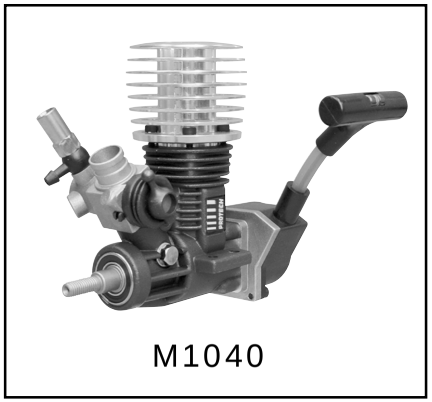
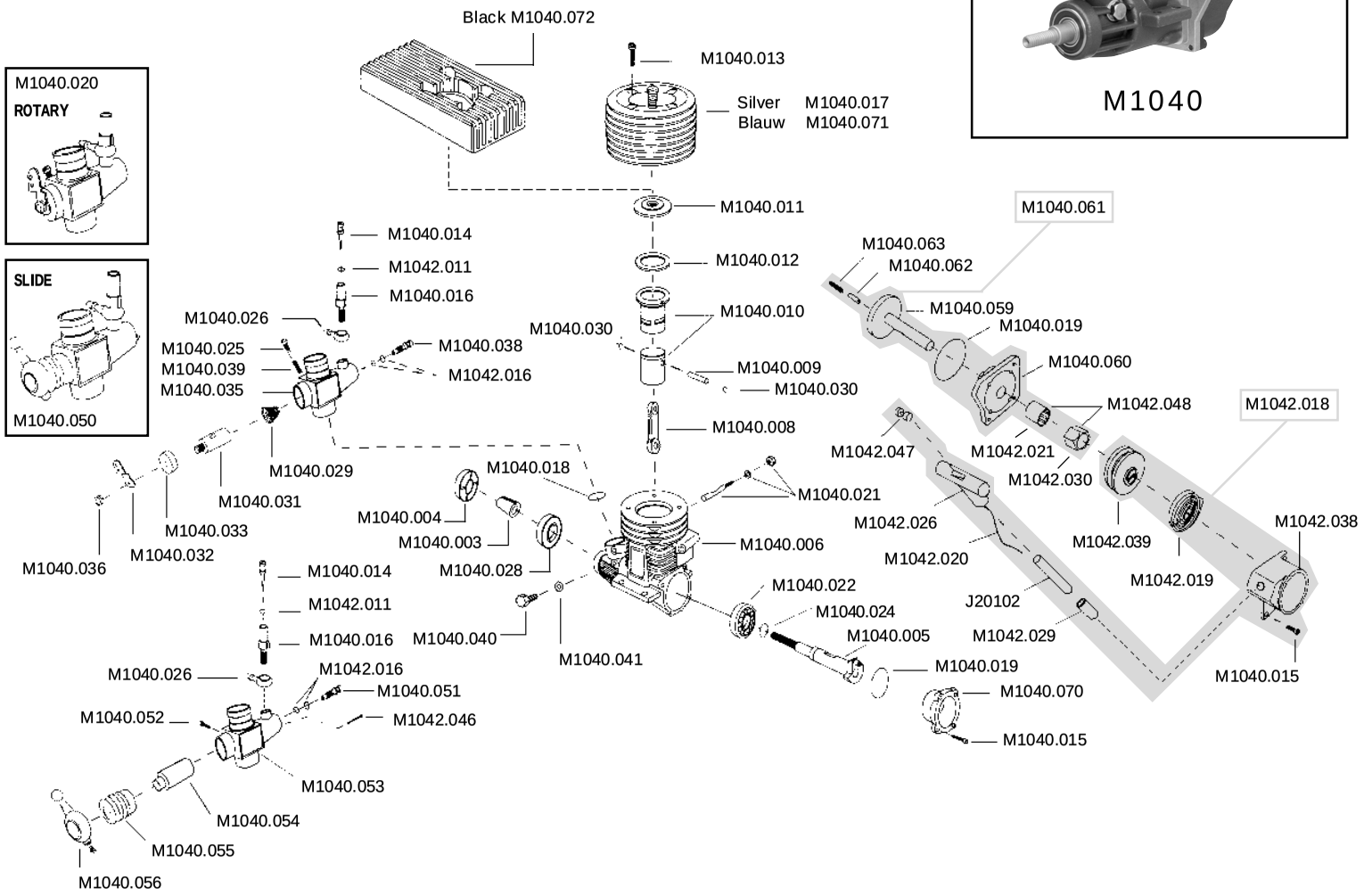
# PROTECH® SX-12

## Engine Instructions




| ITEM N° | DESCRIPTION |
|---|---|
| M1040.003 | DRIVE COPPER CONE |
| M1040.004 | DRIVE GEAR |
| M1040.005 | CRANKSHAFT |
| M1040.006 | CRANKCASE BLACK COLOUR |
| M1040.008 | CONNECTING ROD |
| M1040.009 | PISTON GUDGEON PIN |
| M1040.010 | CYLINDER SLEEVE/PISTON |
| M1040.011 | BURN ROOM (12) |
| M1040.012 | CYLINDER HEAD WASHER |
| M1040.013 | CYLINDER HEAD BOLT (M2.6X12) 4PCS |
| M1040.014 | MAIN NEEDLE VALVE |
| M1040.015 | REAR COVER BOLT (M2.6X6) 4PCS |
| M1040.016 | MAIN NEEDLE VALVE HUB |
| M1040.017 | CYLINDER HEAD (SILVER) |
| M1040.018 | CARBURATOR “O” RING |
| M1040.019 | REAR COVER “O” RING |
| M1040.020 | CARBURETOR COMPLET. (ROTARY TYPE) |
| M1040.021 | CARBURETOR SETTING PIN |
| M1040.022 | BALL BEARING REAR |
| M1040.024 | CRANKSHAFT O-RING 1*5MM |
| M1040.025 | THROTTLE STOP ADJUST. SCREW |
| M1040.026 | FUEL NOZZLE |
| M1040.028 | BALL BEARING FRONT (RUBBER) |
| M1040.029 | NEEDLE SPRING |
| M1040.030 | “G” PIN SNAP RING 2 PCS |
| M1040.031 | THROTTLE NEEDLE |
| M1040.032 | THROTTLE ROD |
| M1040.033 | THROTTLE COVER |
| M1040.035 | CARBURETOR MAIN BODY (ROTARY TYPE) |
| M1040.036 | THROTTLE ROD NUT |
| M1040.038 | SUPPLY NEEDLE VALVE (ROTARY TYPE) |
| M1040.039 | ADJUSTED SCREW SPRING |
| M1040.040 | SCREW |
| M1040.041 | OIL SUPPLY NOZZLE WASHER |
| M1040.050 | CARBURETOR COMPLETELY (SLIDE TYPE) |
| M1040.051 | SUPPLY NEDLE VALVE (SLIDE TYPE) |
| M1040.052 | CARBURETOR SETTING PIN |
| M1040.053 | CARBURETOR MAIN BODY (SLIDE TYPE) |
| M1040.054 | THROTTLE (FOR SLIDE TYPE) |
| M1040.055 | THROTTLE COVER (FOR SLIDE CARBURETOR) |
| M1040.056 | THROTTLE SCREW CAP |
| M1040.059 | STARTING AXLE |
| M1040.060 | CONNECTIVE SEAT |
| M1040.061 | PULL START CRANKCASE COVER SET |
| M1040.062 | STARTING PIN |
| M1040.063 | PRESSURE SPRING |
| M1040.070 | REAR BACK COVER |
| M1040.071 | CYLINDER HEAD (BLUE) |
| M1040.072 | SQUARE CYLINDER HEAD BLACK |
| | |
| M1042.011 | MAIN NEEDLE VALVE “O” RING |
| M1042.016 | SUPPLY NEEDLE VALVE “O” RING |
| M1042.018 | RECOIL STARTING UNIT |
| M1042.019 | EDDY SPRING |
| M1042.020 | STARTING STRING |
| M1042.021 | ONE WAY BALL BEARING |
| M1042.026 | HANDLE |
| M1042.029 | BUFFER HEAD WASHER SEAT |
| M1042.030 | ONE WAY BEARING SEAT |
| M1042.038 | REAR COVER |
| M1042.039 | THREAD SEAT |
| M1042.046 | THROTTLE STOP ADJUSTMENT SCREW |
| M1042.047 | STRING SEAT |
| M1042.048 | ONE WAY BALL BEARING + SEAT |
| J20102 | BUFFER HEAD WASHER |

VERSION 03/04/2002

# *THE PROTECH SIDE EXHAUST CAR ENGINE INSTRUCTIONS RECOMMENDED BREAK-IN PROCEDURE*

- Please note that the carburetor low-end adjustment needle valve situated on the the side of the carburetor has already been factory preset. Please do not attempt to adjust it at this stage .
- To initially start the engine, the main needle valve must be opened to rich setting. To do this, turn the needle in a clockwise direction until it is fully closed and then open it up five complete turns in an anti clockwise direction.
- We recommend that you run the engine at this setting for at least the first six tanks full of fuel
- At this early stage, you may find that because of the rich setting, the engine may initially develop a hydraulic lock because of the excess fuel and be impossible to turn over with the pull starter.
- Whenever this happens, it is necessary to take the glow plug out and turn the car upside down and vigorously spin the engine over with approximately pulls on 10 the starter.
- You will notice a spray of unburnt fuel coming out of the plug hole, which will clear the engine. Whilst the glow plug is out, it is a good idea to connect it to your starting battery and check that the element is showing a healthy red glow. If it is not, your battery or starting system has lost power or the glow plug burnt out.
- Having corrected either fault, replace the glow plug and go through the initial starting period again with the same rich needle setting.
- After six tanks full of fuel, we recommend that you gradually turn the main needle valve inwards in a clockwise direction by quarter of a turn to gradually increase the engine speed, but still with a protective rich smoky exhaust.
- Do not at any time run the motor flat out and certainly not more than half throttle with the car wheels off the ground. You must not run the engine in with the car sitting on “blocks” with wheels off the ground.
- If while the engine is running, there is no smoky exhaust evident, then the setting is too lean and because of the heat and lack of oil present, the motor can be potentially damaged.
- When you feel that you have mastered the starting procedure and the engine is run in, you can adjust the low-end needle to improve idling and quick engine response to full throttle.
- The low-end needle should be turned cautiously only by 1/8 turn at a time. A clockwise movement will produce a leaner mixture which may be necessary if the motor hesitates and blows exhaust smoke when move to full throttle. Conversely, if when switched to full throttle from idle, the engine cuts abruptly, then it is too lean and the low end should be rotated 1/8 turn in an anti clockwise direction.

***AIR FILTERS***

Always use a high quality air filter and check and replace it regularly. Dust and dirt will quickly reduce the performance of your engine and shorten its life. Foam air filters are inexpensive; however if you are using a paper type, please note that the paper can get full of dust restricting the air flow and causing the engine to run rich.

***FUEL***

Always use a high quality model aircraft of car fuel, which contains at least 20% oil. We recommend Daytona fuel, which gives maximum protection and should be the part of any fuel you use. Nitromethane helps to increase idling and power and whilst PROTECH engines will run on high percentages of nitro, we recommend that you don’t run on any more than a total of 15% nitro. For general sport operation, a mix of 20% castor, 5% nitromethane and 75% methanol will give a good performance.

***WHY THE ENGINE WON’T START***

- Fuel flow into the carburetor is blocked. Unscrew the needle valve and blow air into the carburetor.
- The tank may have a blockage ... check it carefully.
- The fuel line from the tank to themotor may be split or have a small pin hole causing air bubbles ... replace it.
- The glow plug may not be operating ... check your battery or replace the plug.
- The fuel filter is clogged up ... replace it.
- The fuel line has slipped off the carburetor or tank.
- You are using the wrong type of fuel.
- The muffler is loose.
- The glow plug connector or lead from the starting battery has a fault ... check it carefully.
- The engine has no compression ... check the head screws and perhaps the cylinder & piston has been scored with dirt.

***EC-DECLARATION OF CONFORMITY FOR MACHINERY*** (Directive 89/392/EEC, Annex II, sub. A.)
PROTECH® for the following products
**engine for R/C models**
type: 12SX
- are in conformity with the provisions of the Machinery (Directive 89/392/EWG), as amended, and with national implementing legislation and furthermore declares that:
- following (parts/clauses of) harmonized standards have been applied: **EN-292-1 / EN-292-2**

Herentals, 13.08.2001 Stefan Engelen

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