MITSUBISHI MOTORS

SERVICE BULLETIN

GLOBAL AFTER SALES OFFICE, MITSUBISHI MOTORS CORPORATION

PURPOSE : CORRECTION	ISSUE NO. : MSB-11E33-501	DATE : 2011-09-20
SUBJECT : FRONT WHEEL ALIGNMENT		<MODEL> <M/Y>
GROUP : FRONT SUSPENSION		(EUR/RUSSIA) See following 2. Applicable Manuals table.

1. Description:

There have been some errors in the inspection and adjustment of the front wheel alignment. This Service Bulletin contains the correct information.

2. Applicable Manuals:

See Attached sheets 1 (1/3) to 1 (3/3).

There may be some attached sheets not included in this Service Bulletin because they are not applicable to your market. Their sheet numbers are not listed in the above table.

3. Effective Models:

From the first production models

4. Corrected Specifications:

See Attached sheets 4, 6 and 7.

Attached sheet 1 (1/3)

<EUR>

Manual/Model	<M/Y>	Pub. No.	Title (Info-ID)	Attached Sheet
2007 PAJERO/MONTERO Workshop Manual CD-ROM (V80/90)	07	CBKE07E2-CD (English) CBKS07E2-CD (Spanish) CBKF07E2-CD (French) CBKG07E2-CD (German)	On-vehicle Service Front Wheel Alignment Check and Adjustment (M13302000901ENG0000010000)	Attached sheet 4
2008 PAJERO/MONTERO Workshop Manual CD-ROM (V80/90)	08	CBKE08E1-CD (English) CBKS08E1-CD (Spanish) CBKF08E1-CD (French) CBKG08E1-CD (German)	On-vehicle Service Front Wheel Alignment Check and Adjustment (M332-01-240-23400-01)	
2009 PAJERO/MONTERO Workshop Manual CD-ROM (V80/90)	09	CBKE09E1-CD (English) CBKS09E1-CD (Spanish) CBKF09E1-CD (French) CBKG09E1-CD (German) CBKI09E1-CD (Italian)	On-vehicle Service Front Wheel Alignment Check and Adjustment (M332-01-240-35300-01)	Attached sheet 6
2009.5 PAJERO/MONTERO Workshop Manual CD-ROM (V80/90)	09.5	CBKE09E2-CD (English) CBKS09E2-CD (Spanish) CBKF09E2-CD (French) CBKG09E2-CD (German) CBKI09E2-CD (Italian)	On-vehicle Service Front Wheel Alignment Check and Adjustment (M332-01-240-51300-01)	
2010 PAJERO/MONTERO Workshop Manual CD-ROM (V80/90)	10	CBKE10E1-CD (English) CBKS10E1-CD (Spanish) CBKF10E1-CD (French) CBKG10E1-CD (German) CBKI10E1-CD (Italian)		
2011 PAJERO/MONTERO Workshop Manual CD-ROM (V80/90)	11	CBKE11E1-CD (English) CBKS11E1-CD (Spanish) CBKF11E1-CD (French) CBKG11E1-CD (German) CBKI11E1-CD (Italian)		

Attached sheet 1 (2/3)

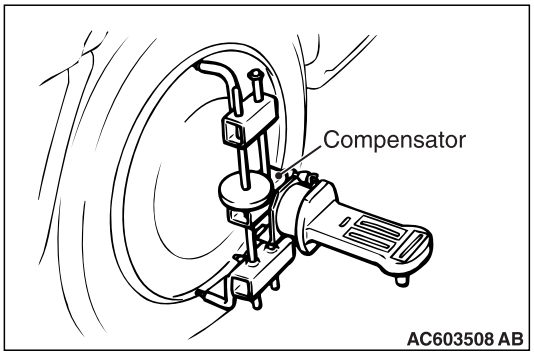
Manual/Model	<M/Y>	Pub. No.	Title (Info-ID)	Attached Sheet
2007 L200 Workshop Manual CD-ROM (KA0T/KB0T)	07	CCRE07E1-CD (English) CCRS07E1-CD (Spanish) CCRF07E1-CD (French) CCRG07E1-CD (German)	On-vehicle Service Front Wheel Alignment Check and Adjustment (M331-00-090-89700-01)	Attached sheet 7
2007.5 L200 Workshop Manual CD-ROM (KA0T/KB0T)	07.5	CCRE07E2-CD (English) CCRS07E2-CD (Spanish) CCRF07E2-CD (French) CCRG07E2-CD (German)		
2009 L200 Workshop Manual CD-ROM (KA0T/KB0T)	09	CCRE09E1-CD (English) CCRS09E1-CD (Spanish) CCRF09E1-CD (French) CCRG09E1-CD (German) CCRI09E1-CD (Italian)	On-vehicle Service Front Wheel Alignment Check and Adjustment (M331-00-091-38400-01)	
2010 L200 Workshop Manual CD-ROM (KA0T/KB0T)	10	CCRE10E1-CD (English) CCRS10E1-CD (Spanish) CCRF10E1-CD (French) CCRG10E1-CD (German) CCRI10E1-CD (Italian)	On-vehicle Service Front Wheel Alignment Check and Adjustment <2WD (HIGH RIDER), 4WD> (M331-00-091-69600-01)	
2011 L200 Workshop Manual CD-ROM (KA0T/KB0T)	11	CCRE11E1-CD (English) CCRS11E1-CD (Spanish) CCRF11E1-CD (French) CCRG11E1-CD (German) CCRI11E1-CD (Italian)	On-vehicle Service Front Wheel Alignment Check and Adjustment <2WD (HIGH RIDER), 4WD> (M331-00-091-69601-01)	

<RUSSIA>

Underneath Manual/Model	<M/Y>	Underneath Pub. No.	Title (Info-ID)	Attached Sheet
2007 PAJERO Workshop Manual (V80/90)	07	N/A	On-vehicle Service Front Wheel Alignment Check and Adjustment (M13302000901ENG0000010000)	Attached sheet 4
2008 PAJERO Workshop Manual (V80/90)	08	N/A	On-vehicle Service Front Wheel Alignment Check and Adjustment (M332-01-240-23400-01)	
2009 PAJERO Workshop Manual (V80/90)	09	N/A	On-vehicle Service Front Wheel Alignment Check and Adjustment (M332-01-240-35300-01)	Attached sheet 6
2009.5 PAJERO Workshop Manual (V80/90)	09.5	N/A	On-vehicle Service Front Wheel Alignment Check and Adjustment (M332-01-240-51300-01)	
2010 PAJERO Workshop Manual (V80/90)	10	N/A		
2011 PAJERO Workshop Manual (V80/90)	11	N/A		
2009 L200 Workshop Manual (KA0T/KB0T)	09	N/A	On-vehicle Service Front Wheel Alignment Check and Adjustment (M331-00-091-38400-01)	Attached sheet 7
2010 L200 Workshop Manual (KA0T/KB0T)	10	N/A	On-vehicle Service Front Wheel Alignment Check and Adjustment <2WD (HIGH RIDER), 4WD> (M331-00-091-69600-01)	
2011 L200 Workshop Manual (KA0T/KB0T)	11	N/A	On-vehicle Service Front Wheel Alignment Check and Adjustment <2WD (HIGH RIDER), 4WD> (M331-00-091-69601-01)	
2009 PAJERO SPORT Workshop Manual (KH8W)	09	N/A	On-vehicle Service Front Wheel Alignment Check and Adjustment (M331-00-091-48100-01)	
2010 PAJERO SPORT Workshop Manual (KH8W)	10	N/A	On-vehicle Service Front Wheel Alignment Check and Adjustment (M331-00-091-48101-01)	
2011 PAJERO SPORT Workshop Manual (KH8W)	11	N/A	On-vehicle Service Front Wheel Alignment Check and Adjustment (M331-00-091-77100-01)	

Attached sheet 4

CAMBER, CASTER AND KINGPIN INCLINATION



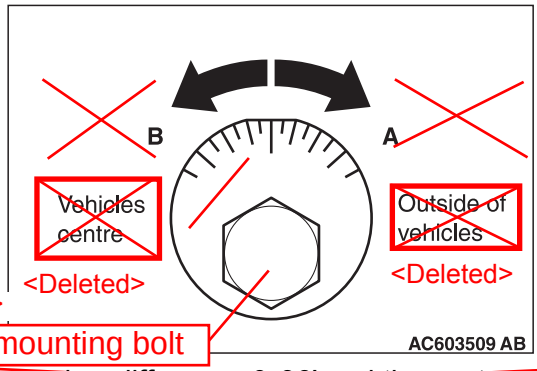
Standard value:

Item		Standard value
Camber		0°00' ± 0°30'*
Caster	Short wheel base	3°39' ± 1°00'*
	Long wheel base	3°31' ± 1°00'*
Kingpin inclination	Kingpin inclination	11°30'

*NOTE: *: Difference between right and left wheels must be less than 30'*

CAMBER AND CASTER REFERENCE TABLE

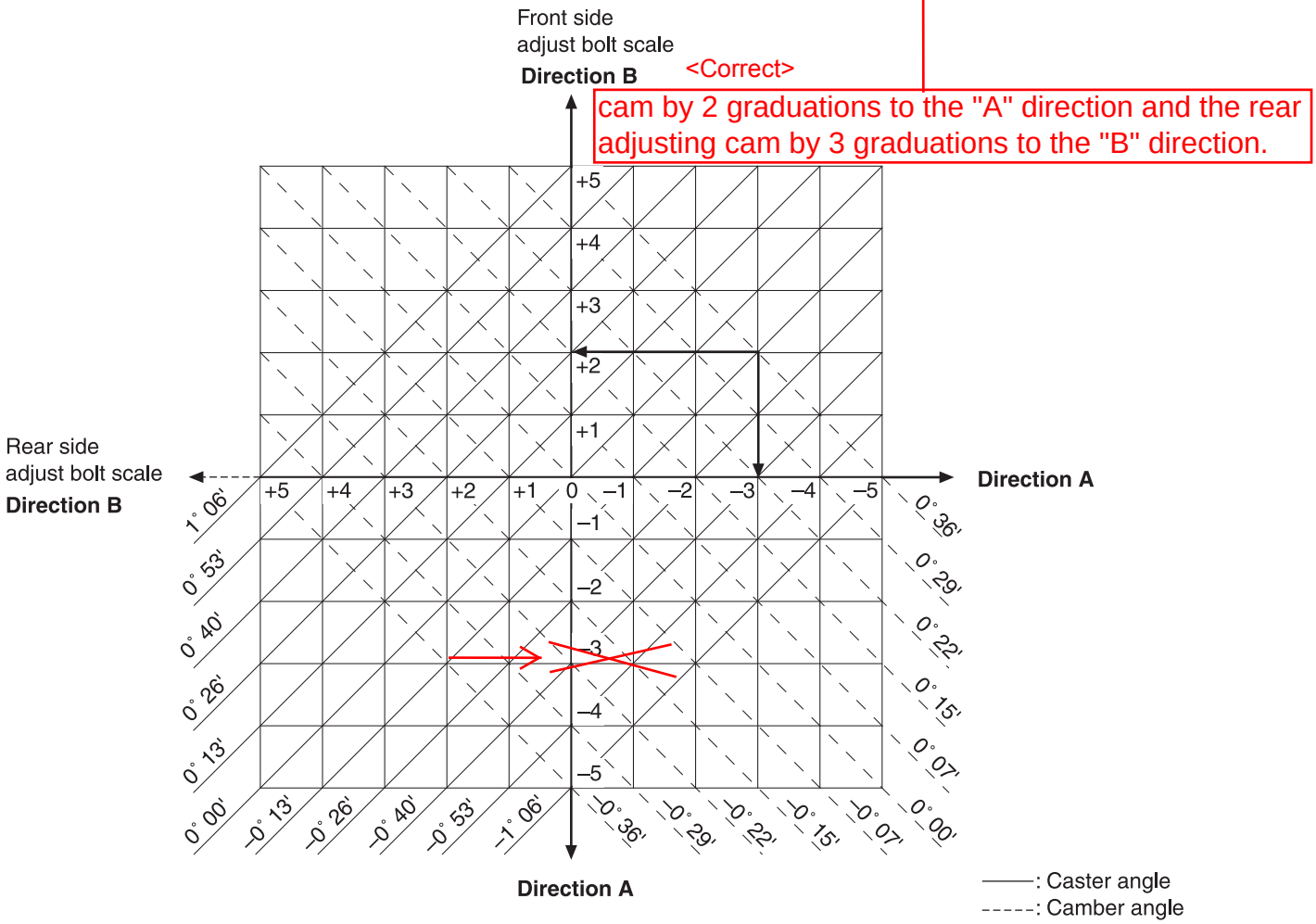
HOW TO READ THIS TABLE (EXAMPLE)



<Added>
Lower arm mounting bolt

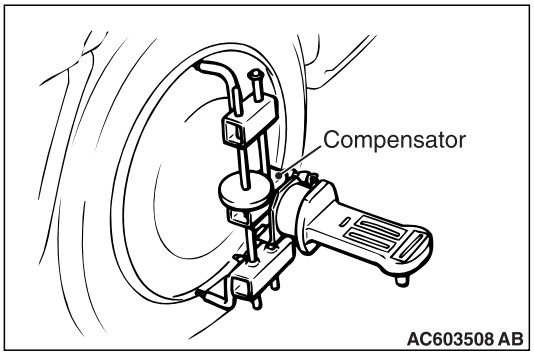
~~If the camber difference 0°36' and the caster difference is –0°13' by comparing the measurement value with the standard value, rotate the front adjusting cam by 1.5 graduations and the rear adjusting cam by 2.5 graduations to the "B" direction.~~ <Incorrect>

<Correct>
cam by 2 graduations to the "A" direction and the rear adjusting cam by 3 graduations to the "B" direction.



Attached sheet 6

CAMBER, CASTER AND KINGPIN INCLINATION



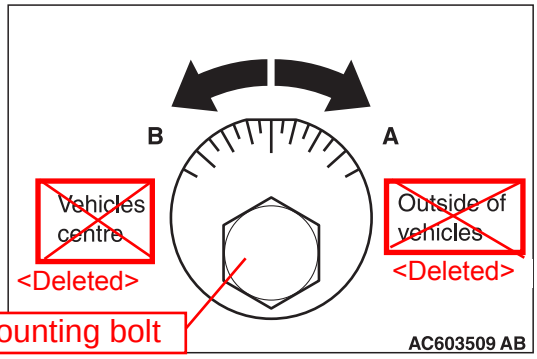
Standard value:

Camber		0°00' ± 0°30'*
Caster	Short wheelbase	3°39' ± 1°00'*
	Long wheelbase	3°31' ± 1°00'*
Kingpin inclination		11°30'

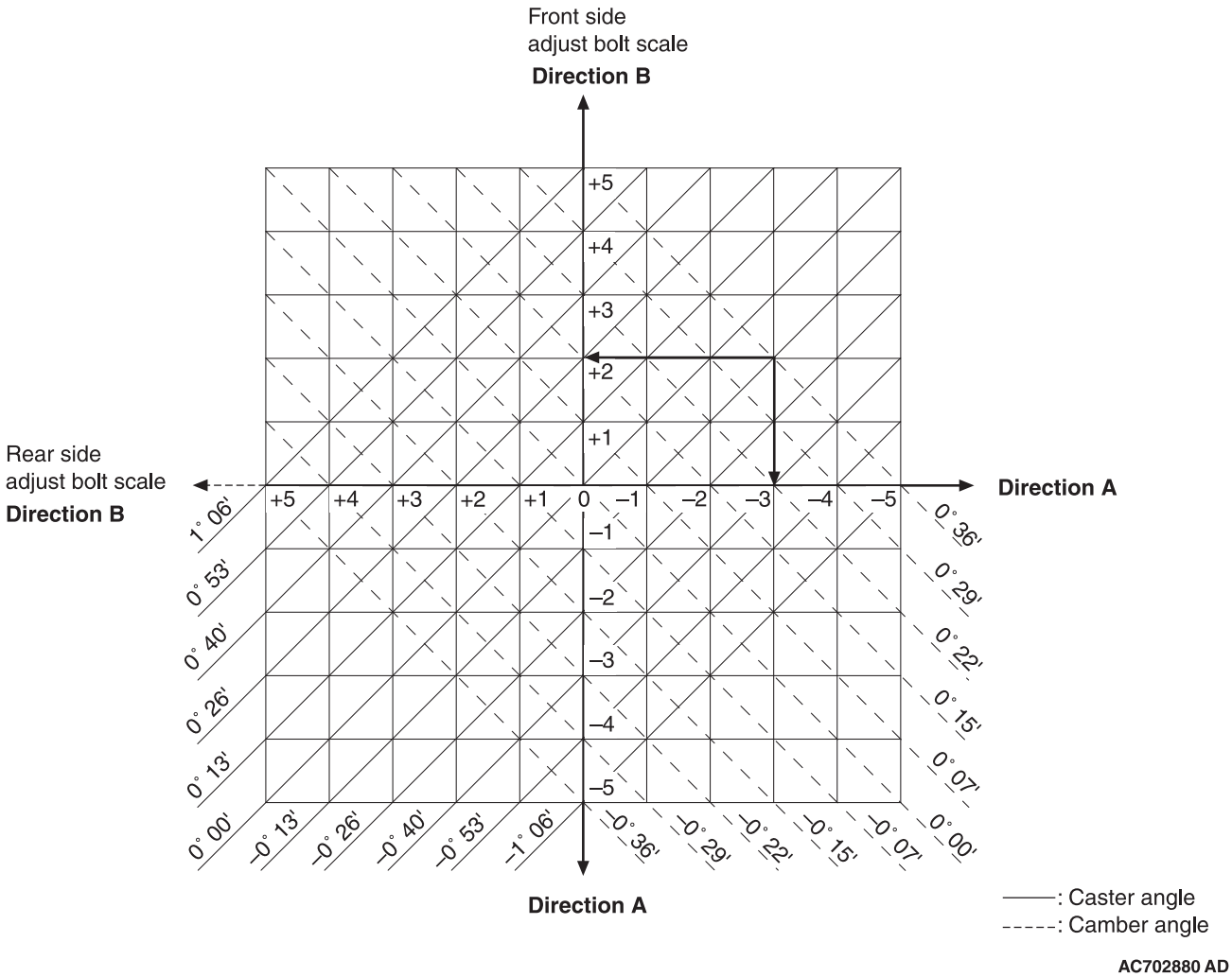
*NOTE: *: Difference between right and left wheels must be less than 0°30'*

CAMBER AND CASTER REFERENCE TABLE

HOW TO READ THIS TABLE (EXAMPLE)



If the camber difference 0°36' and the caster difference is –0°13' by comparing the measurement value with the standard value, rotate the front adjusting cam by 2 graduations to the "A" direction and the rear adjusting cam by 3 graduations to the "B" direction.



Attached sheet 7 (1/2)

CAMBER AND CASTER REFERENCE TABLE

RELATION OF VARIATION

Bolt scale	–4	–3	–2	–1	0	+1	+2	+3	+4
Camber angle	+0°56'	+0°41'	+0°28'	+0°15'	0°	–0°15'	–0°28'	–0°40'	–0°54'
Caster angle	+1°11'	+0°53'	+0°36'	+0°20'	0°	–0°20'	–0°36'	–0°53'	–1°11'

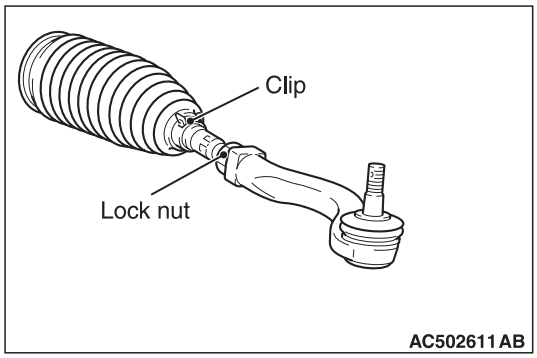
FRONT WHEEL ALIGNMENT CHECK AND ADJUSTMENT <2WD (HIGH RIDER), 4WD>

M1331000901555

Measure wheel alignment with alignment equipment on a level surface. The front suspension, steering system, wheels, and tyres should be serviced to normal condition before measuring wheel alignment.

TOE-IN

Standard value:
At the centre of tyre tread: 0 – 5 mm
Toe angle (per wheel): 0°00' – 0°12'

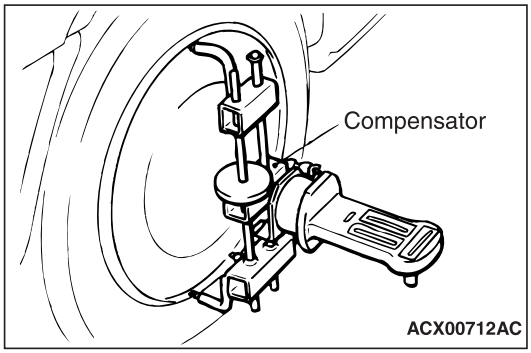


1. Adjust the toe-in by undoing the clip and lock nut, and turning the left and right tie rod turnbuckles by the same amount (in opposite directions).

   NOTE: The toe will move out as the left turnbuckle is turned toward the front of the vehicle and the right turnbuckle is turned toward the rear of the vehicle.
2. Install the clip and tighten the lock nut to the specified torque.

   Tightening torque: 93 ± 15 N·m
3. Confirm that the toe-in is at the standard value.
4. Use a turning radius gauge to check that the steering angle is at the standard value (Refer to GROUP 37 – On-vehicle Service, Steering Angle Check).

CAMBER, CASTER AND KINGPIN INCLINATION



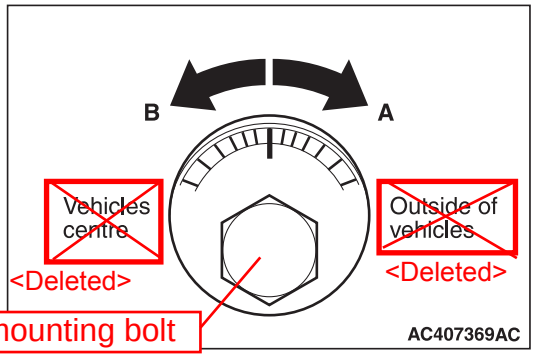
Standard value:

Camber	0°00' ± 0°30'*
Caster	3°48' ± 1°00'*
Kingpin inclination	12°45'

*NOTE: *: Difference between right and left wheels must be 0°30' or less.*

CAMBER AND CASTER REFERENCE TABLE

HOW TO READ THIS TABLE (EXAMPLE)



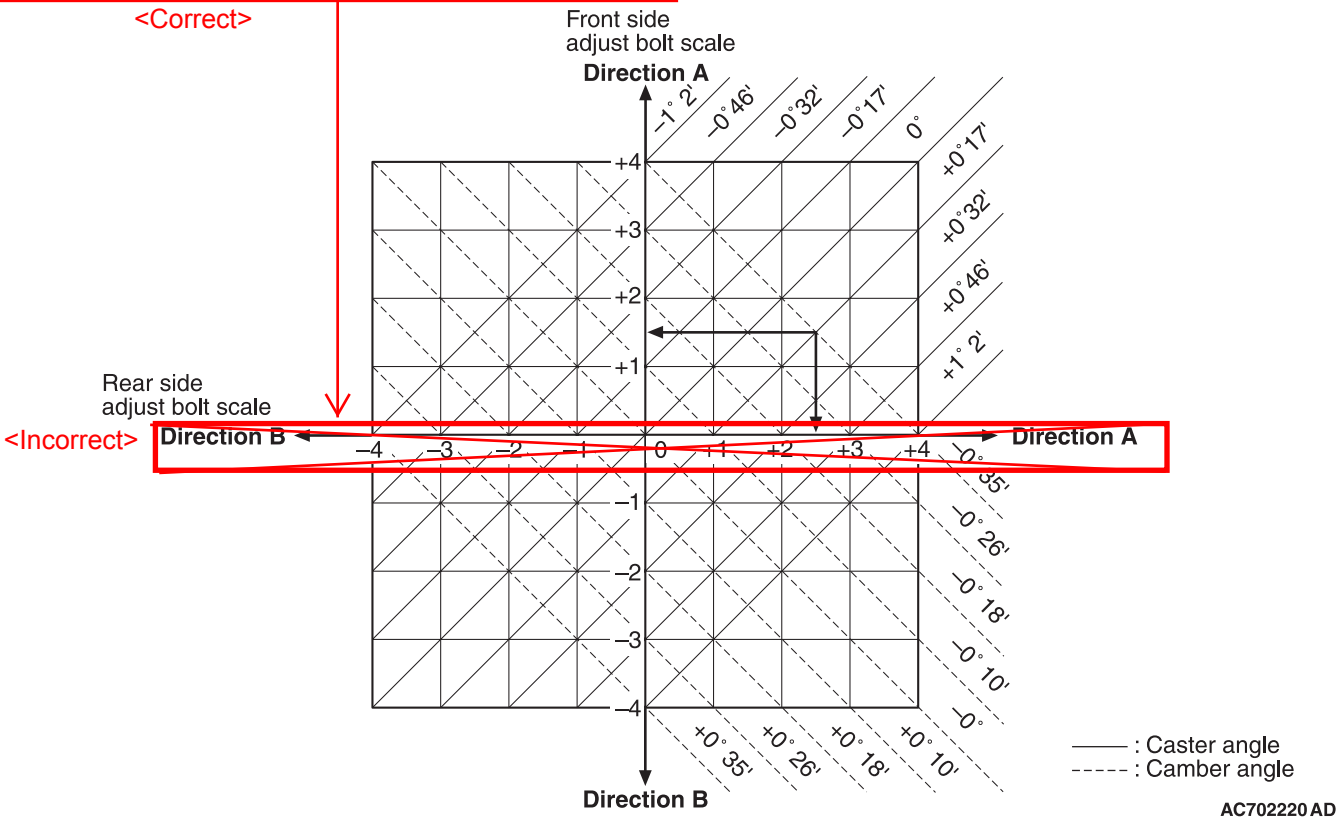
If the camber difference –0°35' and the caster difference is 0°17' by comparing the measurement value with the standard value, rotate the front adjusting cam by 1.5 graduations and the rear adjusting cam by 2.5 graduations to the opposite direction against the "A" direction.

<Incorrect>

<Correct> cam by 1.5 graduations to the "B" direction and the rear adjusting cam by 2.5 graduations to the "A" direction

Attached sheet 7 (2/2)

Direction A ⟷ Direction B
+4 +3 +2 +1 0 -1 -2 -3 -4
<Correct>



NOTE: Solid lines show caster, broken lines show camber.

LOWER ARM BALL JOINT AXIAL PLAY CHECK

M1332011300160

1. Raise the vehicle.
2. Remove the stabilizer link from the lower arm.
3. Move the lower arm up and down with your hands to check for an excessive play in the axial direction of the ball joint. If there is an excessive play, replace the lower arm assembly (Refer to <Vehicles with 2WD (Except High rider)>, <Vehicles with 2WD (High rider), 4WD>).

LOWER ARM BALL JOINT COVER CHECK

M1332008600473

1. Press the lower arm ball joint cover with your finger to check that there are no cracks or damage in the lower arm ball joint cover.
2. If the lower arm ball joint cover is cracked or damaged, replace the lower arm assembly (Refer to <Vehicles with 2WD (Except High rider)>, <Vehicles with 2WD (High rider), 4WD>).

   NOTE: If the lower arm ball joint cover is cracked or damaged, it is possible that there may also be damage to the ball joint.