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SECTION 0

GENERAL INFORMATION

1. INTRODUCTION

1-1. PAGE LAYOUT

This Labor Time Guide is designed for convenient and accurate use. For fast, efficient location of Labor Operation Codes, a detailed illustration and corresponding Labor Operation Code information is provided.

1-2. TYPES OF OPERATION

Major Operation

The Labor Operation Codes consist of seven digits. All operation numbers having “0” in the seventh digit of operation number are classified as “major” operations. A major operation time allowance is sufficient to do the work described as a single operation.

Supplementary Operation (Adds)

All operation numbers having an alphabetical letter in the seventh digit of the operation number are classified as “supplementary” operations. These operations cannot be used as a single operation and must be used as additions to the major operation.

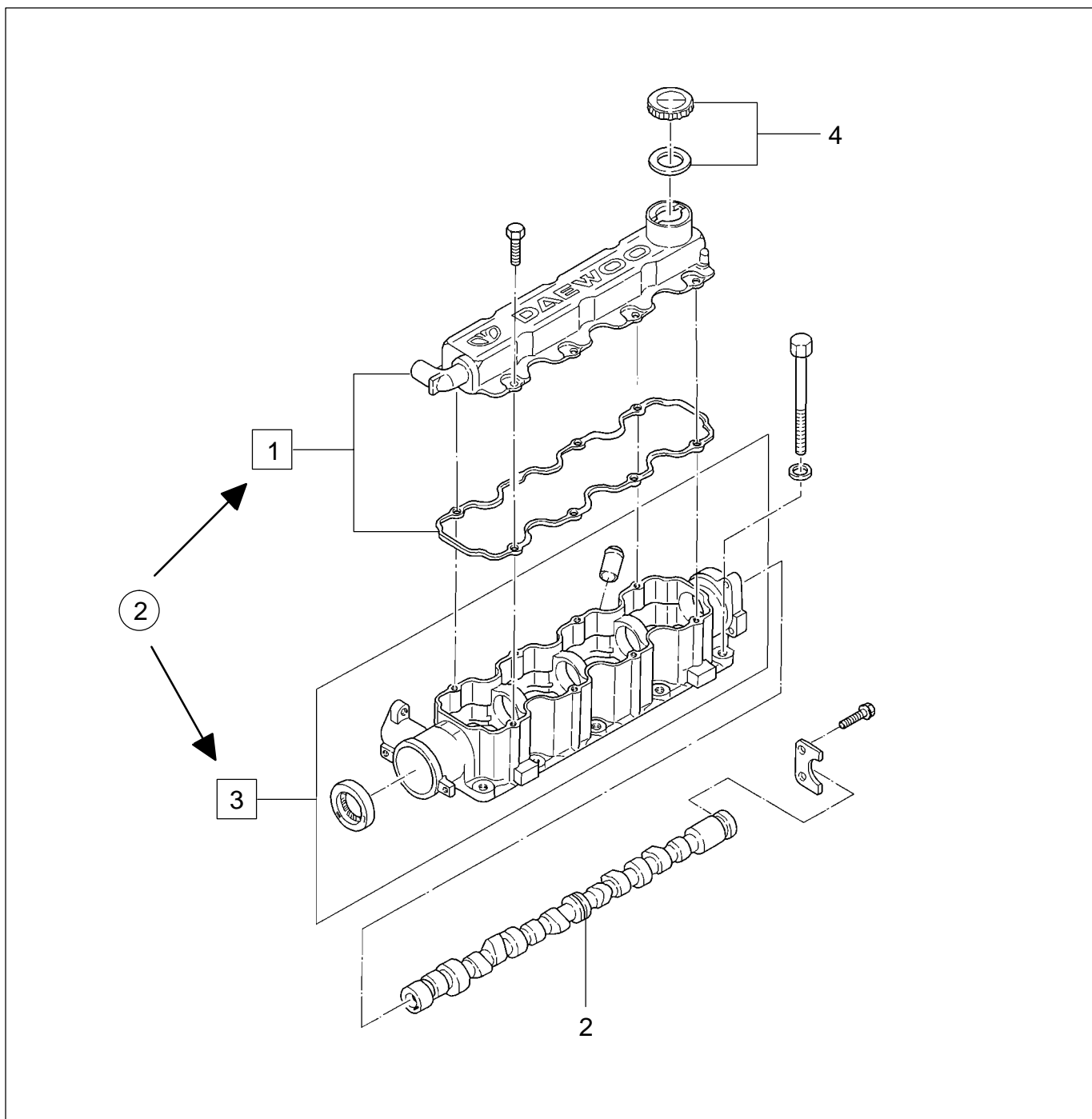
1-3. TIME ALLOWANCES

The time allowances published in this guide have been determined by performing the operation a sufficient number of times to establish an average time or to determine that a fair and equitable time has been developed. Standard technician’s hand tools and dealer essential and available tools are used in performing time studies. No power operated tools are used for time studies. Procedures outlined in Service Manuals, other Service Publications and standard shop practices are used as a guide when performing the work necessary to establish time allowances.

The time allowance includes the actual time required to perform the operation plus an additional allowance to provide for operating variables. Time allowances include time to remove and reinstall manufacturer options and accessories but do not include time to remove and reinstall special or aftermarket equipment.

“Repair diagnosis” time is included in all published labor time operations when it is required to perform the operation. It is the responsibility of the dealer’s qualified service staff to assist technicians in “customer problem analysis” and “symptom diagnosis”.

2. HOW TO READ THIS MANUAL



① Section

Refer to the main group code in this chapter.

② Illustration Number

The illustration number corresponds to the reference number provided in the chart or the facing page.

ENGINE 1B – 19					
SOHC ENGINE MECH. – CAM SUPPORT & SHAFT (132)					
NO.	OPERATION DESCRIPTION	OPERATION CODE	S		
			1.4/ 1.5S		
1	COVER AND/OR GASKET, CAMSHAFT HOUSING (ONE PIECE) – REPLACE	1322100	0.3		
2	CAMSHAFT – REPLACE INC: R & I Dis coil, Camshaft gear, Ignition timing adjust. B – With air conditioning	1322300	2.6		
		132230B	0.1		
3	SUPPORT CAMSHAFT – REPLACE INC: R & I Dis coil, Camshaft gear, Ignition timing adjust. B – With air conditioning	1322500	3.4		
		132250B	0.1		
4	CAP, OIL FILLER – REPLACE	1322700	0.2		
5	OIL SEAL, CAMSHAFT – REPLACE	1322900	2.3		

3 Operation Description

3A. Major Operation

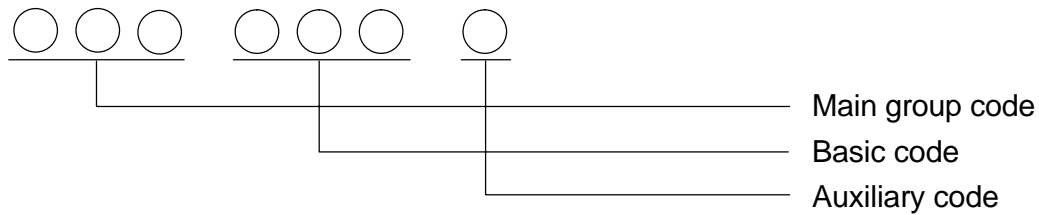
The Operation Description corresponds to each labor operation number, identifies the part or component, and describes what kind of operation is to be performed.

3B. Supplementary Operation

The Operation Description corresponding to each operation number identifies the part or component concerned, and describes the additional operation for removing and reinstalling optional equipment (i.e. power steering, air conditioning, etc.), when a major operation is performed on vehicles with optional equipment.

④ Operation Code

The Operation Code consists of seven digits.



1) Main Group Code

The Main Group Code consists of 3 digits which indicates the area of the vehicle where the repair was performed.

2) Basic Code

The Basic Code is a 3–digit number specific to each operation.

3) Auxiliary Code

The Auxiliary Code indicates the type of repairs as shown below ;

Auxiliary Code	Description
0	Major operation
A B • • • R	Supplementary operation

Major Operation

The numeric code “0” represents a major operation.

Supplementary Operation (ADD)

The alpha code “A” ~ “R” represents supplementary work where additional time is required for R & R of optional parts or components which are related to the intended repair (major operation).

⑤ Operation Times

The operation times in this manual are provided in hours and tenths of hours (e.g. 1.1 hours for 1 hour and 6 minutes).

Enter the operation time on the warranty claim in the same manner.

⑥ Model Code

This code represents the vehicle model.

Vehicle Models

S : KALOS

N : NUBIRA/LACETTI

L : EVANDA

⑦ Engine Type

This designation represents engine types.

1.2S : 1.2 SOHC Engine

1.3S : 1.3 SOHC Engine

1.5S : 1.5 SOHC Engine

1.8S : 1.8 SOHC Engine

2.0S : 2.0 SOHC Engine

1.4D : 1.4 DOHC Engine

1.6D : 1.6 DOHC Engine

1.8D : 1.8 DOHC Engine

2.0D : 2.0 DOHC Engine

2.2D : 2.2 DOHC Engine

3. HOW TO USE THIS MANUAL

The operation times in this manual are provided in hours and tenths of hours (e.g. 1.1 hours for 1 hour and 6 minutes).

Enter the operation time on the warranty claim in the same manner.

Example : (When supplementary work is performed in addition to the intended repair)

Model : S (KALOS)		
Major Operation	:	Camshaft Replacement
Supplementary Work	:	With Air Conditioning

Step 1 : First find SOHC ENGINE MECH. – CAM SUPPORT & SHAFT in MAIN GROUP INDEX and then the page (Engine 1B–19) for Camshaft.

Step 2 : On page Engine 1B–19, note the Operation Code for Camshaft Replacement.

1322300	CAMSHAFT – REPLACE	2.6
132230B	WITH AIR CONDITIONING	0.1
<hr/>		
	Total Operation Time	2.7

SOHC ENGINE MECH. – CAM SUPPORT & SHAFT (132)

NO.	OPERATION DESCRIPTION	OPERATION CODE	S		
			1.4/ 1.5S		
1	COVER AND/OR GASKET, CAMSHAFT HOUSING (ONE PIECE) – REPLACE	1322100	0.3		
2	CAMSHAFT – REPLACE INC: R & I Dis coil, Camshaft gear, Ignition timing adjust. B – With air conditioning	1322300	2.6		
		132230B	0.1		
3	SUPPORT CAMSHAFT – REPLACE INC: R & I Dis coil, Camshaft gear, Ignition timing adjust. B – With air conditioning	1322500	3.4		
		132250B	0.1		
4	CAP, OIL FILLER – REPLACE	1322700	0.2		
5	OIL SEAL, CAMSHAFT – REPLACE	1322900	2.3		

Major Operation : CAMSHAFT – REPLACE → 1322300 → 2.6

Supplementary Work : WITH AIR CONDITIONING → 132230B → 0.1

Operation Code 1322300 & 132230B

Operation Time Total 2.6 + 0.1 = 2.7

4. PAINT REPAIR

4-1. INSTRUCTION

The time allowances for paint operations are established on the basis of techniques and material required for high quality work.

The basis for determining the paint time allowances is a "Paintable Surface".

- 1-1. All dents have been removed from sheet metal parts and welded parts are restored to their original shape.
- 1-2. Welding and soldering joints, overlapping seams formed by partial replacement and surfaces repaired with fillers are completely smooth.
- 1-3. And when the painter does not need to apply more than 3 coats of knife-edge putty to the surfaces to be painted.

4-2. LABOR TIME

The time allowances for paint work include all related tasks like material preparation time, actual repair time and material allowances, which are necessary for a proper and professional paint repair. Note that material allowances are converted to hours and are included in the operation time based on the paint process and the size of area to be painted.

The material allowances include necessary paint mixing and other items like masking tape, sand paper, cleaning materials, etc.

INCLUDES ; moving the vehicle / mixing all materials / color blending / equipment cleaning / color spray sample / repainting time on clear coat / masking / sanding / cleaning / spraying / removing of the masking and polishing.

EXCLUDES ; removal and reinstallation of body attaching parts

4-3. REPAIR TYPE

Type	Description
COLOR COAT	<p>PAINT EXPOSED SURFACES</p> <p>Top-coat entire surface, including small dents that have been straightened (without filling in). This operation should be used when correcting painting conditions such as thin paint, color mismatch or surface scratches not extending beyond the prime coat.</p>
REFINISH	<p>PAINT NEW PART</p> <p>This operation involves sanding out a defect to expose a local area of bare metal, prime locally and then apply color coat.</p> <p>This applies to those paint repairs that require a repair to the prime coat before the color coat is applied.</p>
POLISHING	<p>POLISH THE SURFACES</p>

4-4. HOW TO USE OPERATION CODE FOR PARTIAL PAINTING

Use the operation code of the relevant part and enter "P" in the PF column of the Daewoo Warranty Claim. For example, if only a portion of a Lanos hood required painting, complete the Daewoo Warranty Claim as follows ;

PF	OPERATION CODE	HOUR
P	9836080	0.7

5. DEFECT CODE

5-1. NATURE CODES

N01	Hard start, no start	N34	Fails to reach normal operating temperature
N02	Poor idle	N35	RPM too low
N03	Surge, hesitate, stumble	N36	RPM too high
N04	Engine noise, engine knocking noise	N37	Jumping-out
N05	Choke malfunction	N38	Improper synchronizing
N06	Engine stalled (general)	N39	Oil diluted
N07	Excessive fuel consumption	N40	Misfire
N08	Excessive oil consumption	N41	Spongy pedal
N09	Overheated	N42	Unstable steering
N10	Shift shock	N43	Excessive shock
N11	Engine run-on	N44	Poor release
N12	Flooded, overflowing	N45	Unusual tire wear
N13	Poor acceleration, uneven acceleration	N46	Misaligned or mismatched
N14	Abnormal combustion	N47	Weak
N15	Lack of engine power	N48	Hard to turn
N16	Percolation	N49	Impossible to turn
N17	Improper exhaust gas (black smoke, white smoke)	N50	Vehicle bouncing
N18	Backfire, afterfire	N51	Deteriorated
N19	Vapor lock	N52	Distortion, rainbow, waving
N20	Blocked	N53	Color mismatched
N21	Shuddering, pulsation, vibration, chattering	N54	Defective chrome plate, defective painting
N22	Slippage (slipping)	N55	Rust, corrosion, perforation
N23	Difficult engagement	N56	Glazed
N24	Difficult disengagement	N57	Loose, poor fit
N25	Abnormal shifts	N58	Bubbles
N26	Impossible shifts	N59	Vehicle vibration
N27	Squeaking, squealing, abnormal(wind) noise	N60	Excessive vibration
N28	Dragging	N61	Dead battery
N29	Pulls	N62	Inaccurate (meter, gauge, etc.)
N30	Stalled while driving	N63	Poor sound (horn, radio, etc.)
N31	Stalled while idling	N64	Overcharged, discharged
N32	Stalled between shifts	N65	Electrical failures
N33	Stalling during sudden braking	N66	Blown fuse

5-1. NATURE CODES

N67	Warning light on	N84	Improper opening and/or closing
N68	Intermittent operation	N85	Grabs
N69	Pulls to left or right	N86	Poor maneuverability
N70	Poor AM reception / interference	N87	Insufficient brake
N71	Oil leak, oil entering	N88	Brake judder
N72	Water leak, water entering	N90	Color rainbow, color waving
N73	Leaks—other (air, fuel, refrigerant, vacuum)	N91	Interference or hitting
N74	Poor FM reception / interference	N92	Inoperative
N75	Radio / CD does not operate properly	N93	High/low operating effort
N76	Tape deck does not operate properly	N94	Special policy
N77	Improper memory	N95	Glass cracked
N78	Improper volume control	N96	Glass broken
N80	Headlamp improperly aimed	N97	Glass chipped
N82	Loosening, falling—off, sagged	N98	Glass scratched
N83	Gas leak, gas entering	N99	Undefined

5-2. CAUSE CODES

R01	Scored, scratched or chipped	R19	Improperly machined
R02	Frozen (Temperature)	R20	Faulty casting
R03	Peeling, coming—off	R21	Improper clearance, back lash, free play
R04	Rusty, corroded	R22	Lack of lubricants
R05	Split, cut or torn	R23	Improper welding or soldering, welding or soldering omitted
R06	Broken or cracked	R24	Improper tightening, fit or assembly
R07	Porous, pin holes, cavity	R25	Sticks, binds, seized
R08	Bent, kinked, twisted, distorted, warped or wrinkled	R26	Foreign material, clogged
R09	Stripped – bolts, holes, nuts	R27	Improper sealing, sealer omitted or skipped
R10	Soiled	R28	Improper adjustment
R11	Weakened, loss of tension or resilience (spring, cushion, etc.)	R31	Incorrect part
R12	Abnormal wear	R32	Improperly installed
R13	Out of balance	R33	Improperly routed
R14	Out of round	R34	Missing part
R15	Loose or improper connection	R35	Flaw in material
R16	Open circuit or short circuit	R36	Contaminants
R17	Burned or burned out	R99	Undefined
R18	Grounded or shorted		

5-3. PAINT CODES

P01	Oversprayed, drip	P19	Atmospheric fallout
P02	Undersprayed, bare	P20	Polishing mark, sanding mark
P03	Color mismatched	P21	Touch up
P04	Low Gloss	P22	Dust, dirt
P05	Mottled, cloudy	P23	Poor welding
P06	Sags or runs	P24	Rust
P07	Pin hole	P25	Blistered
P11	Peeling, scaling	P26	Chipped
P12	Orange peel	P27	Cracked
P13	Slow drying	P30	Surface scratch
P14	Thin no paint	P31	Scab corrosion
P15	Wavy	P32	Dent
P16	Tape mark, touch mark	P33	Rust perforation
P17	Chemical damage	P34	Discolored, faded
P18	Acid rain	P99	Undefined

6. ABBREVIATIONS

A/C	Air Conditioning	I/P	Instrument Panel
ADJ	Adjust	MAN	Manual
ASSY	Assembly	MAP	Manifold Absolute Pressure
A/T	Automatic Transaxle	MAT	Manifold Air Temperature
AUTO	Automatic	OH	Overhaul
CC	Color Coat paint	POL	Polishing
CHK	Check	PCV	Positive Crankcase Ventilation
CLN	Clean	PLA	Plating
CYL	Cylinder	REF	Refinish Paint
DIFF	Differential	RPL	Replace
DIST	Distributor	RPR	Repair
DOHC	Double Overhead Camshaft	R&R	Remove and Reinstall
ECM	Electronic Control Module	SOHC	Single Overhead Camshaft
EGR	Exhaust Gas Recirculation	M/T	Manual Transaxle
ETC	Others	VIN	Vehicle Identification Number
H/B	Hatch Back	VSS	Vehicle Speed Sensor
IAC	Idle Air Control		

7. MAIN GROUP CODE

The first 3 digits of the 7 digit code classify the units to be serviced into main groups.

SECTION	SUB-SECTION		MAIN GROUP CODE		PAGE
1. ENGINE	1B	SOHC Engine Mech.	111	Engine unit	1B-1
			113	Belt system	
			121	Engine block	
			122	Crankshaft & piston	
			123	Oil pan & pump	
			131	Cylinder head	
			132	Cam support & shaft	
			133	Timing cover	
			138	Engine & transaxle mount	
	1C	DOHC Engine Mech.	111	Engine unit	1C-1
			113	Belt system	
			121	Engine block	
			122	Crankshaft & piston	
			123	Oil pan & pump	
			131	Cylinder head	
			132	Cam support & shaft	
			133	Timing cover	
			138	Engine & transaxle mount	
	1D	Engine Cooling	141	Radiator	1D-1
			143	Cooling fan	
145			Radiator hose & pipe		
148			Thermostat		
1E	Engine Electrical	151	Ignition cable	1E-1	
		154	Alternator unit		
		156	Starter		
		157	Battery		
		158	Fuse & relay		
1F	Engine Controls	171	Fuel tank	1F-1	
		172	Fuel line		
		173	Canister & fuel vacuum		
		181	Fuel injection		
		182	Accelerator control		
		186	Emission control		

1. ENGINE	1G	Engine Intake & Exhaust	191 193 194 195 196	Air intake system Intake manifold Exhaust manifold Vacuum hose Exhaust pipe line	1G–1
2. SUSPENSION	2C	Front Suspension	213 214 215	Knuckle & hub Front shock absorber Control arm	2A–1
	2D	Rear Suspension	231 232	Rear axle Rear shock absorber	2D–1
	2E	Tires & Wheel	241	Wheel & wheel cover	2E–1
3. DRIVE LINE/ AXLE	3	Drive Axle	321	Axle shaft parts	3–1
4. BRAKES	4A	Hydraulic Brakes	425 428	Brake pipe Brake Pedal & Mount	4A–1
	4B	Master Cylinder & Power Booster	431	Master cylinder & booster	4B–1
	4D	Front Brakes	445	Front brake	4D–1
	4E	Rear Brakes	456	Rear brake	4E–1
	4F	Anti–Lock Brake System	462 465	ABS system Hydraulic modulator	4F–1
	4G	Parking Brakes	478	Parking brake	4G–1
5. TRANSMISSION/ TRANSAXLE	5A1	ZF 16HP Auto Transaxle	524 525 526 527	ZF 16HP Auto Transaxle I ZF 16HP Auto Transaxle II ZF 16HP Auto Transaxle III ZF 16HP Auto Transaxle IV	5A1–1

SECTION	SUB-SECTION		MAIN GROUP CODE		PAGE
5. TRANSMISSION/ TRANSAXLE	5A2	AISIN Auto Transaxle	531	Automatic transaxle	5A2-1
			532	Case & related parts	
			533	Internal powertrain parts	
			534	Gear assembly	
			535	Control valve	
			536	Fluid cooler pipe	
			537	Auto transaxle controls	
5B1	Five Speed Manual Transaxle (D16, D20)	561	Manual transaxle	5B1-1	
		563	Transaxle gear		
		564	Reverse & counter gear		
		565	Bearing plate		
		566	Gear shift cover & fork		
		567	Differential gear		
		569	Shift control		
5B2	Five Speed Manual Transaxle (Y4M)	571	Manual transaxle	5B2-1	
		572	Transaxle gear		
		573	Gear Shift Cover & Fork		
		574	Differential Gear		
		575	Shift Control		
5C	Clutch	581	Clutch parts	5C-1	
		582	Hydraulic clutch		
		583	Clutch pedal		
6. STEERING	6A	Power Steering System	621	Power steering gear	6A-1
			623	Power steering pipe line	
	6D	Manual Steering Gear	635	Manual steering gear	6D-1
	6E	Steering Wheel & Column	641	Steering wheel	6E-1
			642	Steering column cover	
			643	Steering column	
			647	Tie rod	

SECTION	SUB-SECTION		MAIN GROUP CODE		PAGE
7. HVAC (Heating, Ventilation & Air Conditioning)	7A	Heating & Ventilation	711 713 714	Air distribution Evaporator Blower	7A-1
	7B	HVAC Control	732 733 734 735	Compressor Compressor mount A/C hose & pipe line A/C control switch	7B-1
8. RESTRAINTS	8A	Seat Belts	812 822	Front seat belt Rear seat belt	8A-1
	8B	S. R. S (Supplemental Inflatable Restraints)	832 833	Air bag system Immobilizer	8B-1
9. BODY AND ACCESSORIES	9A	Body Wiring System	911	Wiring harness	9A-1
	9B	Lighting System	916/91 7 918	Front lamp Rear lamp	9B-1
	9D	Wiper/Washer System	921 923	Windshield wiper Windshield washer	9D-1
	9E	Inst. Driver System	925	Instrument cluster	9E-1
	9F	Audio & Anti-theft System	928 929	Electrical parts Antenna	9F-1
	9G	Interior Trim	931 932 933 934 935 936 938 939	Instrument panel Molding & switch Instrument parts Console Front door trim Rear door trim Pillar trim Floor carpet	9G-1
	9H	Seats	941 942	Front seat Rear seat	9H-1
	9L	Glass & Mirrors	946	Glass & outside mirrors	9L-1

0 – 16 GENERAL INFORMATION

SECTION	SUB-SECTION		MAIN GROUP CODE		PAGE
9. BODY AND ACCESSORIES	9M	Exterior Parts	951	Emblem & lettering	9M-1
			952	Mud guard	
	9O	Bumpers & Fascias	956	Front bumper	9O-1
			957	Rear bumper	
	9P	Doors	961A	Front door & lock	9P-1
			961B	Front window lifter	
			961C	Front weatherstrip	
963A			Rear door & lock		
963B			Rear window lifter		
963C			Rear weatherstrip		
965			Electric door lock		
966	Fuel filler lock & quarter window lock				
9Q	Roof	967	Trunk lid lock & tailgate lock	9Q-1	
		968	Car lock		
9R	Body Front End	971	Headlining & roof panel	9R-1	
		972A	Sunshade & inside mirror		
		972B	Sun roof		
9S	Body Rear End	973	Hood panel	9S-1	
		974	Front panel		
		975	Fender panel		
		976	Dash panel & cowl		
		977	Grille		
10	Paint	978	Trunk lid panel & spoiler	10-1	
10. PAINT	10	Paint	981	Paint	10-1