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Drive your way[™]



Specification

Category		NE Eacolift		VE		CAMRY	ACCORD	
		NI I decint	Diff'		Diff'	OAWIXT	NOOOND	
	0	AL	4,800	+20	4,820	+15	4,805	4,930
	0/	AW .	1,830	+5	1,835	+15	1,820	1,847
Evt	0	AH	1,475	-5	1,470	-	1,470	1,475
	W/E	Base	2,730	+65	2,795	+20	2,775	2,800
	0/11000	Front	960	-20	940	-5	945	985
	0/пang	Rear	1,110	-25	1,085	-	1,085	1,145
		Head	1,020	+5	1,025	+39	986	1,052
	Front	Leg	1,110 / 1,071	+45/-12	1,155 / 1,059	+15/-2	1,140 / 1,061	1,074 / 1,054
l na f		Shoulder	1,460	+10	1,470	+2	1,468	1,478
Int.	Rear	Head	970	-	970	+10	960	978
		Leg	950 / 983	-70/+1	880 / 984	+20/+50	860 / 934	873 / 909
		Shoulder	1,445	-5	1,440	-5	1,445	1,433
Trunk	Capa.	(SAE, ℓ)	462	-7	455	+30	425	396
S	uspensio	on	D-WISH/M-LINK		STRUT/M-LINK		STRUT/D-LINK	D-WISH/M-LINK
Ground clearance		160	-20	140		140	135	
Tire		215/65R15 215/60R16 225/50R17 215/55R17(NA)		205/70R15 205/65R16 215/55R17 225/45R18		215/60R16 215/55R17	215/60R16 225/50R17	
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Package concept



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Power-train

JOB #1

% based on the homologation value

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Engine			Transmission Area						
	Volume		Target performance						
Model			Max. power (PS/rpm)	Max. Torque (kg⋅m/rpm)	Manual	Automatic	DOM	General	NA (YFA)
	2.0 MPI 2.4 MPI		165/6200	20.2/4600	6SP (M6GF2)	6SP (A6MF1)	•	•	
			177/6000	23.3/4000	6SP (M6GF2)	6SP (A6MF1)			
Theta- II	2.4 GDI	DOM Dual	201/6300	25.5/4250	6SP (M6GF2)	6SP (A6MF2)			
		NA Dual	200HP/6300	25.7/4250			ullet	•	
		NA Single	198HP/6300	25.5/4250			(Jan. `10)	(Aust. only)	
Theta	2.0 LPI		144/6000	19.3/4250	5SP (M5GF2)	5SP (A5CF2)	•		
Added P	ower-train	(plan)					*	k based on the	e target value

Added Power-train (plan)

Engine			Transmission		Area			
Model	Volume	Target performance	Time	Manual	Automotio	DOM	General	NA (YFA)
		PS /kg⋅m			Automatic	DOIVI		
Theta- II	2.0 T-GDI	276 / 36.5	Oct. '10	-	6SP (A6LF2)			•
v(Nu) R/C	2.0 CVVL	170 / 20.0	July '11	6SP (M6GF2)	6SP (A6MF1)	۲		
	2.0 LPI	156 / 19.6	July '11	6SP (M6GF2)	6SP (A6MF1)	•		
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Safety

Category		YF (Target)	NF	CAMRY
	Front	5★/5★	5★/5★	5★ / 5★
NA NCAP	Side	5★/5★	5★/5★	5★/5★
	Rear (new)	Satisfied (no gas leak)	-	Satisfied
	Front	GOOD (G)	GOOD (G)	GOOD (G)
NA IIHS	Side	GOOD (G)	ACCEPT (A)	GOOD (G)
	40% offset	GOOD (G)	GOOD (G)	GOOD (G)
	Front	5★/5★	5★/5★	-
DOM NCAP	Side	5★	5★	-
	Pedestrian	3★	_	-
Aust. NCAP	Front / Side	5★	3★	4★



NVH

Category	YF 2.4	NF F/L 2.4	CAMRY 2.4	ACCORD 2.4	Target
Wind noise	63.1	63.5	63.3	64.5	64 ↓
Road noise	69.5	70.0	68.0	73.5	70 ↓

Biased folding outside mirror



Improved door frame strength

RR L/ARM D/DAMPER



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Plastic shield door module



3. Benefits : Reduce weight (about 2.0Kg/vehicle)

Model	Chrysler Sebring	Mazda6	Ford Fiesta
Shape			
Material	PP+LGF40%	PP+LGF40%	PP+LGF30%



1. Feature

- The window regulator rail (plastic) has been attached on the door module for weight reduction (World first)

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2. Structure



3. Benefits : Injection molding for the plastic panel and regulator rail for weight reduction (0.5Kg/vehicle)

4. Competitors

Model	Chrysler Sebring	FORD EDGE	DCX WRANGLER
Shape			
TYPE	RAIL LESS	RAIL (stand alone)	RAIL (stand alone)

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Hood inner multi cone structure

1. Feature

- In case the vehicle accident that the vehicle crashes the pedestrian, mostly the hood gives a severe damage to the pedestrian. To reduce the damage, the hood that has inner multi cone structure was applied.

2. Structure



3. Benefits: Multi cone structure offers the dispersion of impact to the pedestrian's head

4. Competitors (Camry/Accord: steel strut structure)

Model	OPEL ASTRA	TOYOTA PRIUS	BENZ C220
Exterior			
Туре	STEEL (multi-cone)	STEEL (multi-cone)	Aluminum (multi-cone)

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UMS (User Mode Setting)

1. Feature

- The user option of BCM can be changed by trip/reset switch and cluster display in the vehicle without scanner.

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3 Piece Panorama Sunroof

- 1. Feature
 - Large size glass was applied in the roof: Opening feeling, lighting, ventilation and better exterior view
- 2. Structure





Tilting
 Out sliding
 Fixed glass

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- 3. Product value
 - NVH : a deflector glass was applied to cope with the wind noise

Model	LEXUS ES350	BENZ E350	BENZ S500
Exterior			
TYPE	3 piece type	3 piece type	Black plastic (mesh type)



Smart Junction Box

Items	Main Feature	Structure
Smart Junction Box	 1. Feature Smart J/Box: includes the communication unit Power supply area: consists of fuse and relay Control area: IPS for lamp control, micro-chip for CAN 2. Effectiveness Lamp control by IPS and wiring protection PWM control to prevent lamp damage Outputs the signal via CAN based on the switch input: BCM, Cluster Body-CAN Turn signal lamp control (Lane Change function included) IC integrated for CAN communication Self diagnosis via CAN (lamp open / short) Fail Safe Lamp control 3. Cautions Original spare parts (lamp) must be used Otherwise, lamp malfunction may occur Same type fuse has to be used Not allowed to jump out from the fuse for other purpose 	Image: second





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Items	Main Feature	Structure	Remarks
Cooling	 Feature The water inlet pipe shape was changed to cope with the reduced space between WTC and TGS cable because of 6-speed A/T. To lower the water pump noise at idling after warm up, the water pump pulley ratio was increased (1.08 → 1.25) Optimized water pump housing profile for lower weight. Structure Optimized water pump shape WTC profile was optimized Water pipe connecting portion was changed.	r	
system	(Flange + Stud → O-Ring) Effectiveness Reduced weight (0.4kg) 	The second sec	

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Items	Main Feature	Structure	Remarks
	 Feature Reduced exhaust manifold weight Structure Thinner inlet flange (10t→3.2t) Runner thickness (2.0t →1.5t) Lower Heat Protector: Compact design 	Image: NF facelift	
Exhaust manifold	3. Effectiveness - Reduced weight (1.2kg)	Image: Contract of the second seco	
\sim	www.cargeek	.ir	



Items	Main Feature	Structure	Remarks
Bracket	 1. Feature 9. Engine middle bracket and power steering bracket has been unified as one module for lower weight 2. Effectiveness 9. Reduced weight (2.0kg) 	NF facelift	
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Automatic Transmission





Automatic Transmission





Category DRIVE TYPE		MANUAL					
		θΙΙ-	-2.0	θII-	2.4		
		LPI MPI		MPI	GDI		
		FF	FF	FF	FF		
DRIVE	SYSTEM	2WD	2WD	2WD	2WD		
GENERAL		M5GF2-modified	M6GF2-modified	M6GF2-modified	M6GF2-modified		
	1ST	3.267	3.267	3.267	3.267		
	2ND	1.794	1.794	1.794	1.931		
	3RD	1.542	1.542	1.542	1.696		
GEAR RATIO	4TH	1.176	1.176	1.176	1.276		
	5TH	0.974	0.974	0.974	1.027		
	6TH	-	0.829	0.829	0.829		
	REV.	3.416	3.416	3.416	3.588		
FINAL GEAR TATIO		4.643/ 3.421 (for 1,2,R/ 3,4,5)	5.071/ 3.737 (for 1,2,R/ 3,4,5,6)	4.643/ 3.421 (for 1,2,R/ 3,4,5,6)	4.333/ 3.250 (for 1,2,R/ 3,4,5,6)		
		DRY SINGLE PLATE	DRY SINGLE PLATE	DRY SINGLE PLATE	DRY SINGLE PLATE		
Т/М (Oil (ℓ)	1.80	1.80	1.8ℓ	1.8ℓ		
		WW	w.cargeek.ir				



Manual Transmission





HAC (Hill start Assist Control)

1. Feature

- Holds the braking pressure at uphill when start after stop to avoid the retraction. (ESC function)

2. Structure



1 HECU

- (Hydro-Electronic Control Unit)
- **2** Wheel speed sensor
- **3** Steering angle sensor
- **④ Yaw & Lateral G-sensor**
- **(5)** Longitudinal G-sensor

3. Benefits

- It offers the driving convenience avoiding vehicle retraction at uphill

Model	HONDA ACCORD	TOYOTA CAMRY	NISSAN ALTIMA
TYPE	Not applied (Acura TL applied)	Not applied	Not applied



MDPS (Motor Driven Power Steering)

- High power column type Motor Driven Power Steering
- Benefits : Fuel consumption (improved by 3~4%), environmentally friendly (oil free)



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(Competitors	 			
Model	HMC	ΤΟΥΟΤΑ	HONDA	VW	
	WODEI	YF/YFA	CAMRY	ACCORD	PASSAT
	MDPS	OPT(DOM only) / STD	('11)	-	STD
		WV	vw.cargeek.ir		



ASD (Amplitude Selective Damper)

1. Feature

- ASD offers better driving feeling steering safety than conventional type Especially in case of high frequency (low amplitude) zone, it generates low damping force.



3. Benefits

- High frequency / Low amplitude : low damping force is generated due to the sliding motion of sliding piston (damping force comes from conventional valve only) abetter driving feeling
- Low frequency / High amplitude : Sliding piston is fixed so that the high damping force is generated (damping force comes from conventional VALVE and ASD VALVE) IF for driving safety

Model	HONDA ACCORD	TOYOTA CAMRY	NISSAN ALTIMA
TYPE		Conventional valve type	



Suspension

Category	Feature	Structure
Suspension	 Feature Front McPherson / Rear multi-link : reduced weight and fuel consumption System Front side: 'LOAD SPRING' applied lower friction for driving feeling, lower aligning torque for straight ahead Decreased ground clearance, Silica tire, increased tire air pressure for fuel consumption Max tire, 225/45R18 applied Wide width tire for product value FR/RR, STAB. BAR BUSH applied, STAB. BAR noise and friction can be reduced ASD SHOCK ABSORBER for driving feeling and steering safety 	Front: McPherson (Dual link)



Mounting

Category	Feature	Structure
Mounting	 1.Type : 4points mounting type (ENG 1P + TM 3P) 2. Structure a. Engine mounting: Block type hydro mounting was applied Housing stopper type (durability) Enhanced strength b. T/M mounting: Liquid bush type (for lower frequency NVH), Higher strength (reinforced Body & BRKT) MASS DAMPER added c. Roll mounting: Rubber bush (NF C/O) Mass damper applied for NVH d. Insulator material: economic rubber e. SUPT BRKT : cast iron 	SUPT BRKT ENG RR ROLL T/M MTG



Intake system

Category		Feature		Structure
Intake system	 1. Feature Straighten inta 2. Benefits Improved perfinered inta Air duct / resolower weight a Model Intake air pressure (kPa) 	ake route formance due ike pressure and cost NF F/L 4.4	e to the ated molding fo YF 3.5	Air hose AIR OUT AIR OUT A/Cleaner A/Cleaner A/Duct AIR IN



Exhaust system

Category		Feature		Structure
Category	 ▶ Feature Increased m	Feature huffler capac st sound / en essure / impr NF F/L 99 65 / 161ps elding assem verter for low	ity (23 $\ell \rightarrow 25\ell$) hanced oved power YF 95 63 / 162 ps ably on the er weight and ng points	Structure
	4. Minimized he	eat protector	shield area	C/Converter C/Converter
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Fuel system

Category	Feature	Structure
Fuel system	 Feature Tank volume : 70ℓ Material : Steel System It copes with OBD regulation (Canister close valve, pressure sensor) Air filter was applied on the air intake portion Ventilation was considered on the fuel filler (avoid pollution of air route) 	Filler neck CUT valve Fuel tank Image: Constant of the second



Sliding cover cup holder

- 1. Feature
 - Sliding open/close type for easier and more convenient use as well as better exterior view.



3. Benefits : can be used not only cup holder but also tray (cup guide can be detached)





Biased outside folding mirror

- 1. Feature
 - Biased type outside folding mirror was applied for better exterior view and luxury feeling

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2. Structure



3. Benefits : it offers luxury image when it was parked

_				
	Model	TOYOTA CAMRY	HONDA ACCORD	NF
	Exterior			
	TYPE	FIXED	Folding (general)	←



Rear Camera Display

1. Feature

- Rear camera display + ECM function on the inside room mirror

2. Structure

- 3.5inch display panel / resolution 240,000 pixel



3. Competitors

Model	TOYOTA CAMRY	HONDA ACCORD	NF	
Exterior				
TYPE	ECM+COMPASS	DAY&NIGHT	ECM	

C/



Interior lamp

1. Feature

Room lamp S/W on the overhead console
 Overhead console LED mood lamp added
 Rear room lamp for rear seat

2. Structure



Room lamp S/W related to door



Room lamp (front)

Room lamp (rear)





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Model	TOYOTA CAMRY	HONDA ACCORD	NF
Exterior			
TYPE	LED mood lamp not applied, lens & S/W integrated type	←	LED mood lamp not applied, stand alone S/W



HID headlamp



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Seat warmer S/W

- 1. Feature
 - HI-LOW seat warmer S/W (push-return type \rightarrow seesaw type) for lower cost
- 2. Structure



- The push button type in NF needs an independent seat warmer ECU that processes the digital signal from the S/W.
- The seesaw type in YF does not need ECU, instead the analog signal will be processed by thermostat to implement
 2 stage seat warmer

- 3. Benefits : lower cost (ECU eliminated)
- 4. Competitors : applied in HONDA ACCORD