

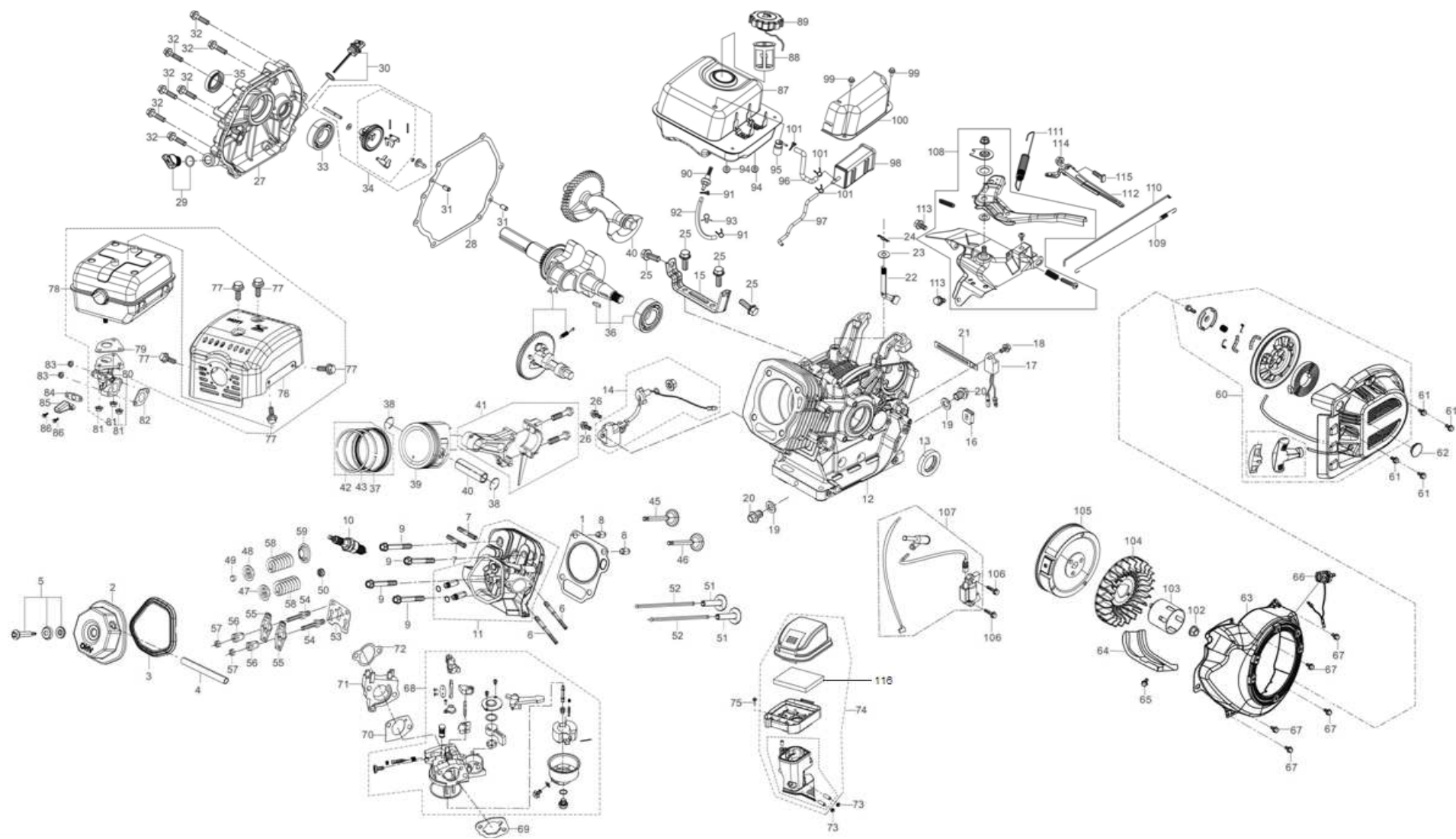
## 1-0198 280cc Engine (Horizontal) - 50 STATE

VENDOR: RATO

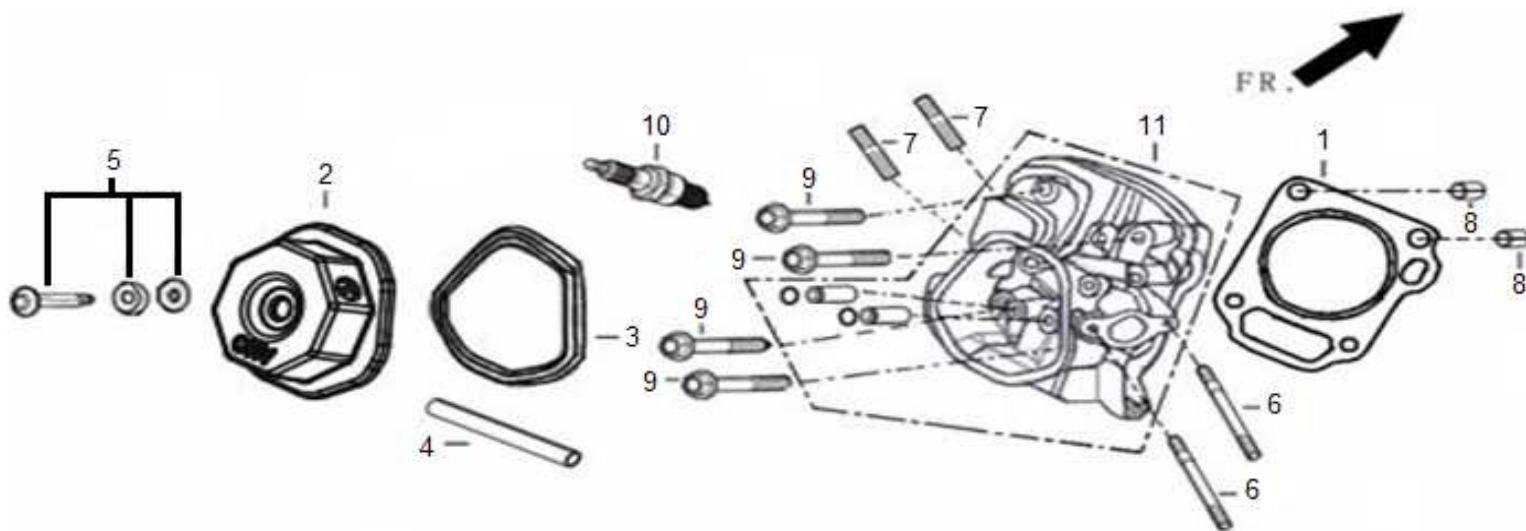
MODEL: R280 50 STATE

DRAWIN BY: RSW

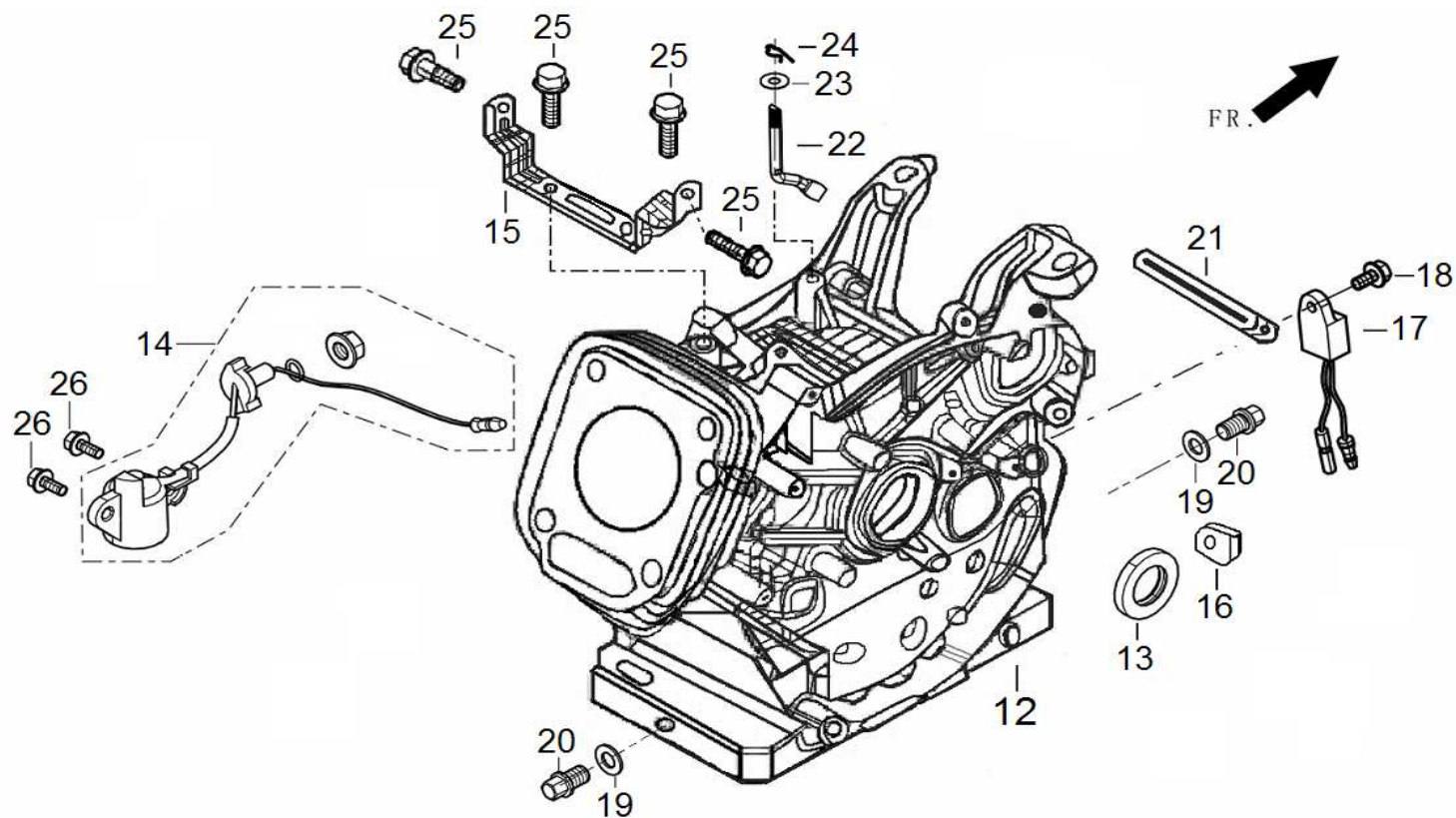
DATE: 5/03/11



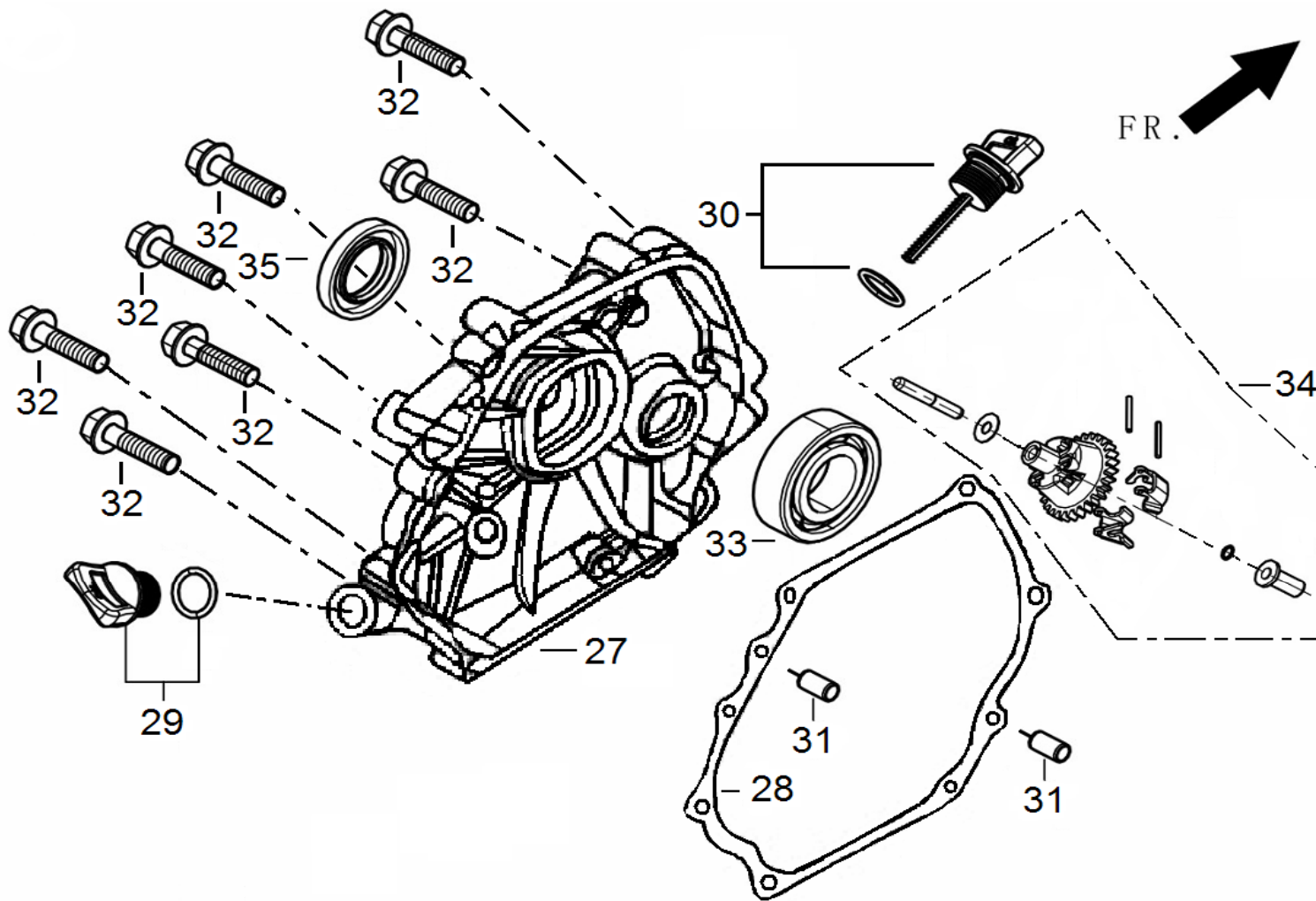
For parts Call 888-279-9274



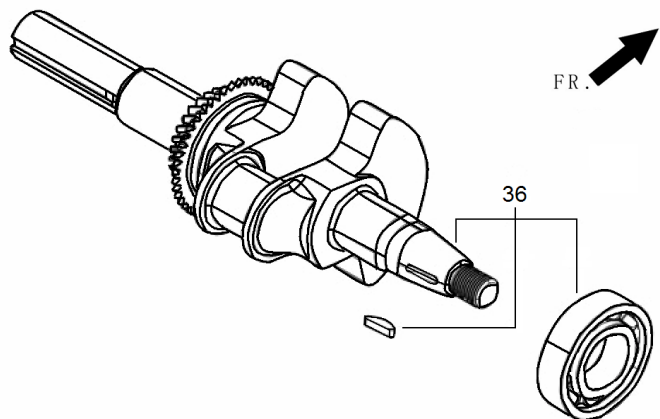
| Ref # | Description                           | Qty | MiTM-PN | RATO-PN            |
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| 1     | GASKET, CYLINDER HEAD                 | 1   | 45-0345 | 12131-Z580110-0000 |
| 2     | COVER SUBASSEMBLY, CYLINDER HEAD      | 1   | 45-0252 | 12410-Z580110-0000 |
| 3     | GASKET, CYLINDER HEAD COVER           | 1   | 45-0240 | 12004-Z580110-0000 |
| 4     | TUBE, BREATHER                        | 1   | 45-0369 | 17004-Z080110-0000 |
| 5     | BOLT SUBASSEMBLY, CYLINDER HEAD COVER | 1   | 45-0241 | 12030-Z310110-0000 |
| 6     | STUD                                  | 2   | 45-0382 | 90204-Z080320-0000 |
| 7     | STUD                                  | 2   | 45-0383 | 90204-Z100320-0000 |
| 8     | PIN                                   | 2   | 45-0330 | 90502-1220-00      |
| 9     | BOLT, CYLINDER HEAD                   | 4   | 45-0239 | 12003-Z080110-0000 |
| 10    | PLUG, SPARK                           | 1   | 45-0310 | 30010-Z010210-0000 |
| 11    | HEAD SUBASSEMBLY, CYLINDER            | 1   | 45-0346 | 12140-Z580120-0000 |



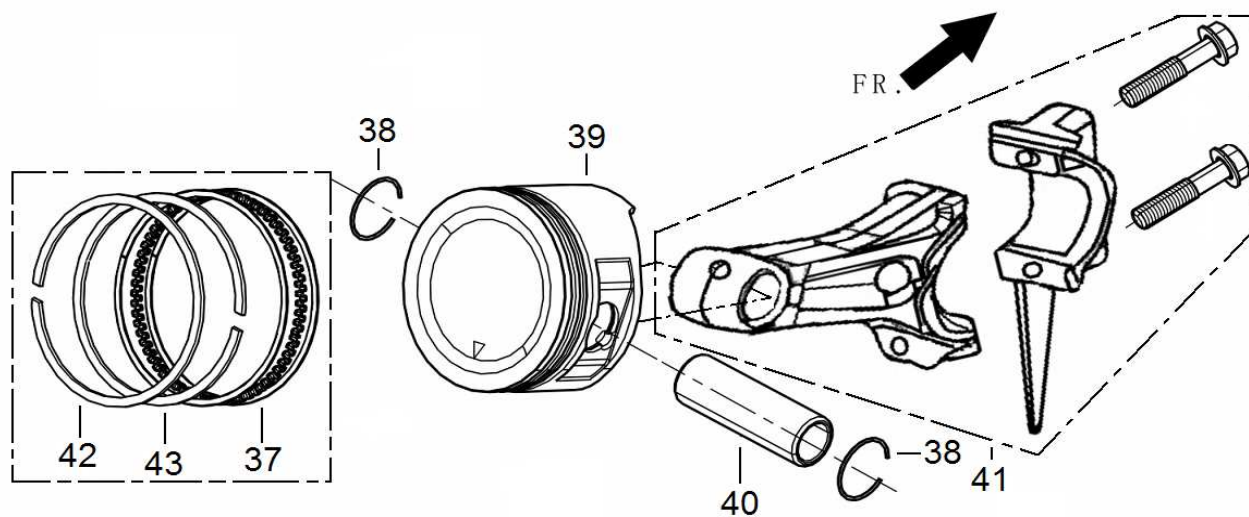
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| 12    | CRANKCASE SUBASSEMBLY         | 1   | 45-0341 | 11310-Z580110-0000 |
| 13    | SEAL, OIL                     | 1   | 45-0385 | 90682-Z080110-0000 |
| 14    | SENSOR, ENGINE OIL            | 1   | 45-0314 | 37060-Z080110-0000 |
| 15    | FRAME, FUEL TANK INSTALLATION | 2   | 45-0286 | 16612-Z080110-H300 |
| 16    | PLUG, RUBBER                  | 2   | 45-0306 | 28101-Z080110-0000 |
| 17    | PROTECTOR, OIL                | 1   | 45-0313 | 37050-Z010210-0000 |
| 18    | BOLT                          | 1   | 45-0315 | 90001-0612-01      |
| 19    | WASHER                        | 2   | 45-0326 | 90412-Z080110-0000 |
| 20    | BOLT, DRAIN PLUG              | 2   | 45-0236 | 11007-Z080110-0000 |
| 21    | CLIP                          | 1   | 45-0335 | 90684-Z030120-0000 |
| 22    | ARM, GOVERNOR                 | 1   | 45-0360 | 16061-Z080110-0000 |
| 23    | WASHER                        | 1   | 45-0327 | 90412-Z080210-0000 |
| 24    | PIN                           | 1   | 45-0328 | 90501-Z010110-0000 |
| 25    | BOLT                          | 4   | 45-0320 | 90001-0820-01      |
| 26    | BOLT                          | 2   | 45-0316 | 90001-0616-01      |



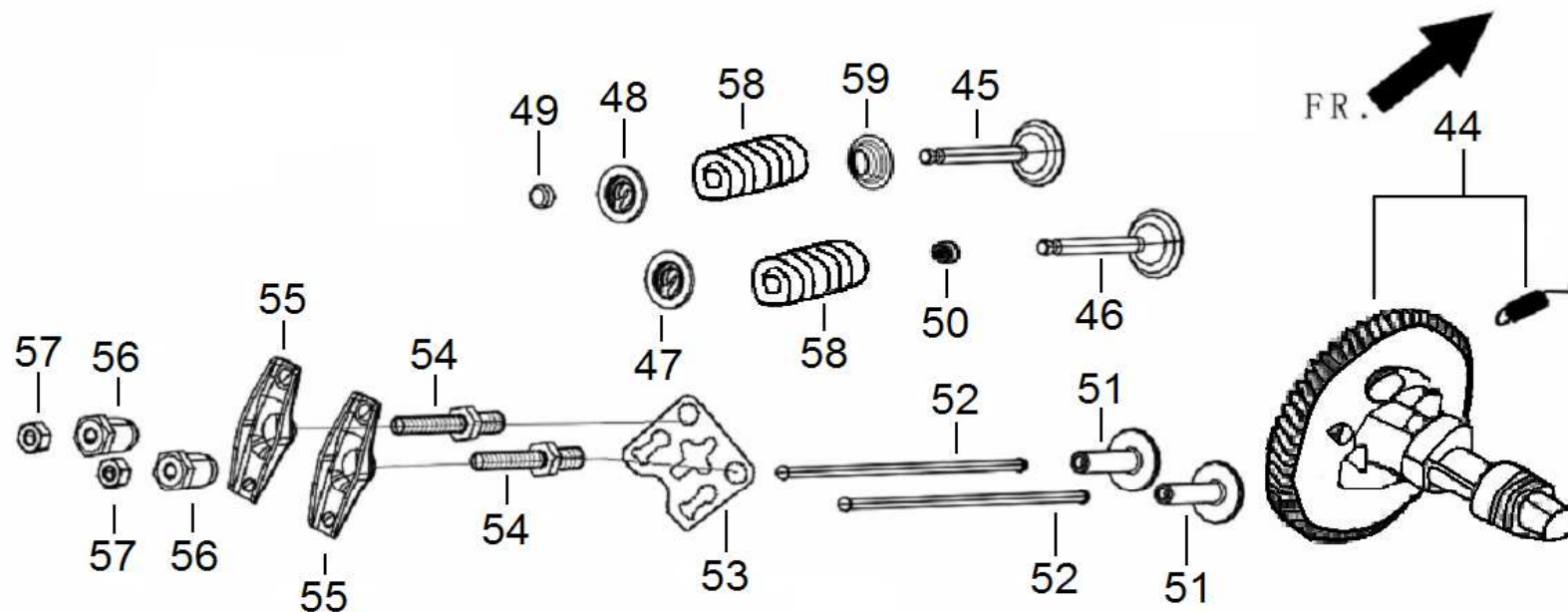
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| 27    | COVER, CRANKCASE             | 1   | 45-0342 | 11411-Z580110-0000 |
| 28    | GASKET, CRANKCASE            | 1   | 45-0340 | 11001-Z580110-0000 |
| 29    | PLUG SUBASSEMBLY, ENGINE OIL | 1   | 45-0273 | 15030-Z080110-Q500 |
| 30    | DIPSTICK SUBASSEMBLY, OIL    | 1   | 45-0272 | 15010-Z080110-Q500 |
| 31    | PIN                          | 2   | 45-0329 | 90502-0912-00      |
| 32    | BOLT                         | 7   | 45-0389 | 90001-0835-01      |
| 33    | BEARING                      | 1   | 45-0384 | 90547-0206-KS      |
| 34    | GEAR ASSY, GOVERNOR          | 1   | 45-0365 | 16400-Z080110-0000 |
| 35    | SEAL, OIL                    | 1   | 45-0385 | 90682-Z080110-0000 |



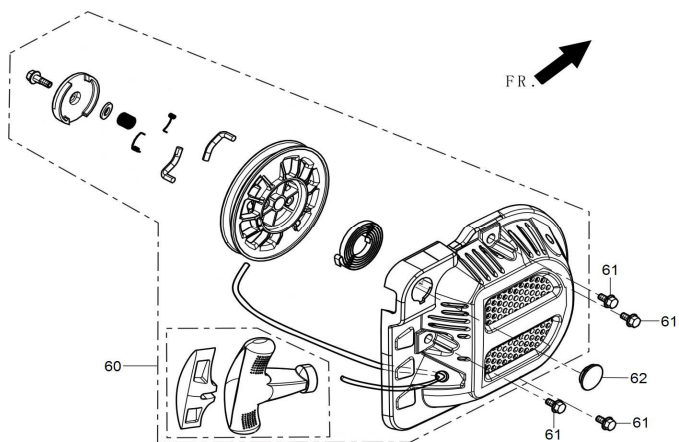
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|-------|-----------------|-----|---------|--------------------|
| 36    | CRANKSHAFT ASSY | 1   | 45-0354 | 13300-Z580210-KS00 |



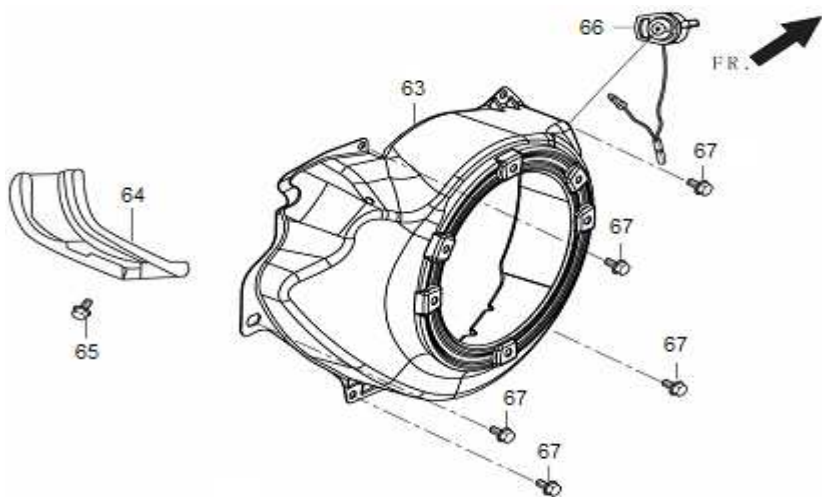
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| 37    | RING SET, OIL    | 1   | 45-0353 | 13210-Z580110-0000 |
| 38    | CLIP, PISTON PIN | 2   | 45-0350 | 13122-Z010110-0000 |
| 39    | PISTON           | 1   | 45-0348 | 13111-Z580110-0000 |
| 40    | PIN, PISTON      | 1   | 45-0349 | 13121-Z580110-0000 |
| 41    | ROD, CONNECTING  | 1   | 45-0347 | 13010-Z580110-0000 |
| 42    | RING, THE FIRST  | 1   | 45-0351 | 13201-Z580110-0000 |
| 43    | RING, THE SECOND | 1   | 45-0352 | 13202-Z580110-0000 |



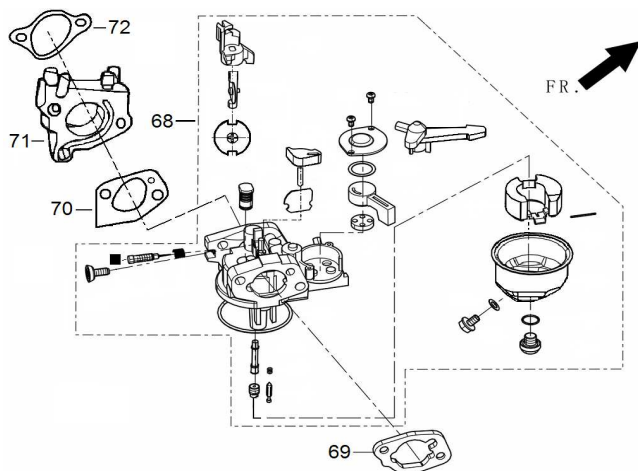
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|-------|-----------------------------------|-----|---------|--------------------|
| 44    | CAMSHAFT ASSY                     | 1   | 45-0357 | 14200-Z580110-0000 |
| 45    | VALVE, EXHAUST                    | 1   | 45-0344 | 12121-Z080110-0000 |
| 46    | VALVE, INTAKE                     | 1   | 45-0343 | 12111-Z080110-0000 |
| 47    | SEAT, VALVE SPRING                | 1   | 45-0248 | 12112-Z080110-0000 |
| 48    | RETAINER, EXHAUST VALVE           | 1   | 45-0246 | 12107-Z080110-0000 |
| 49    | ROTATOR, VALVE                    | 1   | 45-0244 | 12104-Z080110-0000 |
| 50    | GUIDE, SEAL                       | 1   | 45-0242 | 12101-Z080110-0000 |
| 51    | TAPPET, VALVE                     | 2   | 45-0265 | 14081-Z580110-0000 |
| 52    | LIFTER SUBASSEMBLY, VALVE         | 2   | 45-0356 | 14070-Z580110-0000 |
| 53    | PLACE SUBASSEMBLY, LIFTER STOPPER | 1   | 45-0266 | 14090-Z080110-0000 |
| 54    | BOLT, VALVE ADJUSTING             | 2   | 45-0270 | 14313-Z010110-0000 |
| 55    | ROCKER, VALVE                     | 2   | 45-0268 | 14311-Z080110-0000 |
| 56    | NUT, VALVE ADJUSTING              | 2   | 45-0271 | 14314-Z010110-0000 |
| 57    | NUT, VALVE LOCK                   | 2   | 45-0269 | 14312-Z010110-0000 |
| 58    | SPRING, VALVE                     | 2   | 45-0243 | 12103-Z080110-0000 |
| 59    | RETAINER, VALVE SPRING            | 1   | 45-0245 | 12105-Z080110-0000 |



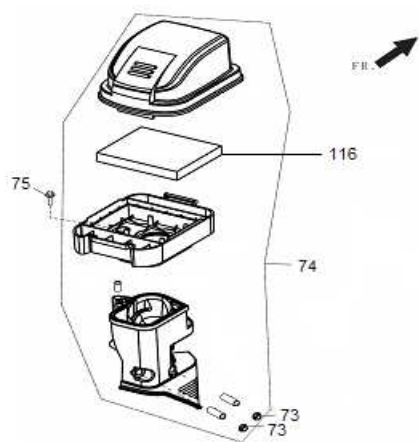
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| 60    | STARTER ASSY, RECOIL         | 1   | 45-0379 | 28200-Z080220-Q200 |
| 61    | BOLT                         | 4   | 45-0315 | 90001-0612-01      |
| 62    | CAP, RECOIL STARTER REEL END | 1   | 45-0307 | 28102-Z010110-0000 |



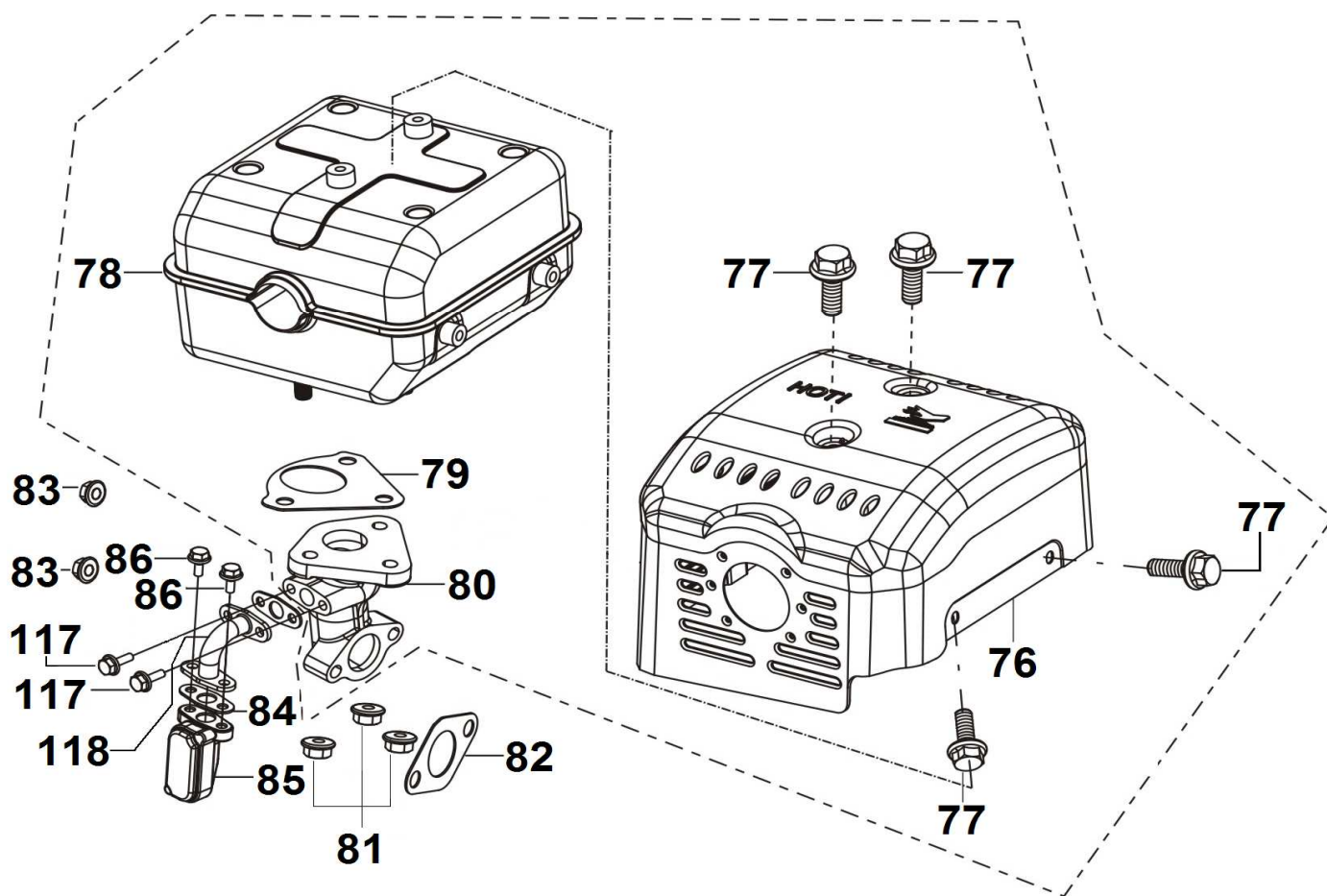
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| 63    | SHROUD                          | 1   | 45-0378 | 28110-Z080410-H600 |
| 64    | SHROUD, CYLINDER BODY           | 1   | 45-0375 | 19304-Z080110-0000 |
| 65    | BOLT                            | 1   | 45-0315 | 90001-0612-01      |
| 66    | SWITCH SUBASSEMBLY, STOP ENGINE | 1   | 45-0312 | 35540-Z060120-QG00 |
| 67    | BOLT                            | 5   | 45-0315 | 90001-0612-01      |



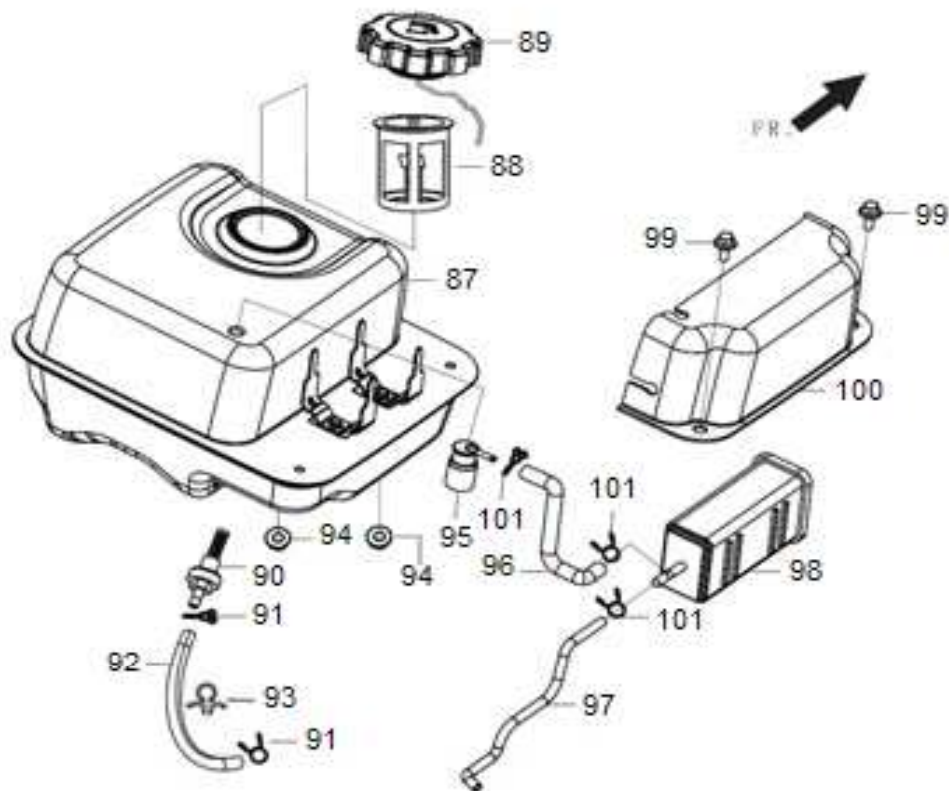
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|-------|-----------------------------|-----|---------|--------------------|
| 68    | CARBURETOR ASSY             | 1   | 45-0364 | 16100-Z580110-0000 |
| 69    | GASKET, AIR CLEANER         | 1   | 45-0295 | 17001-Z080210-0000 |
| 70    | GASKET, CARBURETOR          | 1   | 45-0358 | 16001-Z080110-0000 |
| 71    | PLATE, CARBURETOR INSULATOR | 1   | 45-0359 | 16003-Z080110-0000 |
| 72    | GASKET, INLET               | 1   | 45-0368 | 17002-Z080110-0000 |



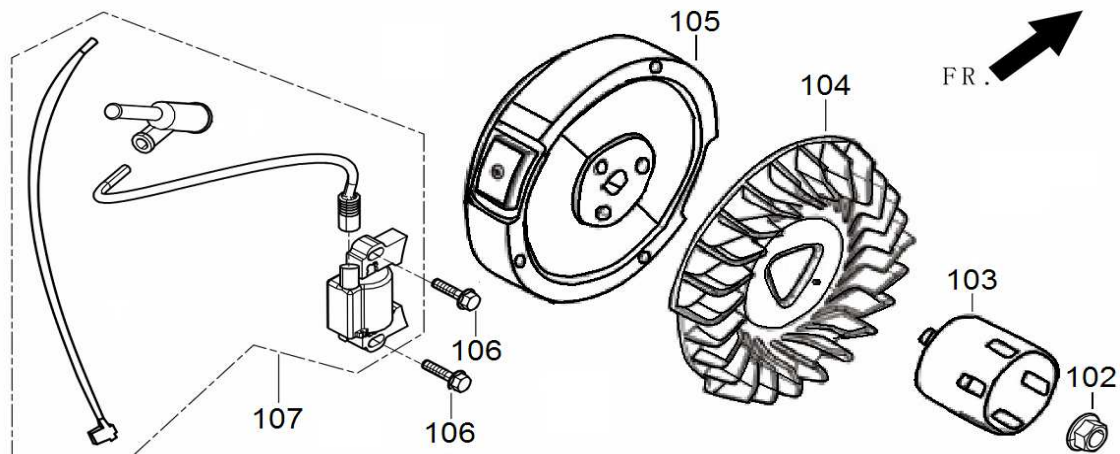
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| 73    | NUT                  | 2   | 45-0324 | 90305-0600-31      |
| 74    | CLEANER, AIR         | 1   | 45-0370 | 17100-Z580210-0000 |
| 75    | BOLT                 | 1   | 45-0317 | 90001-0620-01      |
| 116   | ELEMENT, AIR CLEANER | 1   | 45-0387 | 17151-Z580110-0000 |



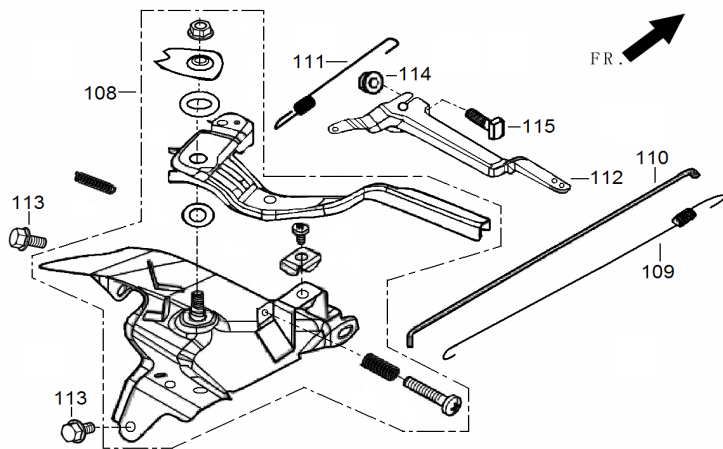
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| 76    | COVER, MUFFLER OUTER                | 1   | 45-0372 | 18130-Z580110-0000 |
| 77    | BOLT                                | 4   | 45-0381 | 90001-0608-01      |
| 78    | MUFFLER BODY                        | 1   | 45-0374 | 18160-Z580210-0000 |
| 79    | GASKET, MUFFLER                     | 1   | 45-0371 | 18101-Z080110-0000 |
| 80    | PIPE, EXHAUST                       | 1   | 45-0373 | 18150-Z580210-0000 |
| 81    | NUT                                 | 3   | 45-0325 | 90305-Z010110-0000 |
| 82    | GASKET, EXHAUST OUTLET              | 1   | 45-0301 | 18001-Z580110-0000 |
| 83    | NUT                                 | 2   | 45-0325 | 90305-Z010110-0000 |
| 84    | GASKET, THE SECOND AIR INTAKE VALVE | 1   | 45-0300 | 17321-Z080110-0000 |
| 85    | VALVE, THE SECOND AIR INTAKE        | 1   | 45-0299 | 18050-Z080110-0000 |
| 86    | BOLT                                | 2   | 45-0317 | 90001-0620-01      |
| 117   | BOLT                                | 2   | 45-0315 | 90001-0612-01      |
| 118   | TUBE, THE SECOND AIR INTAKE         | 1   | 45-0367 | 17350-Z080120-0000 |



| Ref # | Description                             | Qty | MiTM-PN | RATO-PN            |
|-------|-----------------------------------------|-----|---------|--------------------|
| 87    | TANK, FUEL                              | 1   | 45-0287 | 16620-Z310210-H600 |
| 88    | STRAINER, FUEL                          | 1   | 45-0288 | 16652-Z010510-0000 |
| 89    | COVER, FUEL TANK                        | 1   | 45-0290 | 16730-Z010410-0000 |
| 90    | OUTLET SUBASSEMBLY, FUEL TANK OIL       | 1   | 45-0289 | 16680-Z010110-0000 |
| 91    | COLLAR                                  | 2   | 45-0337 | 90685-Z020110-0000 |
| 92    | TUBE, FUEL                              | 1   | 45-0386 | 90686-Z080510-0000 |
| 93    | CLIP                                    | 1   | 45-0336 | 90684-Z080110-0000 |
| 94    | NUT                                     | 2   | 45-0325 | 90305-Z010110-0000 |
| 95    | 3/8" ROLLOVER VALVE (SEE ALSO ITEM 116) | 1   | 45-0446 | 15150-Z010320-0000 |
| 96    | HOSE, FUEL STEAM RUBBER                 | 1   | 45-0293 | 16804-Z310110-0000 |
| 97    | HOSE, AIR CLEANER RUBBER                | 1   | 45-0294 | 16805-Z310110-0000 |
| 98    | COLLECTOR, FUEL STEAM                   | 1   | 45-0291 | 16800-Z310110-0000 |
| 99    | BOLT                                    | 2   | 45-0315 | 90001-0612-01      |
| 100   | COVER, FUEL STEAM COLLECTOR             | 1   | 45-0292 | 16803-Z310110-0000 |
| 101   | COLLAR                                  | 3   | 45-0338 | 90685-Z030220-0000 |
| 116   | 3/8" ROV RUBBER GROMMET                 | 1   | 45-0448 | 15159-Z010110-0000 |



| Ref # | Description          | Qty | MiTM-PN | RATO-PN            |
|-------|----------------------|-----|---------|--------------------|
| 102   | NUT, FLYWHEEL        | 1   | 45-0262 | 13501-Z080110-0000 |
| 103   | PULLEY, STARTER      | 1   | 45-0377 | 28002-Z080310-0000 |
| 104   | IMPELLER             | 1   | 45-0376 | 19352-Z080110-0000 |
| 105   | FLYWHEEL SUBASSEMBLY | 1   | 45-0355 | 13510-Z580110-0000 |
| 106   | BOLT                 | 2   | 45-0318 | 90001-0628-01      |
| 107   | COIL, IGNITION       | 1   | 45-0380 | 30400-Z080110-0000 |



| Ref # | Description                      | Qty | MiTM-PN | RATO-PN            |
|-------|----------------------------------|-----|---------|--------------------|
| 108   | CONTROL ASSY, THROTTLE           | 1   | 45-0366 | 16520-Z080310-0000 |
| 109   | SPRING, THROTTLE VALVE RETURNING | 1   | 45-0277 | 16012-Z080110-0000 |
| 110   | ROD, GOVERNOR                    | 1   | 45-0361 | 16062-Z080110-0000 |
| 111   | SPRING, GOVERNOR                 | 1   | 45-0362 | 16063-Z080120-0000 |
| 112   | SUPPORT SUBASSEMBLY, GOVERNOR    | 1   | 45-0363 | 16070-Z080110-0000 |
| 113   | BOLT                             | 2   | 45-0315 | 90001-0612-01      |
| 114   | NUT                              | 1   | 45-0324 | 90305-0600-31      |
| 115   | BOLT, GOVERNOR SUPPORT           | 1   | 45-0282 | 16072-Z010110-0000 |