SERVICE MANUAL KORANDO

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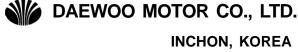
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FOREWORD

This manual includes procedure for maintenance, adjustment, service operation and removal and installation of components.

All information, illustrations and specifications contained in this manual are based on the latest product information available at the time of manual approval.

The right is reserved to make changes at any time without notice.



DAEWOO MOTOR CO., LTD.
INCHON, KOREA

PERSONAL INJURY CAUTION

Appropriate service methods and proper repair procedure are essential for the safe, reliable operation of all motor vehicles, as well as for the personal safety of the person doing the repair. There are many variations in procedures, techniques, tools and parts for servicing vehicles, as well as in the skills of the people doing the work. This manual cannot possibly anticipate all such variations and provide advice or precautions for each. Anyone who deviates from the instructions provided in this manual must ensure their own safety and preserve the safety and integrity of the vehicle. The following list contains general precautions that should always be followed while working on a vehicle.

- Safety stands are required whenever a procedure calls for underbody work.
- Do not smoke when you work on a vehicle.
- To prevent serious burns, do not touch any hot metal parts.
- Set the parking brake when you work on the vehicle.
- Turn the ignition switch OFF unless a procedure states otherwise.
- The engine may operate only in a well-ventilated area.
- Avoid moving parts when the engine is running.
- Safety glasses must be worn for eye protection.

KORANDO Service Manual

FOREWORD

This manual includes procedures for maintenance, adjustment, service operations, and removal and installation of components for the KORANDO vehicle.

When reference is made in this manual to a brand name, number, or specific tool, an equivalent product may be used in place of the recommended item.

All information, illustrations and specifications contained in this manual are based on the latest product information available at the time of publication approval. The right is reserved to make changes at any time without notice.

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KORANDO SERVICE MANUAL

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SPECIFICATIONS

TECHNICAL DATA

Performance-Manual Transaxle

Application	661LA	662NA	662LA	2.0L DOCH	2.3L DOCH	3.2L DOCH
Maximum Speed (Km/h)	140	137	148	154	165	176
Minimum Turning Radius (m)	5.8	5.8	5.8	5.8	5.8	5.8

Performance-Autumatic Transaxle

Application	661LA	662NA	662LA	2.3L DOCH	3.2L DOCH
Maximum Speed (Km/h)	140	137	140	160	170
Minimum Turning Radius (m)	5.8	5.8	5.8	5.8	5.8

Engine

Application	661LA	662NA	662LA	2.0L DOCH	2.3L DOCH	3.2L DOCH
Engine Type	4Cylinder	5Cylinder	5Cylinder	4Cylinder	4Cylinder	6Cylinder
	DIESEL	DIESEL	DIESEL	GASOLINE	GASOLINE	GASOLINE
Bore (mm)	89	89	89	89.9	90.9	89.9
Stroke (mm)	92.4	92.4	92.4	78.7	88.4	84
Total Displacement (cc)	2299	2874	2874	1998	2295	3199
Compression Ratio	22:1	22:1	22:1	9.6:1	10.4:1	10:1
Maximum Power (ps/rpm)	101/4000	95/4000	120/4000	135/5500	149/5500	222/5500
Maximum Torque (kg.m/rpm)	21.5/2400	19.6/2400	25.5/2400	19.3/4000	22.4/4000	31.6/3750

Ignition System

Application	2.0L DOHC 2.3L DOHC		3.2L DOHC		
Ignition Type	Distributorless ignition				
Ignition Timing (BOTH)	6°± 2°	6°± 2°	8°± 2°		
Ignition Sequence	1-3-4-2	1-3-4-2	1-5-3-6-2-4		
Spark Plug Gap (mm)	0.8 ± 0.1	0.8 ± 0.1	0.8 ± 0.1		
Spark Plug Maker	Bosch, Chapion, Beru				
Spark Plug Type	F8DC4(BOSCH)				
	C11YCC(CHAMPION)				
		14F8DU4(BERU)			

Clutch - Manual Type

Application	661LA	662NA	662LA	2.0L DOHC	2.3L DOHC	3.2L DOHC
Type	Single Dry Diaphram					
Outside Diameter (mm)	225	225	240	225	225	240
Inside Diameter (mm)	150	150	150	150	150	155
Thickness	9.2	9.2	9.2	9.2	9.2	9.3
Fluid	Common use :Brake Fluid					

Manual Transmission

Application	661LA	662NA	662LA	2.0L DOHC	2.3L DOHC	3.2L DOHC
Maker	TREMEC	TREMEC	TREMEC	TREMEC	TREMEC	TREMEC
Type or Model	T5	T5	T5	T5	T5	T5
Gear Ratio : 1st	3.969	3.969	3.969	3.969	3.969	3.969
2nd	2.341	2.341	2.341	2.341	2.341	2.341
3rd	1.457	1.457	1.457	1.457	1.457	1.457
4th	1.000	1.000	1.000	1.000	1.000	1.000
5th	0.851	0.851	0.851	0.851	0.851	0.851
Reverse	3.705	3.705	3.705	3.705	3.705	3.705
Final Drive Ratio	4.55	4.55	4.27	4.89	4.55	3.73
Oil Capacity (L)	3.4	3.4	3.4	3.4	3.4	3.4

Auto Transmission

Application	661LA	662LA	2.3L DOHC	3.2L DOHC
Maker	BTRA	BTRA	BTRA	BTRA
Type or Model	M74 4WD	M74 4WD	M74 4WD	M74 4WD
Gear Ratio : 1st	2.741	2.741	2.741	2.741
2nd	1.508	1.508	1.508	1.508
3rd	1.000	1.000	1.000	1.000
4th	0.708	0.708	0.708	0.708
Reverse	2.429	2.429	2.429	2.429
Final Drive Ratio	5.38	4.89	5.86	4.89
Oil Capacity (L)	9	9	9	9

Brake

Applic	cation	Specifications	
Booster Size	non-ABS	8inch + 9inch	
	ABS 5.0	7inch + 8inch	
	ABS 5.3	8inch + 9inch	
Master Cylinder Di	iameter (mm)	£ 25.4	
Booster Ratio		5.6 : 1	
Front Brake : Disc	nt Brake : Disc Type Ventilated		
Rear Brake : Disc	Туре	Solid	

Tire and Wheel

Application	Specifications
Standard Tire Size	P235/75 R15, 255/70 R15
Standard Wheel Size	7JJ ´ 15
Inflation Pressure At Full Lode	
P235 / 75 : Front	30 Psi
Rear	30 Psi
P255 / 75 : Front	30 Psi
Rear	30 Psi

Steering System

Application	Specifications
Gear Type	RACK & PINION
Wheel Alignment:	
Front : Toe-in	0 - 4 mm
Front : Caster	2°30′ ± 30′
Front : Camber	0° ± 30'
Oil Capacity	1L

Suspension

Application	Specifications
Front Type	Double Wishbone
Rear Type	5 - Link

Fuel System

Application	Specifications
Fuel Pump Type	Electric Motor Pump
Fuel Capacity	70 L

Lubricating System

Lubricating Type	661LA	662NA	662LA	2.0L DOHC	2.3L DOHC	3.2L DOHC
Oil Pump Type	External Gear pump					
Oil Filter Type	Combination(Full & Part) Full Flow					
Oil Capacity (L) (Including Oil Filter)	8.0	9.0	9.5	7.2	7.5	8.2

Cooling System

Cooling Type	661LA	662NA	662LA	2.0L DOHC	2.3L DOHC	3.2L DOHC
Coolant Capacity (L)	9.5-10	10.5	10.5 - 11	10.5	10.5	11.3
Radiator Type	Forced Circulation					
Water Pump Type			Cent	rifugal		

Electric System

Application	661LA	662NA	662LA	2.0L DOHC	2.3L DOHC	3.2L DOHC
Battery (MF)			12V -	90AH		
Generator	75A	75A	75A	75A	115A	115A
Starter	2.2kw	2.2kw	2.2kw	1.2kw	1.2kw	1.7kw

VEHICLE DIMENSIONS AND WEIGHTS

Vehicle Dimensions

Application	Application
Overall Length (mm)	4330
Overall Width (mm)	1841
Overall Height (mm)	1840
Wheel Base (mm)	2840
Tread: Front (mm)	1510
Rear (mm)	1520

Vehicle Weights

Application	661LA	662NA	662LA	2.0L DOHC	2.3L DOHC	3.2L DOHC
Manual : Curb Weight (kg)	1790	1810	1830	1790	1790	1840
Gross Vehicle Weight (kg)	2515	2515	2515	2515	2515	2515
Automatic : Curb Weight (kg)	1810	1815	1850	-	1810	1860
Gross Vehicle Weight (kg)	2515	2515	2515	-	2515	2515
Passenger Capacity	5	5	5	5	5	5

STANDARD BOLTS SPECIFICATIONS

	Torque (N⋅m / Ib-in)									
Bolt*	Standard			Limit						
	4T	7T	9T	4T	7T	9T				
M3 ´ 0.5	0.5 N∙m	0.9 N·m	1.3 N·m	0.7 N•m	1.2 N •m	17 N •m				
	(4.5 lb-in)	(8 lb-in)	(12 lb-in)	(6.3 lb-in)	(11 lb-in)	(15 lb-in)				
M4 ´ 0.7	1.2 N∙m	2.0 N·m	3.0 N·m	1.6 N∙m	2.6 N·m	4.0 N •m				
	(11 lb-in)	(18 lb-in)	(27 lb-in)	(14 lb-in)	(23 lb-in)	(36 lb-in)				
M5 ´ 0.8	2.4 N·m	4.0 N•m	5.6 N·m	3.1 N∙m	5.2 N •m	7.6 N •m				
	(22 lb-in)	(36 lb-in)	(50 lb-in)	(28 lb-in)	(47 lb-in)	(68 lb-in)				
M6 ´ 1.0	4.0 N∙m	6.7 N·m	9.7 N∙m	5.4 N•m	9.0 N •m	12.7 N•m				
	(36 lb-in)	(60 lb-in)	(87 lb-in)	(49 lb-in)	(81 lb-in)	(114 lb-in)				
M8 ´ 1.25	8.6 N·m	15.7 N•m	22.5 N·m	12.7 N∙m	20.6 N∙m	30.4 N·m				
	(77 lb-in)	(12 lb-in)	(17 lb-in)	(9 lb-in)	(15.2 lb-in)	(22 lb-in)				
M10 ´ 1.25	18.6 N∙m	32.3 N·m	46.0 N·m	25.5 N•m	42.1 N•m	60.8 N·m				
	(14 lb-in)	(24 lb-in)	(34 lb-in)	(19 lb-in)	(31 lb-in)	(31 lb-in)				
M10 ´ 1.5	18.6 N∙m	30.4 N·m	44.1 N•m	24.5 N•m	41.2 N•m	58.8 N•m				
	(14 lb-in)	(22 lb-in)	(33 lb-in)	(18 lb-in)	(30 lb-in)	(44 lb-in)				
M12 ´ 1.25	34.3 N·m	56.8 N·m	82.3 N·m	45.0 N∙m	75.5 N∙m	107.8 N∙m				
	(25lb-in)	(42 lb-in)	(61 lb-in)	(33 lb-in)	(56 lb-in)	(80 lb-in)				
M12 ´ 1.75	32.3 N∙m	53.9 N∙m	77.4 N·m	43.1 N•m	71.5 N·m	98.0 N·m				
	(24 lb-in)	(40 lb-in)	(57 lb-in)	(32 lb-in)	(53 lb-in)	(73 lb-in)				
M14 ´ 1.5	54.0 N·m	89.2 N•m	127.4 N∙m	71.6 N∙m	117.6 N•m	166.6 N•m				
	(40 lb-in)	(66 lb-in)	(94 lb-in)	(53 lb-in)	(87 lb-in)	(123 lb-in)				
M16 ´ 1.5	81.3 N·m	107.8 N •m	196.0 N∙m	107.8 N•m	186.2 N∙m	264.6 N·m				
	(60 lb-in)	(80 lb-in)	(145 lb-in)	(80 lb-in)	(138 lb-in)	(196 lb-in)				
M18 ´ 1.5	117.6 N•m	196.0 N·m	284.2 N·m	156.8 N•m	264.6 N·m	372.4 N·m				
	(87 lb-in)	(145 lb-in)	(210 lb-in)	(116 lb-in)	(196 lb-in)	(276 lb-in)				
M20 ´ 1.5	166.6N •m	274.4 N•m	392.0 N·m	215.6 N•m	362.6 N∙m	519.4 N·m				
	(123 lb-in)	(203 lb-in)	(290 lb-in)	(160 lb-in)	(268 lb-in)	(384 lb-in)				
M22 ´ 0.5	225.4N •m	372.4 N•m	529.2 N⋅m	294.0 N•m	490.0 N•m	705.6 N·m				
	(167 lb-in)	(276 lb-in)	(392 lb-in)	(218 lb-in)	(362 lb-in)	(522 lb-in)				
M24 ´ 1.5	284.2 N·m	480.2 N •m	686.0 N·m	382.2 N·m	637.0 N·m	921.2 N·m				
	(210 lb-in)	(355 lb-in)	(508 lb-in)	(283 lb-in)	(471 lb-in)	(682 lb-in)				
M24 ´ 2.0	274.4 N•m	460.6 N -m	666.4 N·m	372.4 N·m	617.4 N•m	891.8 N ·m				
	(203 lb-in)	(341 lb-in)	(493 lb-in)	(276 lb-in)	(457 lb-in)	(660 lb-in)				

^{*}Diameter ´ pitch in millimeters

