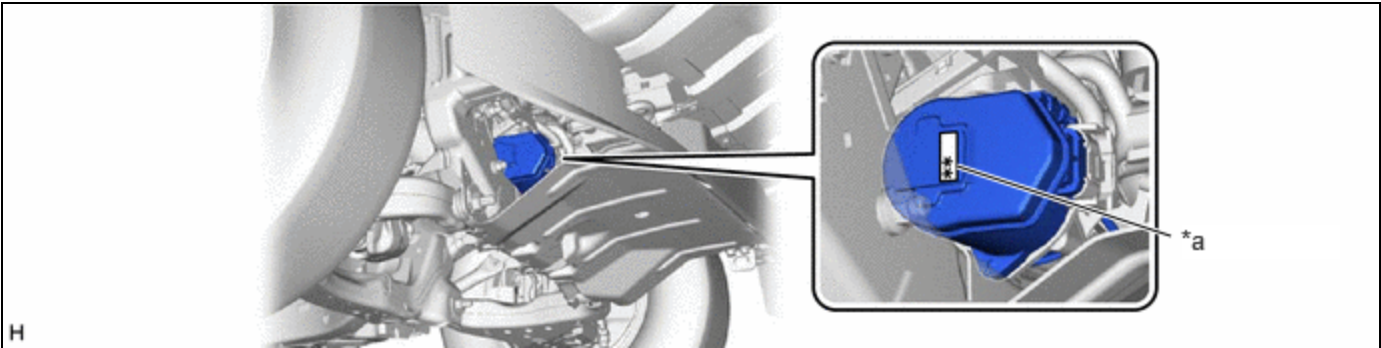
Necessary Procedure After Parts Removed/Installed/Replaced

REPLACED PART OR PERFORMED PROCEDURE	NECESSARY PROCEDURES	EFFECT/INOPERATIVE FUNCTION WHEN NECESSARY PROCEDURES ARE NOT PERFORMED	LINK
Front wheel alignment adjustment	Perform "Calibration"	- DTCs are stored - ABS warning light illuminates - Slip indicator light illuminates - Electronically controlled brake system does not operate correctly	INFO

NOTICE:

For this vehicle, the standard alignment values differ depending on the type.

For this reason, it is necessary to check the identification of the rack and pinion power steering gear assembly and determine the type.



*a	Identification	-	-
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IDENTIFICATION	TYPE
9A	Type A
9B	Type B
9C	Type C

HINT:

The character below "P" signifies the pitch angle.

Use the formula below to calculate pitch angle.

Formula:

$$P=\tan^{-1}\left(\frac{(D\text{ or }E)-B+12.3}{(\text{Wheel Base}-543)}\right)$$

◦ B (mm): Center of front cam bolt tip (front side)

◦ D (mm): Center of lower arm bolt head (outboard side)

◦ E (mm): Center of front leaf spring eye bolt head

◦ Wheel Base (mm)

Tolerance:

TOE-IN ANGLE	CAMBER AND CASTER	LEFT-RIGHT DIFFERENCE OF CAMBER AND CASTER	INSIDE WHEEL ANGLE
+/-0°09' (+/-0.16°)	+/-0°45' (+/-0.75°)	0°30' (0.50°) or less	-2°00' (-2.00°) to 1°00' (1.00°)

Wheel Alignment (Unloaded Vehicle):

for Type A and Type B

FRONT VEHICLE HEIGHT	CAMBER	CASTER	KING PIN ANGLE	TOE-IN ANGLE	TIRE TURNING ANGLE (INSIDE WHEEL)
45 mm (1.77 in.)	1°25' (1.41°)	3°09' (3.15°) - P	12°25' (12.41°)	1°47' (1.79°)	40°12' (40.20°)*1 38°00' (38.00°)*2
50 mm (1.97 in.)	1°20' (1.33°)	3°17' (3.28°) - P	12°29' (12.49°)	1°37' (1.62°)	40°00' (40.00°)*1 37°48' (37.80°)*2
55 mm (2.17 in.)	1°15' (1.25°)	3°25' (3.42°) - P	12°34' (12.57°)	1°27' (1.45°)	39°48' (39.80°)*1 37°36' (37.60°)*2
60 mm (2.36 in.)	1°10' (1.17°)	3°33' (3.55°) - P	12°40' (12.66°)	0°50' (0.84°)	39°12' (39.20°)*1 37°00' (37.00°)*2
65 mm (2.56 in.)	1°05' (1.09°)	3°41' (3.69°) - P	12°45' (12.75°)	0°43' (0.71°)	39°06' (39.10°)*1 36°54' (36.90°)*2
70 mm (2.76 in.)	0°59' (0.99°)	3°49' (3.82°) - P	12°51' (12.85°)	0°35' (0.58°)	39°00' (39.00°)*1 36°48' (36.80°)*2
75 mm (2.95 in.)	0°54' (0.90°)	3°57' (3.95°) - P	12°56' (12.94°)	0°27' (0.45°)	38°48' (38.80°)*1 36°36' (36.60°)*2
80 mm (3.15 in.)	0°48' (0.80°)	4°05' (4.09°) - P	13°03' (13.05°)	0°20' (0.33°)	38°42' (38.70°)*1 36°30' (36.50°)*2
85 mm (3.35 in.)	0°42' (0.70°)	4°13' (4.22°) - P	13°10' (13.16°)	0°13' (0.21°)	38°36' (38.60°)*1 36°24' (36.40°)*2
90 mm (3.54 in.)	0°35' (0.59°)	4°21' (4.35°) - P	13°16' (13.27°)	0°06' (0.10°)	38°30' (38.50°)*1 36°18' (36.30°)*2
95 mm (3.74 in.)	0°29' (0.48°)	4°29' (4.48°) - P	13°23' (13.38°)	0°00' (0.00°)	38°24' (38.40°)*1 36°12' (36.20°)*2
*1: for Type A					
*2: for Type B					

FRONT VEHICLE HEIGHT	CAMBER	CASTER	KING PIN ANGLE	TOE-IN ANGLE	TIRE TURNING ANGLE (INSIDE WHEEL)
100 mm (3.94 in.)	0°22' (0.37°)	4°37' (4.62°) - P	13°30' (13.50°)	-0°06' (-0.10°)	38°18' (38.30°)*1 36°06' (36.10°)*2
105 mm (4.13 in.)	0°15' (0.25°)	4°45' (4.75°) - P	13°38' (13.63°)	-0°12' (-0.20°)	38°12' (38.20°)*1 36°00' (36.00°)*2
110 mm (4.33 in.)	0°08' (0.13°)	4°53' (4.88°) - P	13°46' (13.76°)	-0°17' (-0.29°)	38°06' (38.10°)*1 35°54' (35.90°)*2
115 mm (4.53 in.)	0°00' (0.00°)	5°01' (5.01°) - P	13°53' (13.89°)	-0°22' (-0.37°)	38°00' (38.00°)*1 35°48' (35.80°)*2
120 mm (4.72 in.)	-0°08' (-0.13°)	5°09' (5.15°) - P	14°02' (14.03°)	-0°28' (-0.46°)	37°54' (37.90°)*1 35°42' (35.70°)*2
*1: for Type A					
*2: for Type B					

for Type C

FRONT VEHICLE HEIGHT	CAMBER	CASTER	KING PIN ANGLE	TOE-IN ANGLE	TIRE TURNING ANGLE (INSIDE WHEEL)
20 mm (0.79 in.)	1°43' (1.72°)	2°28' (2.47°) - P	12°05' (12.09°)	1°48' (1.80°)	35°24' (35.40°)
25 mm (0.98 in.)	1°40' (1.66°)	2°37' (2.61°) - P	12°08' (12.14°)	1°37' (1.61°)	35°12' (35.20°)
30 mm (1.18 in.)	1°37' (1.61°)	2°44' (2.74°) - P	12°12' (12.20°)	1°26' (1.43°)	35°00' (35.00°)
35 mm (1.38 in.)	1°32' (1.54°)	2°53' (2.88°) - P	12°16' (12.27°)	1°16' (1.26°)	34°54' (34.90°)
40 mm (1.57 in.)	1°29' (1.48°)	3°01' (3.01°) - P	12°20' (12.34°)	1°05' (1.09°)	34°42' (34.70°)
45 mm (1.77 in.)	1°25' (1.41°)	3°09' (3.15°) - P	12°25' (12.41°)	0°56' (0.93°)	34°30' (34.50°)
50 mm (1.97 in.)	1°20' (1.33°)	3°17' (3.28°) - P	12°29' (12.49°)	0°46' (0.77°)	34°24' (34.40°)
55 mm (2.17 in.)	1°15' (1.25°)	3°25' (3.42°) - P	12°34' (12.57°)	0°38' (0.63°)	34°12' (34.20°)
60 mm (2.36 in.)	1°10' (1.17°)	3°33' (3.55°) - P	12°40' (12.66°)	0°29' (0.48°)	34°06' (34.10°)
65 mm (2.56 in.)	1°05' (1.09°)	3°41' (3.69°) - P	12°45' (12.75°)	0°21' (0.35°)	34°00' (34.00°)
70 mm (2.76 in.)	0°59' (0.99°)	3°49' (3.82°) - P	12°51' (12.85°)	0°13' (0.22°)	33°54' (33.90°)
75 mm (2.95 in.)	0°54' (0.90°)	3°57' (3.95°) - P	12°56' (12.94°)	0°05' (0.09°)	33°42' (33.70°)

FRONT VEHICLE HEIGHT	CAMBER	CASTER	KING PIN ANGLE	TOE-IN ANGLE	TIRE TURNING ANGLE (INSIDE WHEEL)
80 mm (3.15 in.)	0°48' (0.80°)	4°05' (4.09°) - P	13°03' (13.05°)	-0°02' (-0.03°)	33°36' (33.60°)
85 mm (3.35 in.)	0°42' (0.70°)	4°13' (4.22°) - P	13°10' (13.16°)	-0°09' (-0.15°)	33°30' (33.50°)
90 mm (3.54 in.)	0°35' (0.59°)	4°21' (4.35°) - P	13°16' (13.27°)	-0°15' (-0.25°)	33°24' (33.40°)
95 mm (3.74 in.)	0°29' (0.48°)	4°29' (4.48°) - P	13°23' (13.38°)	-0°22' (-0.36°)	33°18' (33.30°)

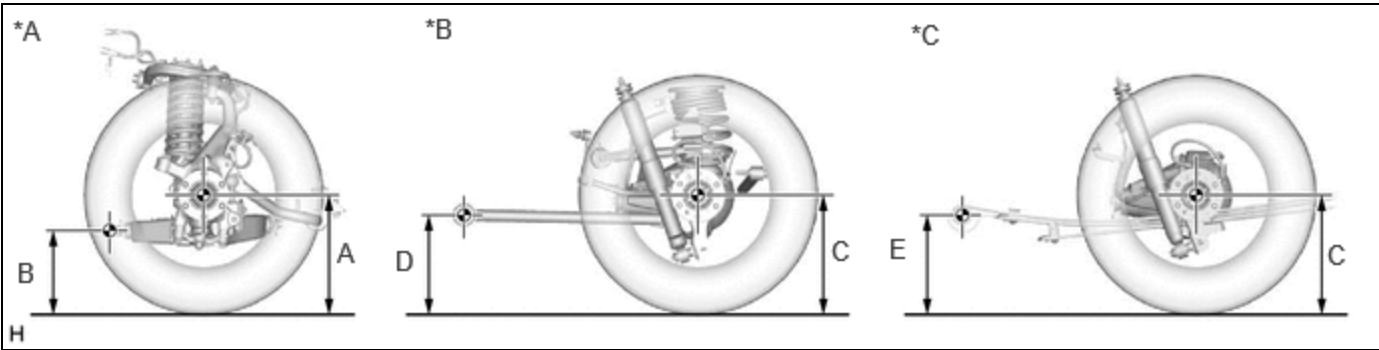
PROCEDURE

1. PREPARATION

- (a) Inspect the tires for wear and proper inflation pressure.
- Click here [INFO](#)
- (b) Bounce the vehicle about 5 times to settle the suspensions.

2. INSPECT VEHICLE HEIGHT

- NOTICE:
- Perform measurement on a level surface.
 - Apply the parking brake and secure the vehicle with the chocks.



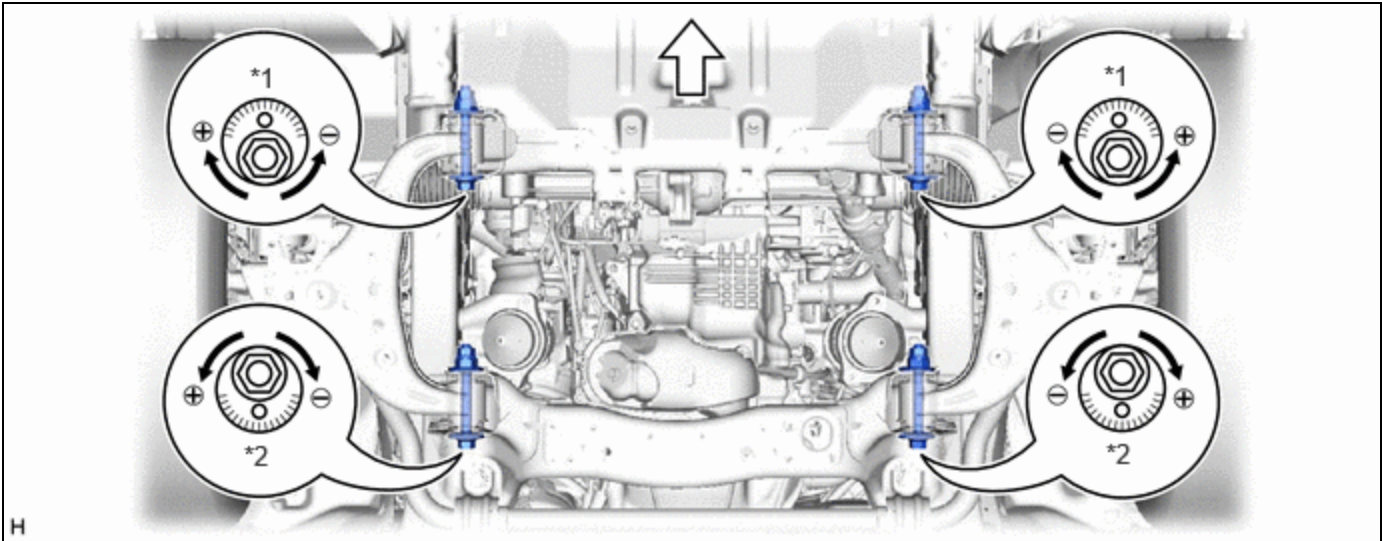
*A	for Front Side	*B	for Rear Side (coil spring)
*C	for Rear Side (leaf spring)	-	-

- (a) Press down on the vehicle several times to stabilize the suspension, and then measure the vehicle height.
- Measuring points:
- A: Front wheel center
- B: Center of front cam bolt tip (front side)
- C: Rear wheel center
- D: Center of lower arm bolt head (outboard side)
- E: Center of front leaf spring eye bolt head
- (b) Calculate A - B for the front vehicle height and C - D or C - E for the rear vehicle height.
- (c) If the it result not as specified, adjust the vehicle height by loading with weights.

3. INSPECT WHEEL ALIGNMENT

- (a) Use the wheel alignment tester or equivalent.

4. ADJUST CAMBER AND CASTER



*1	Front Adjusting Cam	*2	Rear Adjusting Cam
	Front of the Vehicle	-	-

- (a) for Type A and Type B
- (1) Adjust front vehicle height (A - B) to 82 mm (3.23 in.) and rear vehicle height (C - D or C - E) to 71 mm (2.80 in.) before adjusting caster or camber.
- (b) for Type C
- (1) Adjust front vehicle height (A - B) to 59 mm (2.32 in.) and rear vehicle height (C - D) to 61 mm (2.40 in.) before adjusting caster or camber.
- (c) Loosen the bolt and nut.
- (d) Turn the adjustment cam to adjust the camber and casters to the target value.
- Target value (for Type A and Type B):
- Camber

0°48' (0.80°)

Caster

3°30' (3.50°)
- Target value (for Type C):
- Camber

1°12' (1.20°)

Caster

3°06' (3.10°)
- HINT:
- The No. 1 to (+) by 1 notch changes the caster by +0°07' and camber by +0°04'.

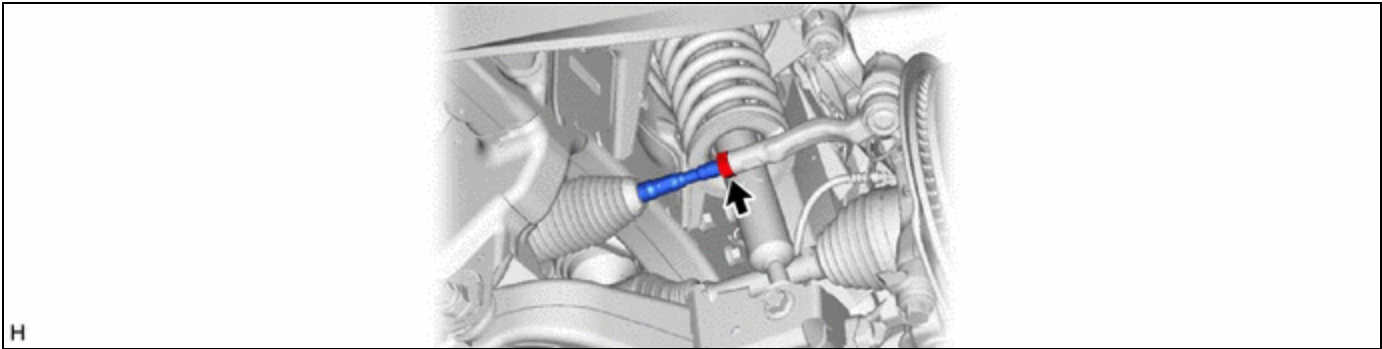
The No. 2 to (+) by 1 notch changes the caster by +0°07' and camber by +0°04'.
- (e) Tighten the bolt and nut.

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5. ADJUST TOE-IN

- (a) Remove the clip from the steering rack boot.

(b) Loosen the nut of the tie rod.



(c) Turn both steering rack ends the same amount to adjust the toe.

(d) Hold the tie rod and tighten the nut.

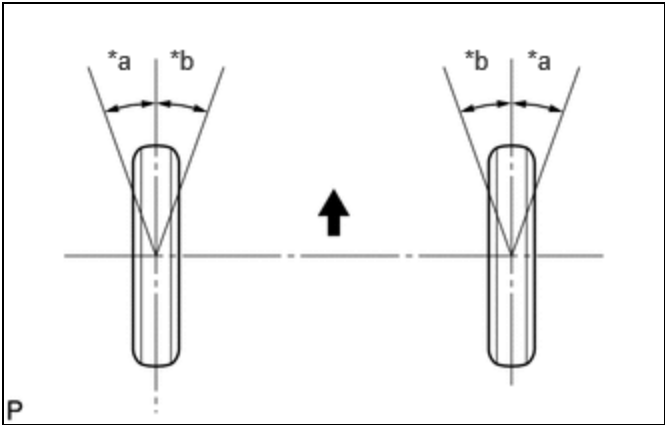
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(e) Fix twisted steering rack boot and install the clip with the tabs toward the front of the vehicle.

(f) Check that the tie rod is at the ball joint movable range center.

6. INSPECT WHEEL ANGLE

(a) Turn the steering wheel until it stops and measure the wheel angle.



*a	Inside
*b	Outside
	Front of the Vehicle

7. PERFORM CALIBRATION

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