



SERVICE MANUAL INFORMATION

**SB-18-020 CONVENTIONAL WHEEL ALIGNMENT
WORKSHOP MANUAL CORRECTION**

**GROUP: SERVICE MANUAL UPDATE
BULLETIN NO: SB-18-020
DATE: 9-5-2018
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SUBJECT VEHICLES: Conventional Trucks equipped with an J08E.

The following is to inform you of the above caption. This service data should be attached to the relevant pages of the workshop manuals for maintenance and to use for servicing.

OVERVIEW:

Workshop manual correction of wheel alignment.



FRONT AXLE (MFS)

DATA AND SPECIFICATIONS

EN08Z06021200001

Vehicle Model			HINO 238, 258, 268 (NE8J)	HINO 238, 258, 268 (NE8J)	HINO 258, 268 (NJ8J, NV8J)	HINO 338 (NF8J)	HINO 338, 358 (NV8J, NH8J)	HINO 338, 358 (NV8J, NH8J)
Front axle series No.			MFS-8	MFS-10	MFS-10	MFS-12	MFS-12	MFS-14
Axle beam type			Reversed Elliot "I" beam	Reversed Elliot "I" beam	Reversed Elliot "I" beam	Reversed Elliot "I" beam	Reversed Elliot "I" beam	Reversed Elliot "I" beam
Axle beam material			As rolled normalized steels	As rolled normalized steels	As rolled normalized steels	As rolled normalized steels	As rolled normalized steels	As rolled normalized steels
Brake disc or drum location			Inboard	Inboard	Outboard	Inboard	Outboard	Outboard
Wheel bearing			Two tapered roller bearings	Two tapered roller bearings	Two tapered roller bearings	Two tapered roller bearings	Two tapered roller bearings	Two tapered roller bearings
Lubrication of wheel bearing (Amount of grease or oil in a hub as shown, below)			Oil	Oil	Oil	Oil	Oil	Oil
King pin thrust bearing			tapered roller bearing	tapered roller bearing	tapered roller bearing	tapered roller bearing	tapered roller bearing	tapered roller bearing
Wheel alignment	Camber	(deg)	+7/16 to -7/16	+7/16 to -7/16	+7/16 to -7/16	+7/16 to -7/16	+7/16 to -7/16	+7/16 to -7/16
	King pin angle	(deg)	9.25	6.25	6.25	6.25	6.25	6.25
	Caster (Reference)	(deg)	3.5 (+2 to +4.5)	3.5 (+2 to +4.5)	3.5 (+2 to +4.5)	3.5 (+2 to +4.5)	3.5 (+2 to +4.5)	3.5 (+2 to +4.5)
	Toe-in	(mm)	1.0-3.0	1.5-3.5	1.5-3.5	1.5-3.5	1.5-3.5	1.5-3.5
Knuckle turning	Inner turn	(deg)	51	51	51	51	51	50
	Outer turn	(deg)	36.8	37.6	37.6	37.6	37.6	37.2

CHANGE

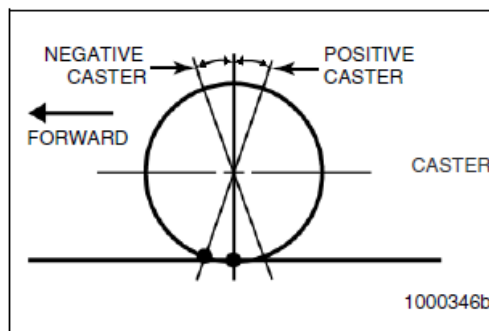
CHANGE

CHANGE

Table I: Camber Angle Recommendations

CHANGE

Vehicle Condition	Recommended Camber Angle
Unloaded	+7/16° to -7/16°
Axle Not Installed in Vehicle	+11/16° to -3/16°



9. CASTER ANGLE

Caster is the FORWARD or REARWARD tilt of the king pin center line when viewed from the side of the vehicle. The caster angle is the angle from the vertical position to the center line of the king pin. If the top of the king pin axis is toward the rear of the vehicle, the caster is positive. A slight positive caster creates a self-aligning action that helps to stabilize the vehicle after turning and stabilizes it for driving straight ahead.

Always use an alignment machine to check the caster angle.

If the caster is greater than specification, steering effort can increase a shimmy condition.

The caster angle is controlled by tapered shims installed under the leaf springs. Adjust the caster according to the specifications.

CHANGE

Caster specifications

Vehicle Condition	Caster Angle (Reference)
Unloaded	3.5° (+2° to +4.5°)

10. MEASURE AND ADJUST THE TOE

Toe is the relationship of the distance between the front of the front tires and the rear of the front tires.

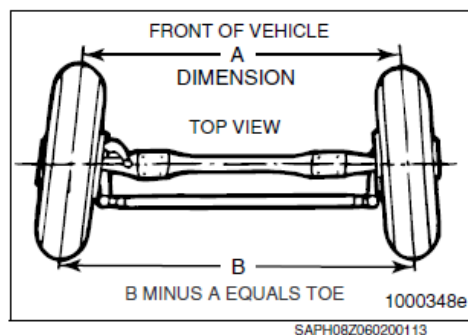
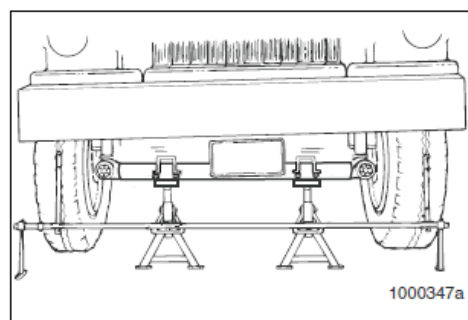
When the front distance is less than the rear distance, the wheels are "toed in." Toe-in is designed into the vehicle to counteract the tendency of the tires to toe-out when the vehicle is driven.

Incorrect toe will result in rapid tire wear.

⚠ WARNING

Park the vehicle on a level surface. Block the wheels to prevent the vehicle from moving. Support the vehicle with safety stands. Do not work under a vehicle supported only by jacks. Jacks can slip and fall over. Serious personal injury and damage to components can result.

- (1) Park the vehicle on a level surface. Block the wheels to prevent the vehicle from moving. Set the parking brake.
- (2) Use jacks to raise vehicle so that front tires are off the ground. Support the front axle with safety stands.
- (3) Use paint or chalk to mark the center area of both front tires around the complete outer surface of the tire.
- (4) Place the pointers of a trammel bar on the marks of each tire. Rotate the tires. Verify that a straight line is marked on the outer surface of the tire.
- (5) Lower the vehicle to the floor. Do not measure toe with the front axle in the raised position. The weight of the vehicle must be on the front axle when toe is measured. Move the vehicle FORWARD and BACKWARD 10 feet (3 meters).
- (6) Place the trammel bar at the back of the tires. Raise the pointers so that the pointers are level with the spindles. Align the pointers with the marks on the tires. Measure and record the distance between the pointers.
- (7) Repeat Step (6) for the front of the tires.
- (8) To obtain the toe measurement, subtract the distance reading between the front of the tires from the distance reading between the back of the tires.
- (9) Use the following procedure if the toe measurement is not within the correct specifications shown in below Table.

**Toe Specifications****CHANGE**

Front axle series No.	MFS 8	MFS 10, 12, 14
Toe specifications	0.04-0.12 in. (1.0-3.0 mm)	0.06-0.14 in. (1.5-3.5 mm)

- a. Loosen the tube clamp nut and bolt on each end of the cross tube.
 - b. Turn the cross tube until the specified toe distance is obtained.
 - c. The threaded portion of the tie rod end must be installed into the cross tube beyond the point where the tube slot stops.
 - d. Tighten the nut and bolt on each end of the cross tube to the specified torque. Refer to "Front Non-Drive Axles with Conventional Wheel Ends", "Torque Specifications" in page AX02-8.
- (10) Repeat Step (1) through Step (8) to check the toe dimension.