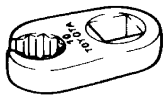
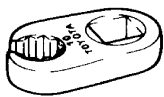

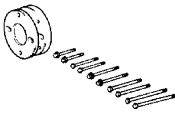
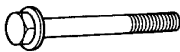

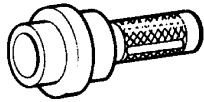
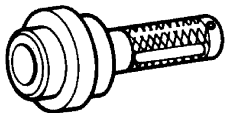


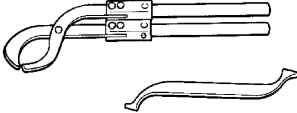


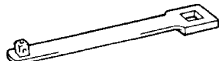
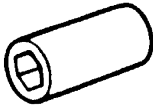
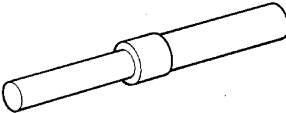
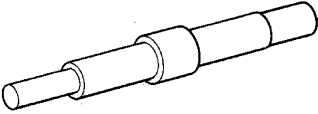

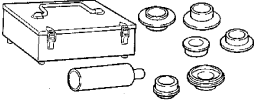


## ENGINE MECHANICAL

## PREPARATION


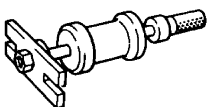
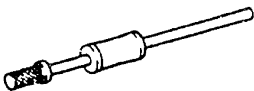
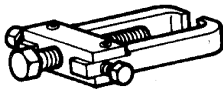




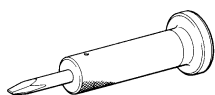

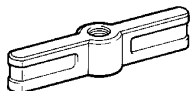
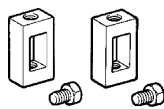
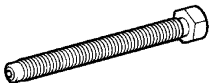
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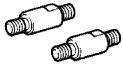
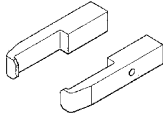

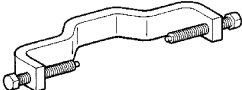
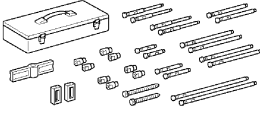
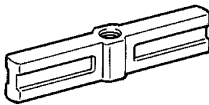
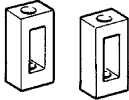

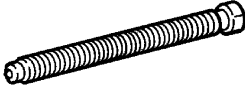
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
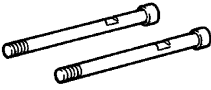
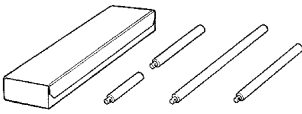

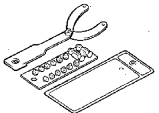
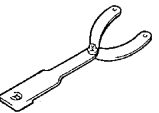
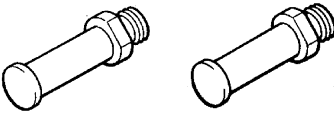
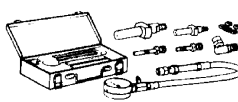
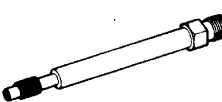
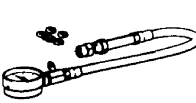
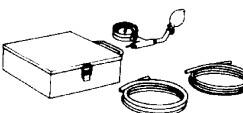
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|---|---------------|------------------------------------|---|
|    | 09023-12700   | Union Nut Wrench 17mm              | VALVE CLEARANCE(1CD-FTV)<br>CYLINDER HEAD<br>GASKET(1CD-FTV)<br>CAMSHAFT(1CD-FTV)<br>PARTIAL ENGINE ASSY(1CD-FTV)   |
|    | 09023-12900   | Union Nut Wrench 19mm              | VALVE CLEARANCE(1CD-FTV)<br>CYLINDER HEAD<br>GASKET(1CD-FTV)<br>CAMSHAFT(1CD-FTV)<br>PARTIAL ENGINE ASSY(1CD-FTV)   |
|    | 09032-00100   | Oil Pan Seal Cutter                | CHAIN(1AZ-FE)   |
|    | 09213-54015   | Crankshaft Pulley Holding Tool     | PARTIAL ENGINE ASSY(1AZ-FE)<br>CHAIN(1AZ-FE)<br>TIMING GEAR CASE OR TIMING<br>CHAIN CASE OIL SEAL(1AZ-FE)<br>ENGINE REAR OIL SEAL(1AZ-FE)<br>CYLINDER HEAD GASKET(1AZ-FE)<br>CYLINDER HEAD<br>GASKET(1CD-FTV)<br>TIMING BELT(1CD-FTV)<br>CAMSHAFT(1CD-FTV)<br>CRANKSHAFT SEAL(1CD-FTV)<br>ENGINE REAR OIL SEAL(1CD-FTV)<br>PARTIAL ENGINE ASSY(1CD-FTV) |
|  | (91651-60855) | Bolt                               | PARTIAL ENGINE ASSY(1AZ-FE)<br>CHAIN(1AZ-FE)<br>TIMING GEAR CASE OR TIMING<br>CHAIN CASE OIL SEAL(1AZ-FE)<br>ENGINE REAR OIL SEAL(1AZ-FE)<br>CYLINDER HEAD GASKET(1AZ-FE)<br>CYLINDER HEAD<br>GASKET(1CD-FTV)<br>TIMING BELT(1CD-FTV)<br>CAMSHAFT(1CD-FTV)<br>CRANKSHAFT SEAL(1CD-FTV)<br>ENGINE REAR OIL SEAL(1CD-FTV)<br>PARTIAL ENGINE ASSY(1CD-FTV) |
|  | 09223-15030   | Oil Seal & Bearing Replacer        | ENGINE REAR OIL SEAL(1AZ-FE)<br>ENGINE REAR OIL SEAL(1CD-FTV)   |
|  | 09223-22010   | Crankshaft Front Oil Seal Replacer | TIMING GEAR CASE OR TIMING<br>CHAIN CASE OIL SEAL(1AZ-FE)   |
|  | 09223-46011   | Crankshaft Front Oil Seal Replacer | CYLINDER HEAD<br>GASKET(1CD-FTV)<br>CAMSHAFT(1CD-FTV)<br>CRANKSHAFT SEAL(1CD-FTV)   |

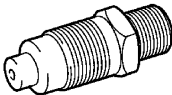
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|---|---------------|---|---|
|    | 09248-55050   | Valve Clearance Adjust Tool Set             | VALVE CLEARANCE(1CD-FTV)  |
|    | (09248-05510) | Valve Lifter Press                          | VALVE CLEARANCE(1CD-FTV)  |
|    | (09248-05520) | Valve Lifter Stopper                        | VALVE CLEARANCE(1CD-FTV)  |
|    | 09249-63010   | Torque Wrench Adaptor                       | CHAIN(1AZ-FE)<br>TIMING GEAR CASE OR TIMING<br>CHAIN CASE OIL SEAL(1AZ-FE)<br>DRIVE BELT(1AZ-FE)  |
|    | 09268-46021   | Nozzle Holder Retaining Nut<br>Wrench       | PARTIAL ENGINE ASSY(1AZ-FE)   |
|    | 09301-00210   | Clutch Guide Tool                           | PARTIAL ENGINE ASSY(1AZ-FE)<br>ENGINE REAR OIL SEAL(1AZ-FE)<br>PARTIAL ENGINE ASSY(1CD-FTV)   |
|  | 09301-00220   | Clutch Guide Tool                           | ENGINE REAR OIL SEAL(1CD-FTV)   |
|  | 09309-37010   | Transmission Bearing Replacer               | CHAIN(1AZ-FE)<br>CYLINDER HEAD GASKET(1AZ-FE)   |
|  | 09316-60011   | Transmission & Transfer Bearing<br>Replacer | CRANKSHAFT SEAL(1CD-FTV)  |
|  | (09316-00011) | Replacer Pipe                               | CRANKSHAFT SEAL(1CD-FTV)  |
|  | 09330-00021   | Companion Flange Holding Tool               | PARTIAL ENGINE ASSY(1AZ-FE)<br>CHAIN(1AZ-FE)<br>TIMING GEAR CASE OR TIMING<br>CHAIN CASE OIL SEAL(1AZ-FE)<br>ENGINE REAR OIL SEAL(1AZ-FE)<br>CYLINDER HEAD GASKET(1AZ-FE)<br>CYLINDER HEAD<br>GASKET(1CD-FTV)<br>TIMING BELT(1CD-FTV)<br>CAMSHAFT(1CD-FTV)<br>CRANKSHAFT SEAL(1CD-FTV)<br>ENGINE REAR OIL SEAL(1CD-FTV)<br>PARTIAL ENGINE ASSY(1CD-FTV) |

## PREPARATION - ENGINE MECHANICAL

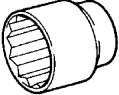
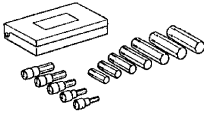
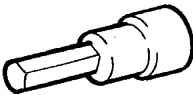
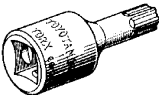
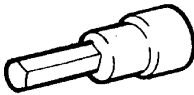
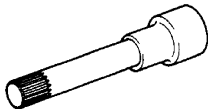
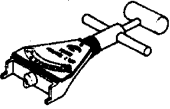

|   |               |                                     |  |
|---|---------------|-------------------------------------|--|
|    | 09520-01010   | Drive Shaft Remover Attachment      | ENGINE REAR OIL SEAL(1AZ-FE)<br>ENGINE REAR OIL SEAL(1CD-FTV)  |
|    | 09520-24010   | Differential Side Gear Shaft Puller | ENGINE REAR OIL SEAL(1AZ-FE)<br>ENGINE REAR OIL SEAL(1CD-FTV)  |
|    | (09520-32040) | Shocker Set                         | ENGINE REAR OIL SEAL(1AZ-FE)<br>ENGINE REAR OIL SEAL(1CD-FTV)  |
|    | 09628-62011   | Boll Joint Puller                   | PARTIAL ENGINE ASSY(1AZ-FE)<br>ENGINE REAR OIL SEAL(1AZ-FE)<br>ENGINE REAR OIL SEAL(1CD-FTV)<br>PARTIAL ENGINE ASSY(1CD-FTV) |
|    | 09816-30010   | Oil Pressure Switch Socket          | PARTIAL ENGINE ASSY(1AZ-FE)  |
|    | 09817-33190   | Sensor Socket Wrench                | PARTIAL ENGINE ASSY(1AZ-FE)  |
|  | 09843-18020   | Diagnosis Check Wire                | ENGINE ASSEMBLY(1AZ-FE)  |
|  | 09843-18040   | Diagnosis Check Wire No.2           | ENGINE ASSEMBLY(1AZ-FE)<br>ENGINE ASSEMBLY(1CD-FTV)  |
|  | 09930-00010   | Drive Shaft Nut Chisel              | PARTIAL ENGINE ASSY(1AZ-FE)<br>ENGINE REAR OIL SEAL(1AZ-FE)<br>ENGINE REAR OIL SEAL(1CD-FTV)<br>PARTIAL ENGINE ASSY(1CD-FTV) |
|  | 09950-40011   | Puller B Set                        | CYLINDER HEAD<br>GASKET(1CD-FTV)<br>CAMSHAFT(1CD-FTV)  |
|  | (09951-04010) | Hanger 150                          | CYLINDER HEAD<br>GASKET(1CD-FTV)<br>CAMSHAFT(1CD-FTV)  |
|  | (09952-04010) | Slide Arm                           | CYLINDER HEAD<br>GASKET(1CD-FTV)<br>CAMSHAFT(1CD-FTV)  |
|  | (09953-04020) | Center Bolt 150                     | CYLINDER HEAD<br>GASKET(1CD-FTV)<br>CAMSHAFT(1CD-FTV)  |

|   |                               |   |
|---|-------------------------------|---|
|    | (09954-04010) Arm 25          | CYLINDER HEAD<br>GASKET(1CD-FTV)<br>CAMSHAFT(1CD-FTV)   |
|    | (09955-04071) Claw No.7       | CYLINDER HEAD<br>GASKET(1CD-FTV)<br>CAMSHAFT(1CD-FTV)   |
|    | (09957-04010) Attachment      | CYLINDER HEAD<br>GASKET(1CD-FTV)<br>CAMSHAFT(1CD-FTV)   |
|    | (09958-04011) Holder          | CYLINDER HEAD<br>GASKET(1CD-FTV)<br>CAMSHAFT(1CD-FTV)   |
|    | 09950-50013 Puller C Set      | CHAIN(1AZ-FE)<br>TIMING GEAR CASE OR TIMING<br>CHAIN CASE OIL SEAL(1AZ-FE)<br>CYLINDER HEAD<br>GASKET(1CD-FTV)<br>TIMING BELT(1CD-FTV)<br>CAMSHAFT(1CD-FTV)<br>CRANKSHAFT SEAL(1CD-FTV)<br>PARTIAL ENGINE ASSY(1CD-FTV) |
|  | (09951-05010) Hanger 150      | CHAIN(1AZ-FE)<br>TIMING GEAR CASE OR TIMING<br>CHAIN CASE OIL SEAL(1AZ-FE)<br>CYLINDER HEAD<br>GASKET(1CD-FTV)<br>TIMING BELT(1CD-FTV)<br>CAMSHAFT(1CD-FTV)<br>CRANKSHAFT SEAL(1CD-FTV)<br>PARTIAL ENGINE ASSY(1CD-FTV) |
|  | (09952-05010) Slide Arm       | CHAIN(1AZ-FE)<br>TIMING GEAR CASE OR TIMING<br>CHAIN CASE OIL SEAL(1AZ-FE)<br>CYLINDER HEAD<br>GASKET(1CD-FTV)<br>TIMING BELT(1CD-FTV)<br>CAMSHAFT(1CD-FTV)<br>CRANKSHAFT SEAL(1CD-FTV)<br>PARTIAL ENGINE ASSY(1CD-FTV) |
|  | (09953-05010) Center Bolt 100 | CYLINDER HEAD<br>GASKET(1CD-FTV)<br>TIMING BELT(1CD-FTV)<br>CAMSHAFT(1CD-FTV)<br>CRANKSHAFT SEAL(1CD-FTV)<br>PARTIAL ENGINE ASSY(1CD-FTV)   |
|  | (09953-05020) Center Bolt 150 | CHAIN(1AZ-FE)<br>TIMING GEAR CASE OR TIMING<br>CHAIN CASE OIL SEAL(1AZ-FE)<br>CYLINDER HEAD<br>GASKET(1CD-FTV)<br>TIMING BELT(1CD-FTV)<br>CAMSHAFT(1CD-FTV)<br>CRANKSHAFT SEAL(1CD-FTV)<br>PARTIAL ENGINE ASSY(1CD-FTV) |

|   |  |   |
|---|--|---|
|    | (09954-05021) Claw No.2                          | CHAIN(1AZ-FE)<br>TIMING GEAR CASE OR TIMING<br>CHAIN CASE OIL SEAL(1AZ-FE)<br>CYLINDER HEAD<br>GASKET(1CD-FTV)<br>TIMING BELT(1CD-FTV)<br>CAMSHAFT(1CD-FTV)<br>CRANKSHAFT SEAL(1CD-FTV)<br>PARTIAL ENGINE ASSY(1CD-FTV) |
|    | (09954-05030) Claw No.3                          | CYLINDER HEAD<br>GASKET(1CD-FTV)<br>TIMING BELT(1CD-FTV)<br>CAMSHAFT(1CD-FTV)<br>CRANKSHAFT SEAL(1CD-FTV)<br>PARTIAL ENGINE ASSY(1CD-FTV)   |
|    | 09950-70010 Handle Set                           | ENGINE REAR OIL SEAL(1AZ-FE)<br>ENGINE REAR OIL SEAL(1CD-FTV)   |
|    | (09951-07100) Handle 100                         | ENGINE REAR OIL SEAL(1AZ-FE)<br>ENGINE REAR OIL SEAL(1CD-FTV)   |
|   | 09960-10010 Variable Pin Wrench Set              | CYLINDER HEAD<br>GASKET(1CD-FTV)<br>TIMING BELT(1CD-FTV)<br>CAMSHAFT(1CD-FTV)<br>CRANKSHAFT SEAL(1CD-FTV)<br>PARTIAL ENGINE ASSY(1CD-FTV)   |
|  | (09962-01000) Variable Pin Wrench Arm Assy       | CYLINDER HEAD<br>GASKET(1CD-FTV)<br>TIMING BELT(1CD-FTV)<br>CAMSHAFT(1CD-FTV)<br>CRANKSHAFT SEAL(1CD-FTV)<br>PARTIAL ENGINE ASSY(1CD-FTV)   |
|  | (09963-01000) Pin 10                             | CYLINDER HEAD<br>GASKET(1CD-FTV)<br>TIMING BELT(1CD-FTV)<br>CAMSHAFT(1CD-FTV)<br>CRANKSHAFT SEAL(1CD-FTV)<br>PARTIAL ENGINE ASSY(1CD-FTV)   |
|  | 09992-00025 Cylinder Compression Check Gauge Set | ENGINE ASSEMBLY(1CD-FTV)  |
|  | (09992-00121) No. 4 Attachment                   | ENGINE ASSEMBLY(1CD-FTV)  |
|  | (09992-00211) Gauge Assy                         | ENGINE ASSEMBLY(1CD-FTV)  |
|  | 09992-00242 Turbocharger Pressure Gauge          | VALVE CLEARANCE(1CD-FTV)<br>CYLINDER HEAD<br>GASKET(1CD-FTV)<br>CAMSHAFT(1CD-FTV)   |

|   |             |                              |                         |
|---|-------------|------------------------------|-------------------------|
|  | 09992-00500 | Compression Gauge Attachment | ENGINE ASSEMBLY(1AZ-FE) |
|---|-------------|------------------------------|-------------------------|

**Recommended Tools**

|   |               |                          |  |
|---|---------------|--------------------------|--|
|    | 09011-12301   | Socket Wrench 30 mm      | PARTIAL ENGINE ASSY(1AZ-FE)<br>ENGINE REAR OIL SEAL(1AZ-FE)<br>ENGINE REAR OIL SEAL(1CD-FTV)<br>PARTIAL ENGINE ASSY(1CD-FTV)                                 |
|    | 09040-00011   | Hexagon Wrench Set       | PARTIAL ENGINE ASSY(1AZ-FE)  |
|    | (09043-20060) | Socket Hexagon Wrench 6  | PARTIAL ENGINE ASSY(1AZ-FE)  |
|    | 09042-00010   | Torx Socket T30          | PARTIAL ENGINE ASSY(1AZ-FE)<br>CHAIN(1AZ-FE)<br>CYLINDER HEAD GASKET(1AZ-FE)   |
|   | (09043-20100) | Socket Hexagon Wrench 10 | ENGINE REAR OIL SEAL(1AZ-FE)   |
|  | 09043-50100   | Bi-hexagon Wrench 10 mm  | CYLINDER HEAD GASKET(1AZ-FE)   |
|  | 09216-00021   | Belt Tension Gauge       | ENGINE ASSEMBLY(1CD-FTV)<br>DRIVE BELT(1CD-FTV)<br>CYLINDER HEAD<br>GASKET(1CD-FTV)<br>TIMING BELT(1CD-FTV)<br>CAMSHAFT(1CD-FTV)<br>CRANKSHAFT SEAL(1CD-FTV) |
|  | (09857-00031) | Spark Plug Gap Gauge     | ENGINE ASSEMBLY(1AZ-FE)  |

**SSM**

|  |             |   |   |
|--|-------------|---|---|
|  | 08826-00080 | Seal Packing Black or equivalent (FIPG) | CHAIN(1AZ-FE)<br>CAMSHAFT(1AZ-FE)<br>CYLINDER HEAD GASKET(1AZ-FE)<br>VALVE CLEARANCE(1AZ-FE)<br>VALVE CLEARANCE(1CD-FTV)<br>CYLINDER HEAD<br>GASKET(1CD-FTV)<br>TIMING BELT(1CD-FTV)<br>CAMSHAFT(1CD-FTV)<br>CRANKSHAFT SEAL(1CD-FTV)<br>PARTIAL ENGINE ASSY(1CD-FTV) |
|--|-------------|---|---|

## PREPARATION – ENGINE MECHANICAL

|             |   |  |
|-------------|---|--|
| 08833-00070 | "Adhesive 1324,"<br>THREE BOND 1324 or equivalent             | PARTIAL ENGINE ASSY(1AZ-FE)<br>ENGINE REAR OIL SEAL(1AZ-FE)<br>ENGINE REAR OIL SEAL(1CD-FTV)<br>PARTIAL ENGINE ASSY(1CD-FTV) |
| 08833-00080 | Adhesive 1344<br>THREE BOND 1344<br>LOCTITE 242 or equivalent | PARTIAL ENGINE ASSY(1AZ-FE)  |

**Equipment**

|   |  |
|---|--|
| Hexagon wrench (10 mm)                              |  |
| Hexagon wrench (6 mm)                               |  |
| CO/HC meter   |  |
| Compression gauge                                   |  |
| Dial indicator                                      |  |
| Dial indicator or dial indicator with magnetic base |  |
| Feeler gauge  |  |
| Micrometer  |  |
| Radiator cap tester                                 |  |
| Tachometer  |  |
| Torque wrench                                       |  |
| Vernier calipers                                    |  |
| Dial indicator with magnetic base                   |  |
| Tire pressure gauge                                 |  |
| Alignment tester                                    |  |
| Toe-in gauge  |  |
| OBD II scan tool                                    |  |
| Engine Sling Device                                 |  |
| Slide calipers                                      |  |
| Wooden block  |  |
| Chain Block   |  |
| Spark plug cleaner                                  |  |
| Angle gauge   |  |
| Universal engine lifter                             |  |