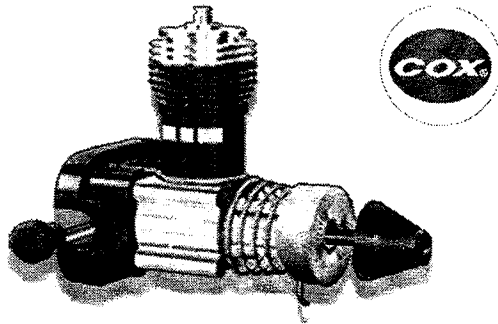


# COX .049 ENGINE

0.8cc High Performance Model Engine



## Engine Data

Displacement: 0.8cc  
Speed: 13,500 rpm  
Weight: 50 gr.  
Manufacturer: Cox Hobbies  
Modified by: Tissan Haifa  
Propeller: 6"x3"

**Includes: Spring Starter, Spinner,  
Plug Wrenches & Mounting Screws**

Specially modified Cox .049 engine, for Tissan Haifa Banana RC Trainer  
Features improve exhaust porting for better performance

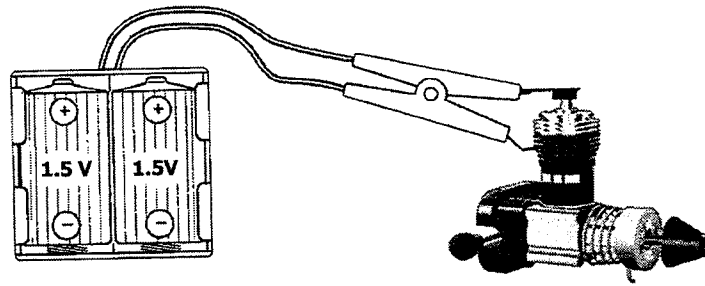
### Preparation for Running

- 1- Required accessories (not supplied):
  - a. 6"x3" Propeller.
  - b. Battery box for two "D" alkaline batteries in parallel connection and glow head clip.
  - c. Model engine fuel containing: 10 - 15% Nitromethane and 20% castor oil.
  - d. Fueling pump or bottle.
- 2- Mount engine on the model, using the supplied 3 screws.  
Tighten screws securely.
- 3- Propeller mounting:
  - a. Rotate engine shaft slightly clockwise, till compression start.
  - b. Put the plastic snap starter cam on the shaft's hex.  
Make sure that the cam rests snugly on shaft hex.
  - c. Mount the propeller on the shaft (flat side faces engine), using the spinner and propeller screw.
  - d. Position prop horizontally (piston at compression start) and tighten screw securely.

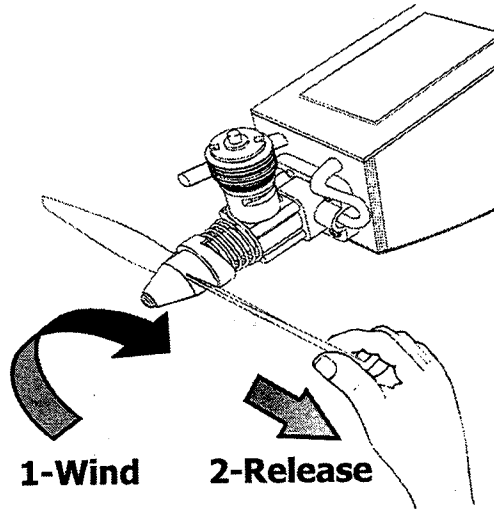
### Starting the Engine

- 1- Close needle valve (turn clockwise). Do not force or overtighten valve.  
After closing, open valve (turn counterclockwise) 3 turns.
  - 2- Filling fuel tank
    - a. Remove feed tube from engine.
    - b. Fill tank through feed tube, until fuel flows from tank's overflow tube.
    - c. Replace feed tube and wipe any excess fuel.
  - 3- Prime Engine
    - a. Close exhaust ports by rotating propeller until piston blocks ports.
    - b. Squirt several drops of fuel into exhaust ports.
    - c. Flip propeller over 3 - 4 times to work fuel into engine.
  - 4- Connect glow clip to glow head (see figure 1).
  - 5- Starting Engine:
    - a. Wind propeller backwards (clockwise) until spring hook catches on notch in snap starter cam.
    - b. After cam is engaged, wind propeller backwards (see figure 2) one full turn.  
(to prevent damage to starter spring, never wind propeller more than one turn)
    - c. Release propeller (see figure 2). Engine should start.
- NOTE: if, after a few attempts, the engine does not start, open needle valve another 1/2 turn, reprime, and repeat starting procedure. If engine still won't start, refer to trouble-shooting chart.

**Figure 1**



**Figure 2**



**Running-In (Breaking-In the engine)**

- 6- Slowly tighten needle valve (clockwise) until engine is running at top speed.
  - At top speed, engine should produce a shrill whine.
  - After engine has reached top speed, loosen needle valve approximately 1/2 turn, or until engine runs with a "crackling" or "bubbling" sound.
  - Remove glow head clip and let engine run until fuel tank runs dry.
  - Restart and repeat procedure until engine has burned a minimum of 3 tanks of fuel.
- 7- Restart engine. Tighten needle valve until engine is running at top speed.
  - Remove glow head clip.
  - If engine holds top RPM, it is broken in.
  - Close needle valve (clockwise) and write down the exact number of turns: N.

**Normal Operation**

- 8- Open needle valve N+1/2 turns. Start engine, following steps 1 to 6.
- 9- Tip model's nose 30 degrees upwards.
  - If engine speed decreases, open needle slowly till engine speed holds.

**General Hints**

Keep your engine clean. Remove and wipe any dust and dirt.  
Keep fuel tank and filling bottle clean.

## TROUBLE SHOOTING CHART

TROUBLE	PROBABLE CAUSE	REMEDY
Will not start - acts like battery wasn't attached to glow head	Poor battery connection	Check to be sure clip is firmly and correctly attached to glow head.
	Weak or dead battery	A good battery should test 1.5 volts or connect battery to a glow head that is known to be good. If glow head filament does not glow bright orange - replace battery.
	Burned out glow head	Remove glow head. Attach glow head to a good 1.5 volt battery. If filament does not glow bright orange, replace glow head.
	Engine wasn't primed	Squirt a few drops of fuel through exhaust port and onto inside of piston then continue with starting procedure.
Engine pops and/or "kicks" - won't start	Loose propeller screw	Tighten propeller screw.
	Dirt under reed	Carefully unsnap reed retainer and remove reed. Wash reed and retainer in solvent or fuel. Replace reed. Be sure reed turns freely under reed retainer.
Engine stiff, propeller turns hard or "kicks"	Engine flooded, too much fuel in cylinder	Close needle valve completely. Leave battery attached and flip propeller (without priming) until short starting "burst" occurs. Then open needle valve 3 turns, and start again.
Engine starts then slows down and stops	Excess fuel at port	Close needle valve. Flip propeller until engine starts and burn out excess fuel. Open needle valve and restart.
Short running "burst" (brief start, then stop)	Engine not getting enough fuel (mixture too lean or tank empty)	Check tank fuel level. Refill if necessary; or, open needle valve another 1/2 turn, prime and start again. It may be necessary to repeat this procedure 3 or 4 times, opening the needle valve 1/2 turn each time.
Rough sounding engine, sluggish, weak power	Loose glow head	Tighten glow head with wrench.

- Never fuel or prime with battery connected to engine
- Wipe excess fuel from model with cloth after each fueling or priming
- Do not operate engine indoors
- Do not smoke when fueling or operating model

## Engine Care

### 1- Glow head replacement:

Never attempt to remove a hot glow head. A hot glow head will stick, and forced removal may damage cylinder. To cool glow head, pour fuel over head.

Use both wrenches to remove head.

Connect glow head connector to glow head. A good glow head, glows bright orange.

### 2- Cleaning:

Engine may be taken apart for cleaning or replacement of parts.

Refer to diagram for location of engine parts.

Disassemble and clean the engine whenever it is dirty. Wash and oil parts before reassembly.

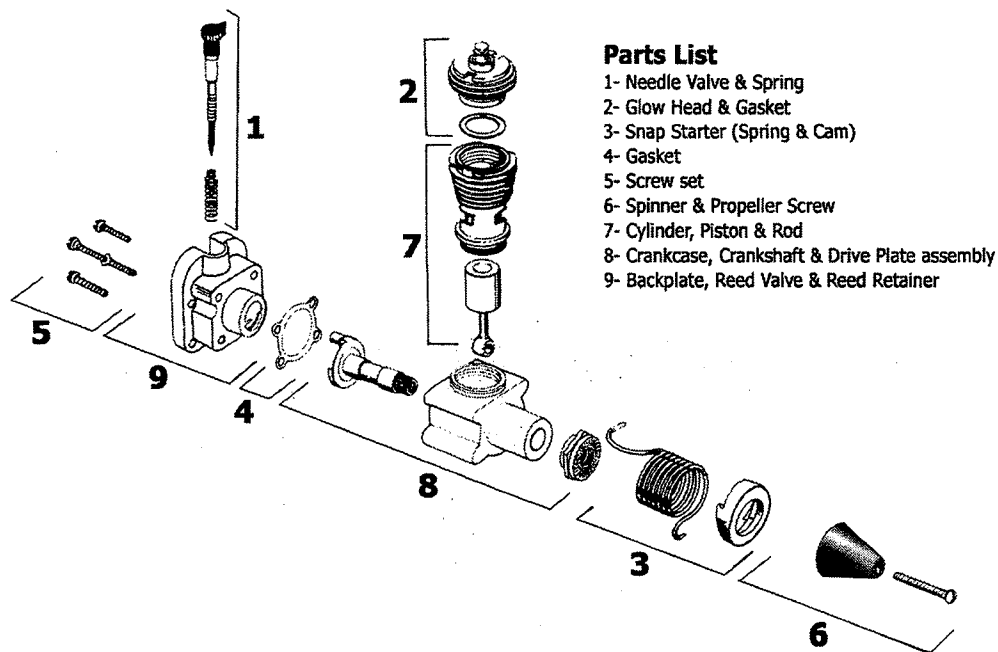
Always disassemble and clean engine after crash or whenever you suspect that dirt may have gotten into parts.

Dirt in engine will drastically shorten engine life.

## Storage

Wipe with a soft cloth.

Oil engine with light oil, then wrap in plastic bag or clean cloth to protect it from dust, dirt and moisture.



### Parts List

- 1- Needle Valve & Spring
- 2- Glow Head & Gasket
- 3- Snap Starter (Spring & Cam)
- 4- Gasket
- 5- Screw set
- 6- Spinner & Propeller Screw
- 7- Cylinder, Piston & Rod
- 8- Crankcase, Crankshaft & Drive Plate assembly
- 9- Backplate, Reed Valve & Reed Retainer



## TISSAN HAIFA

Model Hobby Manufacturers & Distributors

54, Histadrut Blvd. Haifa 32960, Israel  
Tel. +972 4864 5076 Fax. +972 4866 0183

[www.tissanhaifa.com](http://www.tissanhaifa.com)

**WARNING!**  
**THE USE OF ELECTRIC**  
**STARTER CAN DAMAGE**  
**YOUR ENGINE**