

# SUPPLEMENT C TIGHTENING TORQUE

## ENGINE

Tightening component		Tightening torque		
		kgf-m	ft-lb	N-m
Cylinder head × Spark plug		1.5 - 2.2	10.8 - 15.9	14.7 - 21.6
Cylinder head × Cylinder head cover		0.3 - 0.5	2.2 - 3.6	3.0 - 4.9
Cylinder head × Rocker shaft	M10 Bolt	2.9 - 3.7	21.0 - 26.8	28.4 - 36.3
	M8 Bolt	1.3 - 1.7	9.4 - 12.3	12.8 - 16.7
Cylinder head × Cylinder block		6.0 - 6.8	43.4 - 49.2	58.8 - 66.7
Cylinder head × Water temperature sensor		2.5 - 3.5	18.1 - 25.3	24.5 - 34.3
Cylinder head × Water temperature sender gauge		1.2 - 2.0	8.7 - 14.5	11.8 - 19.6
Cylinder head × Distributor		1.5 - 2.2	10.8 - 15.9	14.7 - 21.6
Cylinder head × Exhaust manifold		3.0 - 4.5	21.7 - 32.5	29.4 - 44.1
Cylinder head × Intake manifold		1.5 - 2.2	10.8 - 15.9	14.7 - 21.6
Cylinder block × Water inlet		0.6 - 0.9	4.4 - 6.5	5.9 - 8.8
Cylinder block × Crankshaft main bearing cap		4.5 - 5.5	32.5 - 39.8	44.1 - 53.9
Cylinder block × Oil pump		0.6 - 0.9	4.4 - 6.5	5.9 - 8.8
Cylinder block × Rear oil seal retainer		0.6 - 0.9	4.4 - 6.5	5.9 - 8.8
Cylinder block × Water pump		1.5 - 2.2	10.8 - 15.9	14.7 - 21.6
Cylinder block × Engine mounting bracket		4.0 - 5.5	28.9 - 39.8	39.2 - 53.9
Cylinder block × Transmission		5.0 - 7.0	36.2 - 50.6	49.0 - 68.6
Cylinder block × Oil cooler pipe		2.5 - 3.5	18.1 - 25.3	24.5 - 34.3
Surge tank × Intake air temperature sensor		3.0 - 4.0	21.7 - 28.9	29.4 - 39.2
Surge tank × Gas filter		1.2 - 2.0	8.7 - 14.4	11.8 - 19.6
Surge tank × Throttle body		1.5 - 2.2	10.8 - 15.9	14.7 - 21.6
Crankshaft × Flywheel		8.0 - 10.0	57.9 - 72.3	78.5 - 98.0
Crankshaft × Crankshaft timing belt pulley		9.0 - 10.0	65.1 - 72.0	88.3 - 98.0
Intake manifold × Delivery pipe		1.5 - 2.2	10.8 - 15.9	14.7 - 21.6
Exhaust manifold × Exhaust pipe		3.5 - 5.0	25.3 - 36.2	34.3 - 49.0
Exhaust pipe support No. 1 bracket		3.0 - 4.5	21.7 - 32.5	29.4 - 44.1
Engine mounting bracket × Engine mounting (bolt)		3.0 - 4.5	21.7 - 32.5	29.4 - 44.1
Engine mounting bracket × Engine mounting (nut)		3.5 - 5.5	25.3 - 39.8	34.3 - 53.9
Oil pump body × Oil cooler		2.5 - 3.5	18.1 - 25.3	24.5 - 34.3
Oil pump × Oil pressure switch		1.2 - 2.0	8.7 - 14.5	11.8 - 19.6
Oil pan × Cylinder block		0.7 - 1.2	5.1 - 8.7	6.9 - 11.8
Oil pan × Drain plug		2.0 - 3.0	14.5 - 21.7	19.6 - 29.4
Oil pump body × Oil pump cover		0.8 - 1.3	5.8 - 9.4	7.8 - 12.7
Oil level gauge guide		1.9 - 3.1	13.7 - 22.4	18.6 - 30.4
Surge tank stay No. 1		1.5 - 2.2	10.8 - 15.9	14.7 - 21.6
Surge tank stay No. 2		3.0 - 4.5	21.7 - 32.5	29.4 - 44.1
Surge tank stay No. 3		1.9 - 3.1	13.8 - 22.4	18.6 - 30.3
Camshaft × Camshaft timing belt pulley		1.5 - 2.2	10.8 - 15.9	14.8 - 21.6
Timing belt cover		0.2 - 0.4	1.4 - 2.9	2.0 - 3.9

## SUPPLEMENT C TIGHTENING TORQUE

Tightening component	Tightening torque		
	kgf-m	ft-lb	N-m
Timing belt tensioner	3.0 - 4.5	21.7 - 32.5	29.4 - 44.1
Crankshaft pulley × Crankshaft timing belt pulley	2.0 - 3.0	14.5 - 21.6	19.6 - 29.4
Fluid coupling × Water pump pulley × Water pump	1.0 - 1.8	7.2 - 13.0	9.8 - 17.7
Cooling fan × Fluid coupling	0.44 - 0.66	3.2 - 4.3	4.3 - 6.5
Fuel filter × Fuel hose No. 1 (To delivery pipe)	3.5 - 4.5	25.3 - 32.5	34.3 - 44.1
Fuel filter × Fuel pipe	3.5 - 4.5	25.3 - 32.5	34.3 - 44.1
Fuel hose No. 1 × Delivery pipe	3.5 - 4.5	25.3 - 32.5	34.3 - 44.1
Connecting rod × Connecting rod cap	3.5 - 4.5	25.3 - 32.5	34.3 - 44.1
Clutch cover × Flywheel	1.5 - 2.2	10.8 - 15.9	14.7 - 21.6
Transmission × Starter motor	5.0 - 7.0	36.2 - 50.6	49.0 - 68.6
Front pipe × Three-way catalyst	4.5 - 5.5	32.5 - 39.8	44.1 - 53.9
Three way catalyst × Rear pipe	4.5 - 5.5	32.5 - 39.8	44.1 - 53.9
O <sub>2</sub> sensor × Exhaust manifold	3.0 - 4.0	21.7 - 28.9	29.4 - 39.2
Fuel pump × Fuel pipe	3.5 - 4.4	25.3 - 31.8	34.3 - 43.1

WRU92-C020

## SUPPLEMENT C TIGHTENING TORQUE

### CLUTCH

Tightening component	Tightening torque		
	kgf-m	ft-lb	N-m
Flywheel x Clutch cover A/y	1.5 - 2.2	10.8 - 15.9	14.7 - 21.6
Clutch release lever S/A x Clutch release lever yoke	3.0 - 4.0	21.7 - 28.9	29.4 - 39.2

WRU92-C022

### TRANSMISSION CASE COVER

Tightening component	Tightening torque		
	kgf-m	ft-lb	N-m
T/M case cover x Transmission case	1.5 - 2.0 0.7 - 1.0 (only three bolts)	10.8 - 14.5 5.1 - 7.2	14.7 - 19.6 6.9 - 9.8
Reverse restrict pin holder x T/M case cover	3.0 - 5.0	21.7 - 36.2	29.4 - 49.0
Back up lamp switch x T/M case cover	3.0 - 5.0	21.7 - 36.2	29.4 - 49.0
Set bolt x T/M case cover	3.0 - 4.5	21.7 - 32.5	29.4 - 44.1
Shift lock plate x T/M case cover	1.5 - 2.2	10.8 - 15.9	14.7 - 21.6
Union x T/M case cover	1.3 - 1.6	9.4 - 11.6	12.7 - 15.7

WRU92-C023

### TRANSMISSION

Tightening component	Tightening torque		
	kgf-m	ft-lb	N-m
Cylinder block x T/M case	5.0 - 7.0	36.2 - 50.6	49.0 - 68.6
Exhaust pipe support bracket x T/M case	1.5 - 2.2	10.8 - 15.9	14.7 - 21.6
Bolt for 5th shift arm x T/M case	4.0 - 6.0	28.9 - 43.4	39.2 - 58.8
Bolt for reverse shift arm x T/M case	3.5 - 5.5	25.3 - 39.8	34.3 - 53.9
Front bearing retainer x T/M case	1.5 - 2.2	10.8 - 15.9	14.7 - 21.6
Counter shaft 5th gear x Lock nut	14.0 - 20.0	101.3 - 144.7	137.3 - 196.1

WRU92-C021

**TRANSFER**

Tightening component	Tightening torque		
	kgf-m	ft-lb	N-m
T/F adapter case × T/M case	3.0 - 4.5	21.7 - 32.5	29.4 - 44.1
T/F low speed input gear × Lock nut	18.0 - 22.0	130.0 - 159.0	177.0 - 216.0
T/F front case × T/F adapter case	3.0 - 4.5	21.7 - 32.5	29.4 - 44.1
Bolt for transfer high & low shift fork shaft × T/F front case	1.9 - 3.1	13.7 - 22.4	18.6 - 30.4
Bolt for T/F front drive shift fork shaft × T/F front case	1.9 - 3.1	13.7 - 22.4	18.6 - 30.4
Transposition detect switch × T/F front case	3.0 - 5.0	21.7 - 36.2	29.4 - 49.0
T/F rear case × T/F front case	3.0 - 4.5	21.7 - 32.5	29.4 - 44.1
T/F rear output shaft × Lock nut	14.0 - 20.0	101.0 - 145.0	137.0 - 196.0
Output shaft bearing retainer × T/F rear case	1.5 - 2.2	10.8 - 15.9	14.7 - 21.6
Speedometer sleeve lock plate × Output shaft bearing retainer	0.7 - 1.0	5.1 - 7.2	6.9 - 9.8
Control shaft lower No. 1 bracket × T/F rear case	3.0 - 4.5	21.7 - 32.5	29.4 - 44.1
T/F shift lever retainer × Output shaft bearing retainer	1.5 - 2.2	10.8 - 15.9	14.7 - 21.6
Control shift lever retainer × Control shaft lower No. 1 bracket	1.5 - 2.2	10.8 - 15.9	14.7 - 21.6
Control shaft × Shift & select shaft No. 1	3.0 - 4.5	21.7 - 32.5	29.4 - 44.1

WRU92-C024

**PROPELLER SHAFT**

Tightening Component	Tightening torque		
	kgf-m	ft-lb	N-m
Front differential companion flange × Propeller shaft	6.0 - 8.0	43.2 - 57.6	58.8 - 78.4
Rear differential companion flange × Propeller shaft	6.0 - 8.0	43.2 - 57.6	58.8 - 78.4

WRU90-C012

**FRONT DIFFERENTIAL**

Tightening component	Tightening torque		
	kgf-m	ft-lb	N-m
Front axle housing cover S/A × Differential carrier	1.8 - 2.4	13.0 - 17.4	17.7 - 23.5
Front axle housing cover S/A × Filler plug	4.0 - 6.0	28.9 - 43.4	39.2 - 58.8
Differential carrier × Drain plug	4.0 - 6.0	28.9 - 43.4	39.2 - 58.8
Differential carrier support bracket × Differential carrier	10.0 - 12.0	72.0 - 87.0	98.0 - 118.0
Chassis frame × Differential carrier support bracket	4.0 - 5.5	28.9 - 39.8	39.2 - 53.9
	4.0 - 5.0 (only right side)	28.9 - 36.2	39.2 - 49.0
Bearing cap × Differential carrier	3.0 - 5.0	21.7 - 36.2	29.4 - 49.0
Differential bearing adjusting nut lock × Bearing cap	0.4 - 1.0	2.9 - 7.2	3.9 - 9.8
Ring gear × Differential case S/A (with wet condition)	8.0 - 9.0	57.9 - 65.1	78.5 - 88.3
Drive pinion × Lock nut	16.0 - 20.0	116.0 - 145.0	157.0 - 196.0

WRU90-C013

## SUPPLEMENT C TIGHTENING TORQUE

### REAR DIFFERENTIAL

Tightening component	Tightening torque		
	kgf-m	ft-lb	N-m
Rear axle housing x Differential carrier	5.5 - 8.0	39.8 - 57.9	53.9 - 78.5
Filler plug x Rear axle housing	4.0 - 6.0	28.9 - 43.4	39.2 - 58.8
Drain plug x Rear axle housing	4.0 - 6.0	28.9 - 43.4	39.2 - 58.8
Bearing cap x Differential carrier	7.0 - 9.0	50.6 - 65.1	68.6 - 88.3
Differential bearing adjusting nut lock x Bearing cap	0.4 - 1.0	2.9 - 7.2	3.9 - 9.8
Ring gear x Differential case S/A (with wet condition)	8.0 - 9.0	57.9 - 65.1	78.5 - 88.3
Drive pinion x Lock nut	19.0 - 23.0	137.0 - 166.0	186.0 - 226.0

WRU90-C014

**FRONT AXLE & SUSPENSION**

Tightening component	Tightening torque		
	kgf-m	ft-lb	N-m
Wheel hub nut	9.0 - 12.0	65.1 - 87.0	89.2 - 118
Tie rod (Adjust nut)	12.0 - 17.0	87.0 - 123	118 - 167
Knuckle stopper bolt lock nut	8.0 - 10.0	57.9 - 72.0	78.5 - 98.0
Torsion spring lock nut	7.0 - 9.0	50.6 - 65.1	68.6 - 88.3
Lock nut (Axle hub nut)	10.0 - 15.0	72 - 109	98.0 - 147
Steering knuckle x Brake mounting support	7.0 - 9.0	50.6 - 65.1	68.6 - 88.3
Axle hub x Hub cover (Free wheel hub body)	6.0 - 7.0	43.4 - 50.6	58.8 - 68.6
Axle hub x Brake disc	5.5 - 7.5	39.8 - 54.2	53.9 - 73.5
Free wheel hub x Hub cover (only for Free wheel hub only)	0.8 - 1.2	5.8 - 8.7	7.8 - 11.8
Free wheel hub nut x Brake dram (only for Automatic locking hub)	0.5 - 0.9	3.6 - 6.5	4.9 - 8.8
Drive shaft x Lock bolt with washer (only for Automatic locking hub)	1.5 - 2.2	10.8 - 15.9	14.7 - 21.6
Stabilizer link x Frame	1.9 - 3.1	13.7 - 22.4	18.6 - 30.4
Stabilizer link x Stabilizer bracket cover	3.0 - 4.5	21.7 - 32.5	29.4 - 44.1
Stabilizer x Lower arm	1.9 - 3.1	13.7 - 22.4	18.6 - 30.4
Anchor arm stopper x Frame	0.5 - 0.8	3.6 - 5.8	4.9 - 7.8
Torque arm x Lower arm	4.0 - 5.5	28.9 - 39.8	39.2 - 53.9
Anchor bolt x Lock nut	7.0 - 9.0	50.6 - 65.1	68.6 - 88.3
Shock absorber x Frame	1.9 - 3.1	13.7 - 22.4	18.6 - 30.4
Shock absorber x Lower arm	5.0 - 7.0	36.2 - 50.6	49.0 - 68.6
Suspension upper arm shaft x Frame	10.4 - 13.0	75.2 - 94.0	102 - 128
Suspension upper arm x Upper arm sub assembly	7.0 - 9.0	50.6 - 65.1	68.6 - 88.3
Upper arm x Front spring bumper	1.0 - 1.6	7.2 - 11.6	9.8 - 15.7
Upper ball joint x Upper arm	2.7 - 3.7	19.5 - 26.8	26.5 - 36.3
Lower ball joint x Lower arm	5.7 - 7.8	41.2 - 56.4	55.9 - 76.5
Steering knuckle x Tie rod end	7.0 - 14	50.6 - 101	68.6 - 137
Upper ball joint x Steering knuckle	9.0 - 12.0	65.1 - 87.0	88.3 - 118
Lower arm x Frame	13.0 - 18.0	94.0 - 130.0	128 - 177

WRU90-C015

## SUPPLEMENT C TIGHTENING TORQUE

### REAR AXLE & SUSPENSION

Tightening component	Tightening torque		
	kgf-m	ft-lb	N-m
Rear spring shackle	7.0 - 9.0	50.6 - 65.1	68.6 - 88.3
Leaf spring × Frame	12.0 - 14.0	87.0 - 101	118 - 137
U bolt	9.0 - 11.0	65.1 - 80.0	88.3 - 108
Rear shock absorber	1.9 - 3.1	13.7 - 22.4	18.6 - 30.4
Rear axle housing × Backing plate	4.0 - 5.5	28.9 - 39.8	39.2 - 53.9
Frame × Rear spring bumper	1.5 - 2.2	10.8 - 15.9	14.7 - 21.6

WRU90-C016

### BRAKE

Tightening component	Tightening torque		
	kgf-m	ft-lb	N-m
Air bleeder plug (Front and rear)	0.9 - 1.3	6.5 - 9.4	8.8 - 12.7
Brake booster push rod × Clevis	1.3 ± 0.26	9.4 ± 1.9	12.7 ± 2.6
Brake mounting support × Steering knuckle	7.0 - 9.0	50.6 - 65.1	68.6 - 88.3
Brake mounting support × Stud bolt	4.0 - 5.0	28.9 - 36.2	39.2 - 49.0
Brake mounting support × Caliper body	3.2 - 4.2	23.1 - 30.3	31.4 - 41.2
Brake house × Caliper body	2.1 - 2.7	15.2 - 19.5	20.6 - 26.5
Wheel cylinder × Backing plate	0.8 - 1.2	5.8 - 8.7	7.8 - 11.8
Wheel cylinder × Brake tube	1.3 - 1.8	9.4 - 13.0	12.7 - 17.7
Brake shoe × Automatic adjust lever pin	0.26 - 0.5	1.88 - 3.62	2.55 - 4.9
Wheel hub nut	9.0 - 12.0	65.1 - 87.0	88.3 - 118
Master cylinder reservoir hose band	0.55 - 0.7	4.0 - 5.1	5.4 - 6.9
Master cylinder piston set bolt	0.7 - 1.1	5.1 - 8.0	6.9 - 10.8
Master cylinder × Brake booster	1.04 - 1.56	7.52 - 11.3	10.2 - 15.3
Master cylinder × Brake tube	1.3 - 1.8	9.4 - 13.0	12.7 - 17.7
Brake booster lock nut × Adjust nut	2.08 - 3.12	15.1 - 22.5	20.4 - 30.6
Brake booster × Dash panel	1.0 - 1.6	7.2 - 11.6	9.8 - 15.7
Parking brake control handle × Floor panel	1.0 - 1.6	7.2 - 11.6	9.8 - 15.7
Parking brake control handle × Lock nut	0.4 - 0.7	2.9 - 5.1	3.9 - 6.9
P & B valve × Brake tube	1.3 - 1.8	9.4 - 13.0	12.7 - 17.7
P & B valve × Floor panel	0.6 - 1.0	4.3 - 7.2	5.9 - 9.8
Brake pedal × Brake pedal bracket	1.5 - 2.2	10.8 - 15.9	14.7 - 21.6
Stop lamp switch lock nut	1.8 - 3.0	13.0 - 21.7	17.7 - 29.4
Parking brake shoe strut	0.26 - 0.4	1.9 - 2.9	2.6 - 3.9

WRU92-C025

**STEERING**

Tightening component	Tightening torque		
	kgf-m	ft-lb	N-m
Steering gear housing × Oil filler plug (except power steering equipped model)	0.2 - 0.4	1.4 - 2.9	2.0 - 3.9
Steering wheel × Steering shaft	3.0 - 5.0	21.7 - 36.2	29.4 - 49.0
Steering shaft × Intermediate shaft	2.5 - 3.5	18.1 - 25.3	24.5 - 34.3
Steering column cover × Floor panel	0.4 - 0.7	2.9 - 5.1	3.9 - 6.9
Steering column tube × Brace	1.5 - 2.2	10.8 - 15.9	14.7 - 21.6
Tilt steering support × Long nut (only for tilt steering equipped model)	1.3	9.4	12.7
Tilt steering lever × Long nut (only for tilt steering equipped model)	3.0 - 4.5	21.7 - 36.2	29.4 - 49.0
Steering gear housing × Intermediate shaft	2.5 - 3.5	18.1 - 25.3	24.5 - 34.3
Steering relay rod × Tie rod	7.0 - 14	50.6 - 101	68.6 - 137
Idler arm support pin × Frame	3.5 - 5.5	25.4 - 39.8	34.3 - 53.9
Idler arm assembly × Idler arm support pin	12 - 17	87 - 123	118 - 167
Idler arm × Relay rod	5.0 - 7.0	36.2 - 50.6	49 - 68.6
Pitman arm × Relay rod	7.0 - 14.0	50.6 - 101	68.6 - 137
Steering gear housing × Pitman arm	15 - 20.0	109 - 145	147 - 196
Tie rod × Steering knuckles	7.0 - 14.0	50.6 - 101	68.6 - 137
Cross shaft adjust screw × Lock nut:	2.0 - 3.5	14.5 - 25.3	19.6 - 34.3
Pressure feed tube × Steering gear housing (only for power steering equipped model)	4.0 - 5.0	28.9 - 36.2	39.2 - 49.0
Vane pump bracket × Idle pulley	3.5 - 5.0	25.3 - 36.2	34.3 - 49.0
Vane pump × Pump front stay	3.5 - 5.0	25.3 - 36.2	34.3 - 49.0
Vane pump × Pulley	3.5 - 5.4	25.3 - 39.1	34.3 - 53.0
Vane pump bracket × Engine: M8 M10	1.0 - 1.6 3.5 - 4.5	7.2 - 11.6 25.3 - 32.5	9.8 - 15.7 34.3 - 44.1
Tube support bracket × Pump front stay	1.0 - 1.6	7.2 - 11.6	9.8 - 15.7
Tube support bracket × Clamp	0.4 - 0.7	2.9 - 5.1	3.9 - 6.9
Vane pump × Union bolt	4.5 - 5.5	32.5 - 39.8	44.1 - 53.9
Tube support bracket × Tube support bracket	1.0 - 1.6	7.2 - 11.6	9.8 - 15.7
Drive belt tension adjust bolt × Lock nut	1.0 - 1.6	7.2 - 11.6	9.8 - 15.7
Vane pump front stay × Adjusting strut	3.5 - 4.5	25.3 - 32.5	34.3 - 44.1
Adjusting strut × Adjusting bar	7.0 - 9.0	50.6 - 65.1	68.6 - 88.3
Vane pump × Vane pump bracket	5.0 - 7.0	36.2 - 50.6	49.0 - 68.6
Steering gear housing × Frame	7.5 - 10.5	54.2 - 75.9	73.5 - 103

WRU90-C018

## SUPPLEMENT C TIGHTENING TORQUE

### BODY & OTHERS

kgf-m (ft-lb, N-m)

Tightening component	Tightening torque
Frame × Body	4.2 - 6.5 (30.4 - 47.0, 41.2 - 63.7)
Front bumper × Body	3.0 - 4.5 (21.7 - 32.5, 29.4 - 44.1)
Front bumper guard bar × Body	3.0 - 4.5 (21.7 - 32.5, 29.4 - 44.1)
Rear bumper × Body	1.9 - 3.1 (13.7 - 22.4, 18.6 - 30.4)
Front seat × Body	3.0 - 4.5 (21.7 - 32.5, 29.4 - 44.1)
Rear seat × Body	2.0 - 3.0 (14.5 - 21.7, 19.6 - 29.4)
Front seat belt × Body	2.9 - 5.4 (21.0 - 39.1, 28.4 - 53.0)
Rear seat belt × Body	2.9 - 5.4 (21.0 - 39.1, 28.4 - 53.0)
Exhaust manifold × Front exhaust pipe	4.5 - 5.5 (32.5 - 39.8, 44.1 - 53.9)
Front exhaust pipe × Tail pipe	3.7 - 5.2 (26.8 - 37.6, 36.3 - 51.0)
Front exhaust pipe × Catalyst converter	3.7 - 5.2 (26.8 - 37.6, 36.3 - 51.0)
Catalyst converter × Tail pipe	3.7 - 5.2 (26.8 - 37.6, 36.3 - 51.0)

WRU92-C026