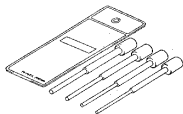
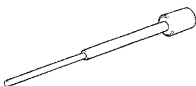
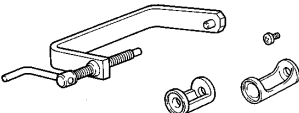
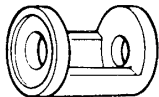
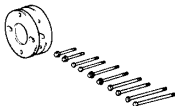
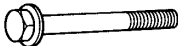
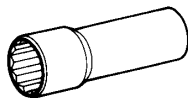
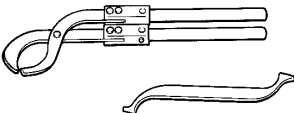
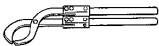

PREPARATION

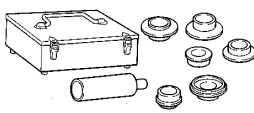
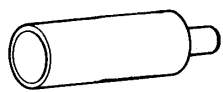
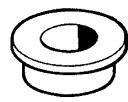
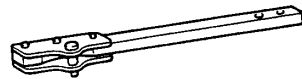
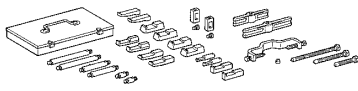
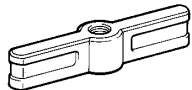
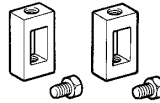
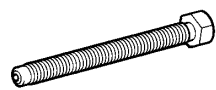
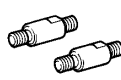
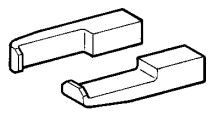
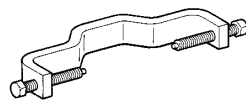
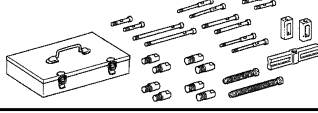
ENGINE MECHANICAL	PP-1
TURBOCHARGING	PP-8
EMISSION CONTROL	PP-11
ELECTRONIC CONTROL DIESEL	PP-13
ENGINE FUEL	PP-15
COOLING	PP-18
LUBRICATION	PP-22
STARTING	PP-27
CHARGING	PP-30

ENGINE MECHANICAL

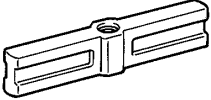
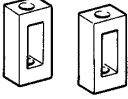
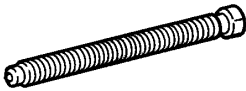
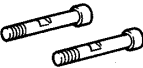
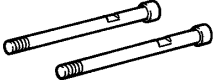
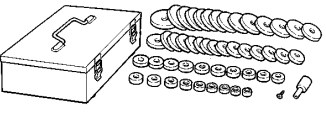
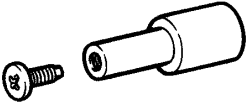
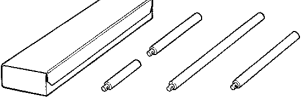
SST (Special Service Tools)

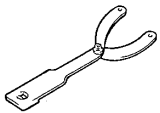
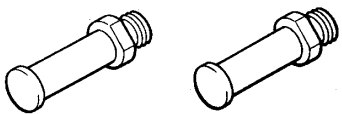
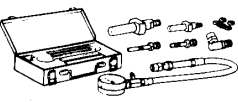
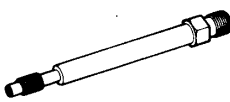
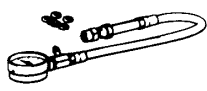
PP27K-01

	09201-10000 Valve Guide Bushing Remover & Replacer Set	
	(09201-01060) Valve Guide Bushing Remover & Replacer 6	
	09202-70020 Valve Spring Compressor	
	(09202-00010) Attachment	
	09213-54015 Crankshaft Pulley Holding Tool	
	(91651-60855) Bolt	
	09223-15030 Oil Seal & Bearing Replacer	Crankshaft rear oil seal
	09223-46011 Crankshaft Front Oil Seal Replacer	Crankshaft timing pulley Camshaft oil seal
	09229-55010 Oil Cooler Relief Valve Wrench	
	09248-55050 Valve Clearance Adjust Tool Set	
	(09248-05510) Valve Lifter Press	
	(09248-05520) Valve Lifter Stopper	

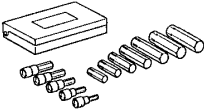
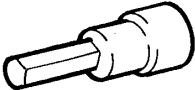
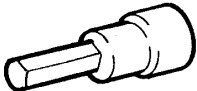
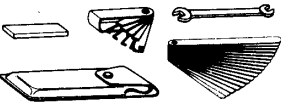
	09316-60011 Transmission & Transfer Bearing Replacer	
	(09316-00011) Replacer Pipe	Crankshaft front oil seal
	(09316-00021) Replacer "A"	Crankshaft front oil seal
	09330-00021 Companion Flange Holding Tool	Crankshaft pulley
	09950-40011 Puller B Set	
	(09951-04010) Hanger 150	Camshaft timing pulley
	(09952-04010) Slide Arm	Camshaft timing pulley
	(09953-04020) Center Bolt 150	Camshaft timing pulley
	(09954-04010) Arm 25	Camshaft timing pulley
	(09955-04071) Claw No.7	Camshaft timing pulley
	(09957-04010) Attachment	Camshaft timing pulley
	(09958-04011) Holder	Camshaft timing pulley
	09950-50012 Puller C Set	

PREPARATION – ENGINE MECHANICAL

	(09951-05010) Hanger 150	Crankshaft pulley Supply pump drive pulley Crankshaft timing pulley
	(09952-05010) Slide Arm	Crankshaft pulley Supply pump drive pulley Crankshaft timing pulley
	(09953-05010) Center Bolt 100	Crankshaft pulley Supply pump drive pulley Crankshaft timing pulley
	(09953-05020) Center Bolt 150	Crankshaft pulley Supply pump drive pulley Crankshaft timing pulley
	(09954-05020) Claw No.2	Supply pump drive pulley Crankshaft timing pulley
	(09954-05030) Claw No.3	Crankshaft pulley
	09950-60010 Replacer Set	
	(09951-00280) Replacer 28	Nozzle holder gasket
	(09951-00500) Replacer 50	Nozzle holder gasket
	(09952-06010) Adapter	Nozzle holder gasket
	09950-70010 Handle Set	
	(09951-07100) Handle 100	Valve guide bushing Nozzle holder gasket Crankshaft rear oil seal
	09960-10010 Variable Pin Wrench Set	

	(09962-01000) Variable Pin Wrench Arm Assy	
	(09963-01000) Pin 10	Camshaft timing pulley Supply pump drive pulley
	09992-00025 Cylinder Compression Check Gauge Set	
	(09992-00121) No. 4 Attachment	
	(09992-00211) Gauge Assy	

RECOMMENDED TOOLS

	09040-00011 Hexagon Wrench Set .	
	(09043-20060) Socket Hexagon Wrench 6.	Cylinder block oil orifice
	(09043-20080) Socket Hexagon Wrench 8.	No.1 idler pulley bolt Oil jet pressure valve
	09200-00010 Engine Adjust Kit .	

EQUIPMENT

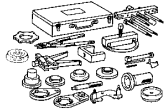
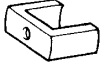
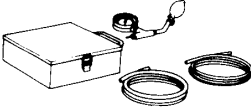
Abrasive compound	
Caliper gauge	
Connecting rod aligner	
Cylinder gauge	
Dial indicator	
Dye penetrant	
Groove cleaning tool	
Heater	
Magnetic finger	
Micrometer	
Piston ring compressor	
Piston ring expander	
Plastic-faced hammer	
Plastigage	
Precision straight edge	
Press	
Ridge reamer	
Soft brush	
Spring tester	Valve spring
Steel square	
Thermometer	Valve spring
Torque wrench	
Valve seat cutter	
V-block	
Vernier calipers	
Wire brush	

SSM (Special Service Materials)

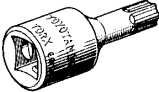
08826-00080	Seal Packing Black or equivalent (FIPG)	Timing belt cover No.5 camshaft bearing cap Camshaft oil seal retainer Cylinder head semi-circular plug Cylinder head Rear oil seal retainer
08826-00100	Seal Packing 1282B, THREE BOND 1282B or equivalent (FIPG)	Engine coolant drain union
08833-00070	Adhesive 1324, THREE BOND 1324 or equivalent	Rear oil seal retainer stud bolt Drive plate bolt

TURBOCHARGING
SST (Special Service Tools)

PP283-01

	09350-32014 TOYOTA Automatic Transmission Tool Set	
	(09351-32070) No.2 Piston Spring Compressor	Bearing housing
	09992-00242 Turbocharger Pressure Gauge	
	09992-00600 Crank Type Spindle	

RECOMMENDED TOOLS

	09042-00010 Torx Socket T30 .	Actuator
	09082-00040 TOYOTA Electrical Tester.	

EQUIPMENT

Dial indicator	
Protractor	
Steel square	
Torque wrench	

EMISSION CONTROL RECOMMENDED TOOLS

PP287-01

	09082-00040 TOYOTA Electrical Tester.	
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EQUIPMENT

MITYVAC (Hand-held vacuum tester)	
Torque wrench	
Vacuum gauge	

ELECTRONIC CONTROL DIESEL

RECOMMENDED TOOLS

PP289-01

	09082-00040 TOYOTA Electrical Tester.
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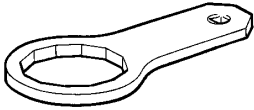
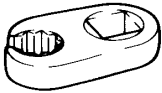
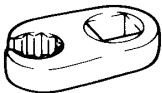
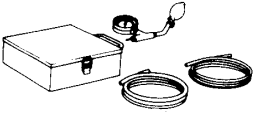
EQUIPMENT

19 mm deep socket wrench	
22 mm deep socket wrench	
OBD II scan tool	
Torque wrench	
Vacuum gauge	

ENGINE FUEL

SST (Special Service Tools)

PP28B-01

	09228-64030 Fuel Filter Wrench	
	09023-12700 Union Nut Wrench 17mm	
	09023-12900 Union Nut Wrench 19mm	
	09992-00242 Turbocharger Pressure Gauge	

RECOMMENDED TOOLS

	09082-00040 TOYOTA Electrical Tester.
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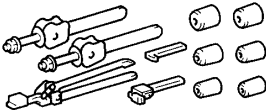
EQUIPMENT

PP28D-01

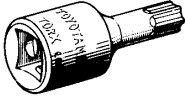
Torque wrench	
OBD II scan tool	

COOLING
SST (Special Service Tools)

PP136-02

	09230-01010 Radiator Service Tool Set	
	09231-14010 Punch	

RECOMMENDED TOOLS

	09042-00030 Torx Socket T20 .	No.1 cooling fan motor
	09082-00040 TOYOTA Electrical Tester.	

EQUIPMENT

Heater	
Radiator cap tester	
Thermometer	
Torque wrench	
Vernier calipers	

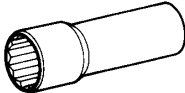
COOLANT

Item	Capacity	Classification
Engine coolant		"Toyota Long Life Coolant" or equivalent
w/ Power heater	7.1 liters (7.5 US qts, 6.3 Imp. qts)	
w/o Power heater	6.9 liters (7.3 US qts, 6.1 Imp. qts)	

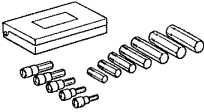
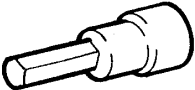
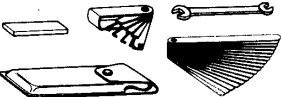
LUBRICATION

SST (Special Service Tools)

PP13A-02

	09032-00100 Oil Pan Seal Cutter	
	09228-10002 Oil Filter Wrench	
	09229-55010 Oil Cooler Relief Valve Wrench	

RECOMMENDED TOOLS

	09040-00011 Hexagon Wrench Set .	
	(09043-20080) Socket Hexagon Wrench 8.	Oil jet pressure valve
	09200-00010 Engine Adjust Kit .	

EQUIPMENT

Oil pressure switch	
Torque wrench	

LUBRICANT

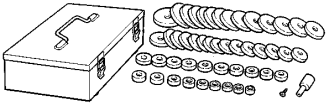
Item	Capacity	Classification
Engine oil		API grade CF-4
Dry fill	6.5 liters (6.9 US qts, 5.7 Imp. qts)	(You may also use API CF or CE or CD)
Drain and refill		
w/ Oil filter change	6.4 liters (6.8 US qts, 5.6 Imp. qts)	
w/o Oil filter change	5.4 liters (5.7 US qts, 4.8 Imp. qts)	

SSM (Special Service Materials)

08826-00080	Seal Packing Black or equivalent (FIPG)	Oil pump No.1 oil pan No.2 oil pan
08833-00070	Adhesive 1324, THREE BOND 1324 or equivalent	Oil pump stud bolt
08833-00080	Adhesive 1344 THREE BOND 1344 LOCTITE 242 or equivalent	Oil pressure switch

STARTING
SST (Special Service Tools)

PP27R-01

	09950-60010 Replacer Set	
	(09951-00340) Replacer 34	Brush holder

RECOMMENDED TOOLS

	09082-00040 TOYOTA Electrical Tester.
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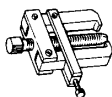
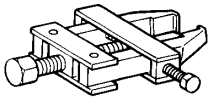
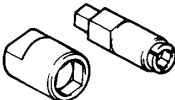
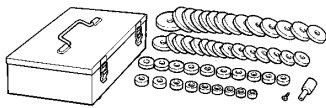
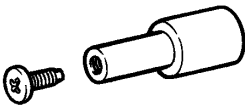
EQUIPMENT

Dial indicator	Commutator
Feeler gauge	
Sandpaper	Commutator
Vernier calipers	Commutator, Brush
Torque wrench	
V-block	
Vise	

CHARGING

SST (Special Service Tools)

PP27E-01

	09285-76010	Injection Pump Camshaft Bearing Cone Replacer	Rotor rear bearing cover
	09286-46011	Injection Pump Spline Shaft Puller	Rectifier end frame
	09820-00021	Alternator Rear Bearing Puller	
	09820-00030	Alternator Rear Bearing Replacer	
	09820-63010	Alternator Pulley Set Nut Wrench Set	
	09950-60010	Replacer Set	Rotor front bearing
	(09951-00230)	Replacer 23	
	(09951-00500)	Replacer 50	
	(09952-06010)	Adapter	

RECOMMENDED TOOLS

	09082-00040 TOYOTA Electrical Tester.
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EQUIPMENT

Ammeter(A)	
Battery specific gravity gauge	Except maintenance-free battery
Torque wrench	
Vernier calipers	Rotor (Slip ring)
Plastic hammer	
Belt Tension gauge	