

## 1-0222 Engine Recoil Start-EPA (RV170)



|                  |                          |
|------------------|--------------------------|
| <b>Vendor:</b>   | <b>Rato</b>              |
| <b>Model:</b>    | <b>RV170 A1302001266</b> |
| <b>Date:</b>     | <b>07/03/13</b>          |
| <b>Drawn By:</b> | <b>Adam Coates</b>       |

**EMISSION CONTROL INFORMATION**

FAMILY NAME: DCRPS.1731GB      EXH ECS: TWC  
 CARB EVAP FAMILY: OP1V      EVAP ECS: OP  
 EPA EVAP FAMILY: DCRPPNHEQDB1      ENGINE DISPLACEMENT: 173cc  
 THIS ENGINE MEETS U.S.EPA PH3 & 2013 CALIFORNIA EXH AND  
 EVP EMISSION REGULATIONS FOR SMALL OFF-ROAD ENGINES.  
 THIS ENGINE IS CERTIFIED TO OPERATE ON UNLEADED GASOLINE.  
 NO OTHER ADJUSTMENTS NEEDED.  
 THE AIR INDEX OF THIS ENGINE IS 3

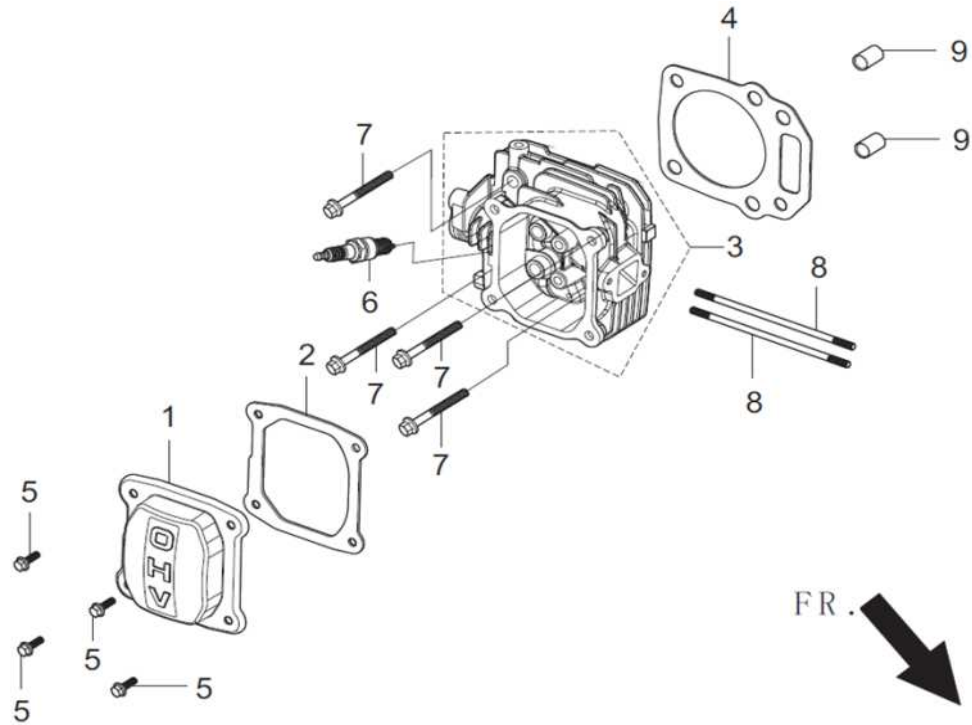
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MOST CLEAN 0    2    4    6    8    10 LEAST CLEAN  
 NOTE: THE LOWER THE AIR INDEX, THE LESS POLLUTION.  
 THIS ENGINE IS CERTIFIED TO BE EMISSIONS COMPLIANT FOR  
 THE FOLLOWING USE:  
 MODERATE(125HOURS)       INTERMEDIATE(250HOURS)  
 EXTENDED(500HOURS)

CHECK OWNER'S MANUAL FOR FURTHER DETAILS.  
 DOM:2013 J ● M A M J J A S O N D  
 CHONGQING RATO POWER MANUFACTURING CORPORATION

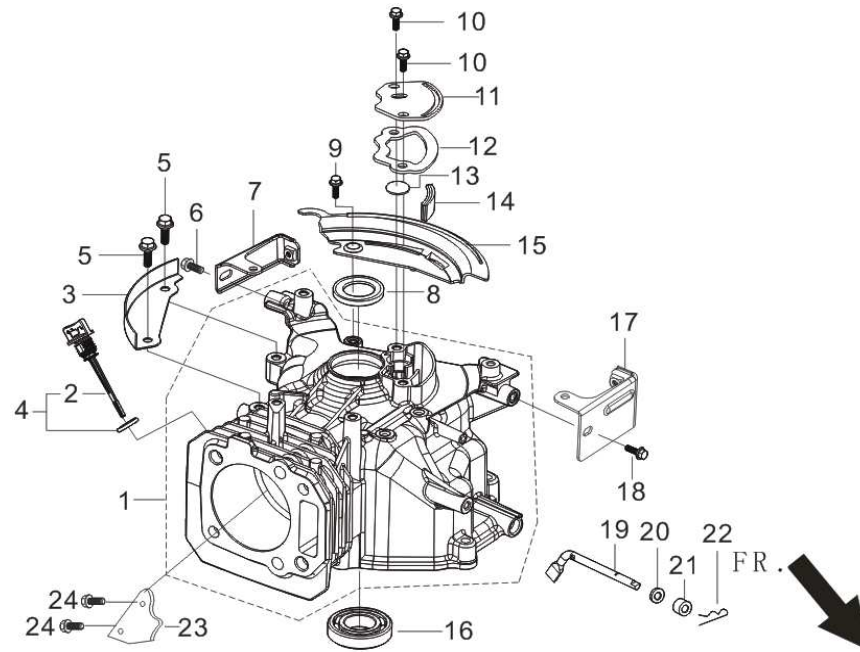
| DATE:     | DESCRIPTION:   | BY: |
|-----------|--|-----|
| 9/16/2013 | ADDED 45-0667 HOSE FUEL STEM   | ALC |
| 11/6/2013 | UPDATED SEVERAL PART NUMBERS AND PICTURES                                    | ALC |
| 1/22/2014 | UPDATED AND ADDED PART NUMBERS AND UPDATED FUEL TANK ASSEMBLY                | ALC |
| 6/17/2014 | UPDATED AND ADDED PART NUMBERS FIG 4-03 WENT TO SET, FIGURE 5-08 WENT TO SET | ALC |

**FIG.1 CYLINDER HEAD SUBASSEMBLY**



| REF.NO. | DESCRIPTION                 | QTY | MITM    | RATO               |
|---------|-----------------------------|-----|---------|--------------------|
| 1-01    | CYLINDER HEAD COVER SUBASSY | 1   | 45-0190 | 12411-Z030120-0000 |
| 1-02    | GASKET- CYLINDER HEAD COVER | 1   | 45-0191 | 12004-Z030110-0000 |
| 1-03    | CYLINDER HEAD SUBASSY       | 1   | 45-0687 | 12140-Z340530-0099 |
| 1-04    | GASKET-CYLINDER HEAD        | 1   | 45-0599 | 12131-Z340110-0000 |
| 1-05    | BOLT-STOPPER BRACKET        | 4   | 80-0060 | 90007-0612-A1      |
| 1-06    | SPARK PLUG                  | 1   | 45-0676 | 30010-Z030310-0000 |
| 1-07    | BOLT- CYLINDER HEAD         | 4   | 45-0600 | 12003-Z030110-0000 |
| 1-08    | STUD-CARBURETOR             | 2   | 45-0601 | 90204-Z030110-0000 |
| 1-09    | PIN-CYLINDER HEAD           | 2   | 45-0602 | 90502-1014-00      |

**FIG.2 CRANKCASE/GOVERNOR GEAR ASSEMBLY**

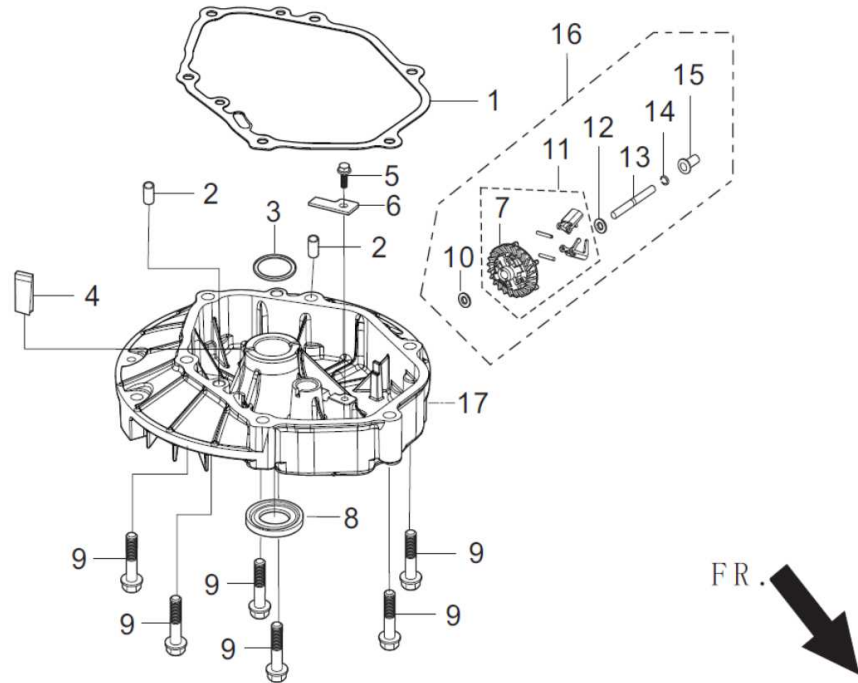


| REF.NO. | DESCRIPTION                 | QTY | MITM    | RATO               |
|---------|-----------------------------|-----|---------|--------------------|
| 2-01    | CRANKCASE SUBASSY           | 1   | 45-0688 | 11310-Z340520-0099 |
| 2-03    | CRANKCASE SHIELD            | 1   | 45-0604 | 19308-Z030110-0000 |
| 2-04    | OIL DIPSTICK SUBASSY        | 1   | 45-0194 | 15010-Z030120-Q500 |
| 2-05    | BOLT-LOW OIL SHUT DOWN      | 2   | 45-0315 | 90001-0612-01      |
| 2-06    | BOLT-STOPPER BRACKET        | 1   | 80-0060 | 90007-0612-A1      |
| 2-07    | BRACKET-FUEL TANK           | 1   | 45-0675 | 16608HZ030120-0000 |
| 2-08    | SEAL-OIL                    | 1   | 45-0195 | 90682-Z030120-0000 |
| 2-09    | BOLT- ENGINE OIL SENSOR     | 1   | 45-0316 | 90001-0616-01      |
| 2-10    | BOLT- LOW OIL SHUT DOWN     | 2   | 45-0315 | 90001-0612-01      |
| 2-11    | PLATE-BREATHER GROOVE COVER | 1   | 45-0692 | 11333-Z250210-0000 |
| 2-12    | GASKET-BREATHER GROOVE      | 1   | 45-0693 | 11332-Z250410-0000 |
| 2-13    | BREATHER RING               | 1   | 45-0694 | 11321-Z030110-0099 |

## FIG.2 CRANKCASE/GOVERNOR GEAR ASSEMBLY / CONTINUED

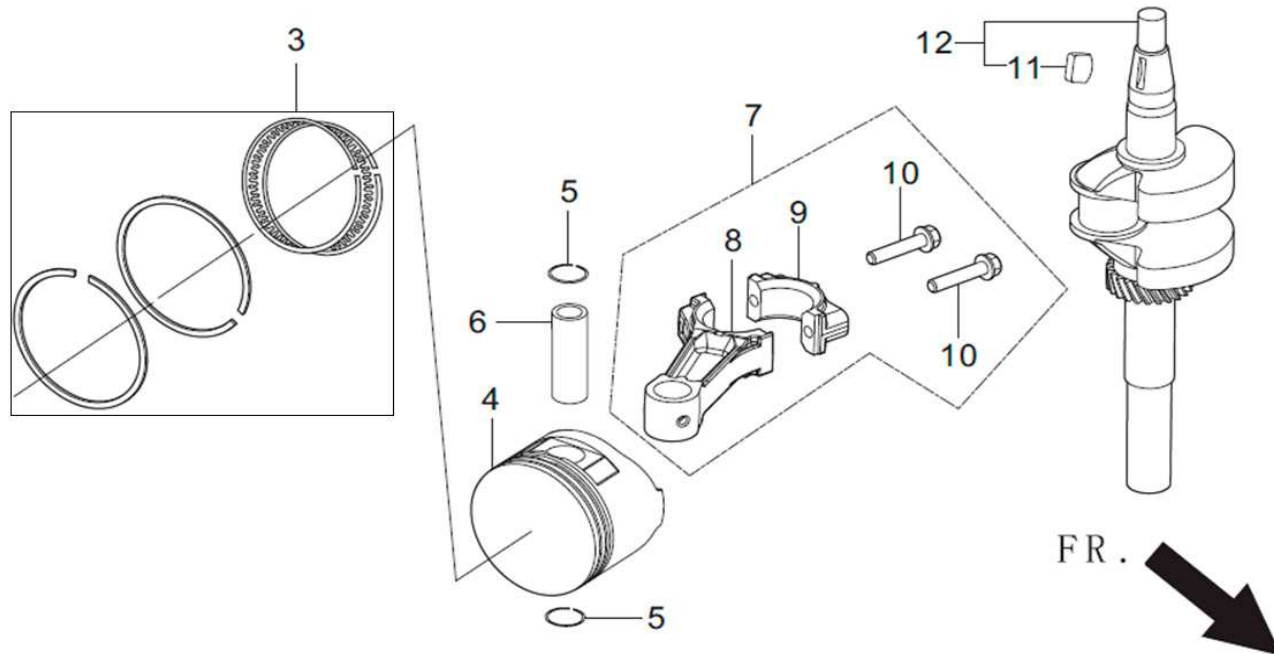
| REF.NO. | DESCRIPTION             | QTY | MITM    | RATO               |
|---------|-------------------------|-----|---------|--------------------|
| 2-14    | STRAINER                | 1   | 45-0695 | 11331-Z250110-0000 |
| 2-15    | SHIELD-CRANKCASE REAR   | 1   | 45-0696 | 19351-Z030120-0000 |
| 2-16    | BALL BEARING            | 1   | 45-0699 | 90548-0205-CL      |
| 2-17    | BRACKET-CRANKCASE FRONT | 1   | 45-0706 | 16607HZ030120-0000 |
| 2-18    | BOLT-STOPPER BRACKET    | 1   | 80-0060 | 90007-0612-A1      |
| 2-19    | GOVERNOR ARM            | 1   | 45-0613 | 16061-Z030120-0000 |
| 2-20    | WASHER-GOVERNOR ARM     | 1   | 45-0480 | 90408-Z010210-0000 |
| 2-21    | OIL-SEAL                | 1   | 45-0614 | 90682-Z030210-0000 |
| 2-22    | PIN                     | 1   | 45-0328 | 90501-Z010110-0000 |
| 2-23    | PLATE-OIL RECYCLING     | 1   | N/A     | 11306-Z340110-0000 |
| 2-24    | BOLT                    | 2   | N/A     | 90001-0510-01      |

## FIG.3 CRANKCASE COVER SUBASSEMBLY



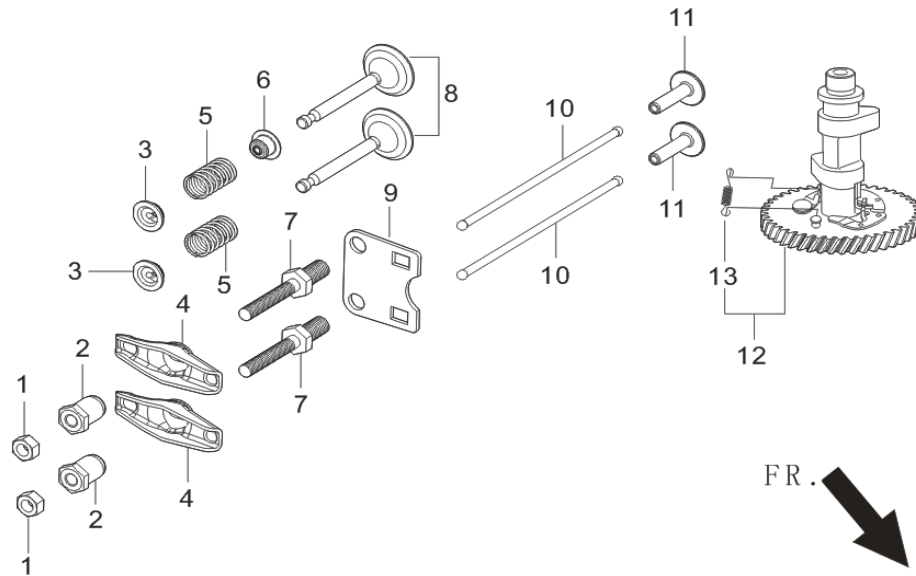
| REF.NO. | DESCRIPTION                  | QTY | MITM    | RATO               |
|---------|------------------------------|-----|---------|--------------------|
| 3-01    | GASKET-CRANKCASE             | 1   | 45-0196 | 11001-Z030110-0000 |
| 3-02    | PIN - GASKET                 | 2   | 45-0570 | 90502-0812-00      |
| 3-03    | WASHER-CRANKCASE COVER       | 1   | 45-0616 | 90408-Z030210-0000 |
| 3-04    | BLOCK-RETURNING OIL          | 1   | 45-0617 | 11341-Z030110-0000 |
| 3-05    | BOLT- LOW OIL SHUT DOWN      | 1   | 45-0315 | 90001-0612-01      |
| 3-06    | GOVENOR PLATE SPINDLE        | 1   | 45-0618 | 16013-Z030120-0000 |
| 3-08    | SEAL-OIL                     | 1   | 45-0197 | 90682-Z030320-0000 |
| 3-09    | BOLT-CRANKCASE M8x1.25x 50mm | 6   | 45-0707 | 90001-0850-01      |
| 3-16    | GOVERNOR GEAR ASSY           | 1   | 45-0620 | 16400-Z030110-0000 |
| 3-17    | CRANKCASE COVER              | 1   | 45-0621 | 11411-Z340410-0000 |

**FIG.4 PISTON SUBASSEMBLY**



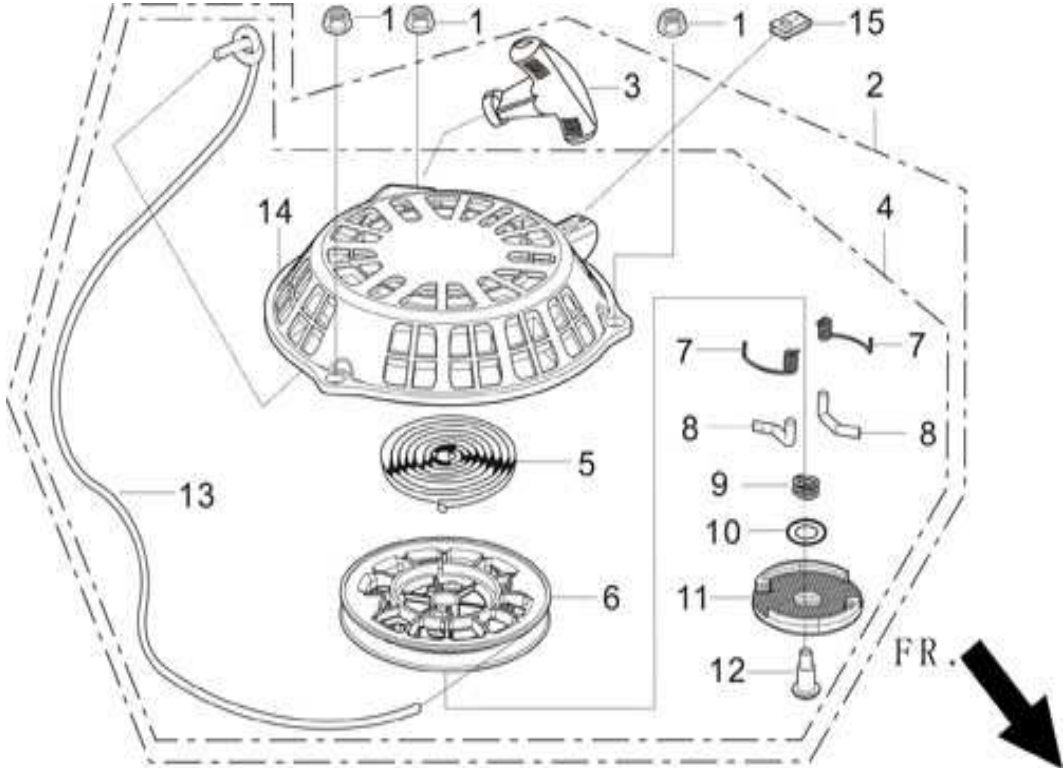
| REF.NO. | DESCRIPTION     | QTY | MITM    | RATO               |
|---------|-----------------|-----|---------|--------------------|
| 4-03    | PISTON RING SET | 1   | 45-0708 | 13200-Z340110-0000 |
| 4-04    | PISTON          | 1   | 45-0625 | 13111-Z340110-0000 |
| 4-05    | PISTON-RING     | 2   | 45-0350 | 13122-Z010110-0000 |
| 4-06    | PIN-PISTON      | 1   | 45-0486 | 13121-Z010110-0000 |
| 4-07    | ROD-CONNECTING  | 1   | 45-0626 | 13010-Z030110-0000 |
| 4-12    | CRANKSHAFT ASSY | 1   | 45-0627 | 13300-Z030510-0000 |

**FIG.5 VALVE TRAIN/CAMSHAFT SUBASSEMBLY**



| REF.NO. | DESCRIPTION                  | QTY | MITM    | RATO               |
|---------|------------------------------|-----|---------|--------------------|
| 5-01    | NUT-VALVE LOCK               | 2   | 45-0269 | 14312-Z010110-0000 |
| 5-02    | NUT-VALVE ADJUSTING          | 2   | 45-0271 | 14314-Z010110-0000 |
| 5-03    | RETAINER-VALVE SRPING        | 2   | 45-0628 | 12112-Z010110-0000 |
| 5-04    | VALVE-ROCKER                 | 2   | 45-0500 | 14311-Z010110-0000 |
| 5-05    | VALVE-SPRING                 | 2   | N/A     | 12103-Z030110-0000 |
| 5-06    | GUIDE-SEAL                   | 1   | 45-0629 | 12101-Z030110-0000 |
| 5-07    | BOLT-VALVE ADJUSTING         | 2   | 45-0270 | 14313-Z010110-0000 |
| 5-08    | VALVE SET                    | 1   | 45-0709 | 12110-Z030110-0000 |
| 5-09    | LIFTER STOPPER PLATE SUBASSY | 1   | 45-0631 | 14090-Z030110-0000 |
| 5-10    | VALVE-LIFTER                 | 2   | 45-0632 | 14071-Z010110-0000 |
| 5-11    | VALVE-TAPPET                 | 2   | 45-0633 | 14081-Z010110-0000 |
| 5-12    | CAMSHAFT ASSY                | 1   | 45-0710 | 14200-Z340210-0099 |

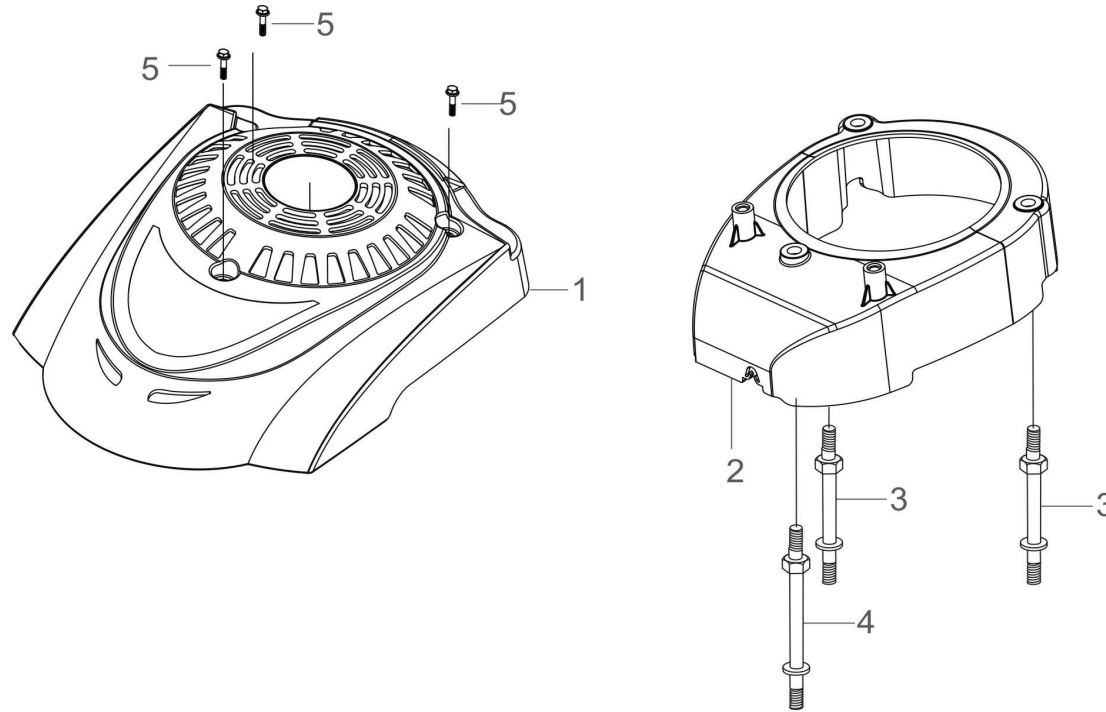
**FIG.6 RECOIL STARTER**



| REF.NO. | DESCRIPTION         | QTY | MITM    | RATO               |
|---------|---------------------|-----|---------|--------------------|
| 6-01    | NUT                 | 3   | 45-0324 | 90305-0600-31      |
| 6-02    | RECOIL STARTER ASSY | 1   | 45-0711 | 28200-Z251710-Q200 |

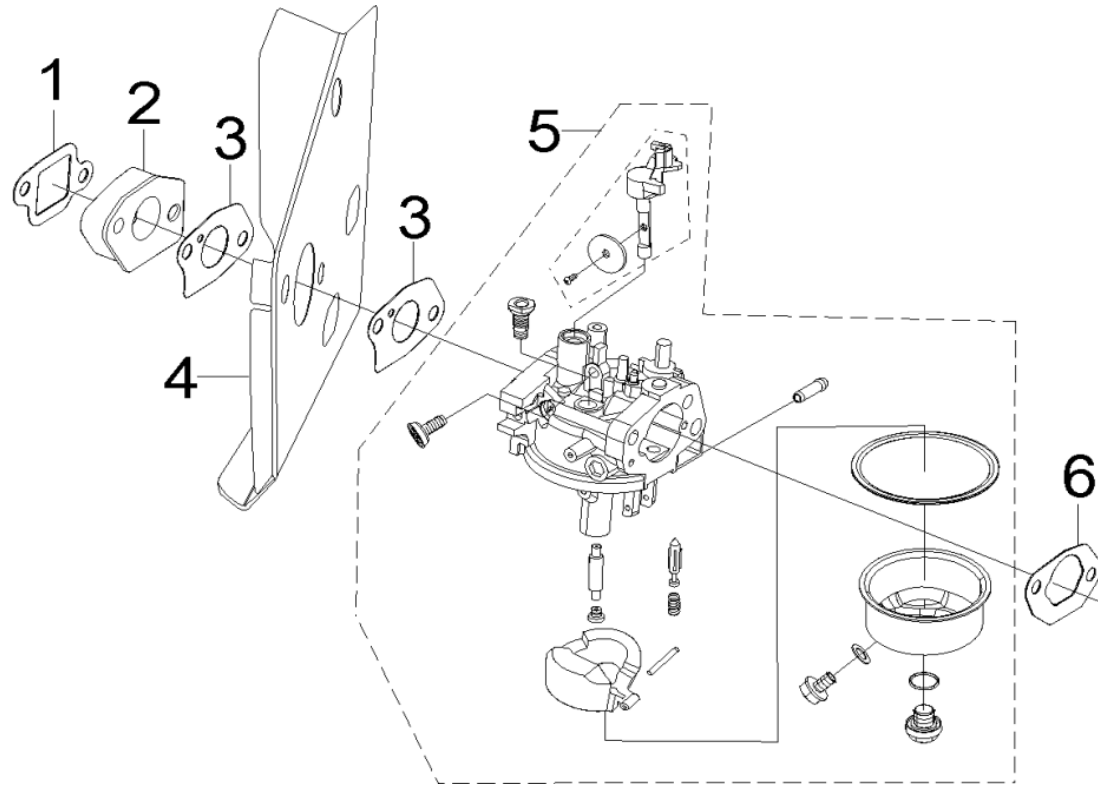


**FIG.7 SHROUDS**



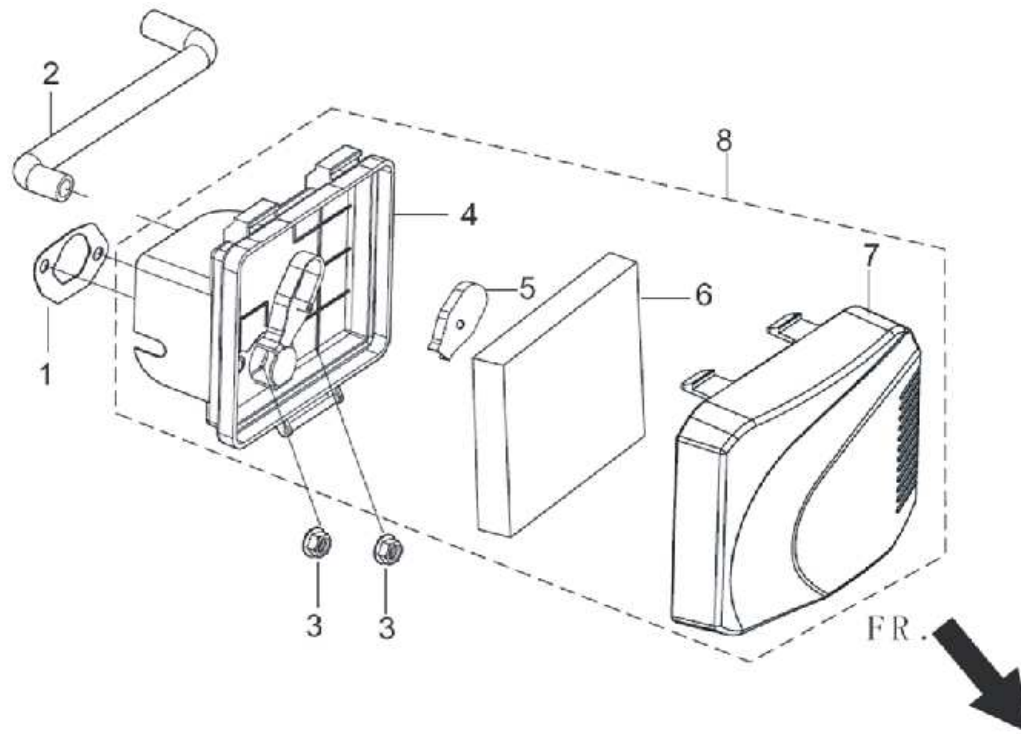
| REF.NO. | DESCRIPTION                 | QTY | MITM    | RATO               |
|---------|-----------------------------|-----|---------|--------------------|
| 7-01    | ENGINE HOUSING- 170CC       | 1   | 45-0199 | 80001-Z340210-Q200 |
| 7-02    | SHROUD- INNER               | 1   | 45-0636 | 28110-Z340110-0000 |
| 7-03    | STUD- SHROUD MOUNTING       | 2   | 45-0637 | 28001-Z340210-0000 |
| 7-04    | STUD- LONG- SHROUD MOUNTING | 1   | 45-0638 | 28001-Z340110-0000 |
| 7-05    | BOLT-LOW OIL SHUT DOWN      | 3   | 45-0315 | 90001-0612-01      |

**FIG.8 CARBURETOR ASSEMBLY**



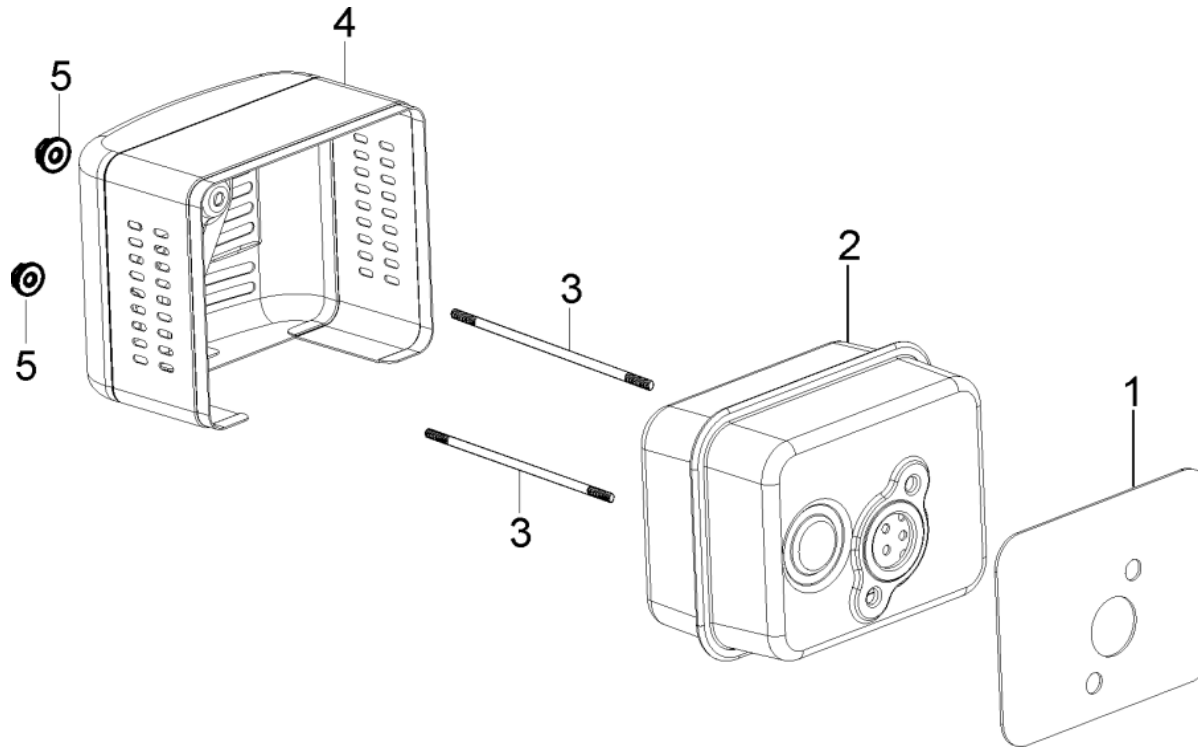
| REF.NO. | DESCRIPTION                 | QTY | MITM    | RATO               |
|---------|-----------------------------|-----|---------|--------------------|
| 8-01    | GASKET-INSULATOR PLATE      | 1   | 45-0200 | 16004-Z030110-0000 |
| 8-02    | PLATE-CARBURETOR INSULATOR  | 1   | 45-0639 | 16003-Z030110-0000 |
| 8-03    | GASKET-CARBURETOR           | 2   | 45-0201 | 16001-Z010110-0000 |
| 8-04    | GASKET-CARBURETOR INSULATOR | 1   | 45-0712 | 16002-Z340410-0000 |
| 8-05    | CARBURETOR ASSY             | 1   | 45-0677 | 16100-Z340810-0099 |
| 8-06    | GASKET-AIR CLEANER          | 1   | 45-0203 | 17001-Z030120-0000 |

**FIG.9 AIR CLEANER**



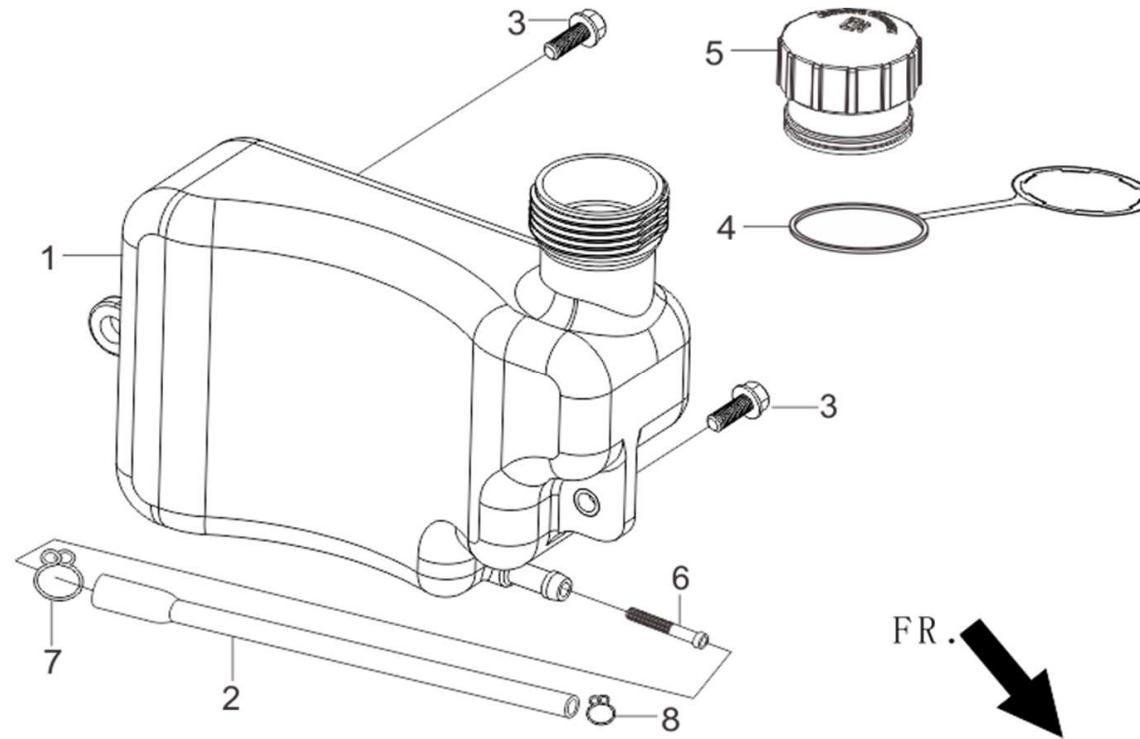
| REF.NO. | DESCRIPTION               | QTY | MITM    | RATO               |
|---------|---------------------------|-----|---------|--------------------|
| 9-01    | GASKET-AIR CLEANER        | 1   | 45-0203 | 17001-Z030120-0000 |
| 9-02    | BREATHER- TUBE            | 1   | 45-0204 | 17004-Z030310-0000 |
| 9-03    | NUT- GOVERNOR SUPPORT     | 2   | 45-0324 | 90305-0600-31      |
| 9-06    | AIR FILTER ELEMENT- 170CC | 1   | 45-0206 | 17150-Z030210-0000 |
| 9-08    | AIR CLEANER ASSY          | 1   | 45-0713 | 17100-Z340510-0000 |

**FIG.10 MUFFLER ASSEMBLY**



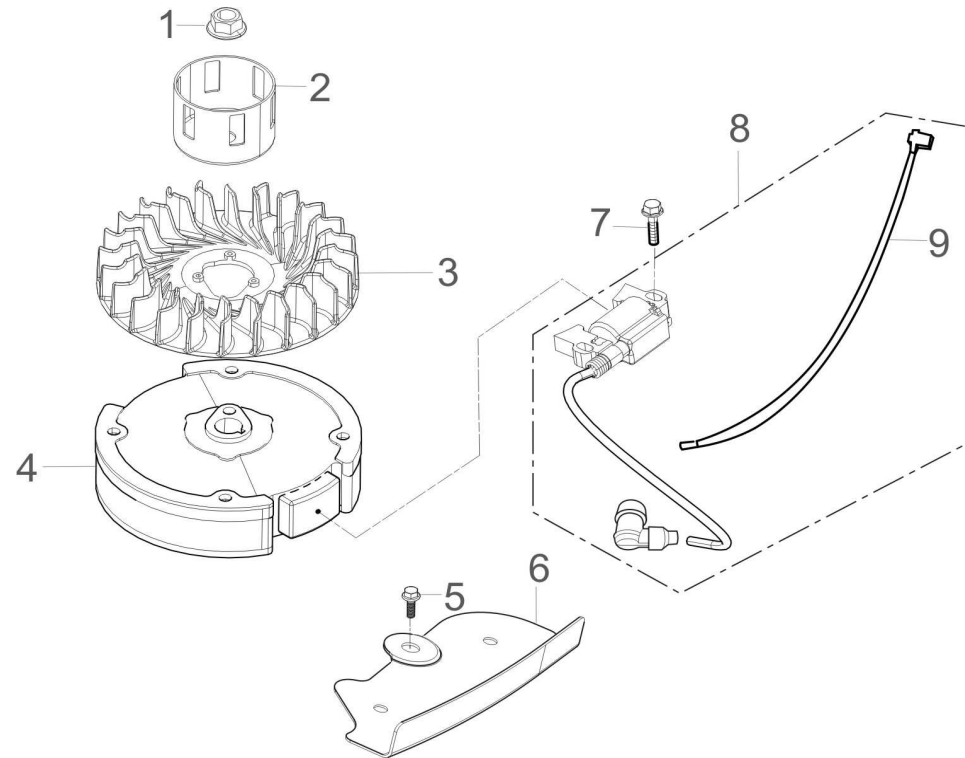
| REF.NO. | DESCRIPTION                   | QTY | MTIM    | RATO               |
|---------|-------------------------------|-----|---------|--------------------|
| 10-01   | GASKET-EXHAUST OUTLET         | 1   | 45-0682 | 18001-Z340210-0000 |
| 10-02   | MUFFLER COVER SUBASSY         | 1   | 45-0681 | 18100-Z340910-QALS |
| 10-03   | STUD-MUFFLER M6x1x96.52mm OAL | 2   | 45-0714 | 90204-Z250310-0031 |
| 10-04   | MUFFLER COVER                 | 1   | 45-0680 | 18130-Z340220-QA00 |
| 10-05   | MUFFLER-NUT                   | 2   | 45-0324 | 90305-0600-31      |

**FIG.11 FUEL TANK ASSEMBLY**



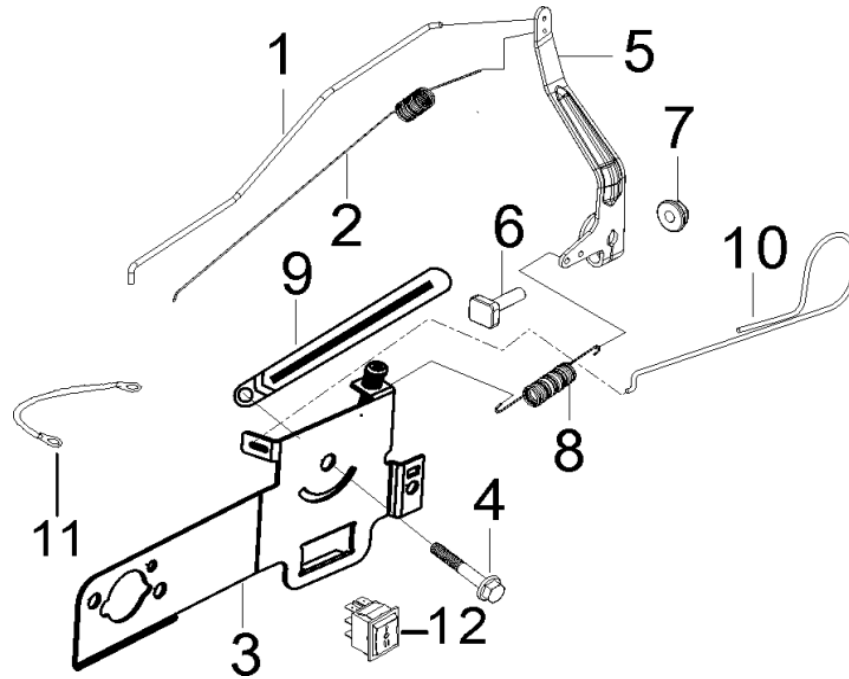
| REF.NO. | DESCRIPTION          | QTY | MITM    | RATO               |
|---------|----------------------|-----|---------|--------------------|
| 11-01   | FUEL TANK - 170CC    | 1   | 45-0683 | 16620-Z030510-0099 |
| 11-02   | TUBE-FUEL            | 1   | 45-0646 | 90686-Z030310-0000 |
| 11-03   | BOLT-FUEL TANK       | 2   | 45-0643 | 90007-0614-A1      |
| 11-04   | FUEL TANK CHAIN      | 1   | 45-0689 | 16744-Z620120-0000 |
| 11-05   | FUEL TANK CAP- 170CC | 1   | 45-0690 | 16730-Z620210-0000 |
| 11-06   | STRAINER-FUEL        | 1   | 45-0644 | 16652-Z030110-0000 |
| 11-07   | CLIP-HOSE            | 1   | 45-0645 | 90685-Z030110-0000 |
| 11-08   | CLAMP                | 1   | 45-0517 | 90740-Z010210-0000 |

**FIG.12 FLYWHEEL / IMPELLER / STARTER PULLEY / IGNITION COIL**



| REF.NO. | DESCRIPTION            | QTY | MITM      | RATO               |
|---------|------------------------|-----|-----------|--------------------|
| 12-01   | NUT-FLYWHEEL           | 1   | 45-0520   | 13501-Z010110-0000 |
| 12-02   | PULLEY-STARTER         | 1   | 45-0654   | 28002-Z030110-0000 |
| 12-03   | IMPELLER               | 1   | 45-0655   | 19352-Z010110-0000 |
| 12-04   | FLYWHEEL SUBASSY       | 1   | 45-0656   | 13510-Z340110-0000 |
| 12-05   | BOLT-LOW OIL SHUT DOWN | 1   | 45-0315   | 90001-0612-01      |
| 12-06   | SHIELD-FUEL TANK LEFT  | 1   | 45-0715   | 19309-Z250110-0000 |
| 12-07   | BOLT-IGNITION COIL     | 1   | 45-0657   | 90007-0625-A1      |
| 12-08   | COIL-IGNITION          | 1   | 45-0213   | 30400-Z340110-0001 |
| 12-09   | IGNITION COIL WIRE     | 1   | SEE 12-08 |                    |

**FIG.13 THROTTLE CONTROL ASSEMBLY**



| REF.NO. | DESCRIPTION                  | QTY | MITM    | RATO               |
|---------|------------------------------|-----|---------|--------------------|
| 13-01   | ROD-GOVERNEOR                | 1   | 45-0660 | 16062-Z030110-0000 |
| 13-02   | SPRING-THROTTLE VALVE RETURN | 1   | 45-0661 | 16012-Z030120-0000 |
| 13-03   | THROTTLE CONTROL ASSY        | 1   | 45-0663 | 16520-Z030620-0000 |
| 13-04   | BOLT-GOVERNOR PLATE          | 1   | 45-0666 | 90007-0628-A1      |
| 13-05   | GOVERNOR SUPPORT SUBASSY     | 1   | 45-0664 | 16070-Z030130-0000 |
| 13-06   | BOLT-GOVERNOR SUPPORT        | 1   | 45-0282 | 16072-Z010110-0000 |
| 13-07   | NUT                          | 1   | 45-0324 | 90305-0600-31      |
| 13-08   | SPRING-GOVERNOR              | 1   | 45-0665 | 16063-Z030120-0000 |
| 13-09   | CLIP                         | 1   | 45-0335 | 90684-Z030120-0000 |
| 13-10   | ROD-CHOKE                    | 1   | 45-0662 | 16123-Z030220-0000 |
| 13-11   | WIRE-GROUND                  | 1   | 45-0659 | 35555-Z020110-0000 |
| 13-12   | STOP ENGINE SWITCH           | 1   | 45-0212 | 35540-Z020110-QG00 |