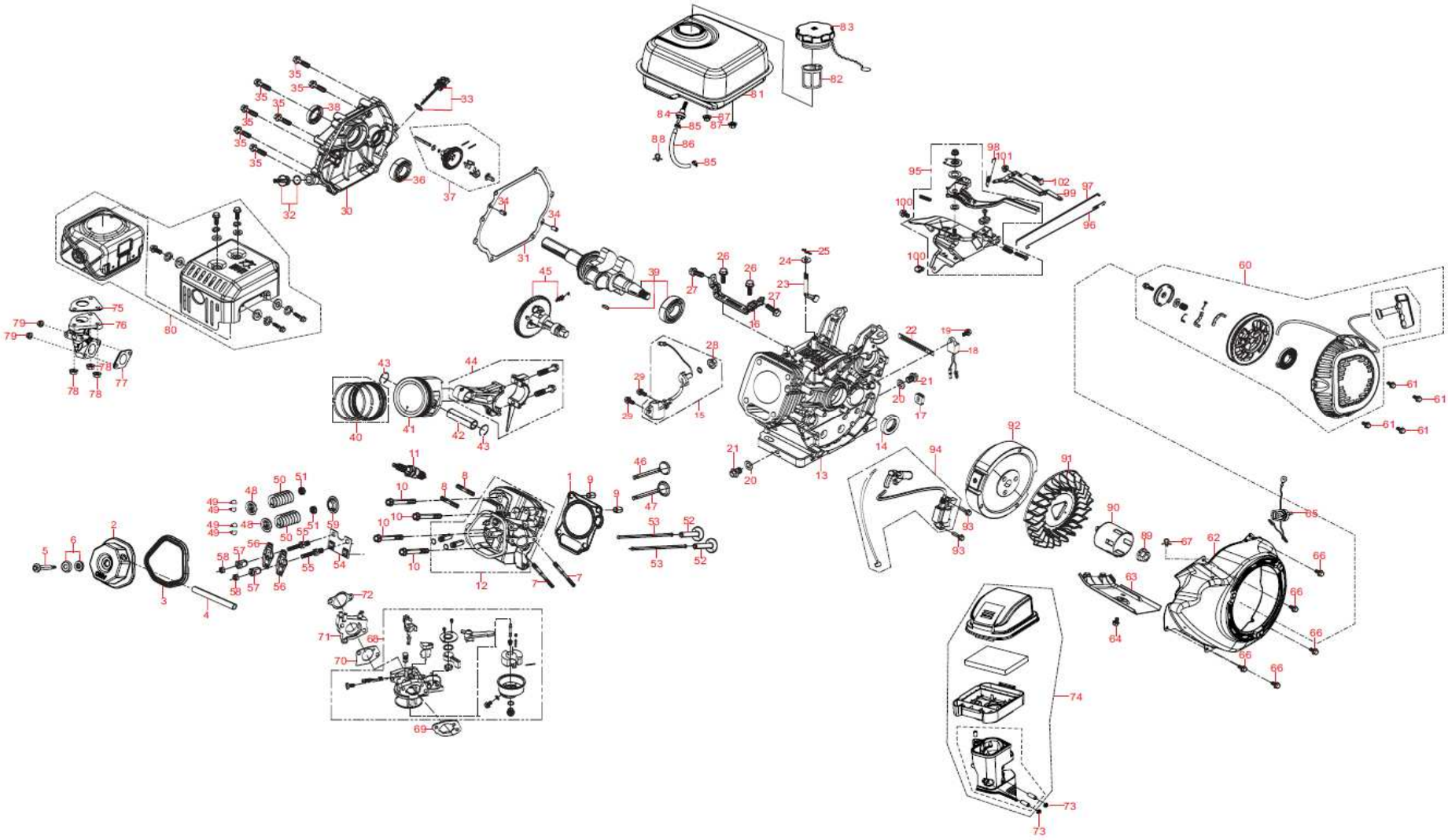
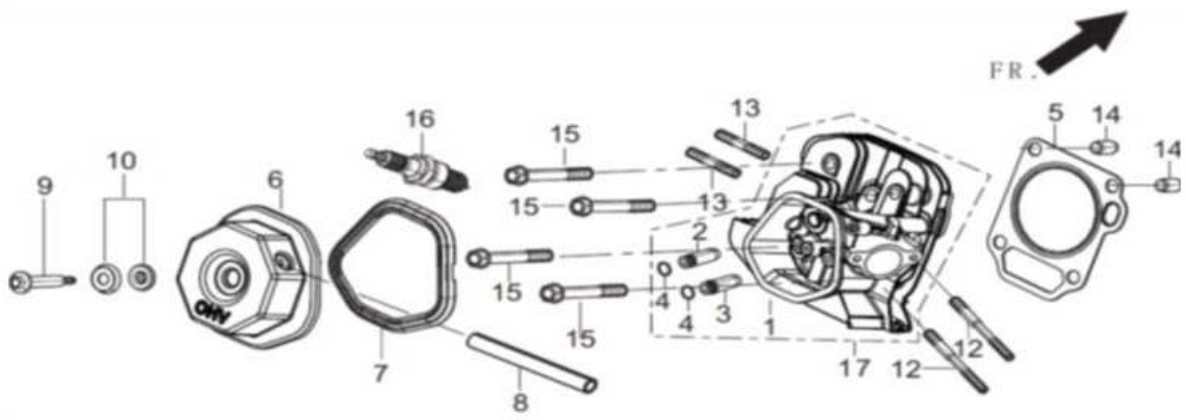
# 1-0231 300cc Engine (Horizontal) - 50 STATE

| |
|---|
| VENDOR: RATO |
| MODEL: R300 50 STATE |
| DRAWIN BY: RSW |
| DATE: 10/06/15 |

For parts Call 888-279-9274

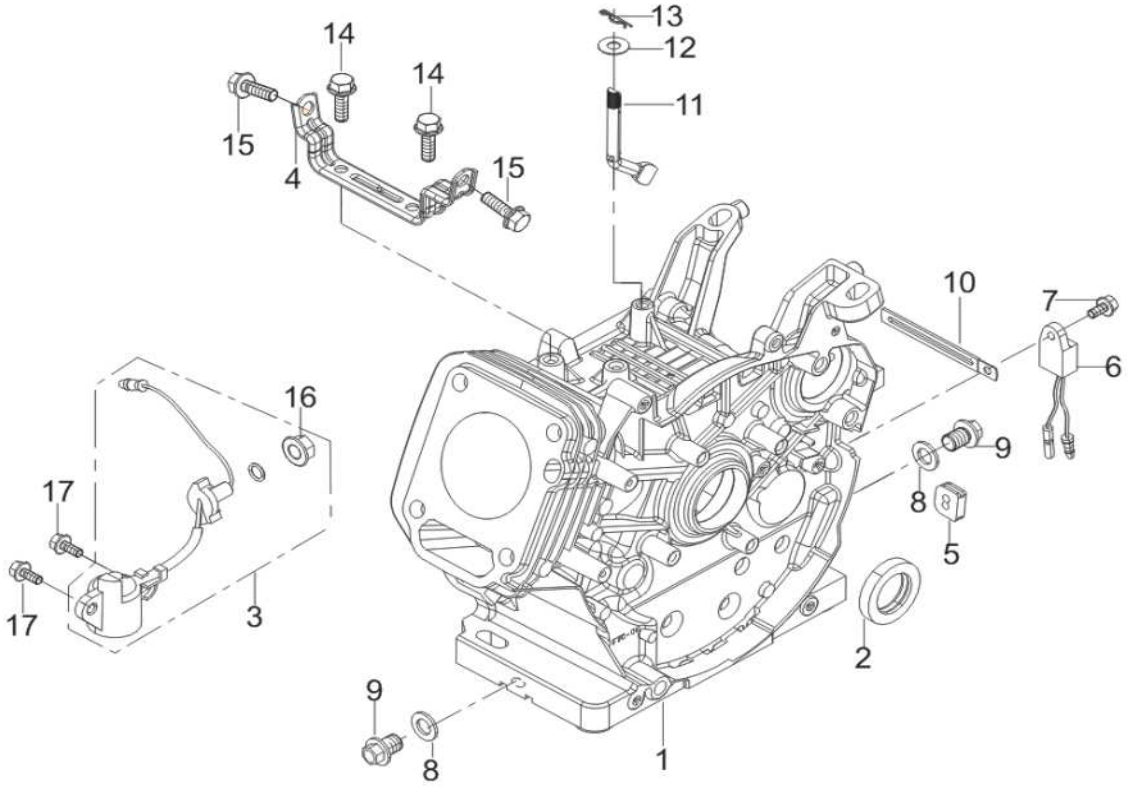


## FIG.1 HEAD SUBASSEMBLY, CYLINDER / PLUG,SPARK (E01)



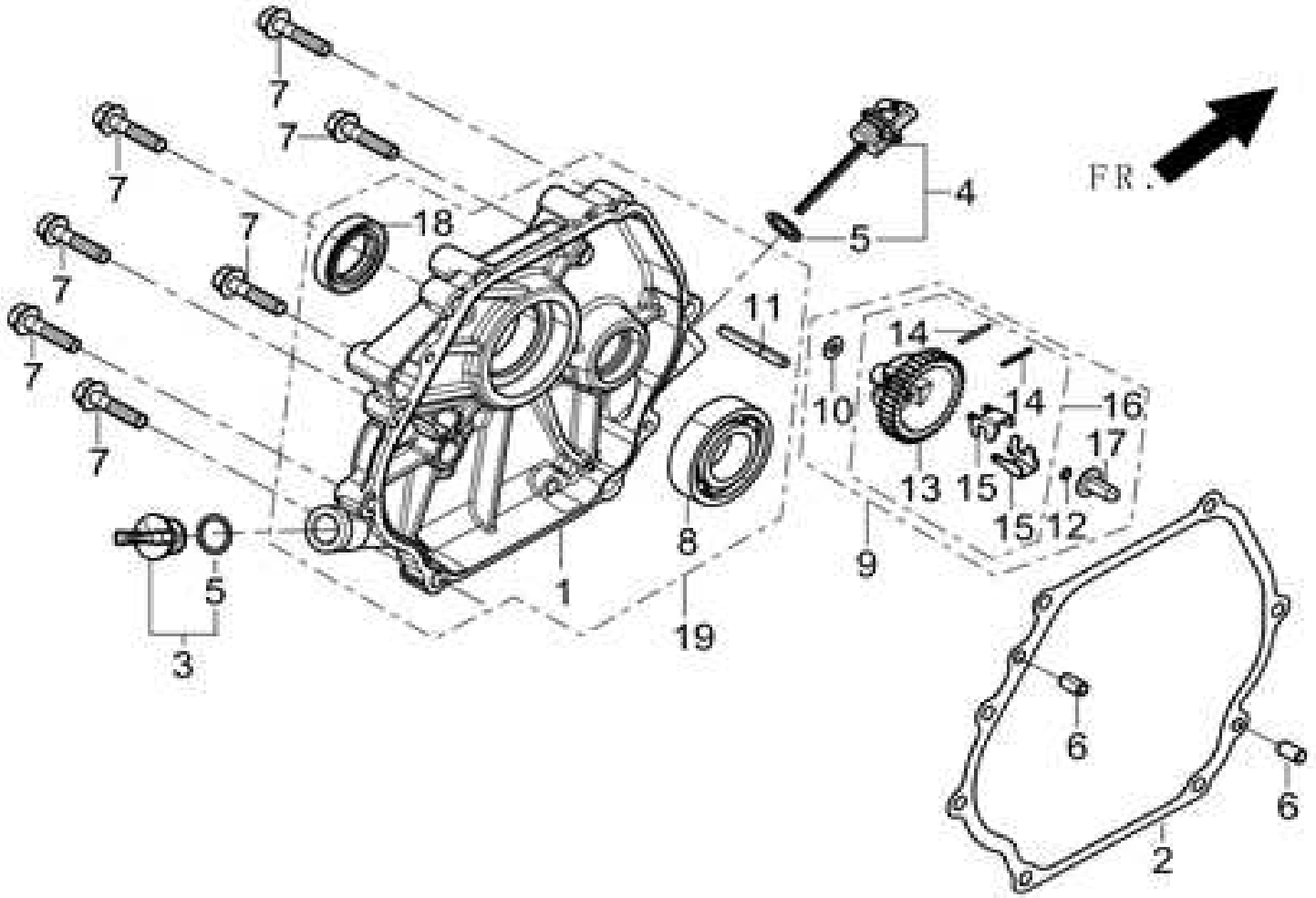

| Ref # | Description | Qty | MiTM-PN | RATO-PN |
|---|---|---|---|---|
| E01-5 | GASKET, CYLINDER HEAD | 1 | 45-0783 | 12131-Z730110-0000 |
| E01-6 | COVER SUBASSEMBLY, CYLINDER HEAD | 1 | 45-0559 | 12410-Z580110-0199 |
| E01-7 | GASKET, CYLINDER HEAD COVER | 1 | 45-0560 | 12004-Z580110-0099 |
| E01-8 | TUBE, BREATHER | 1 | 45-0784 | 17004-Z730110-0000 |
| E01-9 | BOLT SUBASSEMBLY, CYLINDER HEAD COVER | 1 | 45-0562 | 12032-Z080111-01A0 |
| E01-10 | CYLINDER EPICRANIUM BOLT SEAL & GASKET UNIT | 1 | 45-0563 | 12034-Z080110-0099 |
| E01-12 | STUD | 2 | 45-0382 | 90204-Z080320-0000 |
| E01-13 | STUD | 2 | 45-0323 | 90204-Z100320-0000 |
| E01-14 | PIN | 2 | 45-0330 | 90502-1220-00 |
| E01-15 | BOLT, CYLINDER HEAD | 4 | 45-0239 | 12003-Z080110-0000 |
| E01-16 | PLUG, SPARK | 1 | 45-0471 | 30010-Z010110-0000 |
| E01-17 | HEAD SUBASSEMBLY, CYLINDER | 1 | 45-0785 | 12140-Z730210-0B99 |

**FIG.2 CRANKCASE. (E02)**



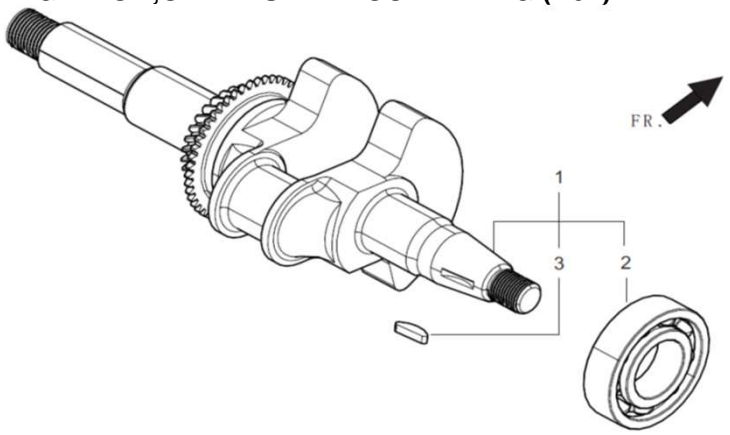

| Ref # | Description | Qty | MiTM-PN | RATO-PN |
|---|---|---|---|---|
| E02-1 | CRANKCASE SUBASSEMBLY. | 1 | 45-0786 | 11310-Z730110-0B00 |
| E02-2 | SEAL, OIL | 1 | 45-0333 | 90682-Z080110-0000 |
| E02-3 | SENSOR, ENGINE OIL | 1 | 45-0787 | 37060-Z080120-0000 |
| E02-4 | FRAME, FUEL TANK INSTALLTION | 1 | 45-0286 | 16612-Z080110-H300 |
| E02-5 | PLUG, RUBBER | 1 | 45-0306 | 28101-Z080110-0000 |
| E02-6 | PROTECTOR, OIL | 1 | 45-0313 | 37050-Z010210-0000 |
| E02-7 | BOLT | 1 | 45-0315 | 90001-0612-01 |
| E02-8 | WASHER | 2 | 45-0326 | 90412-Z080110-0000 |
| E02-9 | BOLT, DRAIN PLUG | 2 | 45-0236 | 11007-Z080110-0000 |
| E02-10 | CLIP | 1 | 45-0335 | 90684-Z030120-0000 |
| E02-11 | ARM, GOVERNOR | 1 | 45-0360 | 16061-Z080110-0000 |
| E02-12 | WASHER | 1 | 45-0327 | 90412-Z080210-0000 |
| E02-13 | PIN | 1 | 45-0328 | 90501-Z010110-0000 |
| E02-14 | BOLT | 2 | 45-0320 | 90001-0820-01 |
| E02-15 | BOLT | 2 | 45-0788 | 90001-0816-01 |
| E02-16 | NUT | 1 | 45-0789 | 90305-Z010210-01 |
| E02-17 | BOLT | 2 | 45-0316 | 90001-0616-01 |

**FIG.3 COVER SUBASSEMBLY, CRANKCASE / GEAR ASSY, GOVERNOR (E03)**



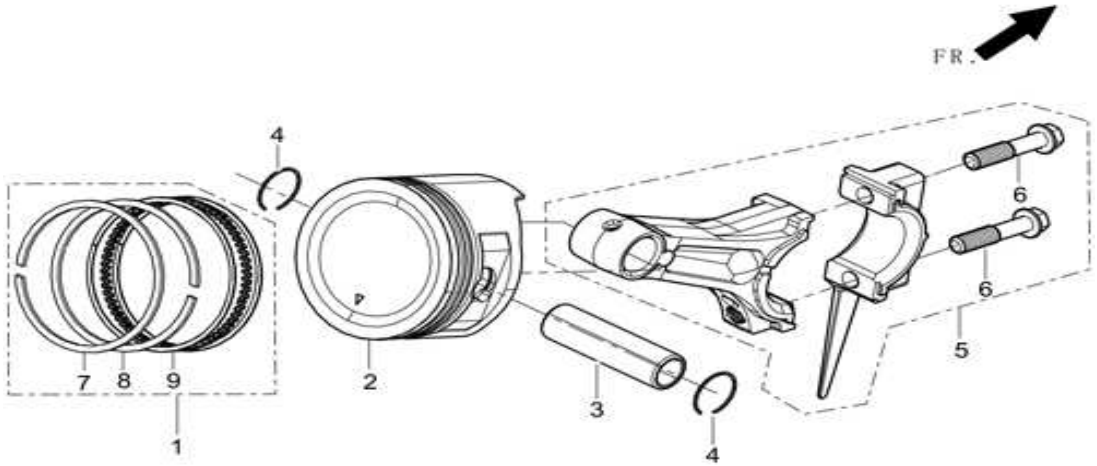

| Ref # | Description | Qty | MiTM-PN | RATO-PN |
|---|---|---|---|---|
| E03-1 | COVER , CRANKCASE | 1 | 45-0817 | 11411-Z580110-0B00 |
| E03-2 | GASKET, CRANKCASE | 1 | 45-0340 | 11001-Z580110-0000 |
| E03-3 | PLUG SUBASSEMBLY, ENGINE OIL | 1 | 45-0273 | 15030-Z080120-Q500 |
| E03-4 | DIPSTICK SUBASSEMBLY, OIL | 1 | 45-0272 | 15010-Z080120-Q500 |
| E03-6 | PIN | 2 | 45-0329 | 90502-0912-00 |
| E03-7 | BOLT | 7 | 45-0389 | 90001-0835-01 |
| E03-8 | BEARING | 1 | 45-0818 | 90547-0206-00 |
| E03-9 | GEAR ASSY, GOVERNOR | 1 | 45-0365 | 16400-Z080110-0000 |
| E03-18 | SEAL, OIL | 1 | 45-0333 | 90682-Z080110-0000 |

## FIG.4 ROD,CRANKSHAFT CONNETING (E04)



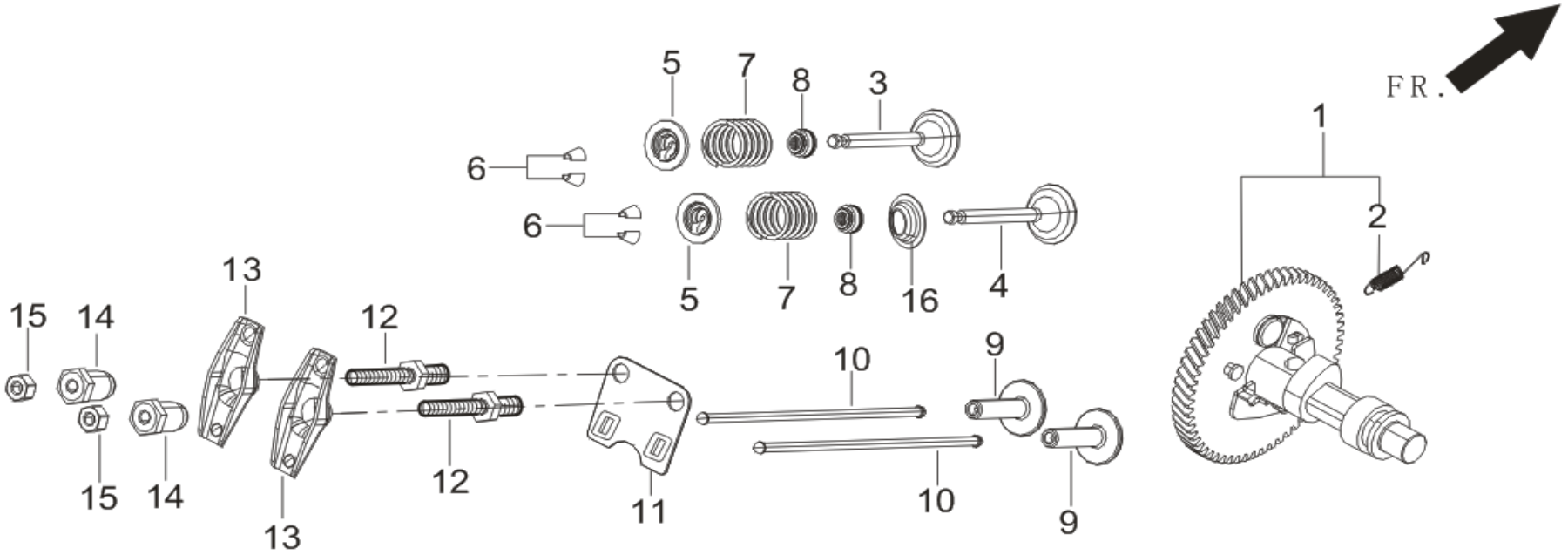

| Ref # | Description | Qty | MiTM-PN | RATO-PN |
|---|---|---|---|---|
| E04-1 | CRANKSHAFT ASSY | 1 | 45-0790 | 13300-Z730210-RB00 |

## FIG.5 RING SET,OIL / ROD,CRANKSHAFT CONNETING （E05）



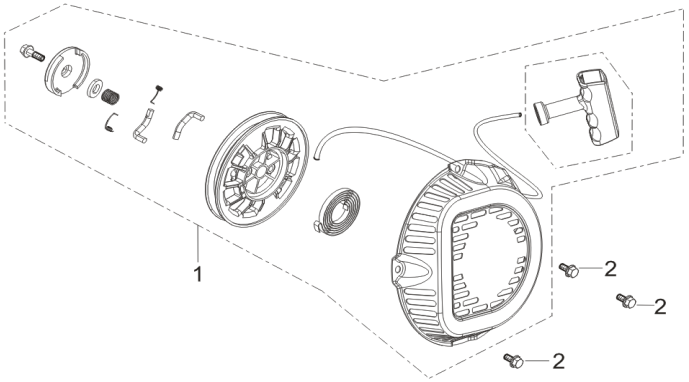

| Ref # | Description | Qty | MiTM-PN | RATO-PN |
|---|---|---|---|---|
| E05-1 | RING, PISTON | 1 | 45-0791 | 13200-Z730110-0099 |
| E05-2 | PIN, PISTON | 1 | 45-0792 | 13111-Z730120-0099 |
| E05-3 | CLIP, PISTON PIN | 1 | 45-0793 | 13121-Z730110-0000 |
| E05-4 | PISTON | 2 | 45-0794 | 13122-Z730110-0099 |
| E05-5 | ROD, CONNECTING | 1 | 45-0795 | 13010-Z730120-0099 |
| E05-7 | RING, THE FIRST | 1 | 45-0796 | 13201-Z730110-0099 |
| E05-8 | RING, THE SECON | 1 | 45-0797 | 13202-Z730110-0099 |
| E05-9 | RING SET, OIL | 1 | 45-0798 | 13210-Z730110-0099 |

**FIG.6 TRAIN,VALVE / CAMSHAFT SUBASSEMBLY (E06)**



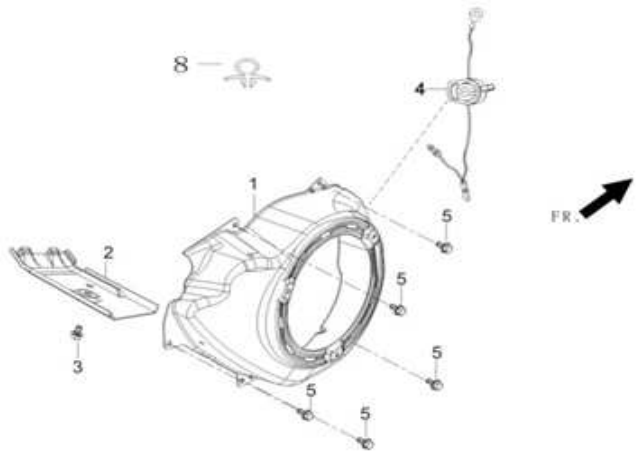

| Ref # | Description | Qty | MiTM-PN | RATO-PN |
|---|---|---|---|---|
| E06-1 | CAMSHAFT ASSY. | 1 | 45-0799 | 14200-Z730120-0099 |
| E06-3+4 | VALVE | 1 | 45-0800 | 12110-Z730110-0099 |
| E06-3 | VALVE, EXHAUST | 1 | 45-0801 | 12121-Z730110-0099 |
| E06-4 | VALVE, INTAKE | 1 | 45-0802 | 12111-Z730110-0099 |
| E06-5 | SEAT, VALVE SPRING | 2 | 45-0803 | 12112-Z730110-0000 |
| E06-6 | CLAMP, VALVE LOCK | 4 | 45-0804 | 12109-Z730110-0000 |
| E06-7 | SPRING, VALVE | 2 | 45-0805 | 12103-Z730110-0099 |
| E06-8 | GUIDE, SEAL | 2 | 45-0806 | 12101-Z020110-0000 |
| E06-9 | TAPPET, VALVE | 2 | 45-0265 | 14081-Z580110-0000 |
| E06-10 | LIFTER, VALVE | 2 | 45-0807 | 14070-Z730110-0000 |
| E06-11 | PLATE SUBASSEMBLY, LIFTER STOPPER | 1 | 45-0266 | 14090-Z080110-0000 |
| E06-12 | BOLT, VALVE ADJUSTING | 2 | 45-0270 | 14313-Z010110-0000 |
| E06-13 | ROCKER, VALVE | 2 | 45-0268 | 14311-Z080110-0000 |
| E06-14 | NUT, VALVE ADJUSTING | 2 | 45-0271 | 14314-Z010110-0000 |
| E06-15 | NUT, VALVE LOCK | 2 | 45-0269 | 14312-Z010110-0000 |
| E06-16 | RETAINER, VALVE SPRING | 1 | 45-0245 | 12105-Z080110-0000 |

## FIG.7 STARTER,RECOIL （E07）



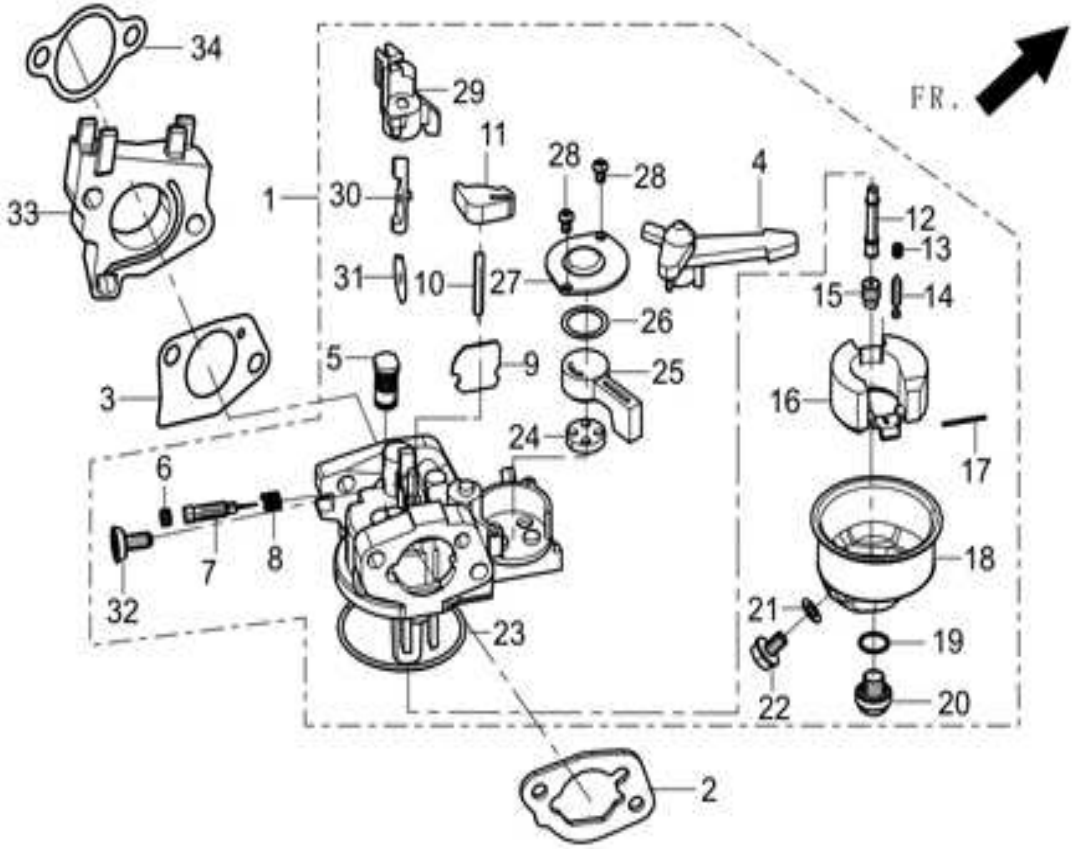

| Ref # | Description | Qty | MiTM-PN | RATO-PN |
|---|---|---|---|---|
| E07-1 | STARTER ASSY, RECOIL | 1 | 45-0808 | 28200-Z081510-H600 |
| E07-2 | BOLT | 3 | 45-0381 | 90001-0608-01 |

## FIG.8 SHROUD / SHIELD,LOWER （E08）




| Ref # | Description | Qty | MiTM-PN | RATO-PN |
|---|---|---|---|---|
| E08-1 | SHROUD | 1 | 45-0378 | 28110-Z080410-H600 |
| E08-2 | SHROUD, CYLINDER BODY | 1 | 45-0375 | 19304-Z080110-0000 |
| E08-3 | BOLT | 1 | 45-0315 | 90001-0612-01 |
| E08-4 | SWITCH SUBASSEMBLY, STOP ENGINE | 1 | 45-0809 | 35540-Z060140-QG00 |
| E08-5 | BOLT | 5 | 45-0315 | 90001-0612-01 |
| E08-8 | CLIP | 1 | 45-0336 | 90684-Z080110-0000 |

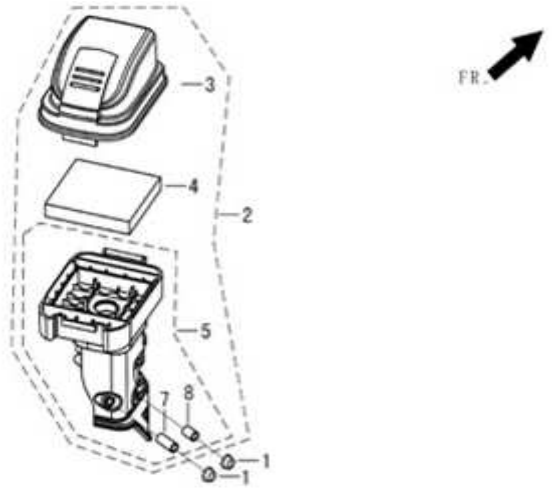
**FIG.9 CARBURETOR ASSY.（E09）**




| Ref # | Description | Qty | MiTM-PN | RATO-PN |
|---|---|---|---|---|
| E09-1 | CARBURETOR ASSY. (BEFORE SERIAL NUMBER: A223001964) | 1 | 45-0810 | 16100-Z730110-0099 |
| E09-1 | CARBURETOR ASSY. (AFTER SERIAL NUMBER: A223001964) | 1 | 45-1103 | 16100-Z730310-00M0 |
| E09-2 | GASKET, AIR CLEANER | 1 | 45-0295 | 17001-Z080210-0000 |
| E09-3 | GASKET, CARBURETOR | 1 | 45-0358 | 16001-Z080110-0000 |
| E09-33 | PLATE, CARBURETOR INSULATOR | 1 | 45-0811 | 16003-Z730110-0000 |
| E09-34 | GASKET, CARBURETOR INSULATOR | 1 | 45-0368 | 17002-Z080110-0000 |

## FIG.10 CLEANER, AIR (E10) (BEFORE SERIAL NUMBER A2203001964)

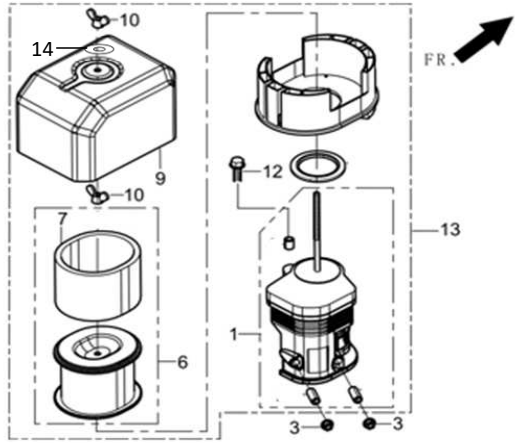
**BEFORE SERIAL NUMBER:**
**A2203001964**




| Ref # | Description | Qty | MiTM-PN | RATO-PN |
|---|---|---|---|---|
| E10-1 | NUT | 2 | 45-0324 | 90305-0600-31 |
| E10-2 | CLEANER, AIR | 1 | 45-0812 | 17100-Z580120-0000 |
| E10-4 | AIR FILTER ELEMENT | 1 | 45-0387 | 17151-Z580110-0000 |

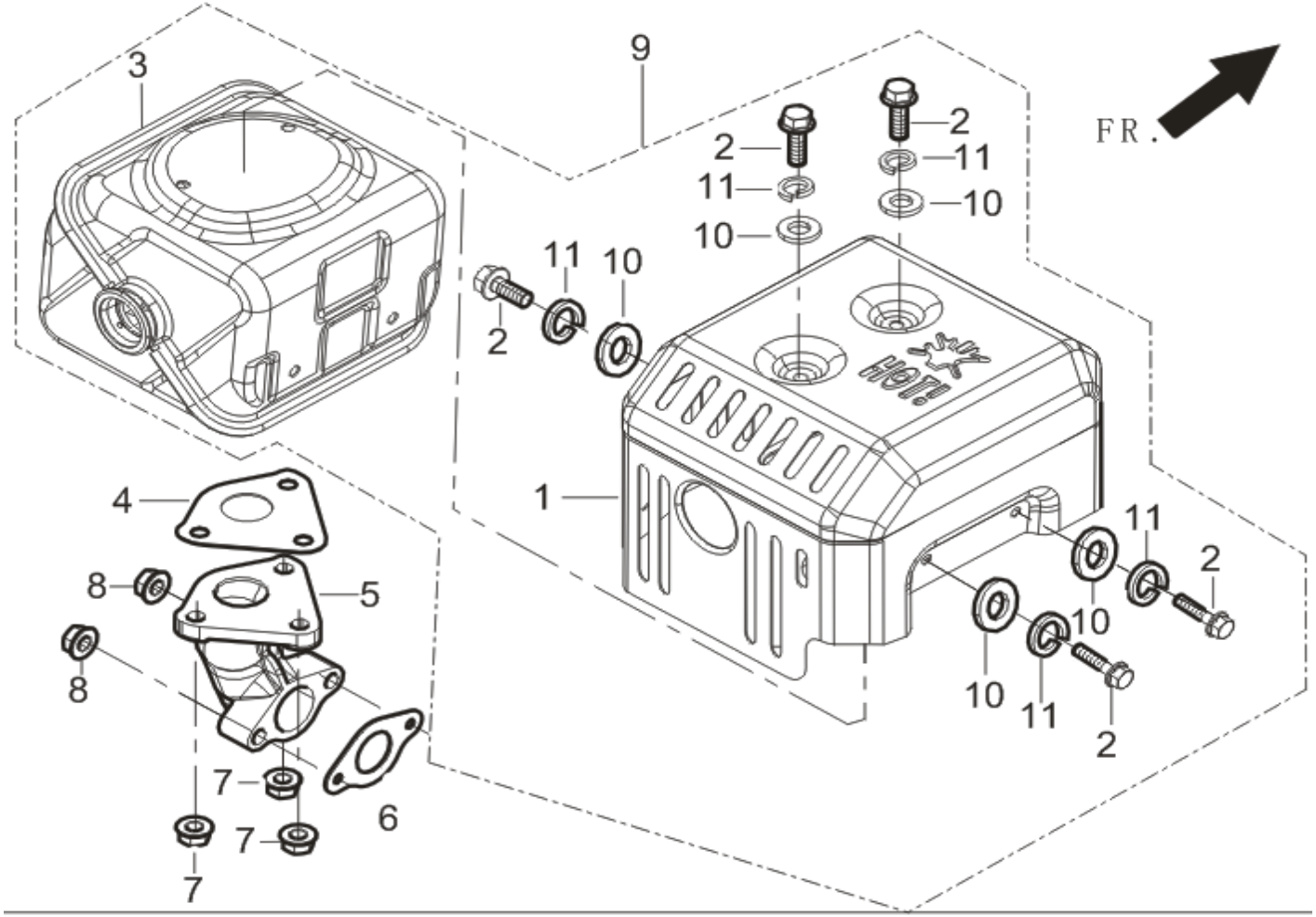
## FIG.10 CLEANER, AIR (E10) (AFTER SERIAL NUMBER A2203001964)

**AFTER SERIAL NUMBER:**
**A2203001964**



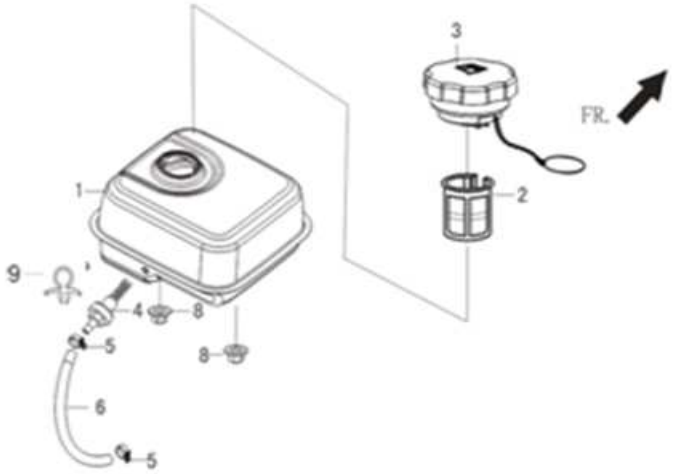

| Ref # | Description | Qty | MiTM-PN | RATO-PN |
|---|---|---|---|---|
| E10-3 | HEXAGON NUT WITH FLANGE | 2 | 80-0469 | 90305-0600-31A0 |
| E10-6 | AIR FILTER - 300CC | 1 | 45-0906 | 17150-Z080110-0000 |
| E10-9 | AIR FILTER COVER - 300CC | 1 | 45-0907 | 17104-Z080210-0000 |
| E10-10 | BUTTERFLY NUT - STAMPED | 2 | 45-0905 | 90312-0600-33 |
| E10-12 | BOLT | 1 | 45-0896 | 90007-0620-A1A0 |
| E10-13 | AIR FILTER ASSEMBLY - 300CC | 1 | 45-0908 | 17100-Z080210-0000 |
| E10-14 | SEALING WASHER - 1/4" NEOPRENE | 1 | 28-1072 | N/A |

**FIG.11 MUFFLER ASSY.（E11）**



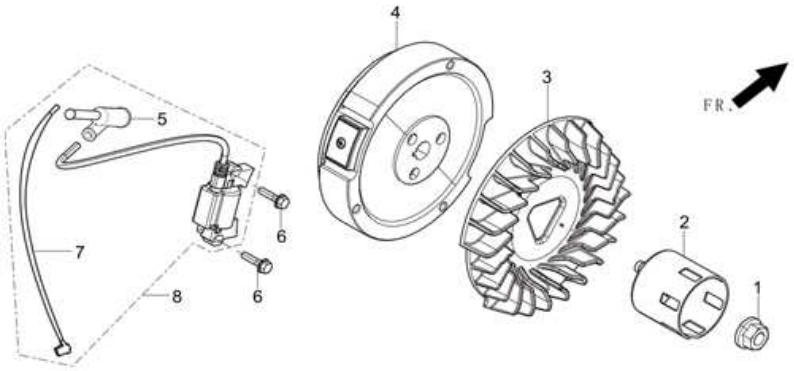

| Ref # | Description | Qty | MiTM-PN | RATO-PN |
|---|---|---|---|---|
| E11-4 | BLOCK, MUFFLER SEAT REINFORCING | 1 | 45-0371 | 18101-Z080110-0000 |
| E11-5 | PIPE, EXHAUST | 1 | 45-0813 | 18150-Z580110-0000 |
| E11-6 | GASKET, EXHAUST OUTLET | 1 | 45-0301 | 18001-Z580110-0000 |
| E11-7 | LOCKNUT | 3 | 45-1114 | 90332-Z1F0110-00A0 |
| E11-8 | LOCKNUT | 2 | 45-1114 | 90332-Z1F0110-00A0 |
| E11-9 | MUFFLER ASSY. | 1 | 45-0814 | 18100-Z580110-0000 |

## FIG.12 TANK ASSY, FUEL （E12）



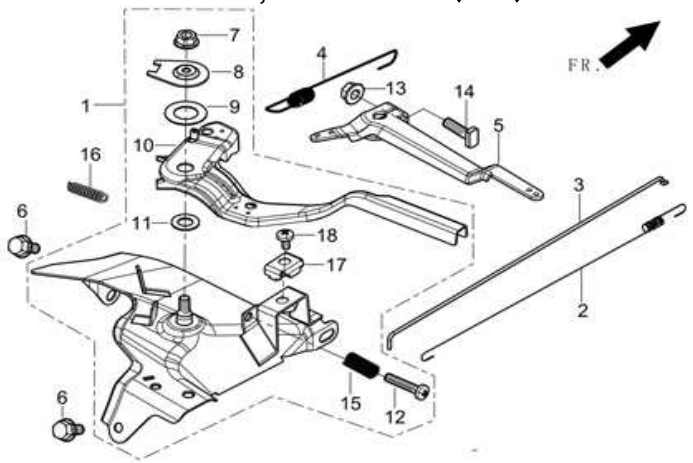

| Ref # | Description | Qty | MiTM-PN | RATO-PN |
|---|---|---|---|---|
| E12-1 | TANK, FUEL | 1 | 45-0413 | 16620-Z310410-H600 |
| E12-2 | STRAINER,  FUEL | 1 | 45-0411 | 16652-Z010710-0000 |
| E12-3 | COVER, FUEL TANK | 1 | 45-0412 | 16730-Z310110-0000 |
| E12-4 | OUTLET SUBASSEMBLY, FUEL TANK OIL | 1 | 45-0289 | 16680-Z010110-0000 |
| E12-5 | CARB CANISTER HOSE COLLAR | 2 | 45-0338 | 90685-Z030220-0000 |
| E12-6 | TUBE, FUEL | 1 | 45-0386 | 90686-Z080510-0000 |
| E12-8 | NUT | 2 | 45-0436 | 90305-0800-31 |
| E12-9 | CLIP | 2 | 45-0336 | 90684-Z080110-0000 |

## FIG.13 FLYWHEEL / IMPELLER / STARTER PULLEY / IGNITION COIL（E13）




| Ref # | Description | Qty | MiTM-PN | RATO-PN |
|---|---|---|---|---|
| E13-1 | NUT, FLYWHEEL | 1 | 45-0262 | 13501-Z080110-0000 |
| E13-2 | PULLEY,STARTER | 1 | 45-0377 | 28002-Z080310-0000 |
| E13-3 | IMPELLER | 1 | 45-0376 | 19352-Z080110-0000 |
| E13-4 | FLYWHEEL SUBASSEMBLY | 1 | 45-0815 | 13510-Z080110-0000 |
| E13-6 | BOLT | 2 | 45-0318 | 90001-0628-01 |
| E13-8 | COIL, IGNITION | 1 | 45-0816 | 30400-Z080310-0100 |

## FIG.14 CONTROL ASSY, THROTTLE （E14）




| Ref # | Description | Qty | MiTM-PN | RATO-PN |
|---|---|---|---|---|
| E14-1 | CONTROL SUBASSEMBLY, THROTTLE | 1 | 45-0366 | 16520-Z080310-0000 |
| E14-2 | SPRING, THROTTLE VALVE RETURNING | 1 | 45-0277 | 16012-Z080110-0000 |
| E14-3 | ROD, GOVERNER | 1 | 45-0361 | 16062-Z080110-0000 |
| E14-4 | SPRING, GOVERNOR | 1 | 45-0362 | 16063-Z080120-0000 |
| E14-5 | SUPPORT SUBASSEMBLY, GOVERNOR | 1 | 45-0363 | 16070-Z080110-0000 |
| E14-6 | BOLT | 2 | 45-0315 | 90001-0612-01 |
| E14-13 | NUT | 1 | 45-0324 | 90305-0600-31 |
| E14-14 | BOLT, GOVERNOR SUPPORT | 1 | 45-0282 | 16072-Z010110-0000 |