Ural (Урал) - Днепр (Днепр)
Mufflers for Russian Motorcycles
with Sidecars

Part VIII-3: Installation of

Black Modtop Mufflers

on 2003 Ural Patrol


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Modtop Performance Black Mufflers for Urals

- Modtop Performance LLC
  - Dan Malinowski
  - 34973 300th St., Henderson, MN 56044
  - http://www.modtopperformance.com/
- Specializing in Parts for Ural Motorcycles
- High-Quality, Retro Muffler Assemblies
- American-Made using Quality Steel and Muffler Bodies with High-Temperature, Durable, Hotrod Black, Powder-Coat
  - Can Withstand Temperatures Greater than 1,000°F
  - Coating Will Not Dull or Chalk Like Most Powder Coats
- 3” diameter Body, 15 gauge Wall, with 1 ¾” diameter Cores
- Inlet/Outlets are 1 ½ diameter, 14 gauge Pipes with Inlet Expanded to Fit Over Stock Pipes or the Extension Pipes
- Includes Custom-Made Large "P" Clamps, Small Clamps, Extension Pipes and Hardware
- If Not Satisfied with Fit, Finish or Sound of Mufflers, Return Them for Full Refund
- List Price: Muffler Kit with 1 pair of Small Clamps: $224.99
- If 2010 or Newer Model and Do Not Have the Small Hanger Clamps on Exhaust System; Order the Muffler Kit with 2 pairs of Small Clamps
  - Muffler Kit with 2 pairs of Small Clamps (for 2010 and newer models): $234.99
- Powder-Coating of Header Pipes and Crossover Pipes Also Available on an Exchange Basis
- Note: Modtop Performance Powder-Coat, Transition Pipes Do Not Contain Catalytic Converters

Modtop Performance is proud to offer black powder-coated replacement mufflers for Ural motorcycles, and they’re proud of them.
Transition / Catalytic Converter (CatCon) Pipes

- Transition Pipes Needed to Establish the Correct Angle from the Exhaust Manifold (Headers) before Entering the Muffler
  - Transition between Header (“J” Pipe or Exhaust Manifold) and Muffler (Silencer)
  - About 9” Long for Ural (Part #: IMZ-8.123-12036) for 2003 Patrol
- Ural Transition Pipes Also House a Catalytic Converter at One End: Transition/CatCon Pipe
- Modtop Performance Black, Powder-Coat, Transition Pipes Do Not Contain Catalytic Converters
- Options for Using the Modtop Black Transition Pipes during Muffler Replacement
  - I. Add Black Modtop Transition Pipe to Existing Chrome Ural Transition/CatCon Pipe
    - Places End of Tailpipe About 11” beyond Rear Axle
    - Retains Catalytic Converter (CatCon)
  - II. Replace Chrome, Ural Transition/CatCon Pipe with Black Modtop Transition (no CatCon) Pipe
    - Places End of Tailpipe Only 6” beyond Rear Axle
    - Eliminates Catalytic Converter: Increases Power by a Few HP, Eliminates Converter Fouling
    - Legality Problem
  - III. Retain Chrome Ural Transition/CatCon Pipe and Don’t Use Black Modtop Transition Pipe
    - Places End of Tailpipe Slightly Ahead of Rear Axle
    - Retains Catalytic Converter (CatCon)
  - IV. Eliminate Any Transition Pipe
    - Won’t Work: Body of Muffler Hits Drivers Foot-Peg
    - Also: Not Possible to Make the Transition without Any Transition Pipe

Much of the installation of replacement mufflers involves the transition pipe, as we present the pros and cons of retaining the chrome transition/catcon pipe.
Transition / Catalytic Converter (CatCon) Pipes (cont.)

• Is the Original Ural Transition/Cat Pipe Still Needed? Maybe / Maybe Not
  – Federal Law Prohibits Removal or Replacement of a Properly Functioning OEM (Original Equipment Manufacturer) Catalytic Converter
    • If the Vehicle Was Manufactured after 1986, It Must Retain the Catalytic Converter
• Is My Motorcycle Required to Pass a Tailpipe Emissions “Smog-Check”?
  – Depends on the State:
    • Some States Do Not Have Any Emissions Testing
    • In Some States, Smog-Checks Required in Populated Areas, But Not in Selected Rural Areas
    • With Laws and Regulations Changing at an Increasing Rate, It Is Very Difficult for the After-Market to Keep Ahead of Changes
    • Contact Local or State Agencies for Information Regarding Local Emissions Laws
    • Exceptions Usually Include Vehicles Designed for Off-Road Use Only
  – On the Other Side, Motorcycle Owners Run the Risk of Converters Clogging, Which Doesn’t Help Emissions Either
    • It’s No Wonder the Catalytic Converter Is Often Tossed Out in Favor of a “Test Pipe” (a straight-thru pipe, no CatCon), Except That It’s Illegal

Legality means that the catalytic converter must remain in the exhaust system, even if it means that the converter may clog or deform affecting the emissions in an even worse way.
Catalytic Converter (CatCon) Inspection
(John Grocke (a.k.a. JohnBG) at www.russianiron.com)

• JohnBG Pulled Apart Muffler and Found the CatCon Completely Imploded (shown below)
  – Caused Abnormal Operation of 750cc Ural

• Construct “Test” Pipes to Show Effect of Clogged Transition Pipe (strictly hypothetically speaking)
  – Many Riders Have Been Lured to Installing “Test Pipes” for Less Back-Pressure and Increased Horsepower
  – Method 1 to Construct Test Pipes without CatCons:
    • Remove Transition Pipes (on each side, between the J-pipes and the mufflers)
    • Use Small Grinder, Dremel Tool or Bench Grinder to Grind Away the Welds that Hold the Converter in Place
    • Pull Out the Corrugated Web and S-Piece
  – Method 2 to Construct Test Pipes without CatCons:
    • Remove Transition Pipes (on each side, between the J-pipes and the mufflers)
    • Hack Saw a Little Ring on the Pipe Side of the Weld and Discard the Stub

Ural placed a small catalytic converter in each transition pipe, between the muffler and header pipe, so the bike could meet U.S. import criteria.
Many Reported Catalytic Converter Failures

2010 Patrol Catalytic Converter (affordable-beemers.smugmug.com)

www.ural.cz
This Ural Patrol is missing the transition/catalytic converter pipes, thus leaving the end of the tailpipe a few inches ahead of the rear axle.
Ural advertisements show the Ural with the transition/catalytic converter pipes, yielding a tailpipe extending about 6” beyond the rear axle.
Ural Tailpipes

Typically the tailpipe extends slightly (about 6”) beyond the Ural’s rear axle.
The transition/catalytic converter (CatCon) pipe was added to the exhaust system to satisfy EPA requirements for imports.
2003 (IMZ-8.103) Ural Patrol Exhaust Assembly

1. Ural Torpedo Mufflers
2. “J” Header Pipes
3. “J” Header Pipes
4. Header Bracket
5. Header Bracket and Pipe Clamp
6. Cross-Over Pipe
7. Transition / Catalytic Converter (CatCon) Branch Pipe
8. Pipe Clamp
9. Large “P-Shaped” Muffler Clamp
10. Muffler Nut
11. And 12. Large “P-Shaped” Muffler Clamps

Item # | Part # | Description | Qty
---|---|---|---
1 | IMZ-8.123-12003 | Muffler Assembly | 2
2 | IMZ-8.123-12004 | Header Pipe | 1
3 | IMZ-8.123-12007 | Header Pipe | 1
4 | IMZ-8.103-12103-10 | Clamp LH | 1
5 | IMZ-8.123-12103 | Clamp RH | 1
6 | 6,312,108-20 | Connecting Pipe | 1
7 | IMZ-8.123-12036 | Branch Pipe | 2
8 | IMZ-8.101-12112 | Clamp | 6
9 | IMZ-8.123-12114 | Clamp | 1
10 | 6,612,270 | Muffler Nut | 2
11 | IMZ-8.123-12114 | Clamp | 1
12 | IMZ-8.107-12060 | Clamp | 1
With the original transition/catalytic converter pipe installed on my 2003 Patrol, the Ural chrome “torpedo” muffler extended about 6” beyond the rear axle.
The catalytic converter is contained in Ural’s chrome transition pipe in the center.
The Modtop Performance mufflers come with custom-made large "P" clamps, small clamps, extension (transition) pipes and hardware.

Step 1: Make sure the pipes will easily fit into each other. This will save effort to trying to get them to fit, especially in the hard-to-work center section between the motorcycle and the sidecar.

Tools Required:
- 13 mm, 14 mm, 19 mm Socket Set and Box Wrench
- Hammer
- Block of Wood
Replacing the Left-Hand Muffler

**Step 2:** Remove the left-hand muffler. This muffler is easier to replace and will yield valuable experience before tackling the right (center) muffler. Loosen the compression joint (muffler nut) at the front of the mufflers with the spanner supplied in the Ural tool kit.

**Step 3:** Use a 19 mm wrench to remove the rear, left-hand (passenger) foot-peg (nut & lock-washer) which holds the large chrome “P” clamp, supporting the Ural chrome torpedo muffler.
Step 4: Using a 14 mm socket and wrench, remove the small clamps at each end of the transition/catalytic converter pipe. Remove the chrome torpedo muffler.

Step 5: Slip the new black transition (9”) pipe tube onto the old chrome transition/catalytic converter pipe. This new transition pipe can be rotated to allow the muffler to align properly.

Step 6: Install the muffler using the large muffler clamp on the step peg, while rotating the new 9” transition pipe. Leave the large “P-clamp” loose while fitting.
Replacing the Left-Hand and Right-Hand Mufflers

Step 7: Gently rotate the muffler inside the transition pipe to achieve the best fit, always looking to see the angle the muffler makes with the frame.

Step 8: After having achieved the right angle, tighten the small clamp (14 mm) between the old chrome transition/catalytic converter pipe and the new black transition pipe (13 mm for new black clamp). Use a block of wood and a hammer (or rubber mallet) to gently tap the end of the new black transition pipe as far to the left as possible. Then tap the black Modtop muffler home and tighten the black P-clamp.

Step 9: Repeat for right-hand (center) muffler.

Alternatively, you may want to leave out the Ural chrome transition/CatCon pipe, which will keep the end of the tailpipe from extending 11” beyond the rear axle, or simply delete the black transition pipe and retain the Ural chrome transition/CatCon pipe.
Installation of the Modtop Performance mufflers without the chrome Ural transition pipe is much more pleasing, as it doesn’t extend as much beyond the rear axle.
Curing the Modtop Performance Powder-Coat Exhaust

- Powder-Coating Has Dried, But Needs To Be Fully Cured by the Heat of Exhaust System
  - Do Not Overheat the Part before It Is Fully Cured
  - Run the Engine in a Well-Ventilated Area Only
  - To Cure Coatings on the Motorcycle:
    - Allow Engine to Idle, or Drive Gently for Approximately 60 Minutes, or Until No Vapor/Smoke Is Given Off by the Coating
- Caution: Excessive Exhaust Heat, Due to a Poorly Tuned Engine Can Damage the coating During the Cure Process
  - Do Not Install on a New Engine Until All Adjustments Have Been Made to the Valves, Timing and Jetting

Gentle operation or idling for one hour completes the curing process of the powder-coat.