

A Restored 1940 Indian Four - Submitted by Enry Altoe - Italy

June 2018

In June of 2018 I was commissioned by a customer to carry out a full restoration of a 1940 Indian four. The Bike was complete, but in need of a full refurbishment.

The previous owner had taken care of her since 1981 but, nowadays due to his advanced age and weakness, was encountering difficulties to pilot this beauty.

The main and general customization the bike had received was a usual supply of chrome, moreover prolonged years of low usage had brought an unpleasant covering of rust.

So the first step of the restoration was a complete dismantling of the bike, and a full check of alignment of the frame and fork. The frame was okay, but the fork (it can happen on leaf spring models) was slightly twisted.

So, I realigned the fork, bending it with blowtorch and checking alignment with laser. Then I substituted all shafts and bushings. These bikes are quite heavy, but a fork in perfect condition makes the bike seem much lighter .

The second step was the construction of a turnable engine support table. This support structure allows the engine, even fully assembled with cylinders, to be inverted upside down, making any work, on the bottom or top, easier.

The third step of the job was a full check of babbitt bearings alignment. This detail is important, and allows the engine to run smoothly at very low rpm. Luckily the babbitts, due to low usage, were still in perfect condition. So, I simply changed all valve springs, piston rings, clutch springs, gaskets, felts, corks, seals, and after complete dismantling of the engine I sandblasted it with CO2, much more gentle on surfaces than thinner glass sand. This procedure allowed the engine to return to its original condition, instead of sand that is too abrasive.

After that all cylinders were sandblasted and repainted. While all external parts were cad plated. Several bolts and screws, damaged over the years, were substituted with new ones, identical to originals (thanks to J. Greer engineering)

An intensive care was taken in the restoration of the generator-distributor unit, now fully rebuilt. It's now extremely reliable, and a minor deviation from originality, being upgraded to a 1948 regulator, much better than 1940 cut out.

Other small deviations from originality are the presence of a 1941 front fender (it allows much easier tyre changes) and the installation of an Indian service front brake (aesthetically identical to the original, but much stronger, thanks to double cams and increased thickness).

Another source of dedication in my work was a careful check of the pump, where all internal parts were checked, and what necessary was substituted.

I also proceeded to renew the carburetor, reworking it with the lathe and installing an over-sized venturi. Then I installed new needles, bushings, shafts, seats, and now it works like new.

I also checked all parts of the speedo, and the unusual gear made in soft material (prone to wear) was changed with a new one.

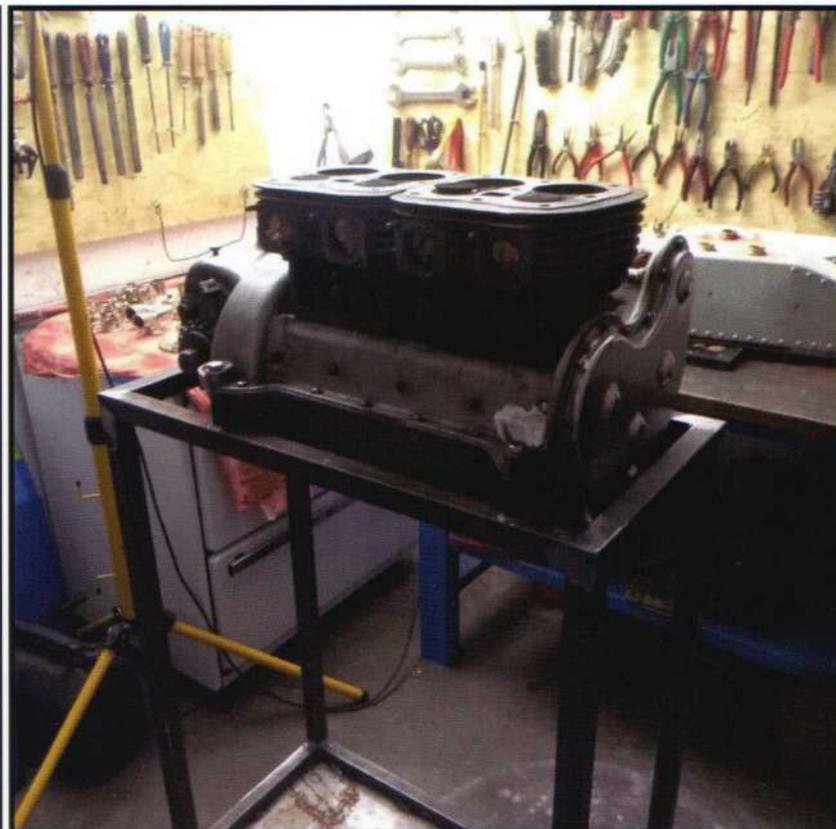
All extra chromed parts were sandblasted, then chrome was removed with a galvanic process, and finally powder coated in black. Also the frame, rims and fork were powder coated, while I preferred to use acrylic laquer for the hubs and brake drums, in order to protect all threads and clearances.

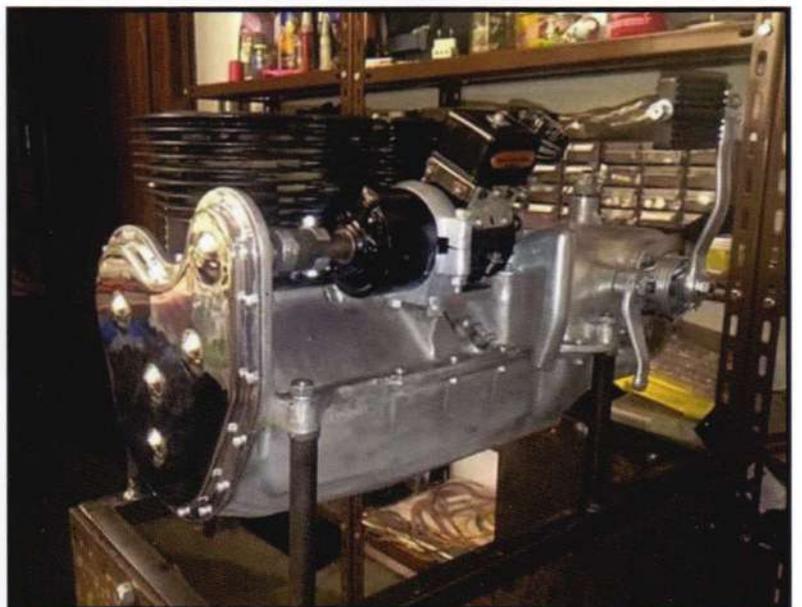
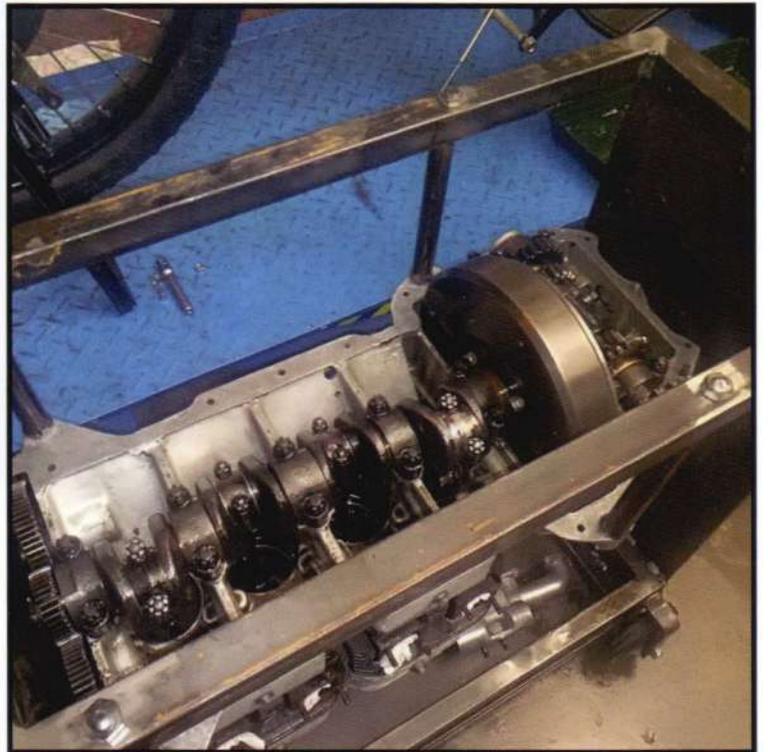
The exhaust, a perfect reproduction of an A.G. Sprague unit, was triple layered with copper, then nicked and finally chromed. This process avoids the yellow discoloring close to the cylinders, even after many hard ridden miles.

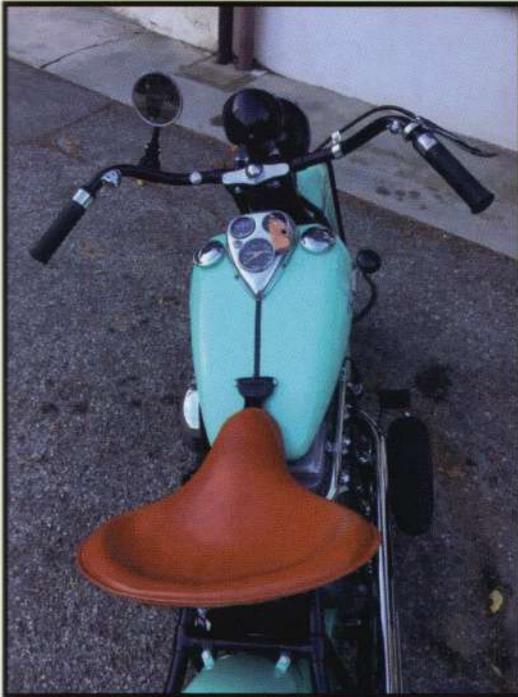
This marvelous bike now rides, sorry... flies in a really enjoyable way! It idles like a kitten and roars like a tiger!

I hope that you fall in love with her as I did.

Yours sincerely. Gianvittorio Celot, Indian Agency, Italy.



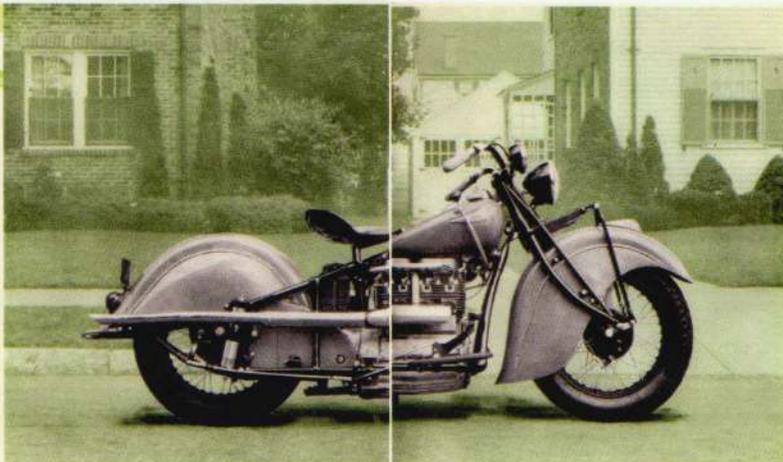




Indian 4 Model 440

SPECIFICATIONS

MOTOR	Four cylinder air cooled, high compression. Bore 3 1/8", stroke 3 1/4", 77.01 cubic inch displacement. Overhead intake, side exhaust. Cylinders cast in pairs. Removable aluminum heads. Cam ground pistons. All tappets and rocker arms fully enclosed and operating in oil bath. Heated intake manifold. New chrome air cleaner.
CLUTCH	Multiple disc, operating in oil.
TRANSMISSION	Three speed.
DRIVE	Primary drive, helical gear. Final drive, 5/8" pitch, 3/4" wide roller chain.
LUBRICATION	Pressure feed oil pump with valve oil gauge. All oil in motor base. Capacity 2 quarts. Hydraulic chassis lubrication fittings.
ELECTRIC AND IGNITION SYSTEM	Auto-Lite generator, new Indian 6-volt, 99 ampere hour battery, outside fill type, with "Fill-Rite" Valve. Distributor ignition standard. Solidcore magnetron ignition available as extra cost. Twin Banner headlight with beam control and separate parking bulb. New fuse block. Stop light.



SPECIFICATIONS

INSTRUMENTS	Carbon 130 mile, lighted speedometer, odometer and switch on instrument panel. Lumbar type lock-in switch. Maximum hand or electric stop band speedometer optional at extra cost.
FRAME	New Indian spring frame. Double tube cradle type. Both front and rear wheel supports. Chrome steel and jilly steel Indian triple stem. Soft action, pick-up rear, leaf spring.
FORK	Full slotted front and rear fenders. Chrome rear bumper, chrome tire and chrome running light on front fender.
TANK	Matte and reserve tanks. Capacity 4.5 gallons. Chrome tank insignia.
FINISH	DuPont Duco enamel. Six color optional. Special colors at extra cost.
MUFFLER	All chrome silent muffler. Extended muffler tail pipe.
SADDLE	New spring seat post. Large "Aines" rubber cushioned saddle. Leather top.
FOOTBOARDS	New automotive type bonded rubber and steel footboards.
BRAKES	Internal expanding front and rear wheel. Fanned brake lining.
WHEELS & TIRES	Interchangeable wire wheels, 18" deep center rim, 18" x 4.00" Goodyear or Firestone tires optional.
WHEEL BASE	60"
WEIGHT	568 lbs.