



Ural (Урал) - Dnepr (Днепр) Russian Motorcycle Evolution Part I: Engines

***(See Also Part II: Russian Generators/Alternators Part III:
Russian Ignition Systems and Part IV: Russian Carburetors)***

***Ernie Franke
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6 / 2013***

Sorting thru Ural / Dnepr Engine Types

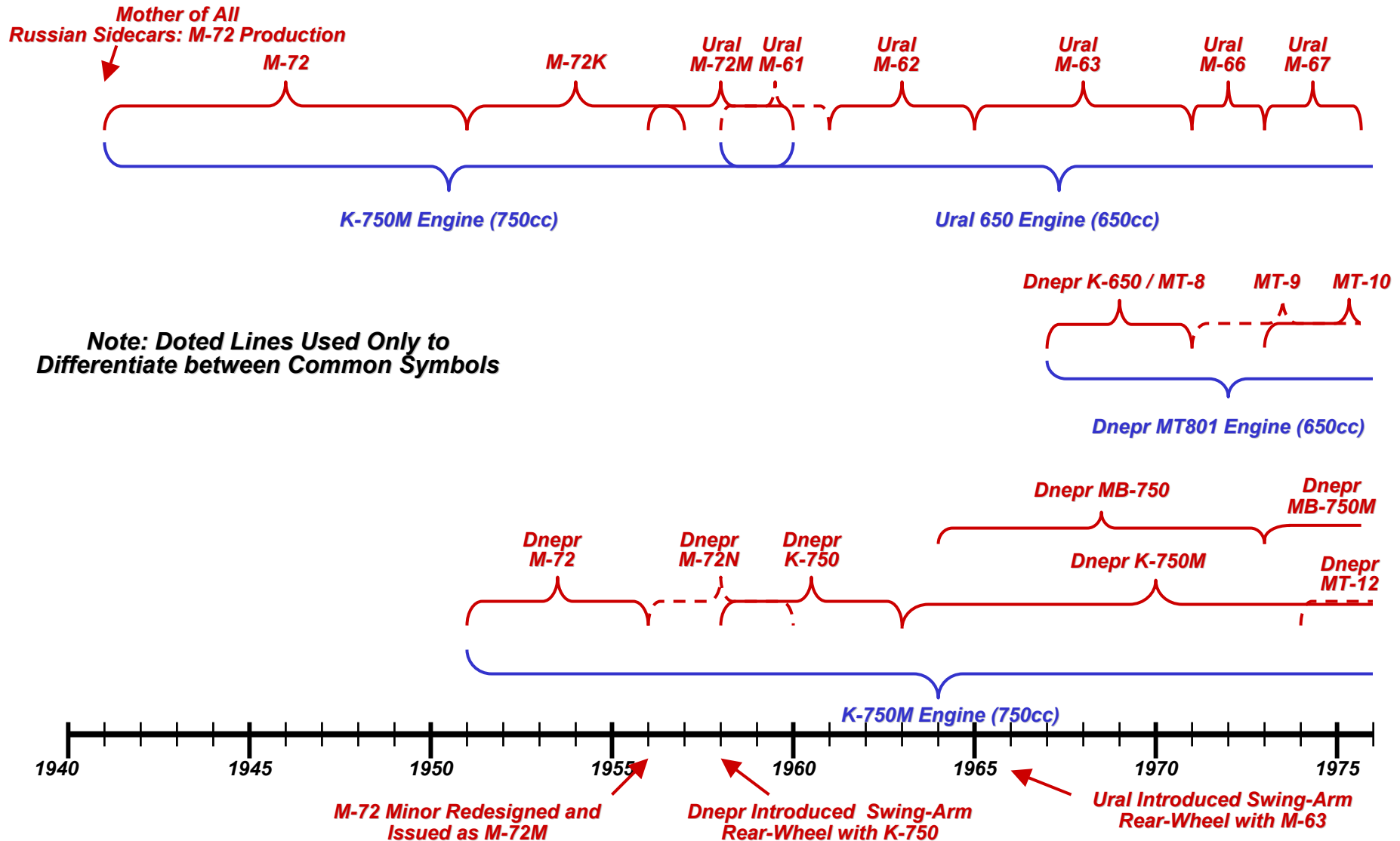
- **All Heavy-Class "Dnepr" and "Ural" Engines Have Same Structural Schemes**
 - **Two-Cylinder, Four-Stroke, Carburetor, Air-Cooled**
 - **Opposed Cylinders in Horizontal Plane (Boxer Engine)**
 - **Provides High Balancing for Crank-and-Rod Mechanism**
 - **Good Air-Cooling of Engine**
- **Ural / Dnepr Engines Separate into Seven Different Types**
 - **1: M-72 / K-750 Side Valve (SV) Engine**
 - **Derivative of BMW R71**
 - **Original M-72 SV 750cc Engine**
 - **2: K-750M SV Engine: Dnepr K-750, K-750M, MT-12, MB-750, MB-750M Motorcycles**
 - **Connecting Rods Mounted on Roller Bearings, Cast Iron Cylinders**
 - **Intake and Exhaust Valves Are Smaller in Diameter**
 - **Low-pressure Lubrication System with Full-Flow, Paper Oil Filter**
 - **Oil Pump Rotated by Camshaft**
 - **Gases from Crankcase Pushed Directly to the Atmosphere thru Breather**
 - **3: MT801 Engine: Dnepr K-650/MT-8, MT-9, MT-10, MB-650 Motorcycles**
 - **First Over-Head Valve (OHV) Design, 650cc Displacement, 32 Horsepower**
 - **First Introduced with K-650 / MT-8, Later Upgraded with MT9 Engine**
 - **Replaced Manual Breaker Distributor PM-05 with PM-302 Automatic Ignition**
 - **Cast Ductile Iron Crankshaft with Removable Connecting Rods and Replaceable Bearing Inserts**
 - **Forced Lubrication System with Centrifugal Oil Cleaner**
 - **Engine Reliability, Durability and Repair**
 - **Replaced Roller Bearings Connecting Rod Journal Bearings (Bi-metallic Liners) and Use of Solid Cast Iron Crankshaft**
 - **Bimetallic Cylinder (Aluminum and Iron Sleeve) Substantially Reduced Wear Compared to Previous One-Piece, Cast-Iron Piston to Ensure Performance during Long Rides in Heavy Traffic**

Sorting thru Ural / Dnepr Engine Types

- 4: MT10-36 OHV Engine: Dnepr MB-650M, MT-10.36 Motorcycles**
 - Modified MT801: Increased Capability to 36 HP (26.5 kW)**
 - Increased Intake Valve Diameter from 37 to 40 mm**
 - New Camshaft Profile**
 - Increased Compression Ratio from 7.0:1 to 7.5:1 (A-72 and A-76 Petrol)**
 - Export Engine to Run on High-Octane A-93 with Compression Ratio of 8.5:1**
 - Increased Max Performance to 5600 - 5800 rpm**
 - Modified Form of Deepening a Valve at Bottom of Piston**
 - Since November 1978, Produced Piston Sphere Radius Head 72.5m**
 - Used on**
- 5: MT10-32 OHV Engine: Dnepr MT-11, MT-16 Motorcycles**
 - Modified MT10-36 for Higher Torque at Lower Speeds, Lower Power: 32HP**
 - Maximum Speed Lowered by 700 rpm**
 - Modified Camshaft with New Profile**
- 6: M67-36 Engine: Ural MT-67.36, Series “650” Motorcycles**
 - Significant Differences from MT10-32 Engine**
 - One-Piece Crankshaft Construction and Removed Only by Means of Special Devices**
- 7: Ural 750 cc OHV Engine: Ural Patrol, Gear-Up**
- Use of Valve Covers, Cylinder Heads, Carburetors, Generators/Alternators and Ignition to Verify Engine Types**

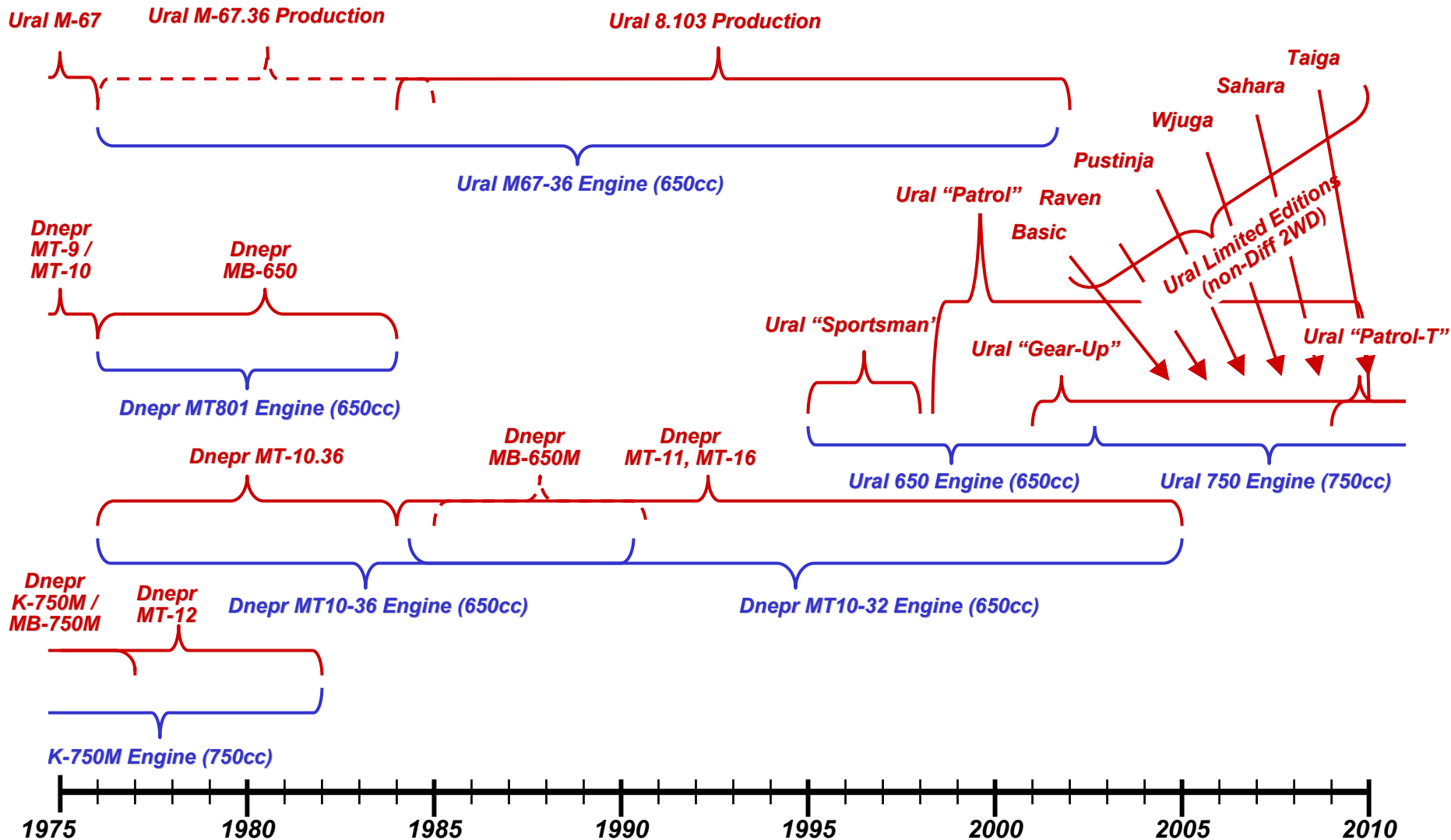
We will spend a fair amount of time merely identifying Russian engines, which comes in hardy for identifying models and years.

Russian Sidecar Motorcycle Engine Evolution



Starting with the M-72, a copy of the German R71, heavy Russian motorcycle production has steadily advanced under IMZ (Ural) and KMZ (Dnepr).

Russian Sidecar Motorcycle Engine Evolution

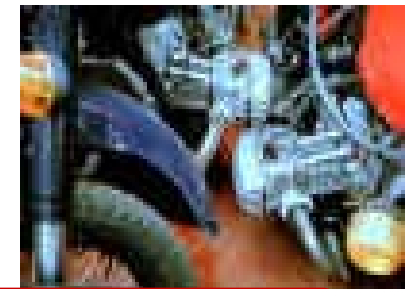
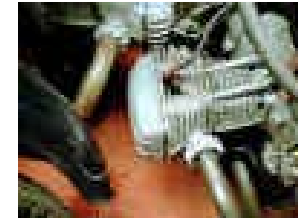


Dnepr dropped out of heavy Russian motorcycle production in 2005, after an outstanding program of military and civilian models.

Ural (Урал) / Dnepr (Днепр) Sidecar Motorcycle Engines								
Ural (Урал) Model	Production	Engine (ccm³)	HP / kW	RPM for Max HP	Compression Ratio	Torque (Nm)	RPM for Torque	Engine Type
M-72	1941-1951	746 SV	22 / 16	4400-4600	5.5±0.2	39	2800-3500	M-72
M-72K	1951-1958	746 SV	27 / 20	5000	5.5±0.2	39	2800-3500	M-72
M-72M	1956-1960	746 SV	22 / 16	4600	5.5±0.2	39	2800-3500	M-72
M-61	1958-1961	649 OHV	28 / 21	4800-5200	6.2	45	3000-3500	Ural 650
M-62 (Ural-1)	1961-1965	649 OHV	28 / 21	4800-5200	6.2	45	3000-3500	Ural 650
M-63 (Ural-2)	1965-1971	649 OHV	28 / 21	4800-5200	6.5±0.2	47	4200-4800	Ural 650
M-66 (Ural-3)	1971-1973	649 OHV	32 / 24	5000-5200	7.0±0.2	47	4200	Ural 650
M-67 (IMZ-8.101)	1974-1976	649 OHV	32 / 24	5000-5200	7.0±0.2	47	4200	Ural 650
M-67.36	1976-1985	649 OHV	36 / 27	4600-4900	7.0±0.2	45	4200	M67-36
8.103 Series “650”	1984-2002	649 OHV	36 / 27	5000-5200	7.0, 8.1, etc.	47	3600	M67-36
“750”Series	2003-Present	745 OHV	41 / 29	5600	8.6±0.2	52	4600	Ural 750
Dnepr (Днепр) Model	Production	Engine (ccm³)	HP / kW	RPM for Max HP	Compression Ratio	Torque (Nm)	RPM for Torque	Engine Type
M-72	1951-1956	746 SV	22 / 16	4600	5.5±0.2	39	2800-3500	M-72
M-72N	1956-1960	746 SV	22 / 16	4600	5.5±0.2	39	2800-3500	M-72
K-750	1958-1963	746 SV	26 / 19	4600-4800	6.0+0.1/-0.3	42	2800-3500	K-750M
K-750M	1963-1977	746 SV	26 / 19	4600-4800	6.0+0.1/-0.3	42	2800-3500	K-750M
MB-750	1964-1973	746 SV	26 / 19	4600-4800	6.0+0.1/-0.3	42	2800-3500	K-750M
MB-750M	1973-1977	746 SV	26 / 19	4600-4800	6.0+0.1/-0.3	42	2800-3500	K-750M
MT-12 (Dnepr-12)	1974-1982	746 SV	26 / 19	4600-4800	6.0+0.1/-0.3	42	2800-3500	K-750M
K-650/MT-8	1967-1971	649 OHV	32 / 24	4800-5200	7.0+0.1/-0.2	42	4900-5200	MT801
K-650/MT-9	1971-1976	649 OHV	32 / 24	4800-5200	7.0+0.1/-0.2	42	4900-5200	MT801
MT-10	1973-1976	649 OHV	32 / 24	4800-5200	7.0+0.1/-0.2	42	4900-5200	MT801
MB-650	1976-1984	649 OHV	32 / 24	4800-5200	7.0+0.1/-0.2	42	4900-5200	MT801
MT-10.36	1976-1984	649 OHV	36 / 27	5300-5800	7.5	47	4800-5300	MT10-36
MB-650M	1985-1991	649 OHV	36 / 27	5300-5800	7.5	47	4800-5300	MT10-36
MT-11 (Dnepr-11)	1984-2005	649 OHV	32 / 24	4500-5300	7.0	50	4000-4500	MT10-32
MT-16 (Dnepr-16)	1985-2005	649 OHV	32 / 24	4500-5300	7.0	50	4000-4500	MT10-32

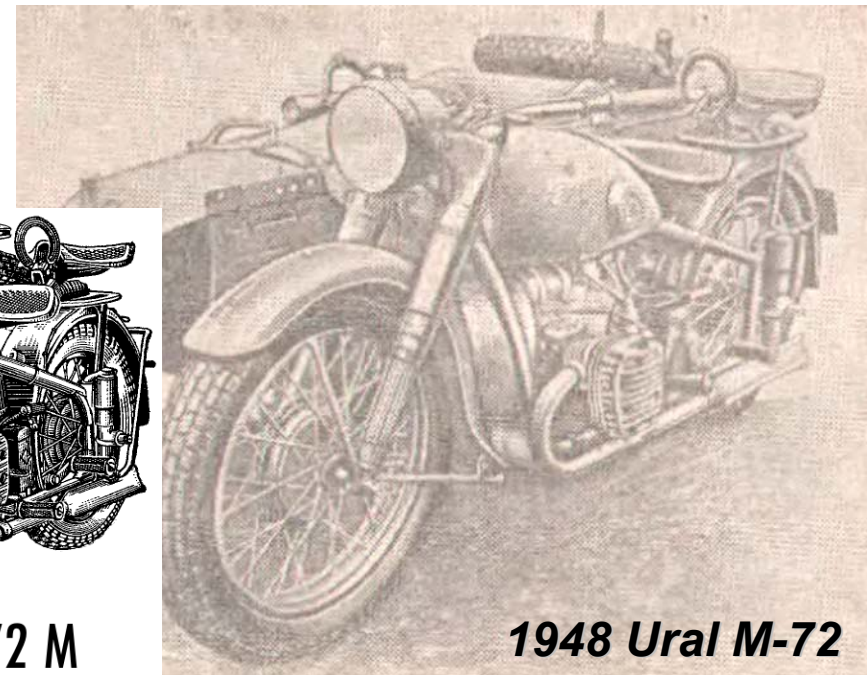
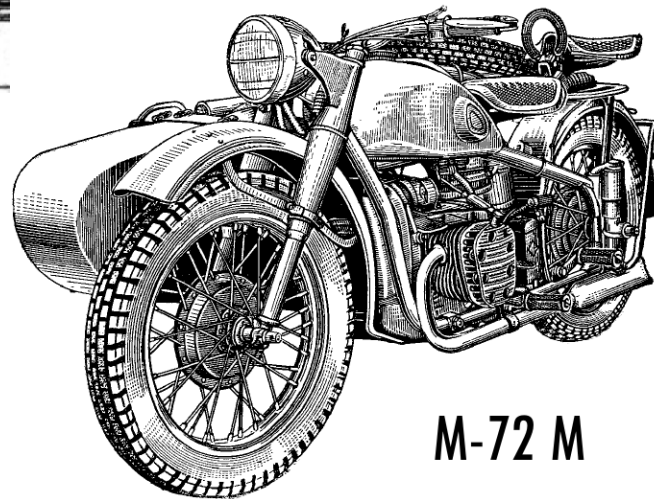
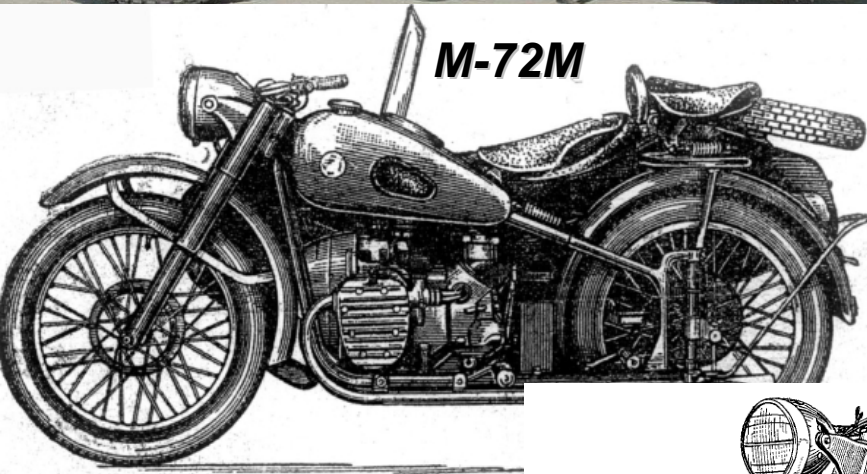
Model Identification (www.uralmotorbikes.info/model_identification.htm)

- **Side Valve (SV) Distinguished by Flat-Sided Cylinder Head with Two Pieces; Barrel and Cylinder Head**
- **Overhead Valve (OHV) Distinguished by Wider Engine with Three Pieces; Barrel, Cylinder Head and Rocker Cover**
- **Ural OHV Engines Come in Two Sizes:**
 - **650cc and 750cc**
 - **Earlier 650cc Engines Have Cast Iron Barrel Bolted Directly to Crankcase with Studs on Barrel to Mount the Aluminum Head, with Oval Rocker Cover with Push-Fit Down-Pipes**
 - **Later 750cc Engines Have Aluminum Barrel Mounted to Aluminum Head with Shaped Rocker Cover with Push-Fit Down-Pipes Studs Pass-Thru Barrel and Head**
 - **Dnepr 650cc OHV Engines Have Aluminum Barrel Mounted to Aluminum Head with Rectangular Rocker Cover, with Mounting Studs Visible thru Barrel Fins the exhaust has a screw on mounting fin fitting**

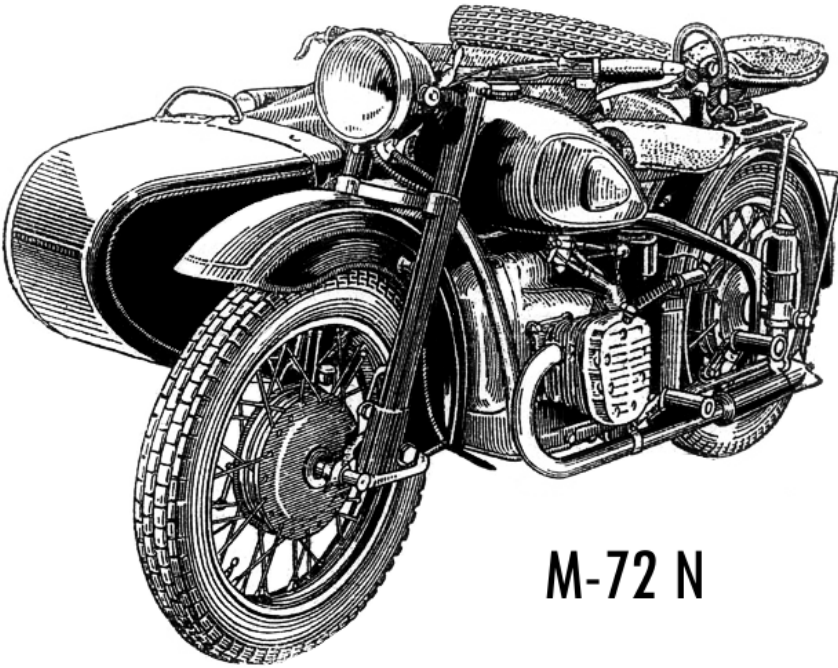


Apart from the external differences, Dneprs run shell bearings and Urals use roller bearings.

IMZ/Ural M-72 (1941-1950) and M-72M (1956-1960) with M-72 Engine



Dnepr's M-72N (1956-1960) with M-72 Engine



M-72 N

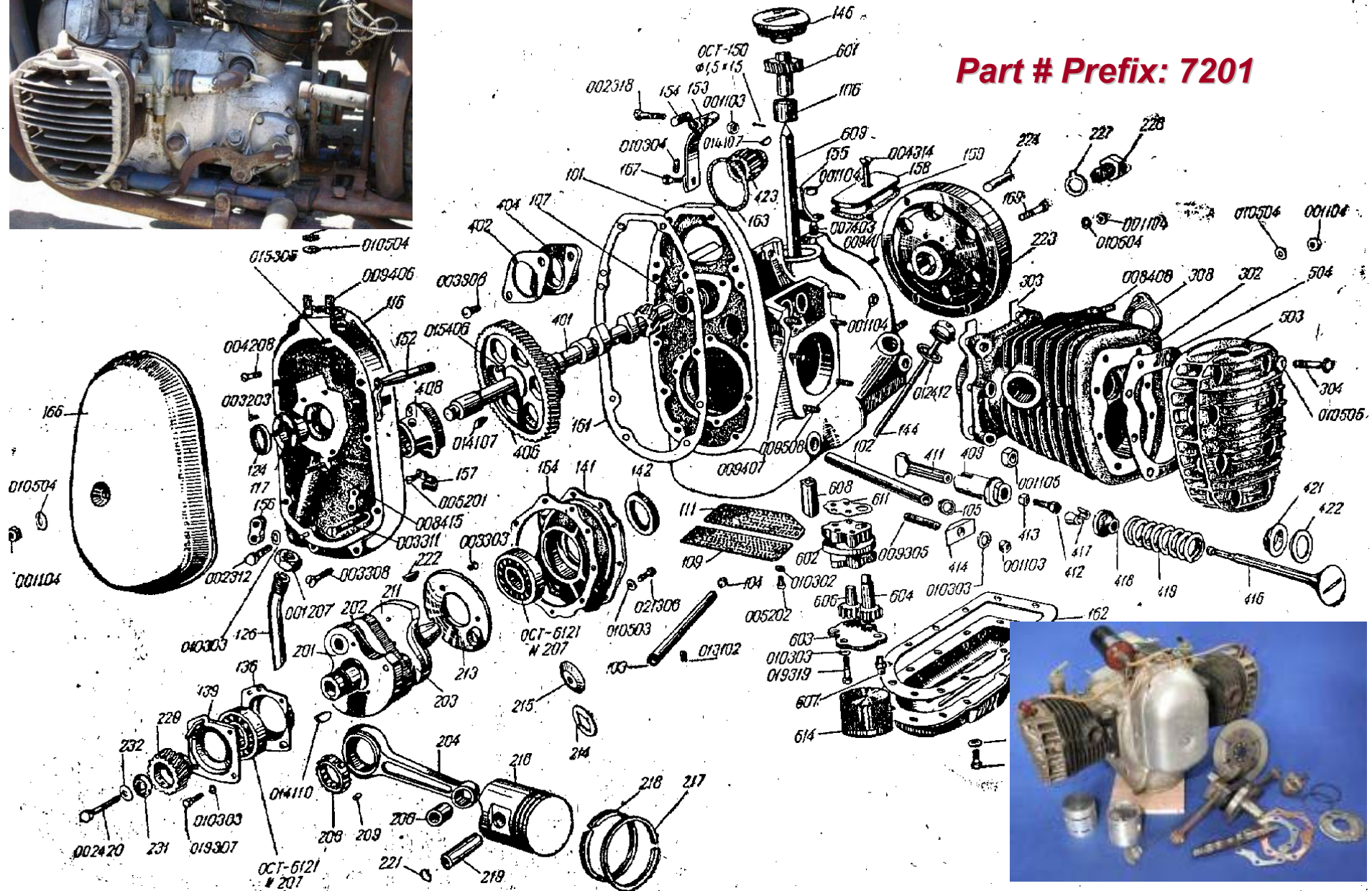


1957 M-72N

In 1956 the M-72 was given a minor redesign and issued as the M-72N.

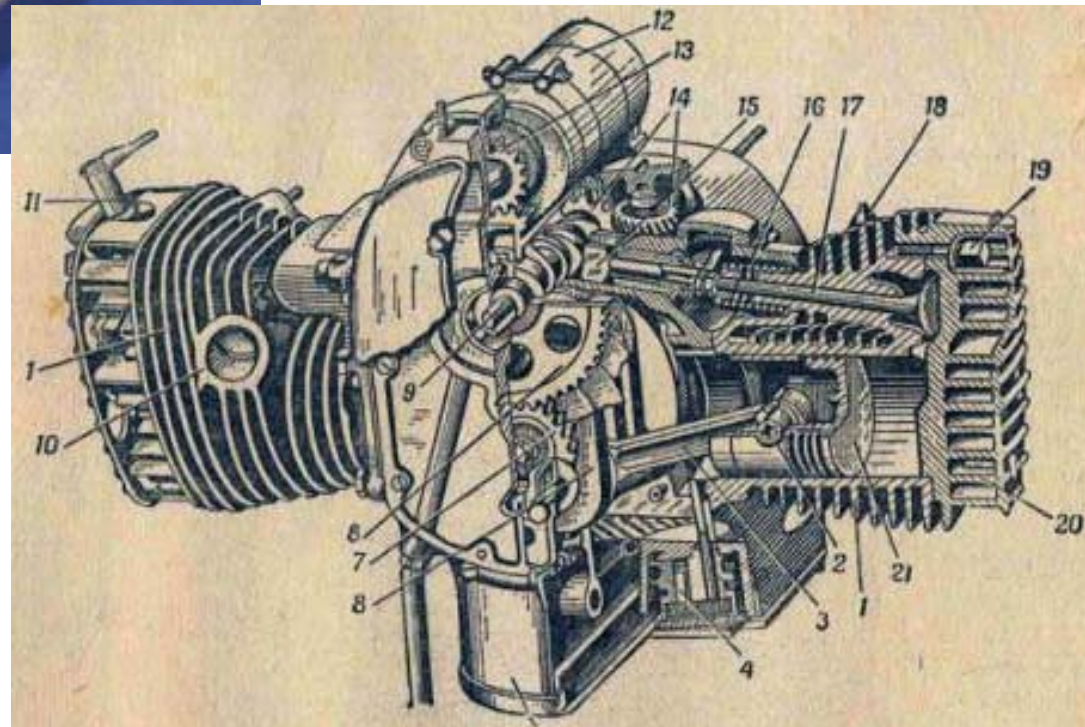
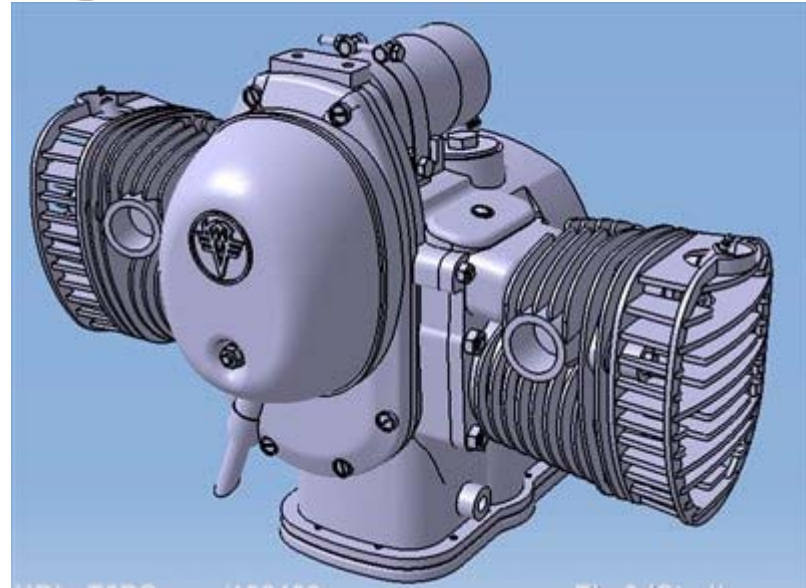
M-72 Side-Valve (SV) Engine (1941)

Part # Prefix: 7201



M-72 750cc Engine

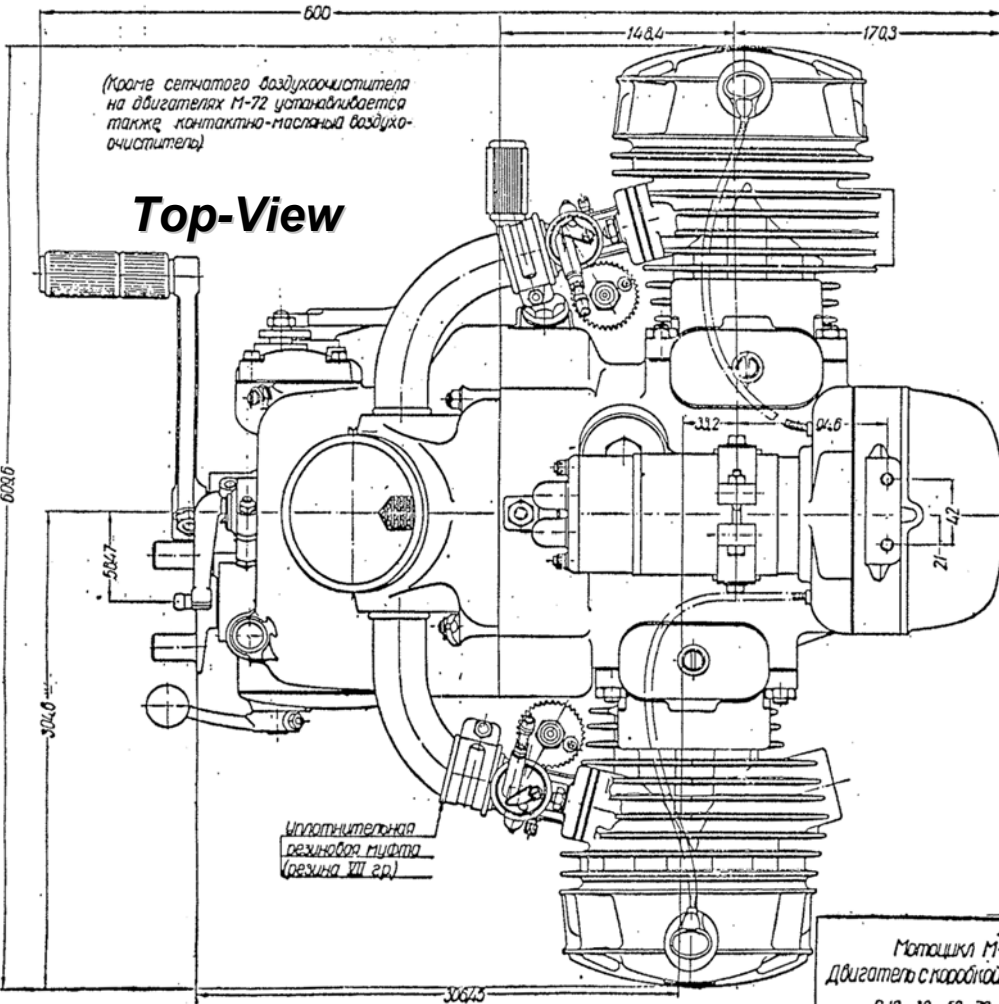
Original M-72 Engine, made in China
Vendor ID: S3873
List Price: €1.649.00
(www.ural-zentrale.de)



Timing Housing Cover



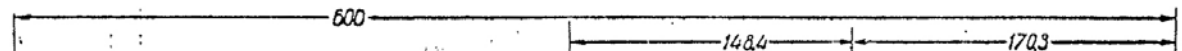
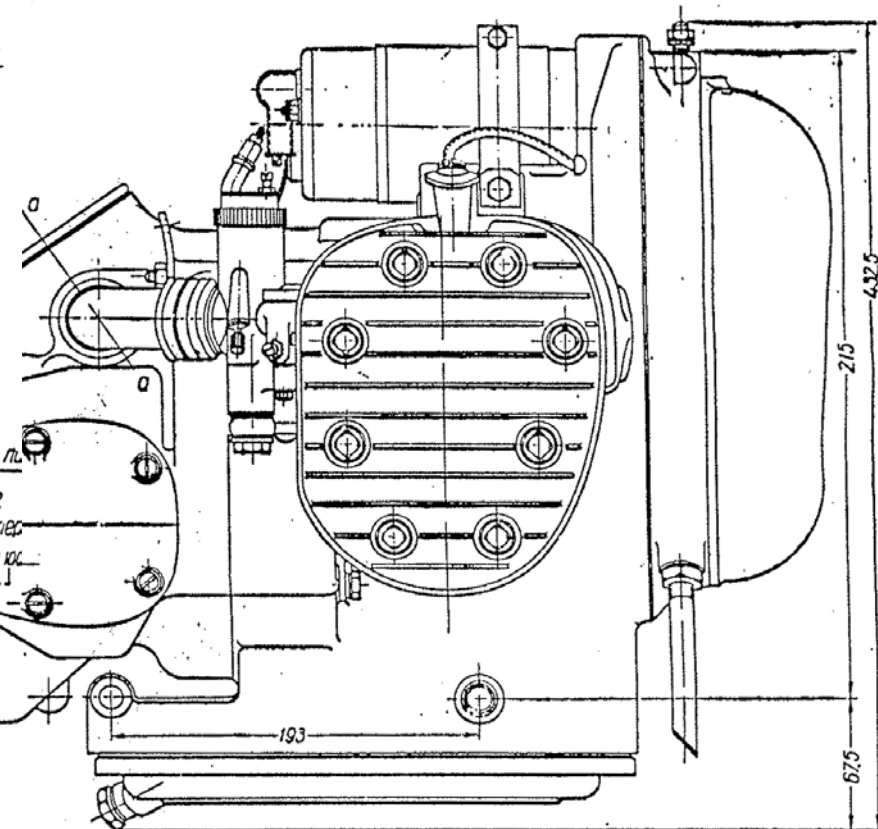
M-72 Engine



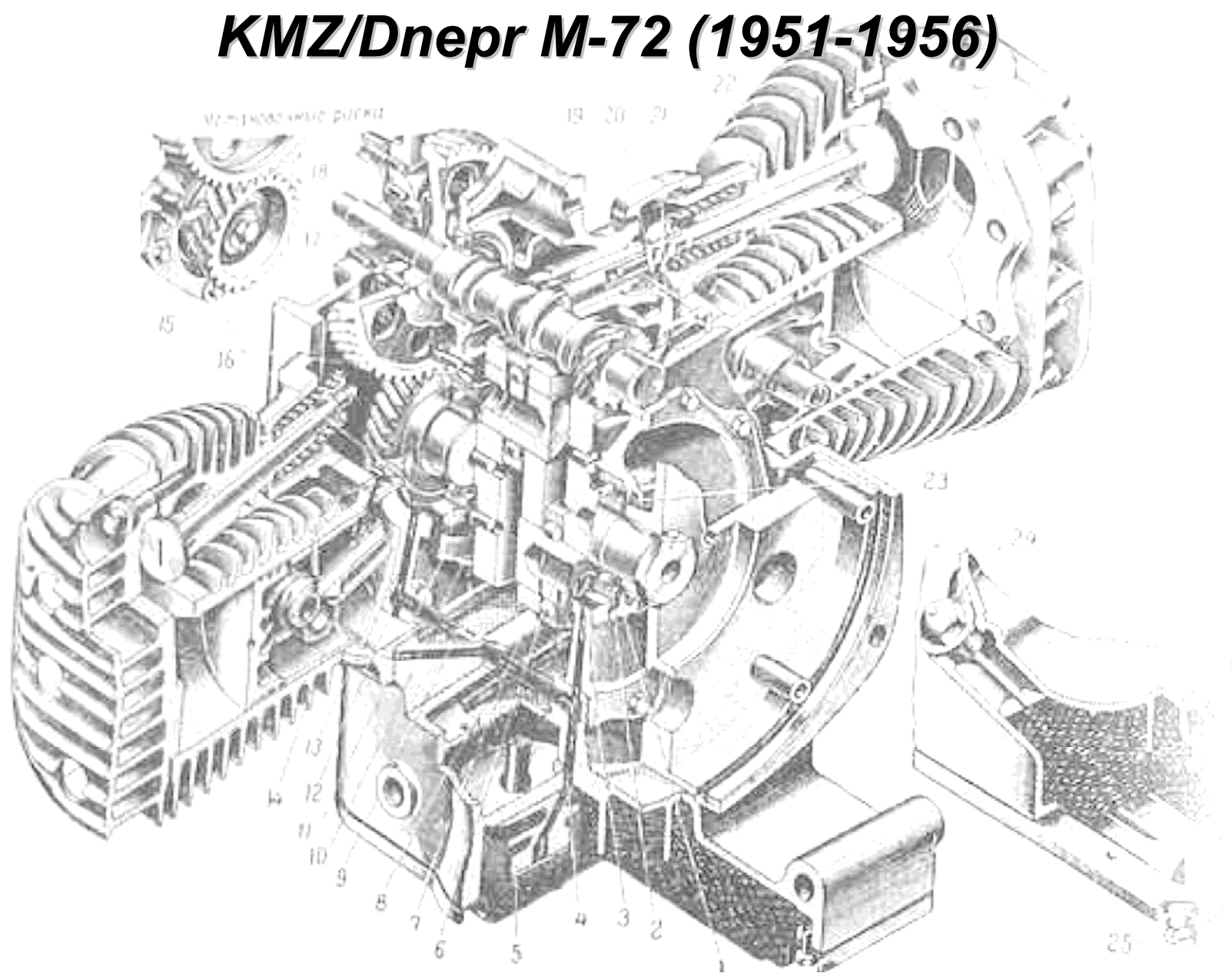
Мотоцикл М-72
Двигатель с карбюратором

0 10 30 50 70 80 100

Side-View

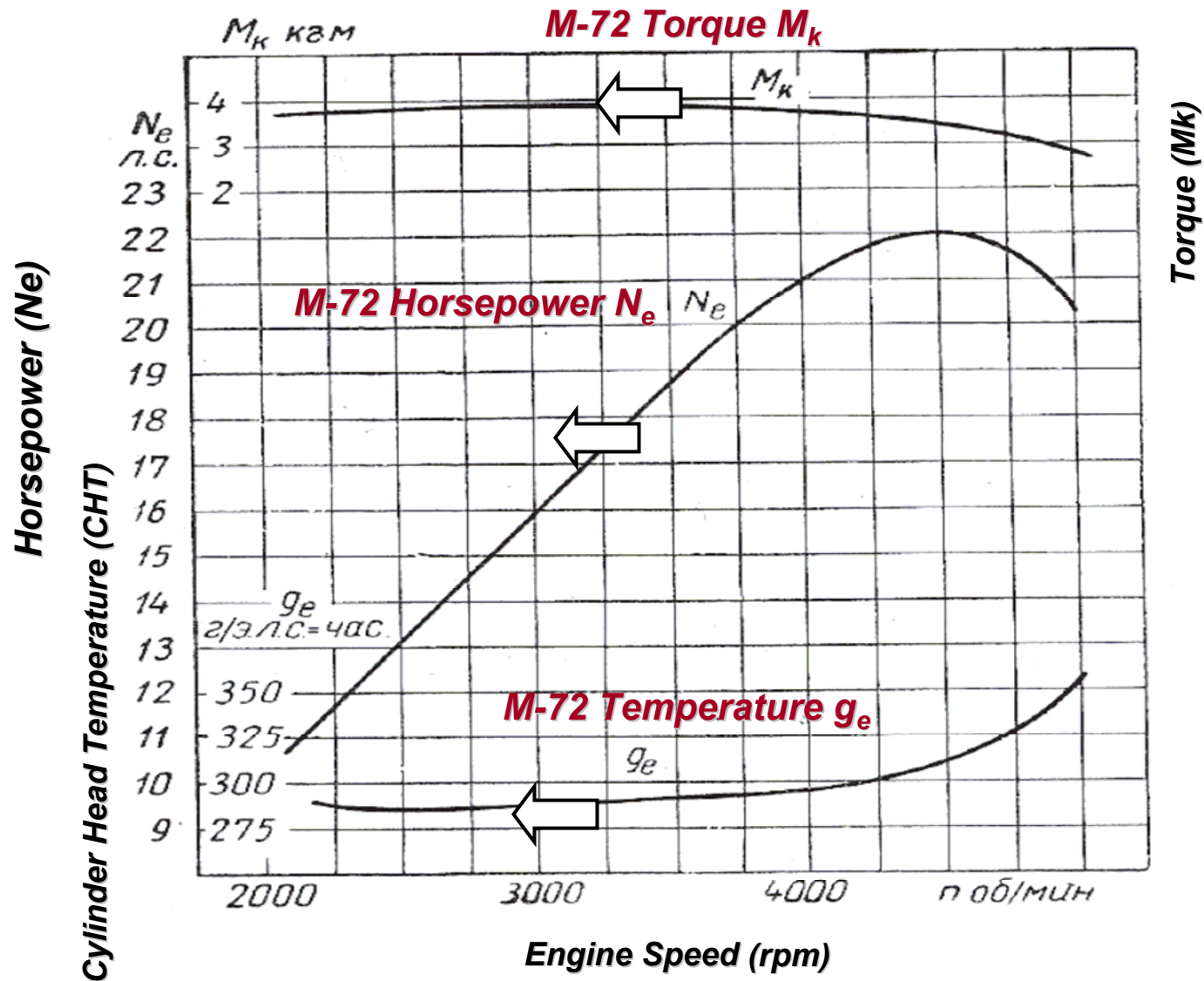


KMZ/Dnepr M-72 (1951-1956)



1. Slinger, 2. Oil Channel, 3. Calibrated Orifice, 4. Vertical Channel, 5. Oil Pump, 6. Crank Pin Cavity, 7. Radial Drilling Crank Pin, 8. Oil Filter Stoke, 9. Oil Pipe Tube, 10. Bleed Hole, 11. Drip Pan, 12. Oil Passage Cap, 13. Oil Pipe Channel, 14. Drilling in Left Cylinder, 15. Oil Line Pipe, 16. Ring Groove, 17. Camshaft Oil Seal, 18. Distributor Housing, 19. Front Oil Feed, 20. Main Hole, 21. Rear Channel Oil Pocket, 22. Scraper Piston Ring, 23. Gland (Seal), 24. Filler Plug with Dipstick, 25. Plug Hole

Performance Curve for M-72 Engine



The M-72 engine produced 22 horsepower (16 kW) and a torque of 3.9 kg-m.

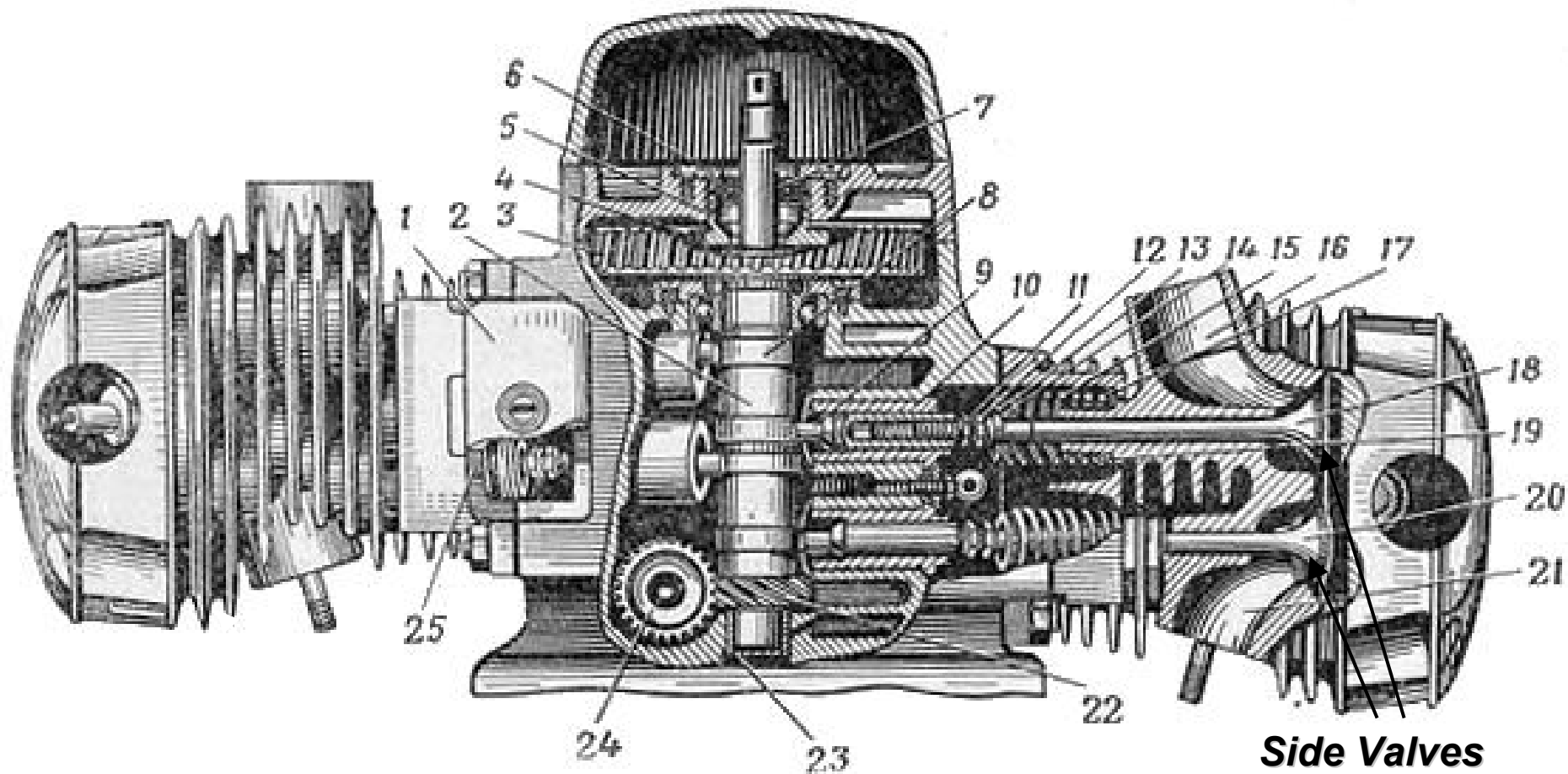
Side-Valve (SV) Engine 750cc

K-750 Engine, Complete
Vendor ID: 002.328
List Price: €1,159.43 NOS
(www.oldtimergarage.eu)

Side Valves

Removal of the cylinder head clearly shows the side valves (SV).

K-750 Engine



Side Valves

1. Valve Box Cover, 2. Camshaft, 3. Camshaft Gear, 4. Lead Breather Leash, 5. Breather, 6. Camshaft Flange, 7. Camshaft Seal, 8. Camshaft Exhaust Lobe, 9. Pusher, 10. Pusher Guide, 11. Locknut, 12. Pusher Adjusting Bolt, 13. Lower Valve Spring Plate, 14. Biscuit, 15. Valve Spring, 16. Exhaust Pipe, 17. Upper Valve Spring Plate, 18. Exhaust Valve, 19. Gasket, 20. Intake Valve, 21. Inlet, 22. Camshaft Helical Gear, 23. Camshaft Rear Bearing, 24. Oil Pump Drive Gear, 25. Valve Box Cover Gasket

Dnepr Engine OHV 650cc

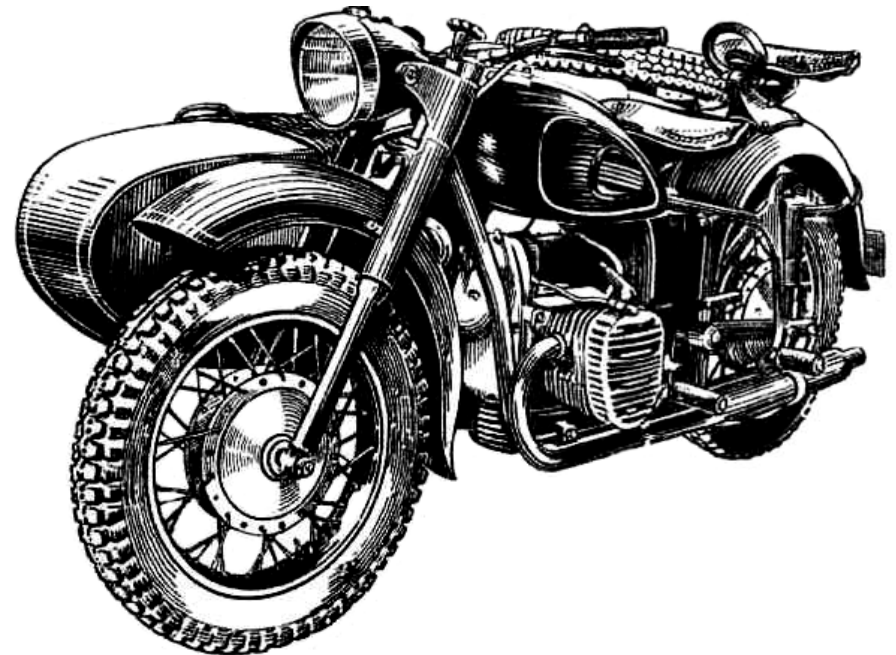


**Dnepr Valve Cover
(Old Style: 5 Cooling Ribs)**

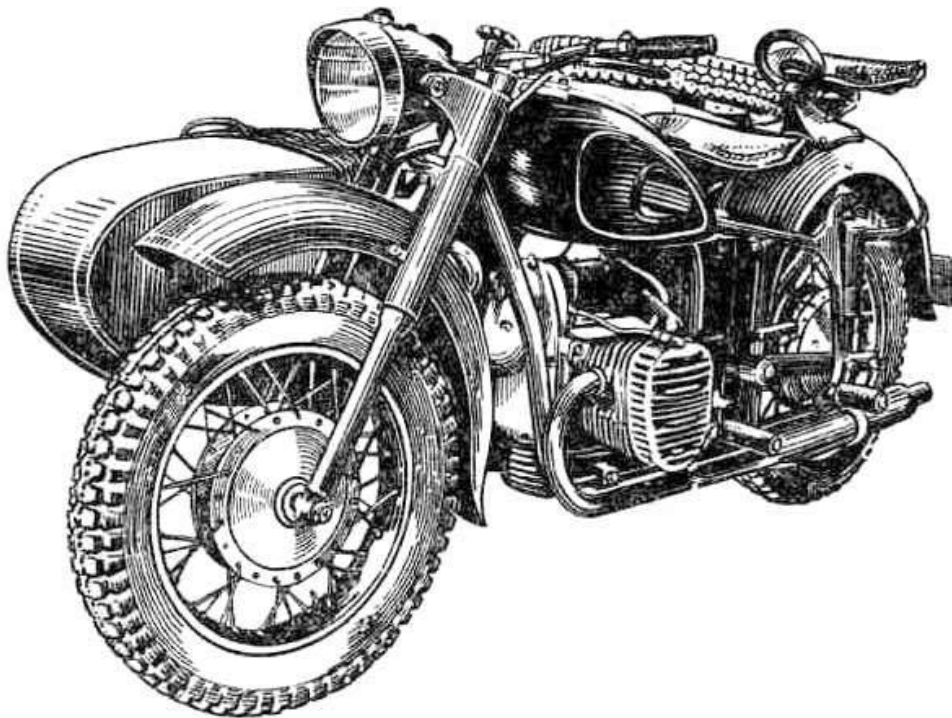


**Engine, 650ccm with 12V alternator, no carburetor
(Dnepr)
Military
List Price: 999.00EUR Used 169km
(www.ural-hamburg.de)**

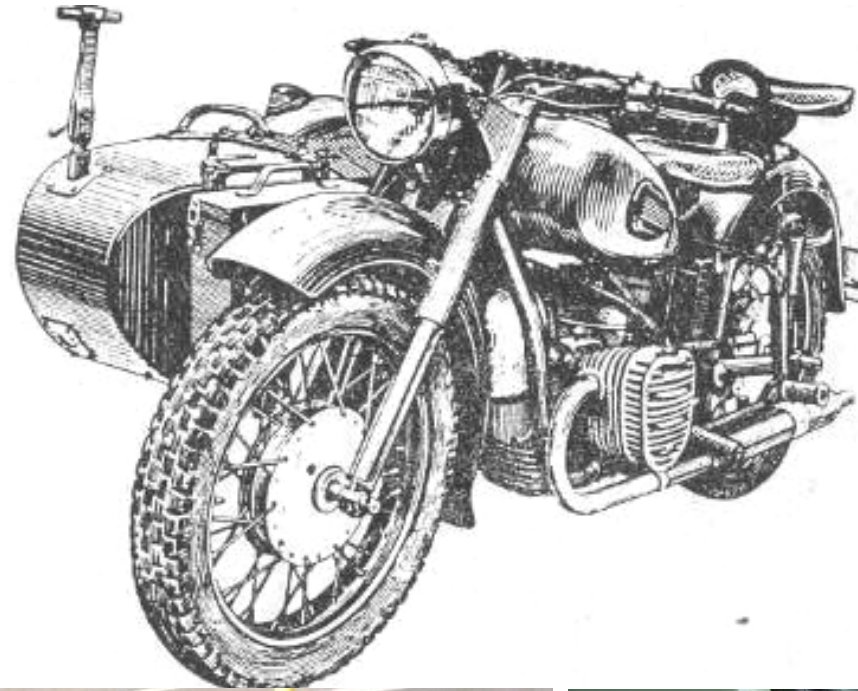
KMZ/Dnepr K-750



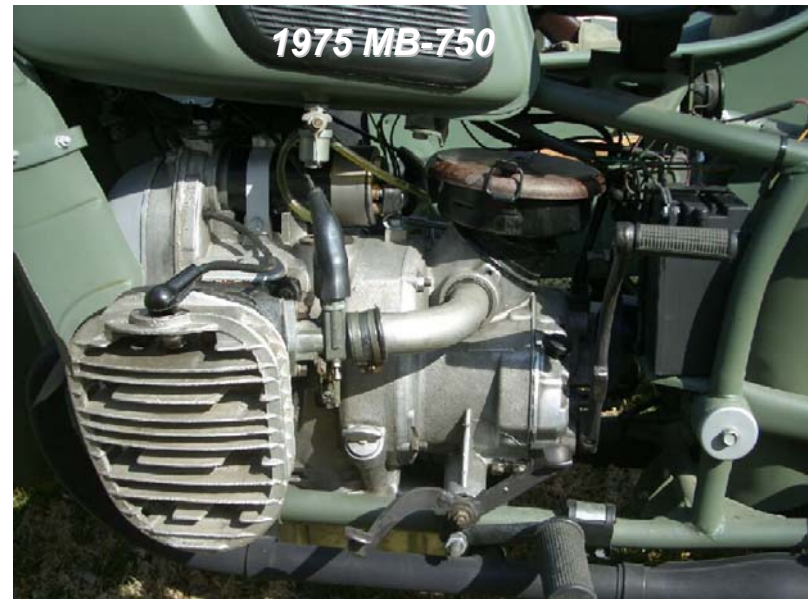
KMZ/Dnepr K-750M



KMZ/Dnepr MB-750 with K-750M Engine



1975 MB-750



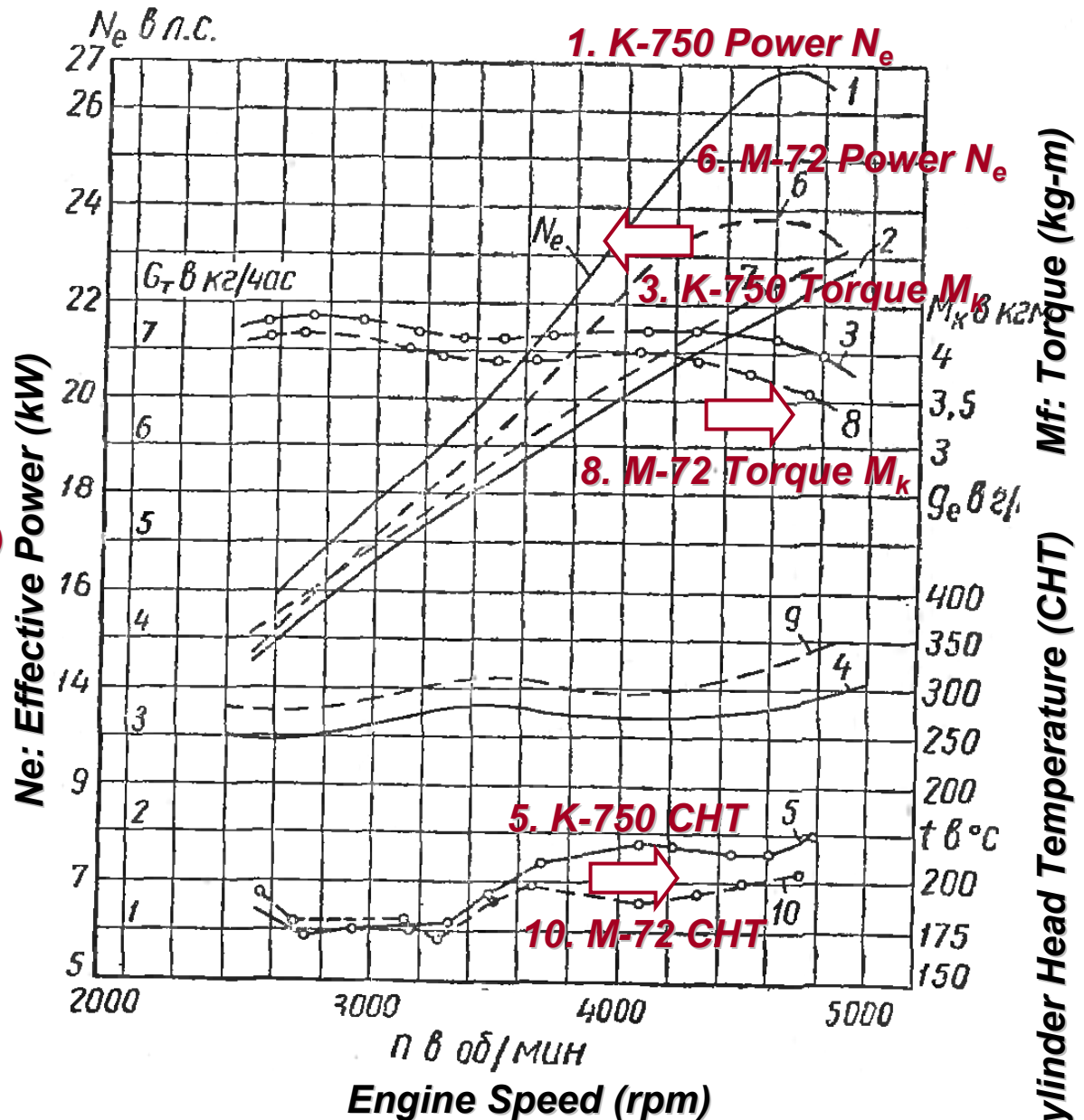
Performance Curve for K-750 Engine

K-750 (Solid Line)

1. Power (kW)
2. Fuel Consumption per hour
3. Torque
4. Specific Fuel Consumption
5. Cylinder Head Temperature (CHT)

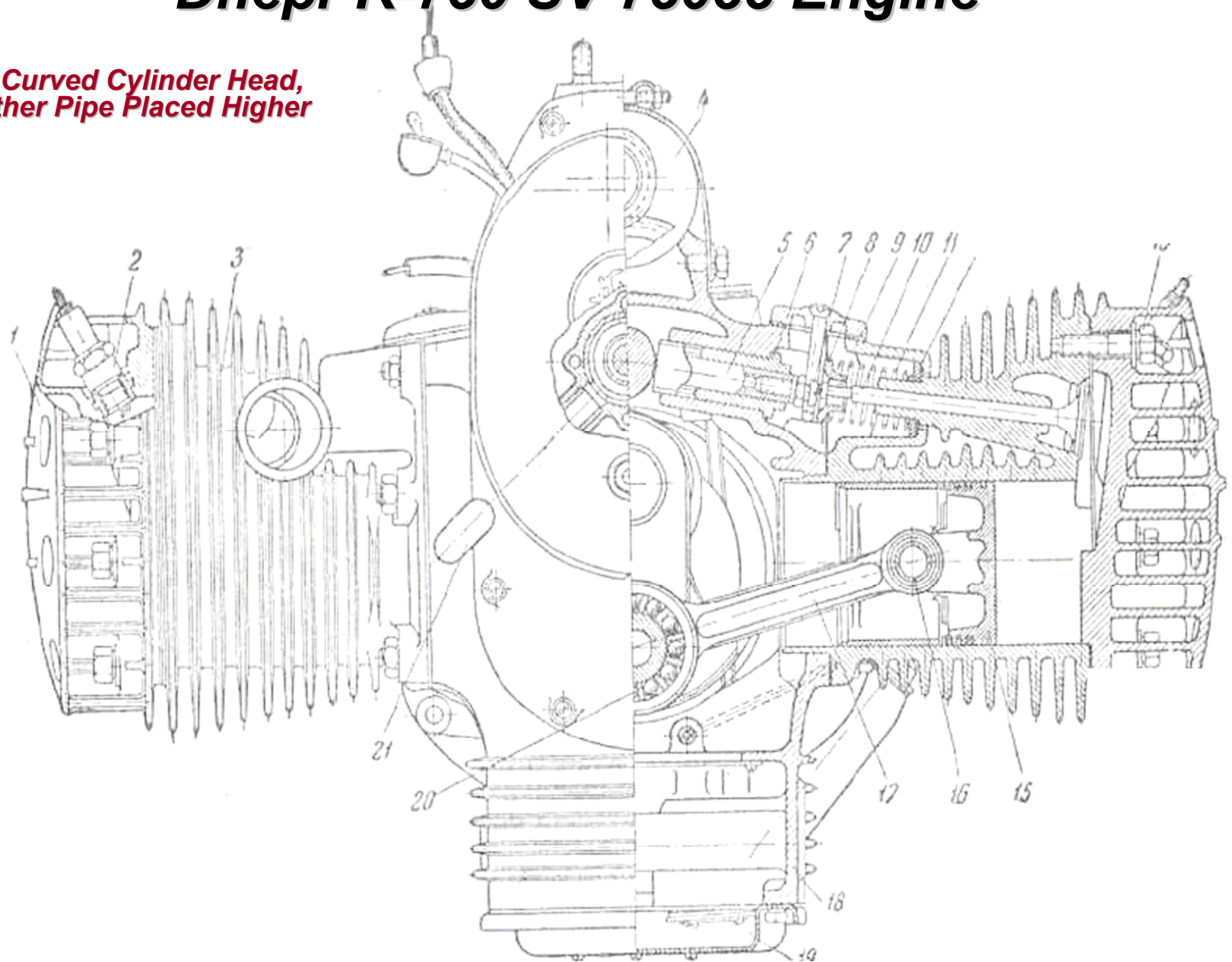
M-72 (Dashed Lines)

6. Power (kW)
7. Fuel Consumption per hour
8. Torque
9. Specific Fuel Consumption
10. Cylinder Head Temperature (CHT)



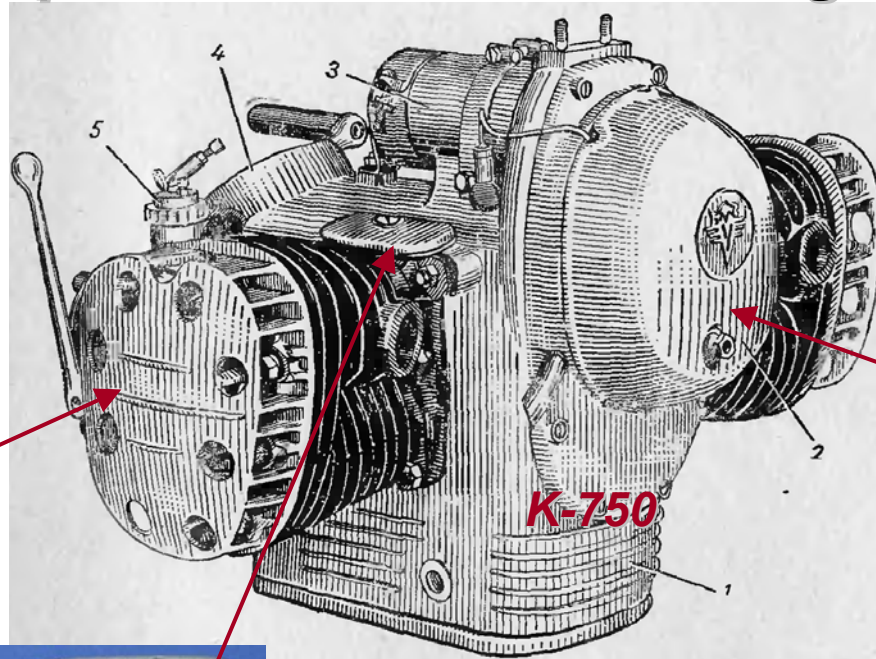
Dnepr K-750 SV 750cc Engine

**Note: 1. Curved Cylinder Head,
21. Breather Pipe Placed Higher**



1. Cylinder Head, 2. Spark Plug, 3. Cylinder, 4. Generator, 5. Push Rod, 6. Push Rod Guide, 7. Pusher, 8. Pusher Guide, 9. Pushrod Bolt Locknut, 10. Lower Valve Plate, 11. Valve Spring, 12. Valve, 13. Cylinder Head Bolt, 14. Cylinder Head Gasket, 15. Piston, 16. Wrist Pin, 17. Connecting Rod, 18. Piston, 19. Oil Pan, 20. Connecting Rod Bearing, 21. Breather

Dnepr K-750 SV 750cc Engine



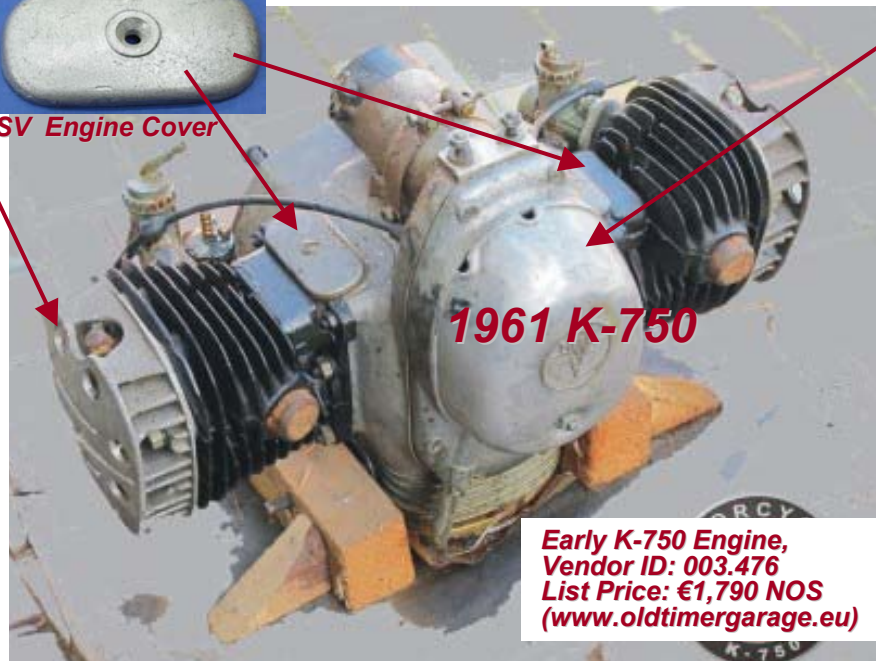
Cylinder End Piece



SV Engine Cover



Timing Cover



1961 K-750

***Early K-750 Engine,
Vendor ID: 003.476
List Price: €1,790 NOS
(www.oldtimergarage.eu)***

Dnepr K-750 SV 750cc Engine



**Engine from K-750
(No Generator or Carburetor)
Vendor ID: 1313
List Price: €1,353 NOS
(moto-boxer.com)**

Dnepr K-750 SV 750cc Engine



*Engine, 750cc
(K-750)
List Price: \$1,300
(www.dnepr-kiev.com)*

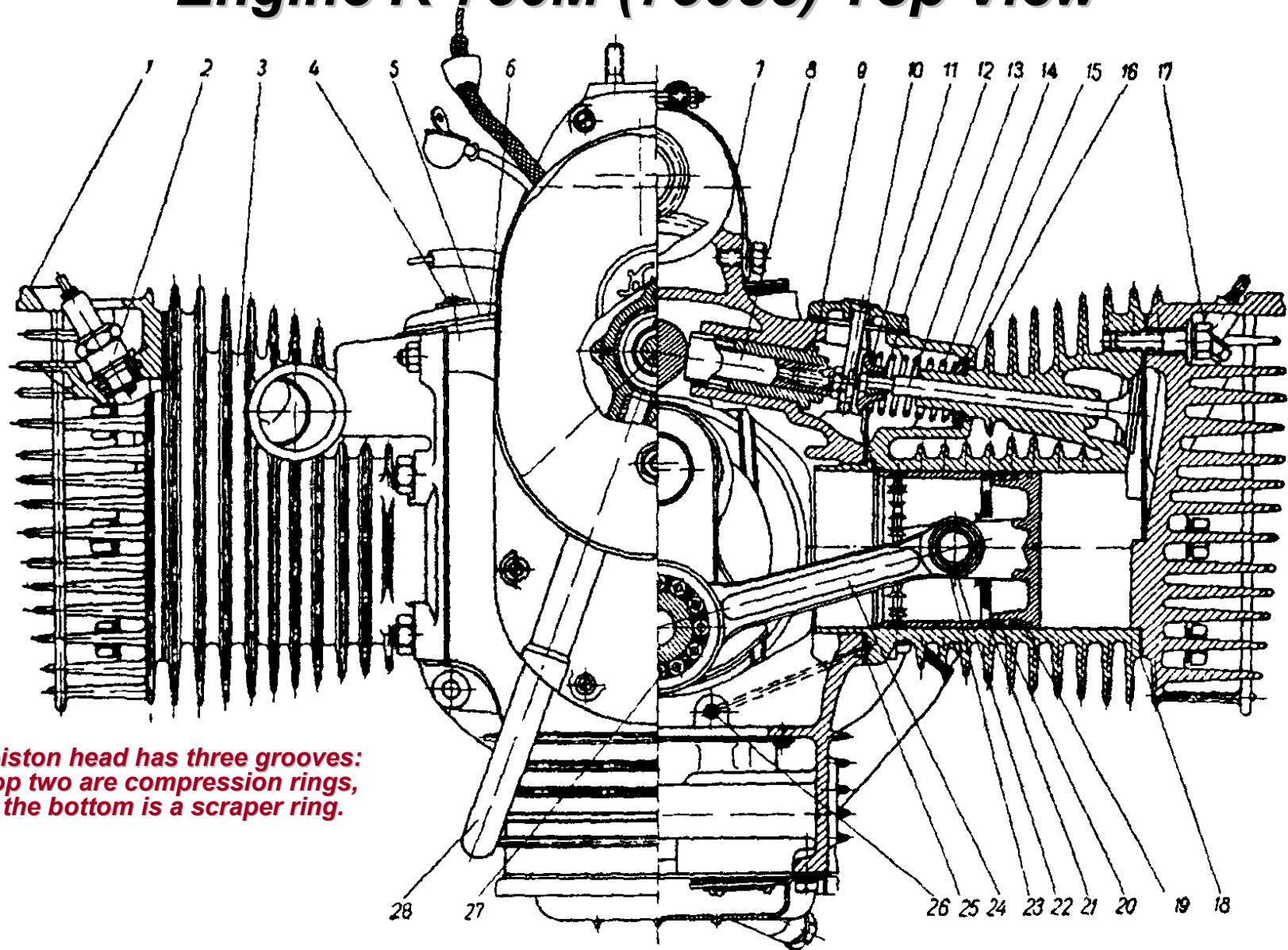
KMZ/Dnepr K-750 SV 750cc Engine



Smooth Cylinder Head on Early K-750 (bcozz.multiply.com)



Engine K-750M (750cc) Top View



*The piston head has three grooves:
the top two are compression rings,
and the bottom is a scraper ring.*

1. Cylinder Head, 2. Spark Plug, 3. Cylinder, 4. Screw Caps, 5. Valve Box Cover, 6. Gasket, 7. Generator Clamp, 8. Push Rod, 9. Push Rod Guide, 10. Adjustment Bolt with Locknut, 11. Lower Bumper, 12. Spring, 13. Valve, 14. Valve Spring, 15. Top Plate of Valve Springs, 16. Sealing Gasket Valve Springs, 17. Cylinder Head Bolt, 18. Cylinder Head Gasket, 19. Piston, 20. Piston Compression Ring, 21. Piston Oil Ring, 22. Piston Rings, 23. Small End Connecting Rod Bushing, 24. Rod, 25. Cylinder Gasket, 26. Oil Line Pipe, 27. Connecting Rod Bearing, 28. Breather Vent

K-750 / K-750M, M-72M, MB-750 Cylinders and Heads

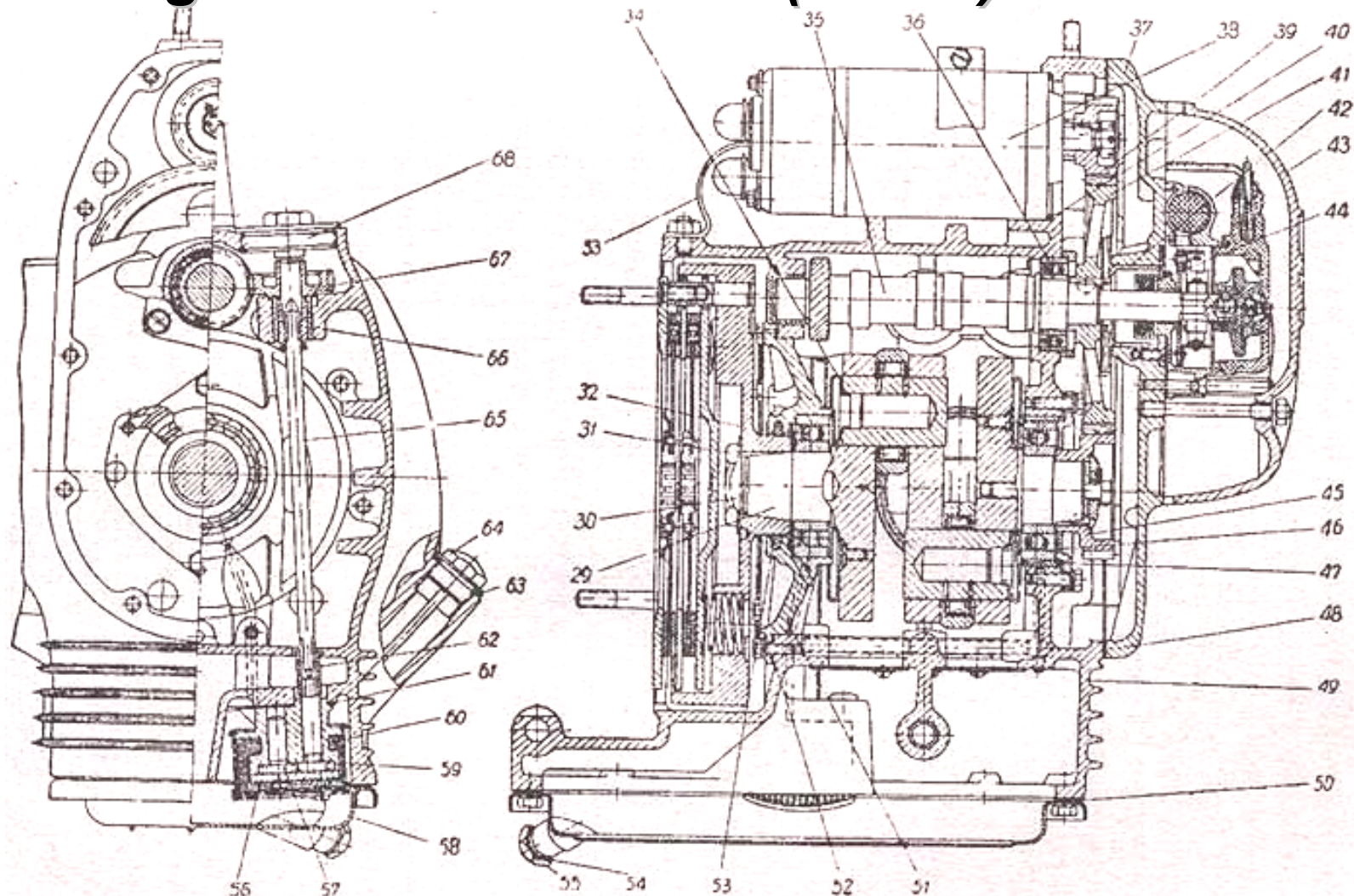
Early K-750

K-750

M-72M, MB-750, K-750M

**Smooth cylinder end-pieces are original only on early K-750 models.
They were never used on M-72's.**

Engine K-750 / K-750M (750cc) Side View



29. Crankshaft, 30. Lock-Washer, 31. Flywheel Bolt, 32. Flywheel, 33. Generator Bracket, 34. Drip Pan, 35. Camshaft, 36. Camshaft Bearing, 37. Timing Box Cover, 38. Generator, 39. Generator Gear, 40. Generator Sealing Gasket, 41. Camshaft Gears, 42. Breather, 43. Front Cover, 44. Camshaft Oil Seal, 45. Crankshaft Timing, 46. Bearing Housing Cover, 47. Bearing housing, 48. Sealing Gasket, 49. Carter, 50. Sealing Gasket Pallet, 51. Rear Housing Bearing Crankshaft, 52. Sealing Gasket, 53. Gland, 54. Sealing Washer, 55. Drain plug, 56. oil pump housing Cover, 57. Pinions Oil Pump, 58. Pan, 59. Oil pump Filter, 60. Oil pump, 61. Gasket oil pump housing, 62. Couplings, 63. Sealing Gasket, 64. Filler plug with Dipstick, 65. Connecting Rod, 66. Bushing Drive Gear Oil Pump, 67. Oil Pump Drive Gear, 68. Tube Gear

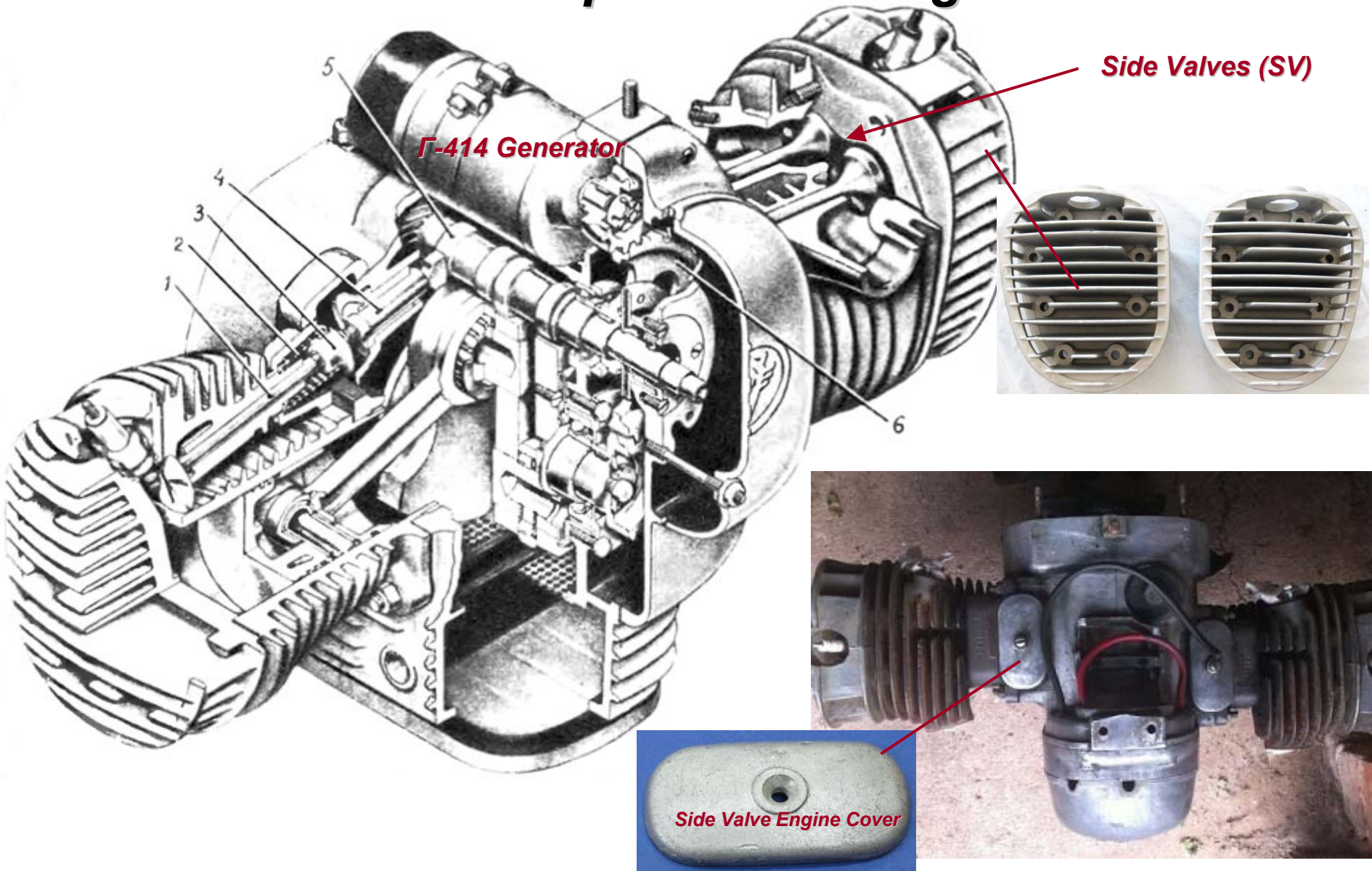
K-750M Engines



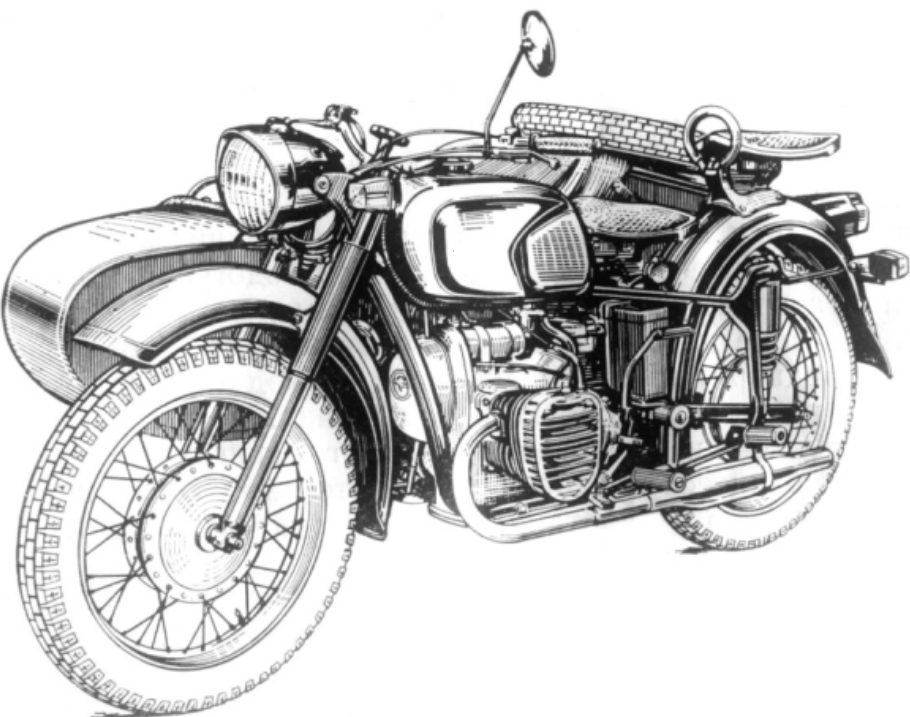
*Dnepr K-750 SV 750cc
List Price: €1,680
(www.ural-motos.com)*



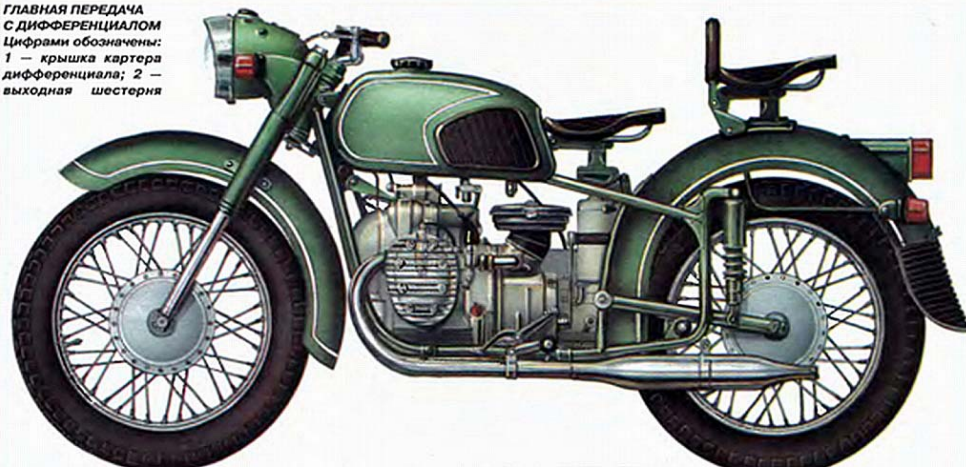
KMZ/Dnepr K-750M Engine



Dnepr MT-12 with K-750M Engine



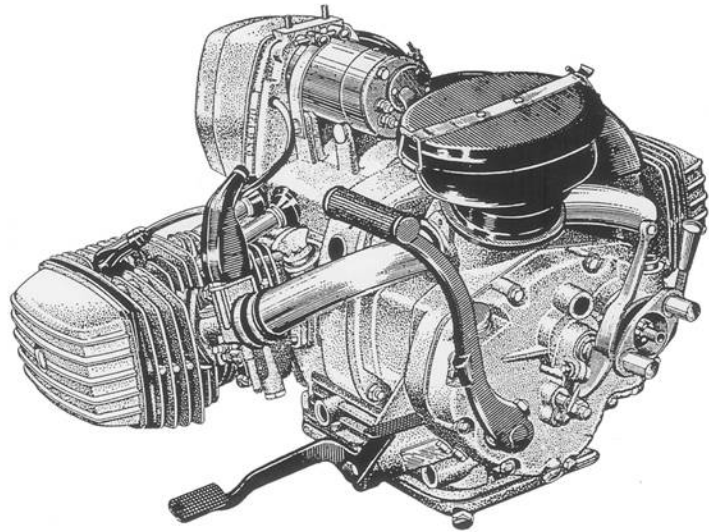
ГЛАВНАЯ ПЕРЕДАЧА
С ДИФФЕРЕНЦИАЛОМ
Цифрами обозначены:
1 — крышка картера
дифференциала; 2 —
выходная шестерня



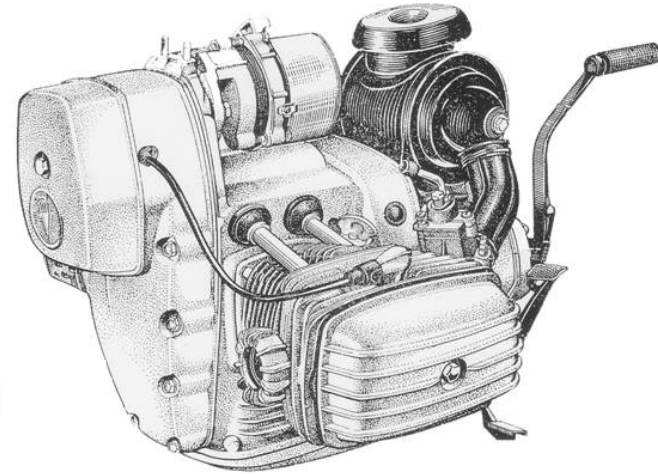
KMZ/Dnepr MT801 (650cc) Engine

- ***Developed from K-750 Engine***
- ***Features***
 - ***Developed in 1967***
 - ***Over-Head Valve (OHV) Timing***
 - ***Cast Iron Crankshaft with Detachable Connecting Rod***
 - ***Replaceable Rod Bearing Inserts***
- ***Installation on K-650/MT-8, MT-9, MT-10 and MB-650***

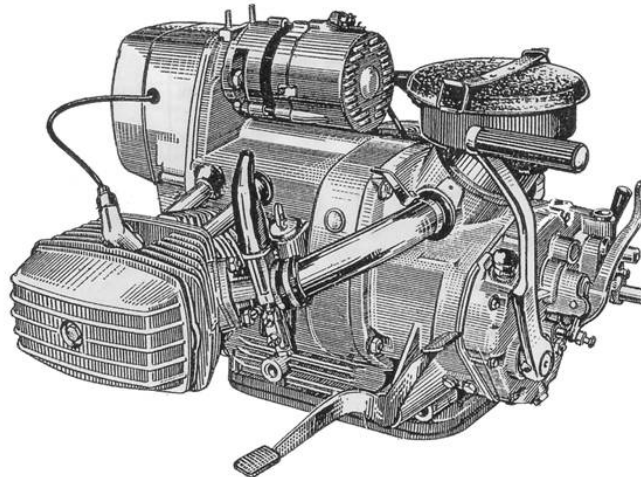
DNEPR ENGINE MT-9 MT-10



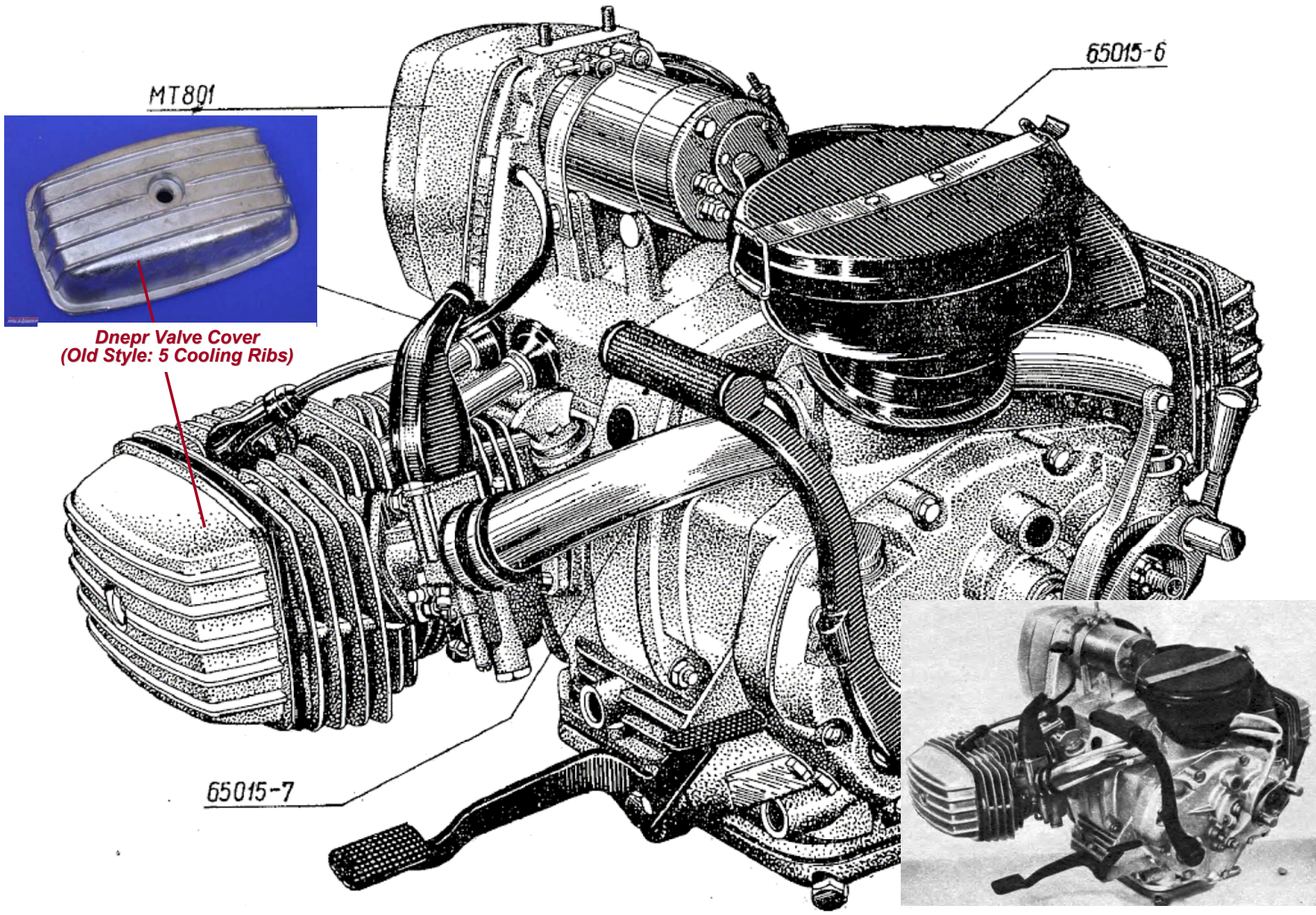
DNEPR ENGINE MT-11 MT-16



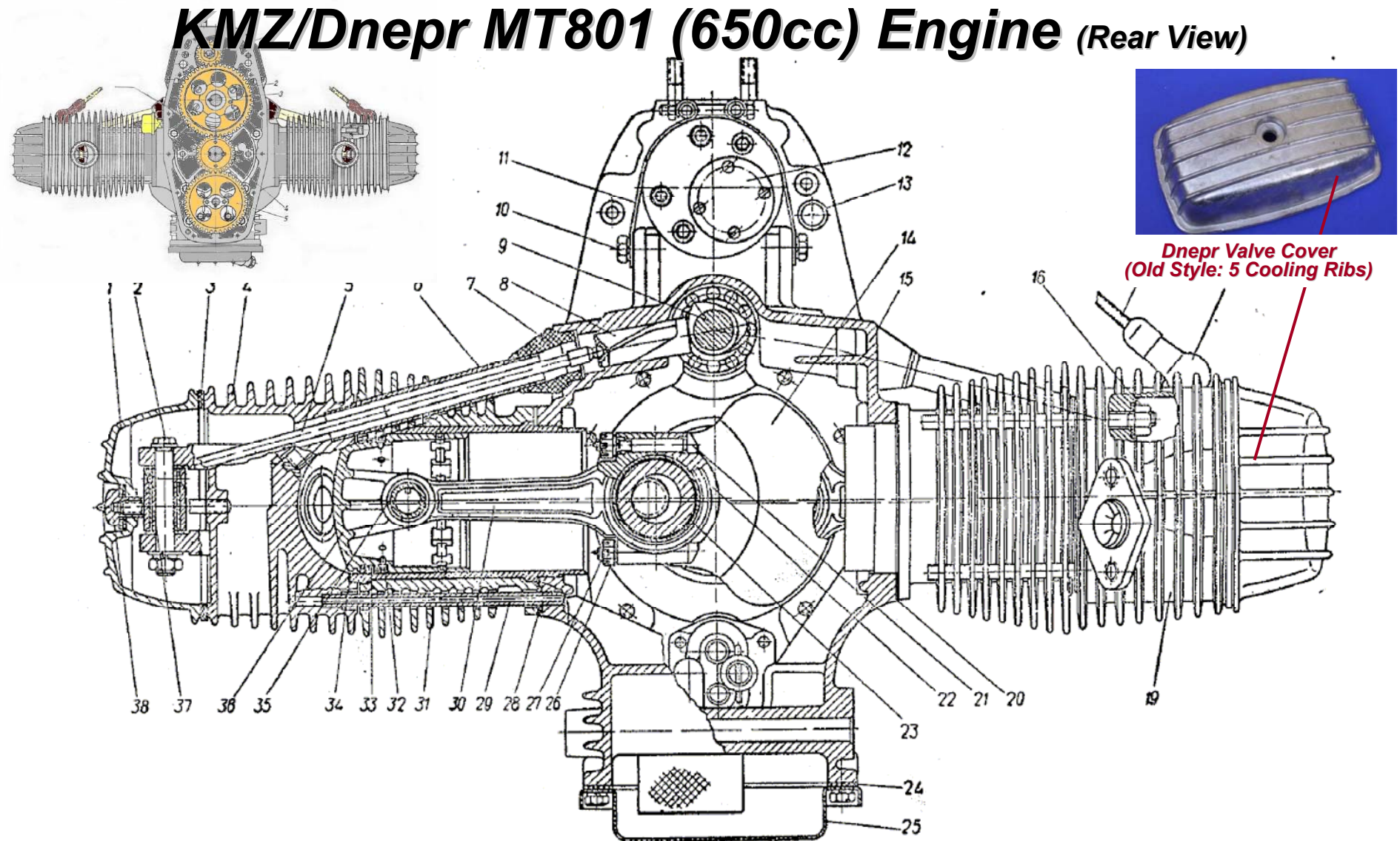
DNEPR ENGINE MT 10-36



KMZ/Dnepr MT801 (650cc) Engine (Rear View)



KMZ/Dnepr MT801 (650cc) Engine (Rear View)

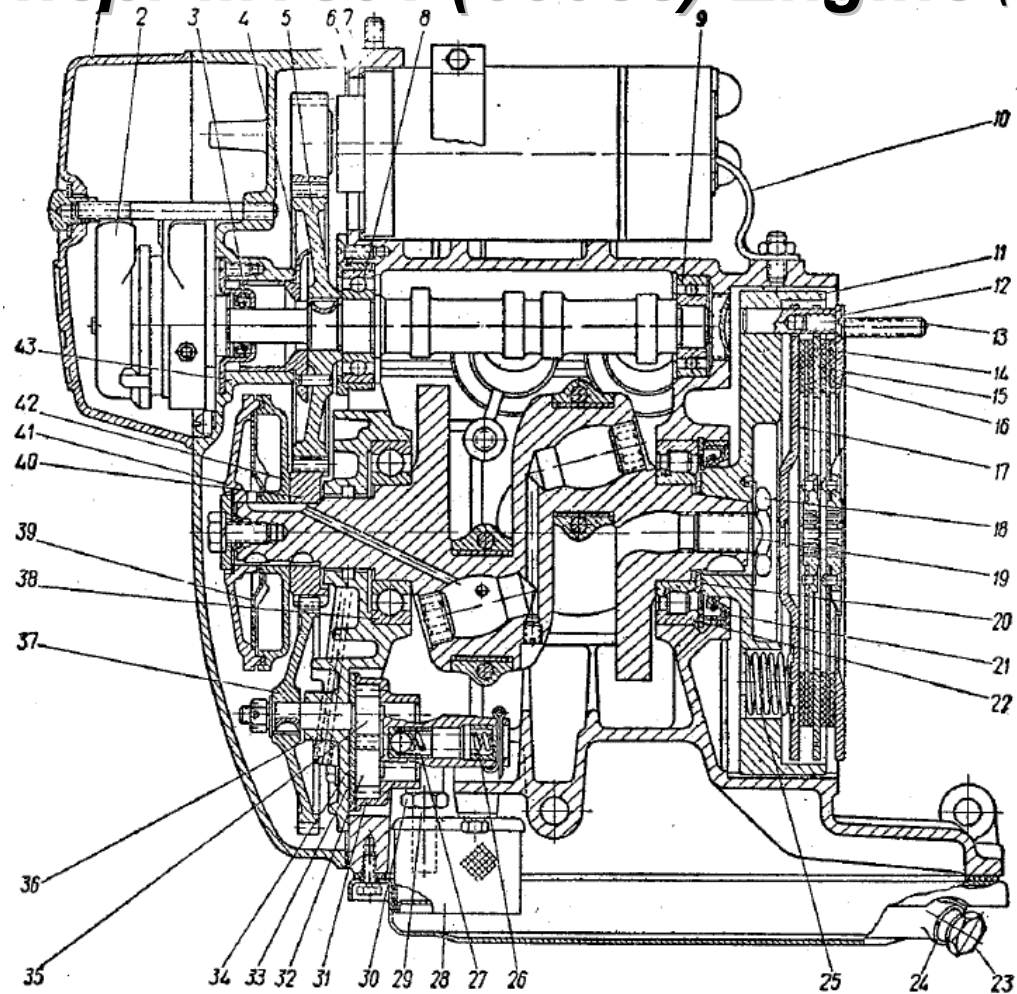


1. Head Cover, 2. Rocker Axle, 3. Gasket, 4. Left Cylinder Head, 5. Rod, 6. Rod Jacket, 7. Sealing Cap, 8. Tappet, 9. Camshaft, 10. Generator Bolt Clamp, 11. Generator Clip, 12. Generator, 13. Generator Jacket, 14. Crankshaft, 15. Crankcase, 16. Cylinder Head Fastening Nut, 17. High-Voltage Wire, 18. Spark Plug Terminal, 19. Right Cylinder Head, 20. cylinder Liner, 21. Connecting Rod Bolt, 22. Connecting Rod Cap, 23. Connecting Rod Half Bearing, 24. Crankcase Pan Gasket, 25. Crankcase Pan, 26. Connecting Rod Bolt Nut, 27. Cotter Pin, 28. Drain Pipe Gasket, 29. Drain Pipe, 30. Connecting Rod, 31. Cylinder, 32. Oil Control Piston Ring, 33. Compression Ring, 34. Cylinder Head Gasket, 35. Piston Pin, 36. Piston, 37. Rocker Axle Fastening Bolt, 38. Head Cover Fastening Nut

KMZ/Dnepr MT801 (650cc) Engine (Side View)

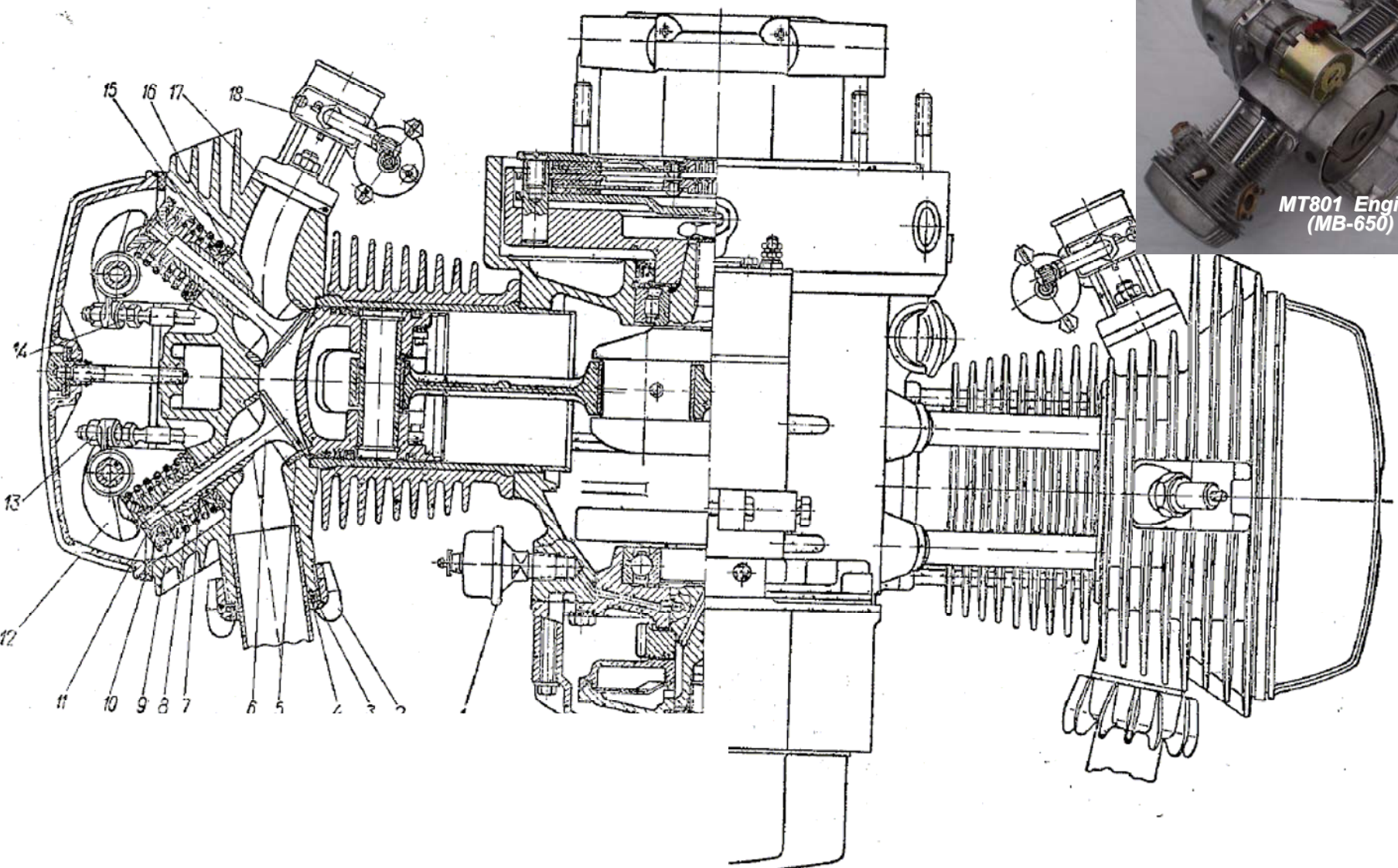


**Cover ignition
(MT801166)**



1. Crankcase Cover, 2. Interrupter/Distributor, 3. Camshaft Seal, 4. Breather, 5. Camshaft Driven Gear, 6. Paper Gasket, 7. Generator Gasket, 8. Camshaft Front Bearing, 9. Camshaft Rear Bearing, 10. Generator Stop, 11. Flywheel, 12. Clutch Back Disk Fastening Screw, 13. Gearbox Fastening Stud, 14. Clutch Driven Disk, 15. Clutch Intermediate Driving Plate, 16. Clutch Driven Disk, 17. Clutch Pressure Driving Disk, 18. Flywheel Fastening Bolt, 19. Lock Washer, 20. Oil Deflector, 21. Crankshaft Oil Seal, 22. Crankshaft Rear Bearing, 23. Drain Plug, 24. Gasket, 25. Clutch Spring, 26. Relief Valve Spring, 27. Relief Valve, 28. Oil Receptacle (Oil Suction Bell), 29. Oil Suction Pipe, 30. Pipe Fastening Nut, 31. Oil Pump Housing, 32. Oil Pump Driven Gear, 33. Oil Pump Housing Gasket, 34. Oil Pump Body Cover, 35. Oil Pump Driving Gear, 36. Front Bearing Housing, 37. Oil Pump Drive Gear, 38. Crankshaft Front Bearing, 39. Centrifuge Screen, 40. Timing Gear, 41. Centrifuge Cover, 42. Centrifuge Housing, 43. Timing Gear Box Cover

KMZ/Dnepr MT801 (650cc) Engine (Top View)

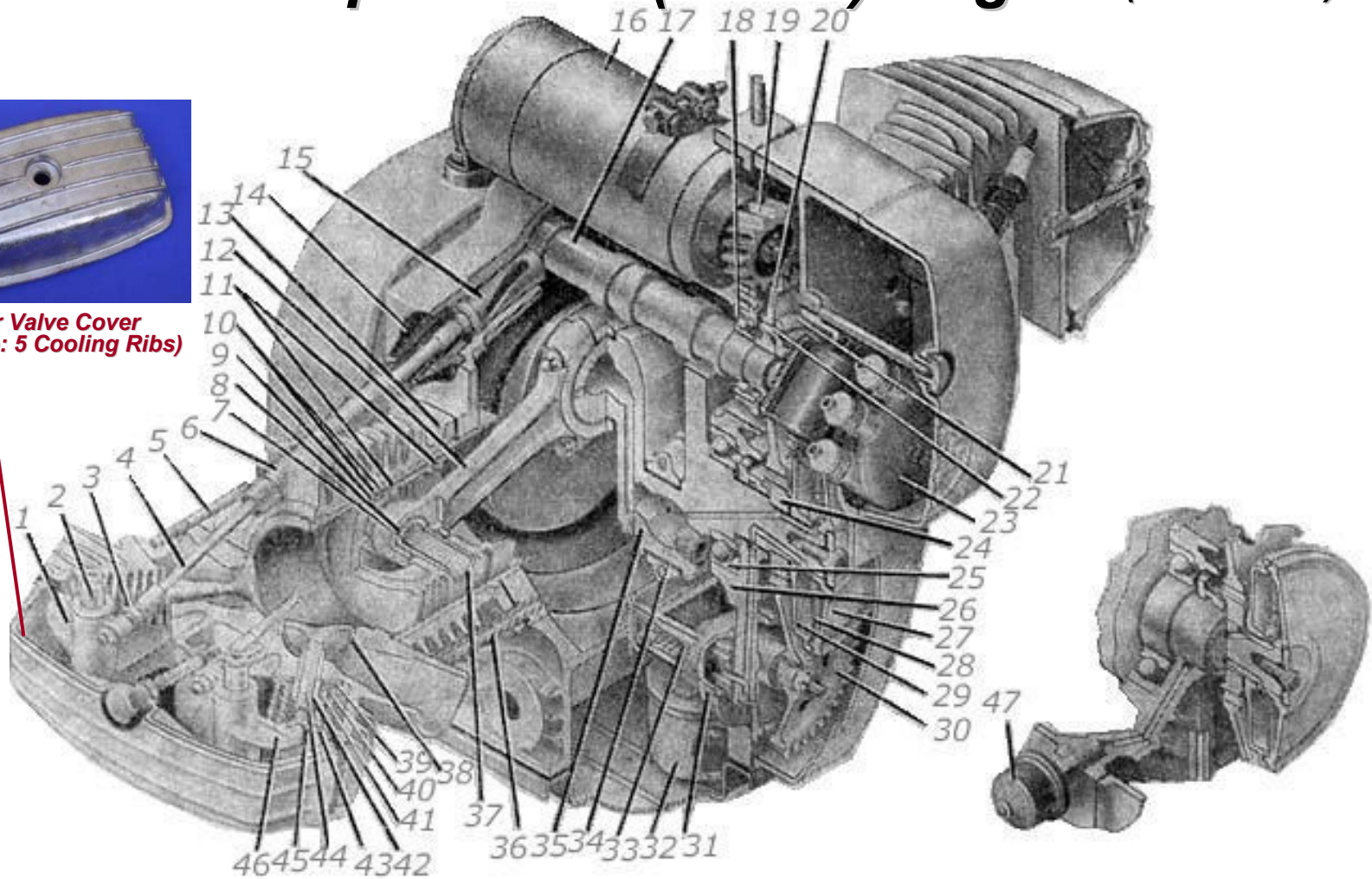


- 1. Emergency Oil Pressure Sensor, 2. Exhaust Pipe Fastening Nut, 3. Exhaust Gasket, 4. Split-Ring Seal, 5. Valve Seat, 6. Valve: 7. Valve Guide, 8. Outer Valve Spring, 9. Inner Valve Spring, 10. Upper Valve Retainer, 11. Valve retainer Blocks, 12. Rocker Arm, 13. Locknut, 14. Adjusting Bolt, 15. Lower Valve Retainer, 16. Gasket, 17. Carburetor Gasket, 18. Carburetor**

KMZ/Dnepr MT801 (650cc) Engine (Front View)



**Dnepr Valve Cover
(Old Style: 5 Cooling Ribs)**

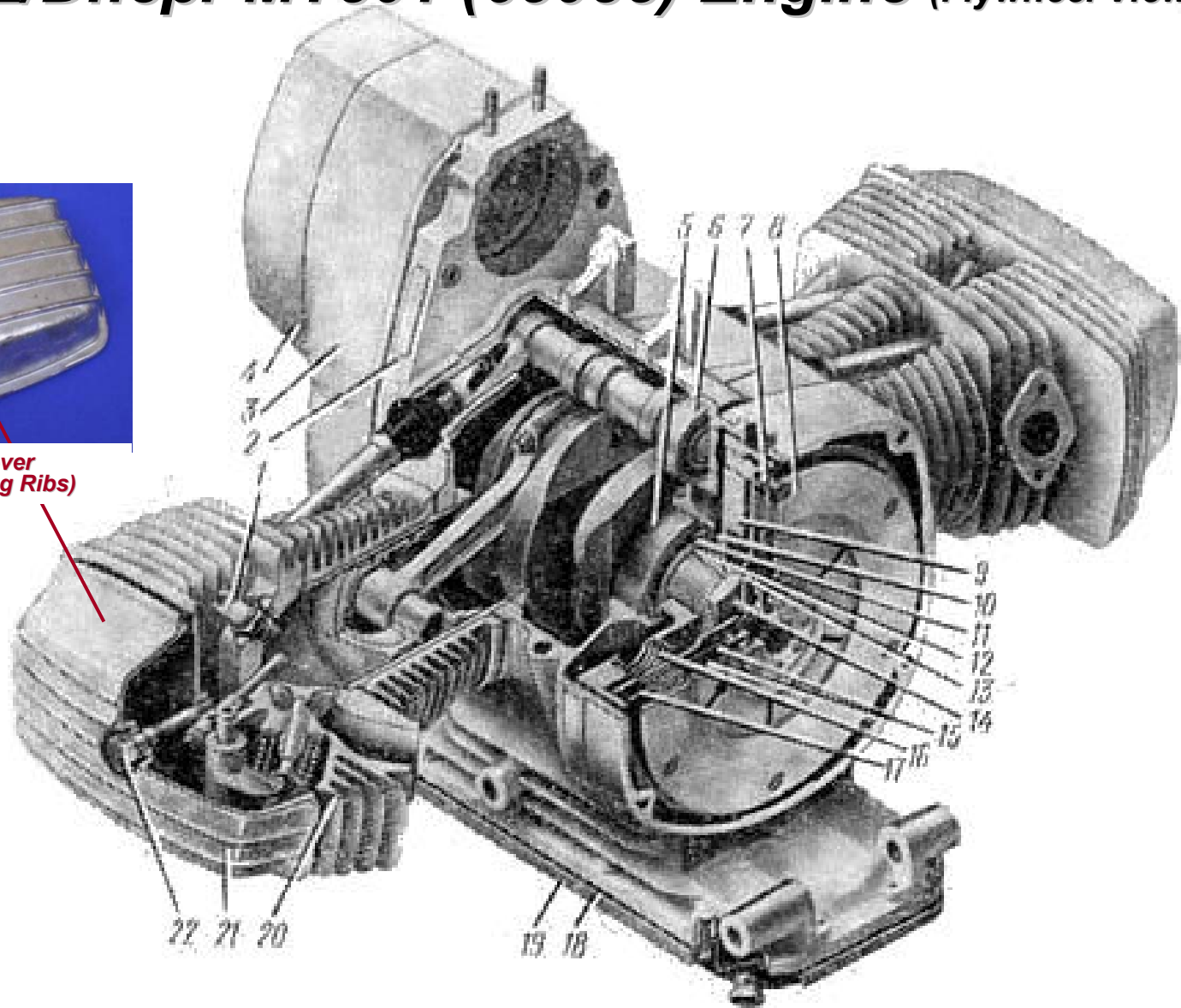


1. Left Arm, 2. Sleeve, 3. Adjusting Bolt, 4. Rod, 5. Cylinder Mounting Stud, 6. Housing Boom, 7. Piston Pin, 8. Upper Connecting Rod Bushing, 9. Piston, 10. Compression Rings, 11. Oil Control Ring, 12. Rod, 13. Cylinder, 14. Sealing Cap, 15. Pusher, 16. Generator, 17. Camshaft, 18. Front Bearing Camshaft; 19. Generator Gear, 20. Camshaft Gear, 21. Breather, 22. Lead Breather 23. Distributor Breaker, 24. Drive Gear Distribution, 25. Front Crankshaft Bearing, 26. Front Bearing Housing, 27. Centrifuge Cap, 28. Centrifuge Screen, 29. Centrifuge Housing, 30. Oil Pump Gear, 31. Oil Pump, 32. Oil Receiver, 33. Discharge Valve, 34. Rod Insert, 35. Crankshaft, 36. Drainage Pipe, 37. Piston Pin Locking Ring, 38. Seat, 39. Lower Bowl, 40. Outer Valve Spring, 41. Inner Valve Spring, 42. Valve, 43. Top Plate, 44. Valve, 45. Biscuit, 46. Right Arm, 47. Emergency Oil Pressure Sensor

KMZ/Dnepr MT801 (650cc) Engine (Flywheel View)



**Dnepr Valve Cover
(Old Style: 5 Cooling Ribs)**



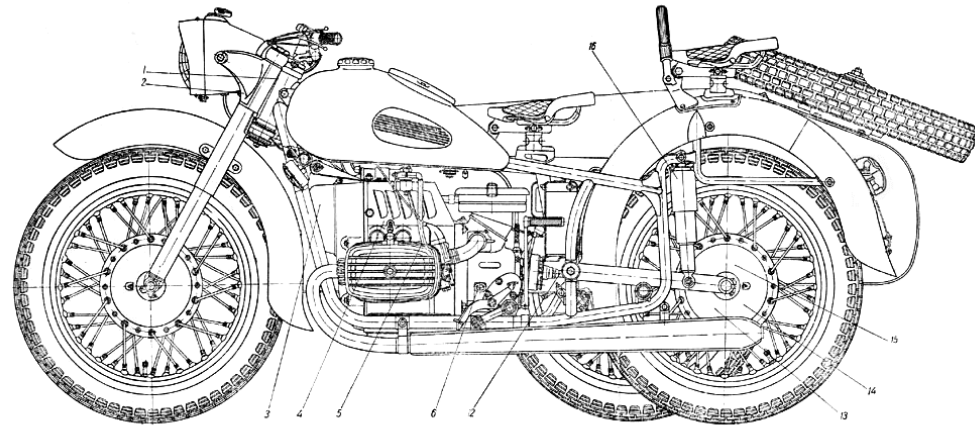
1. Spark Plug, 2. Aluminum Crankcase, 3. Junction Box Cover, 4. Front Cover Crankcase, 5. Rear Crankshaft Bearing, 6. Rear Camshaft Bearing, 7. Screw for Hard Disk Clutch, 8. Hard Disk Clutch, 9. Flywheel, 10. Crankshaft Oil Seal, 11. Valve Stem Washer, 12. Spacer, 13. Push the Drive Plate Clutch, 14. Flywheel Bolt, 15. Disc Clutch, 16. Clutch Spring, 17. In Between the Drive Plate Clutch, 18. Pallet Lining, 19. Pan, 20. Left Cylinder Head, 21. Cylinder Head, 22. Nut Cover

MT801 Engine (650 cc) in K-650/MT-8, MT-9, MB-650 & MT-10



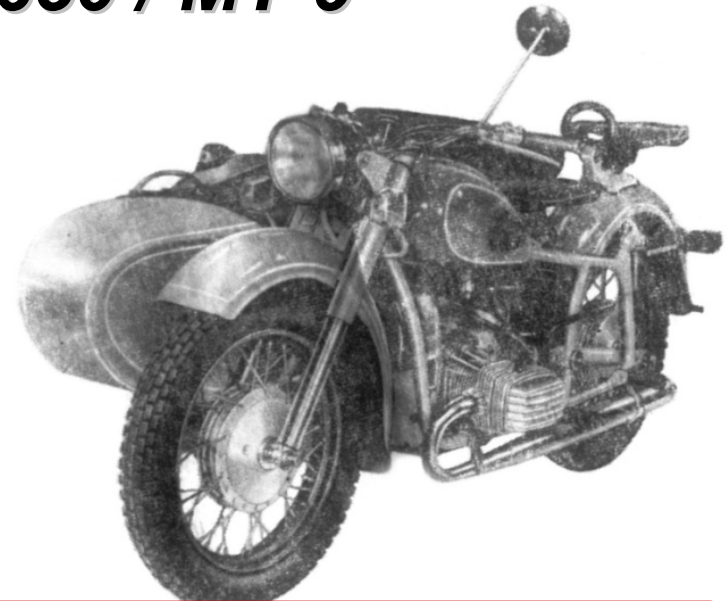
The MT801 engine was used in Dnepr's K-650/MT-8, MT-9, MB-650 and MT-10.

KMZ/Dnepr K-650 / MT-8 (650 cc)



K-650

KMZ/Dnepr K-650 / MT-9

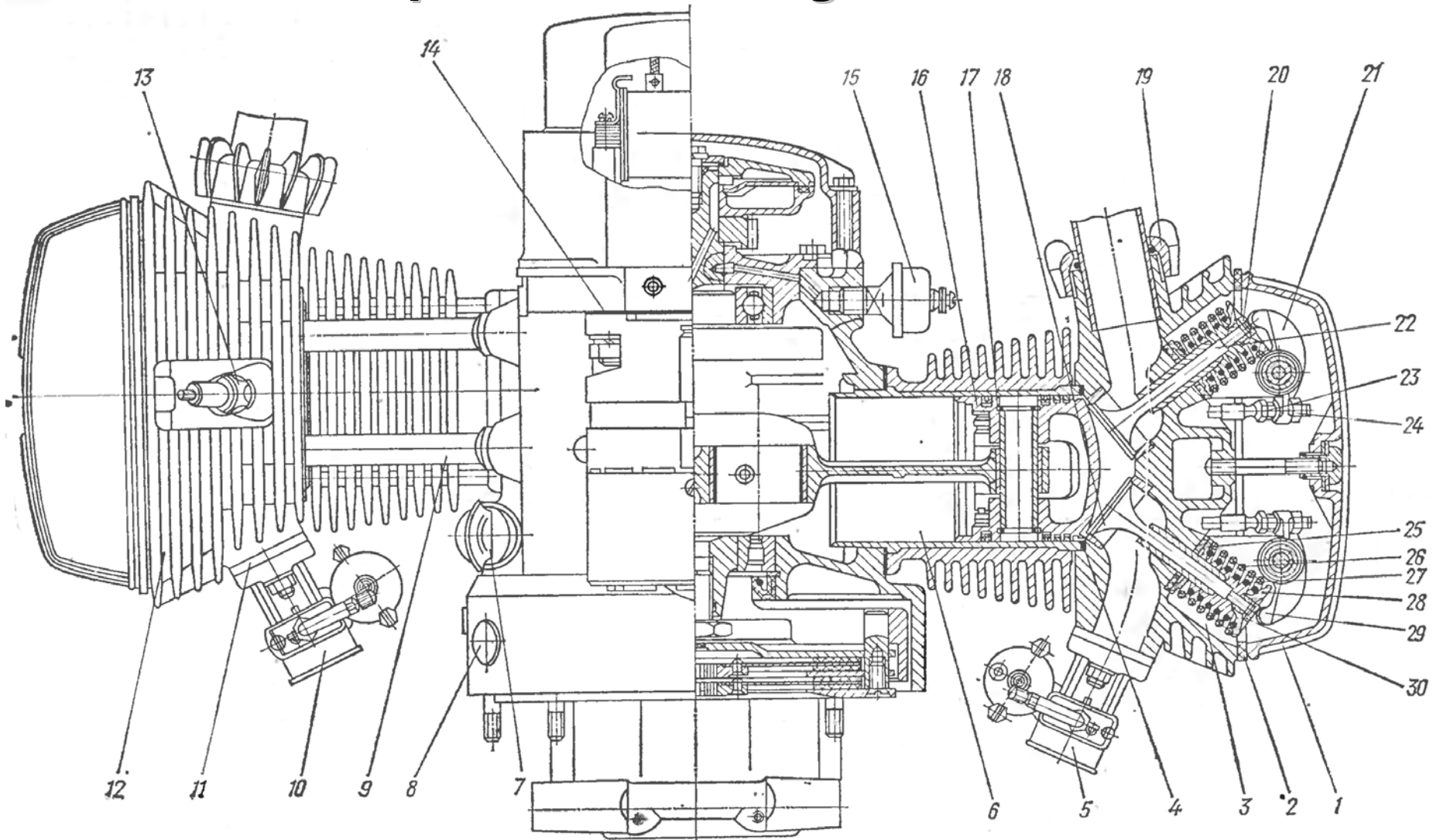


The K-650 / MT-8 used Dnepr's first Overhead Valve engine.

KMZ/Dnepr MT10-36 OHV 650cc Engine

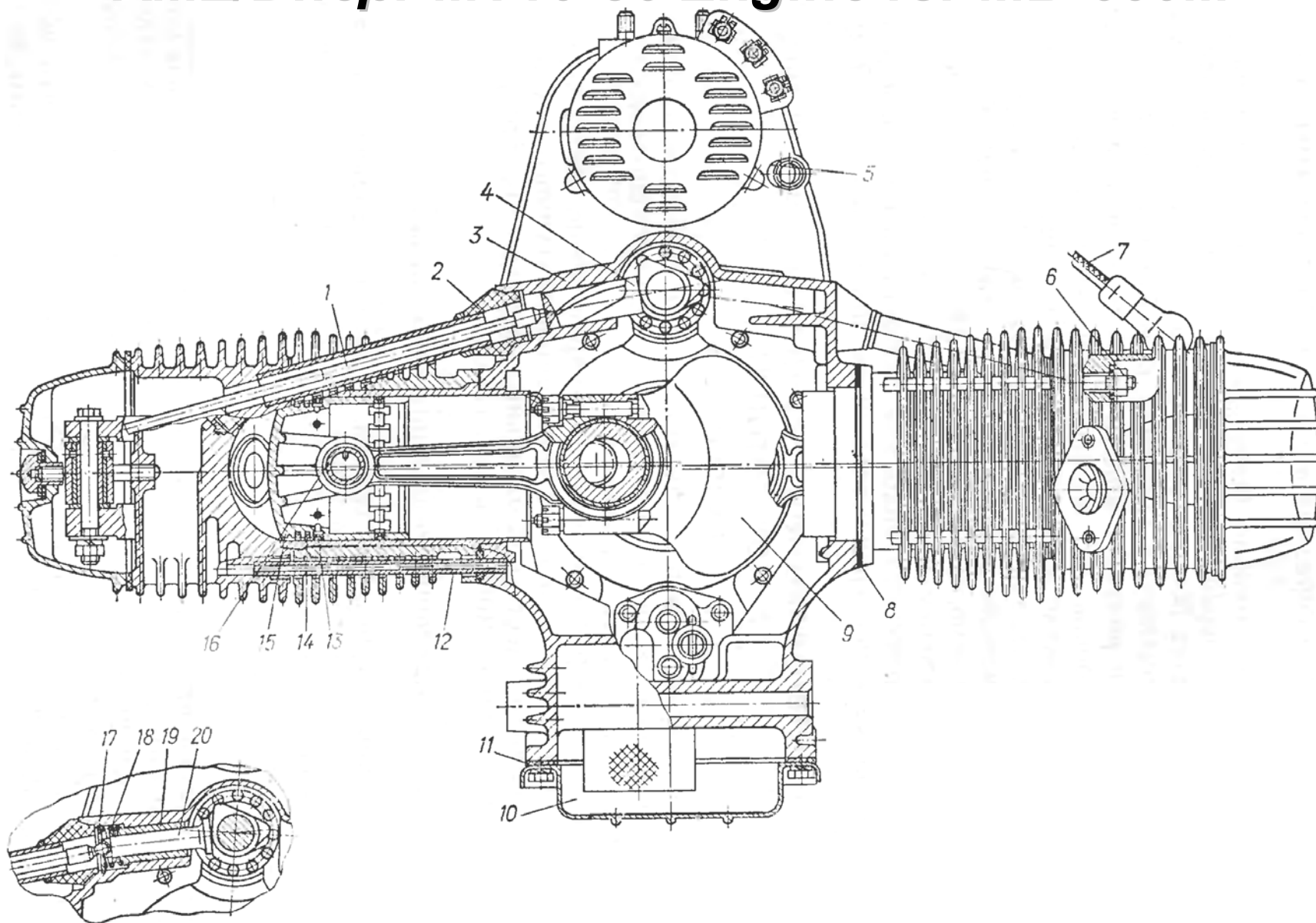
- ***MT10-36 Engine: Upgraded MT801 Engine from MT-10 Motorcycle***
 - ***Increased Capacity to 36 Hp (26.5 kW)***
 - ***Achieved by Increasing Diameter of Intake Valve 37 to 40 mm, Using Camshaft with a New Profile and Increasing Compression Ratio to 7.5:1***
 - ***Engine Speed Increased to 5600 - 5800 rpm***
 - ***Modified Form of Deepening Valve at Bottom of Piston***
 - ***Used Carburetor K-301D, Instead of K-301B; Breaker PM302-01 Automatic Ignition***
 - ***Since November 1978, Produced Piston Sphere Radius Head 72.5mm***
 - ***Increased Compression Ratio from 7.0:1 to 7.5:1 (A-72 and A-76 Petrol)***
 - ***Export Engine to Run on High-Octane A-93 with Compression Ratio of 8.5:1***
 - ***Distance from Axis of Piston Pin to Outer Surface of 48.2 mm***
 - ***Piston Bore Reshaped under Exhaust Valve***
- ***Used on Dnepr: MB-650M, MT-10.36 Motorcycles***

KMZ/Dnepr MT10-36 Engine for MB-650M



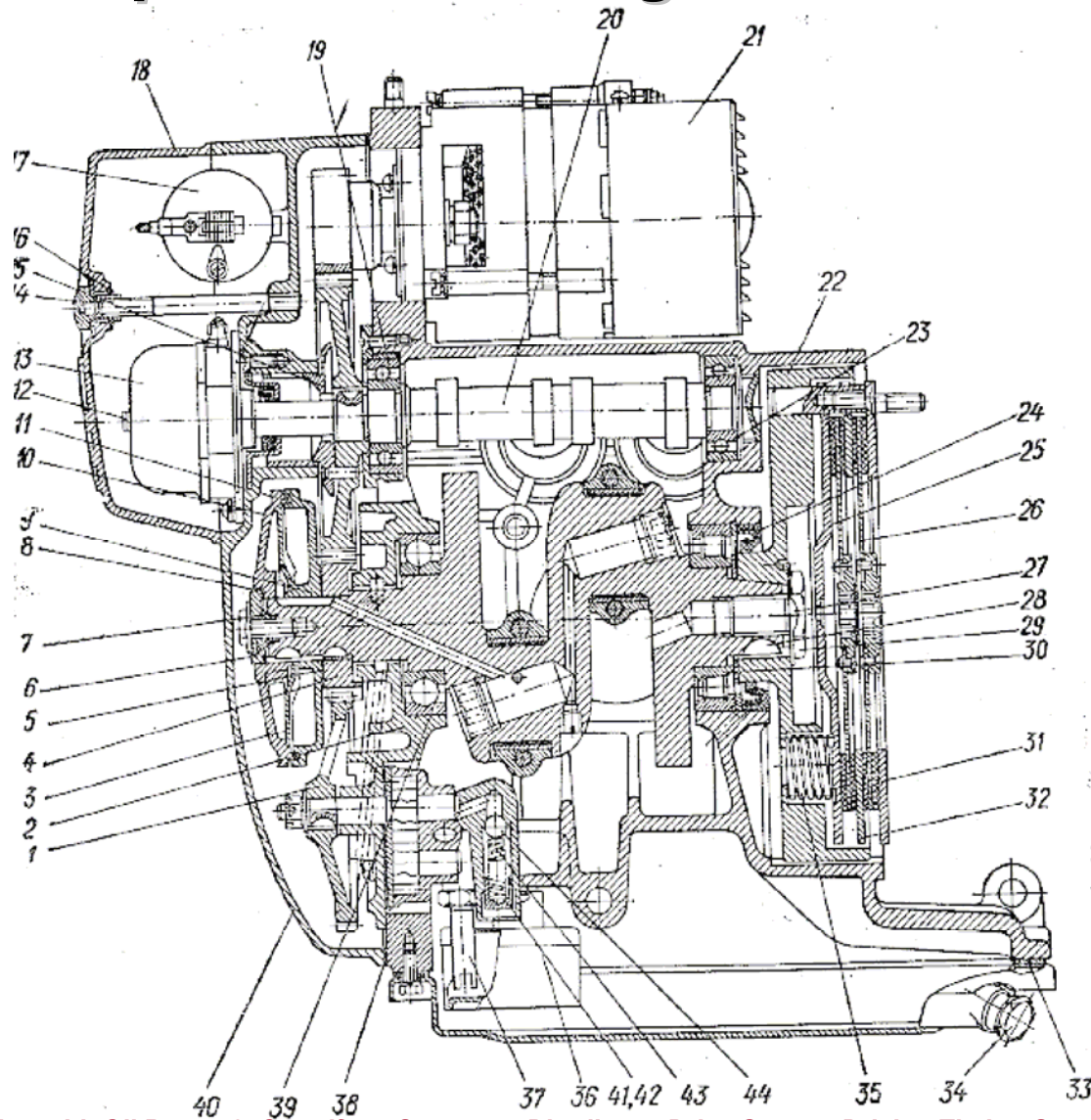
1. Cylinder Head Cover, 2. Head Cover Gasket, 3. Right-Hand Cylinder Head with Valves, 4. Cylinder Head Gasket, 5. Right-Hand Carburetor, 6. Cylinder, 7. Filler Plug, 8. Rubber Plug, 9. Rod casing, 10. Left-hand Carburetor, 11. Carburetor gasket, 12. Left-Hand Head with Valves, 13. Spark Plug, 14. Generator Gasket, 15. Emergency oil Pressure sensor, 16. Piston with Rings and pins, 17. Piston Pin Lock Ring, 18. Inlet Valve, 19. Exhaust Pipe Fastening Nut, 20. Valve Stem Cap, 21. Right-Hand Rocker, 22. Outlet Valve, 23. Adjusting Bolt, 24. Locknut, 25. Lower Disk, 26. Valve Outer Spring, 27. Valve Inner Spring, 28. Upper Sisk, 29. Left-Hand Rocker, 30. Block

KMZ/Dnepr MT10-36 Engine for MB-650M



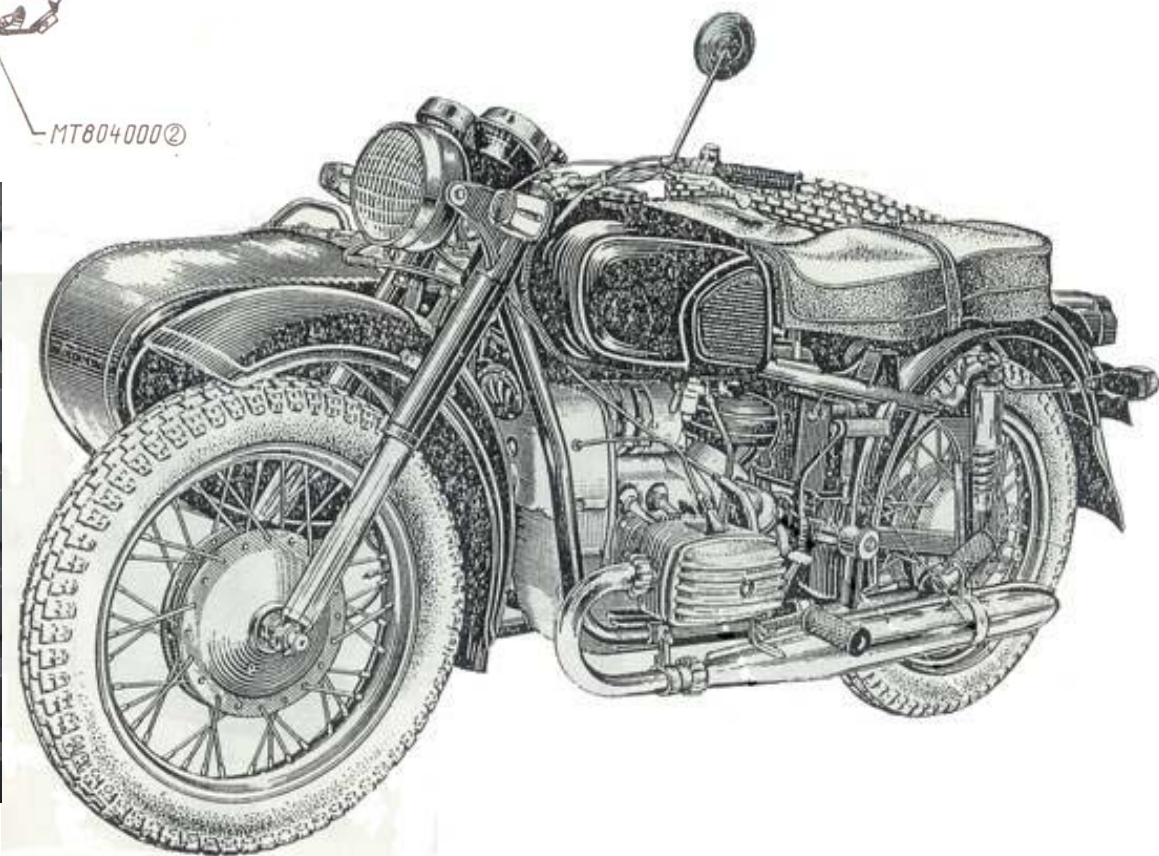
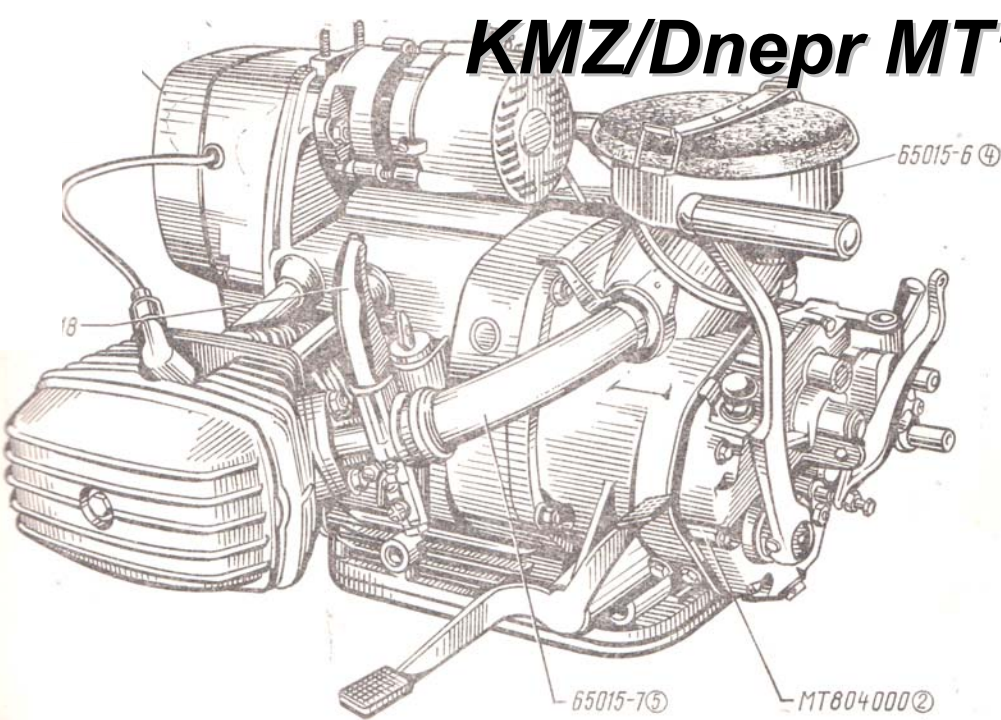
- 1. Rod, 2. Sealing Cap, 3. Crankcase, 4. Tappet, 5. Breather Outlet Tube, 6. Special Nut, 7. High Voltage Wire, 8. Cylinder Gasket, 9. Crankshaft with Connecting Rods, 10. Pan (Sump), 11. Sump Gasket, 12. Drain Pipe, 13. Oil Control Ring, 14. Compression Ring, 15. Piston, 16. Piston Pin, 17. Circlip, 18. Spring, 19. Pushrod (Tappet) Guide, 20. Push Rod (Tappet)**

KMZ/Dnepr MT10-36 Engine for MB-650M



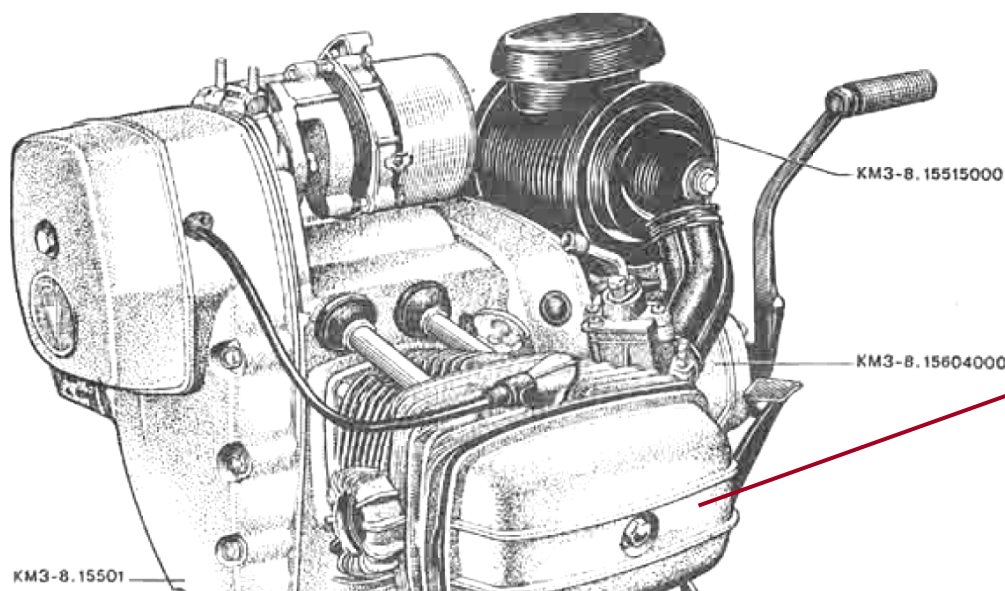
1. Oil Pump Gear, 2. Front Bearing with Oil Pump, 3. Centrifuge Screen, 4. Distributor Drive Gear, 5. Driving Timing Gear Gasket, 6. Centrifuge Washer, 7. Sealing Ring, 8. Centrifuge Washer Gasket, 9. Centrifuge Body, 10. Centrifuge Cover, 11. Centrifuge Sealing O-ring, 12. Breaker Cover Holder with Cleat, 13. Breaker, 14. Cover Fastening Nut, 15. Breather, 16. Cover Locking Ring, 17. Ignition Coil, 18. Crankcase Front Cover, 19. Camshaft Front Bearing, 20. Camshaft with Gear, 21. Generator with Gear, 22. Flywheel with Clutch Pins, 23. Camshaft Rear Bearing, 24. Crankshaft Seal, 25. Clutch Driving Pressure Disc, 26. Clutch Driven Disc, 27. Flywheel Lock Washer, 28. Flywheel Woodruff Key, 29. Flywheel Fastening Bolt, 30. Crankshaft Rear Bearing, 31. Clutch Driving Bearing Disc, 32. Clutch Driving Intermediate Disc, 33. Sump Gasket, 34. Drain Plug, 35. Clutch Pressure Spring, 36. Oil Receiver, 37. Oil Intake Pipe, 38. Timing Gear Case Gasket, 39. Crankshaft Front Bearing, 40. Timing Gear Case Cover, 41. Cotter Pin, 42. Plug, 43 - Spring, 44 - Ball

KMZ/Dnepr MT10-36 Engine



KMZ/Dnepr MT10-32 Engine (KMZ-8.15501)

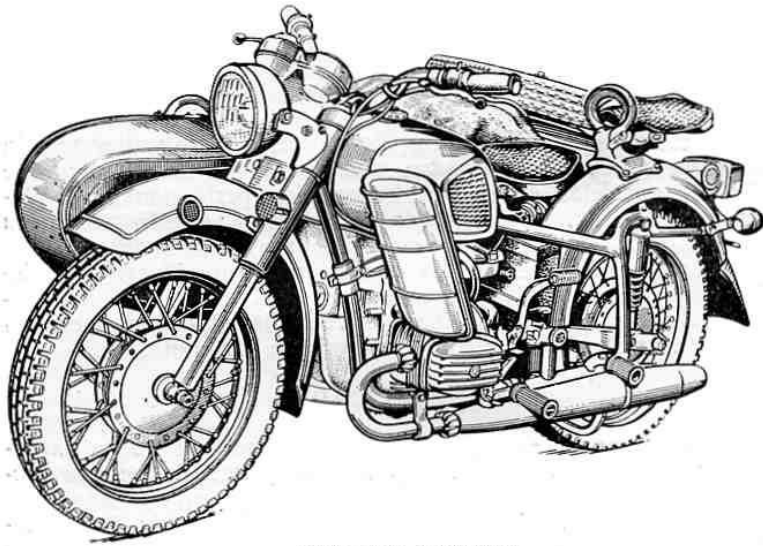
- **Based on Previous MT10-36 Engine**
 - **Higher Torque at Low and Mid-Range Engine Speed**
 - **Significantly Improved Traction-in-Dynamic Performance in Rural Areas**
 - **Maximum Power Decreased by 3 kW and Maximum Speed Lower by 700 rpm**
 - **Engine Improved by Modified Camshaft with New Profile**
 - **MT10-32 Fully Interchangeable with Engine of Previous Design**
 - **Can Be installed on Engines MT9, MT10 and MT10-36.**
 - **Change in Piston Design**
 - **Previous Engine (10-32) Sphericity of Bottom Set with Ejector Piston**
 - **10-36 Has a Flat Bottom**
 - **Reduced Compression to 7.0:1**
 - **Increased Size of 10-32 Cylinder by 0.9 mm**
 - **Upgraded Engine Used K-63T Carburetors**
 - **Used in Dnepr MT-11 and MT-16 Motorcycles**



**Dnepr Valve Cover
(New Style: 2 Cooling Ribs)**

The MT10-32 engine was used in Dnepr's MT-11 and MT-16.

MT10-32 Engine (650cc) for Dnepr MT-11 and MT-16



Motorcicleta DNEPR-16



1995 Dnepr MT-16



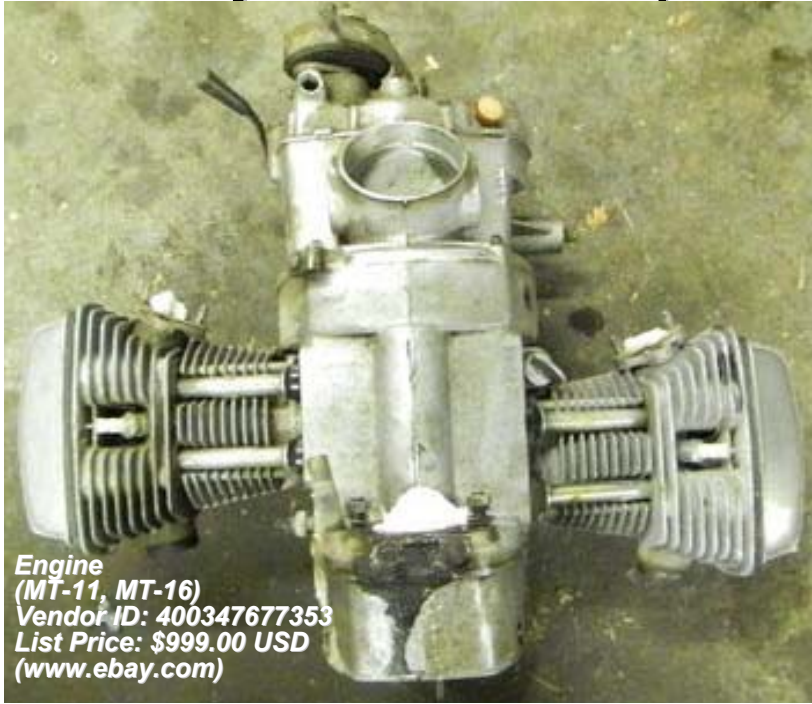
1993 MT-11



1992 MT-16

The MT10-32 engine was used in Dnepr's MT-11 and MT-16.

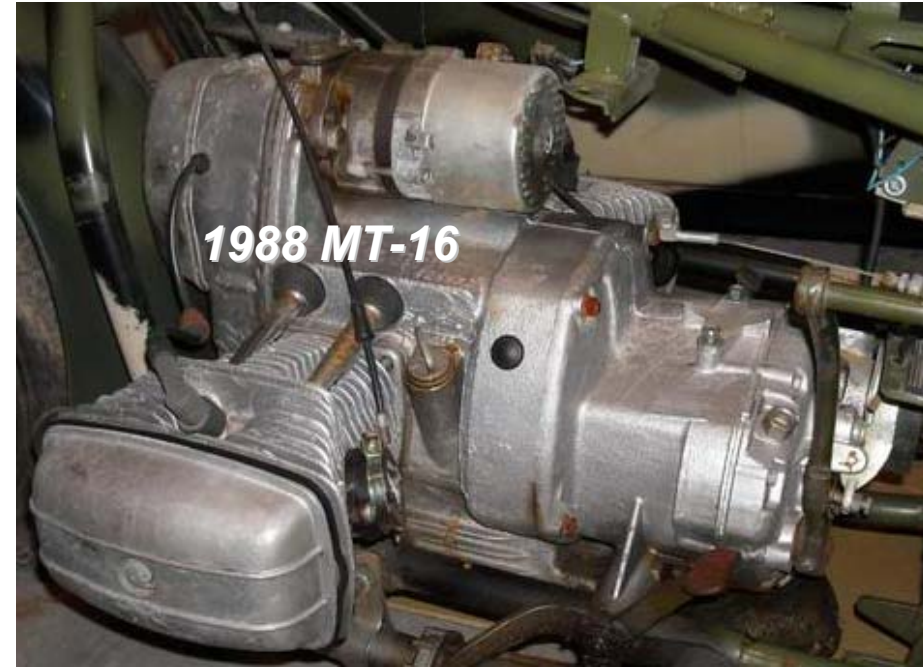
Dnepr MT10-32 (650cc) Engine (MT-11, MT-16)



Engine
(MT-11, MT-16)
Vendor ID: 400347677353
List Price: \$999.00 USD
(www.ebay.com)



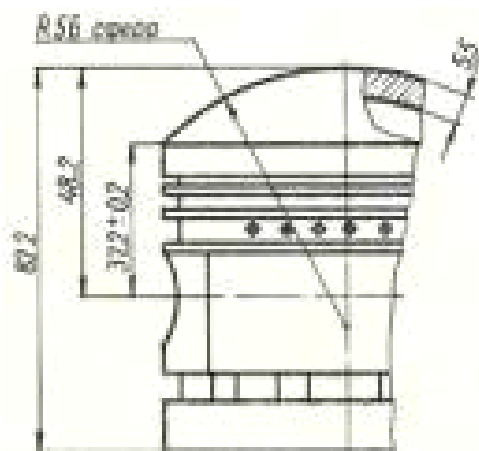
MT10-32 Engine (650cc) in Dnepr's MT-11 & MT-16



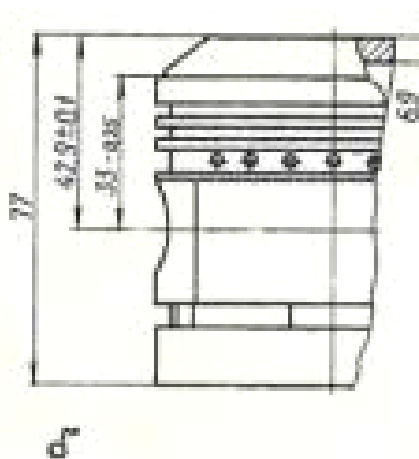
The MT10-32 engine was used in Dnepr's MT-11 and MT-16.

MT10-36 vs. MT10-32 Engine (uraldnepr.ru)

- **New Pistons, Cylinders and Camshafts**
- **Pistons of Old (MT10-36) and New (MT10-32) Designs Fully Interchangeable**
 - **Cylinders with Size of 108.6 mm Can Be Installed on All Previous Models of Motorcycles with Engine Dnepr MT**
 - **Suitable for All Dnepr Engines in K-650/MT-8, MT-9, MT-10, MT-10.36**
 - **Change Pistons in Pairs**
 - **Pistons Are Selected with the Same Color Index, Which Have the Piston Pin and the Upper End of Connecting Rod, and Similar Masses**
- **Compression Ratio Decreased from 7.5:1 (MT10-36) to 7.0:1 (MT10-32)**
 - **Achieved by an Increase of 0.9 mm Height of the Cylinder (Distance between the Surfaces Adjacent to the Block and Cylinder Head)**
 - **Rest of the Cylinders Is the Same**
- **Modified Profile Camshaft Lobes, Which Improved Torque characteristic**

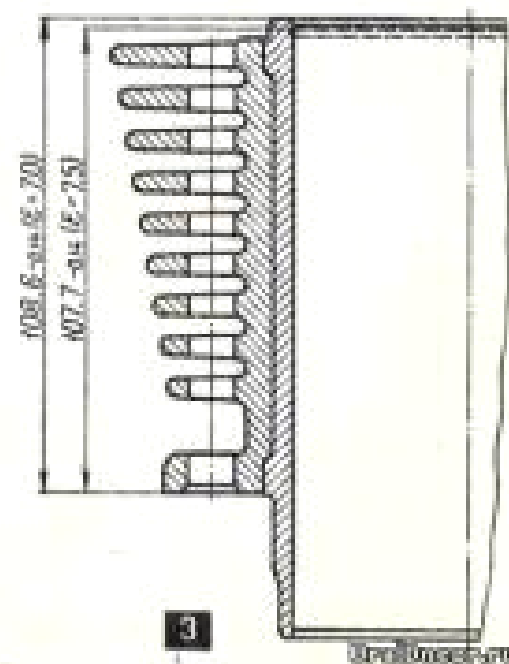


2 а



б

Рис. 2. Поршни двигателей: а — MT10—36; б — MT10—32.

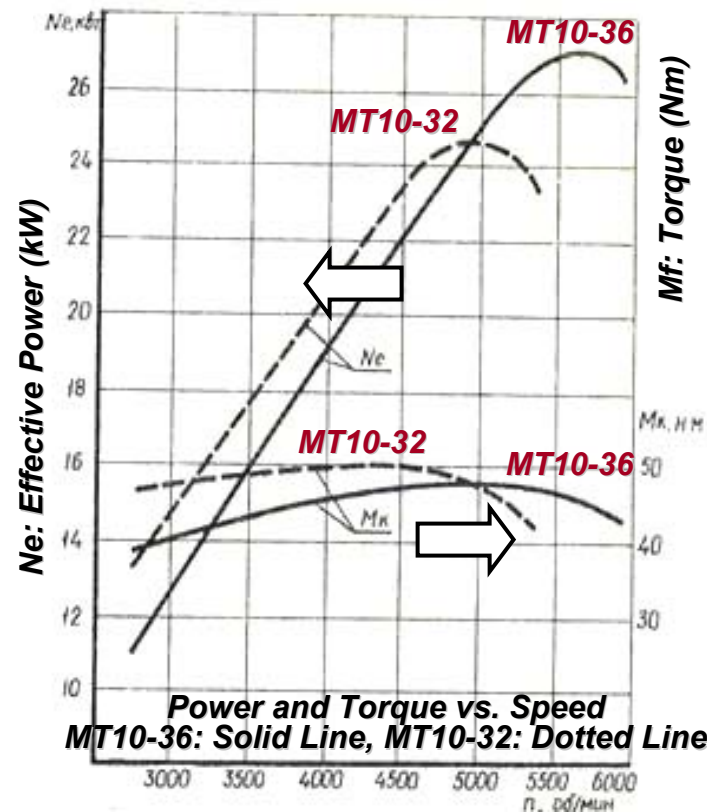


3

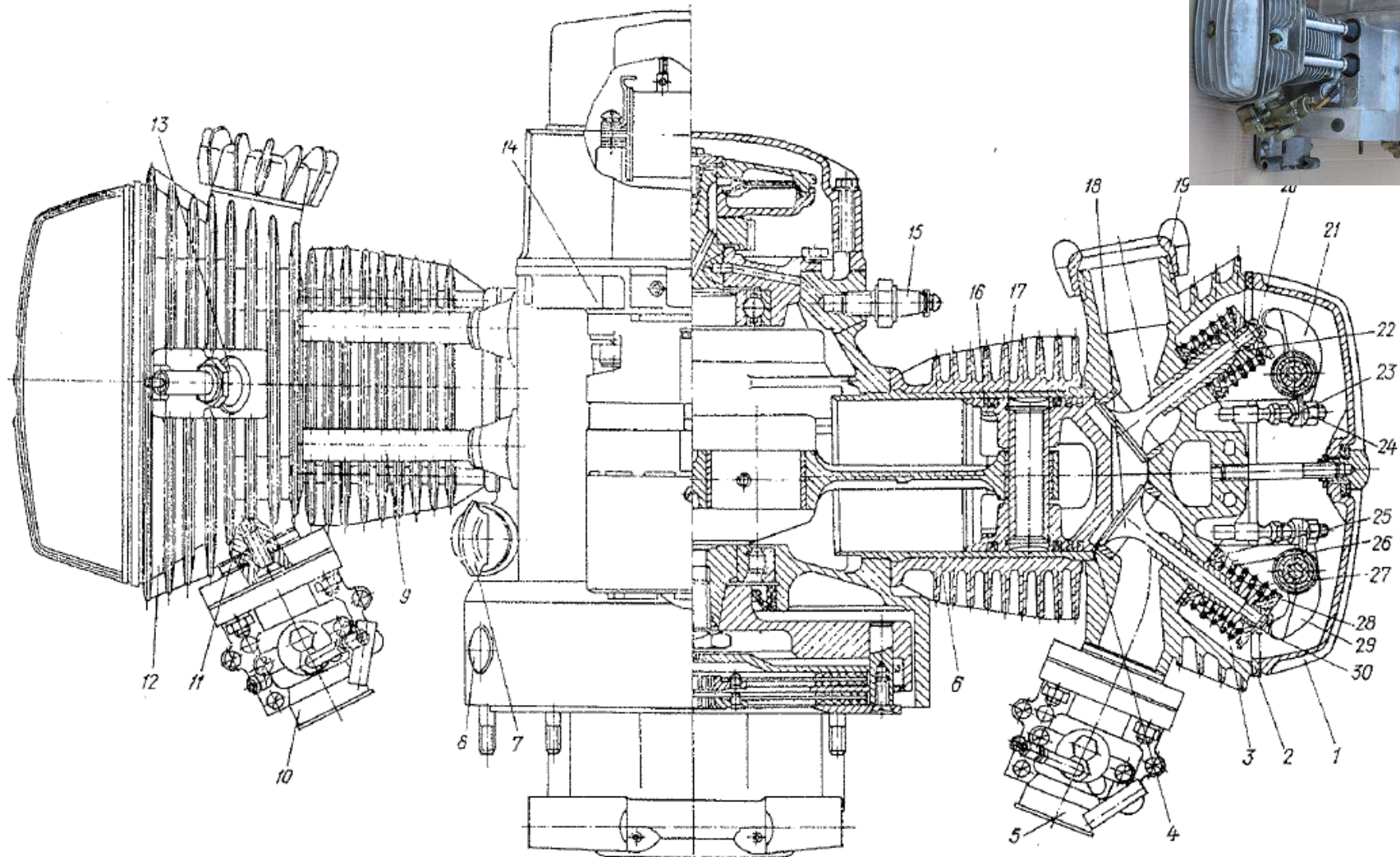
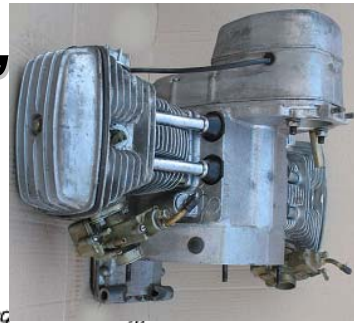
Рис. 3. Цилиндры двигателя MT10—32 [сплошная линия] и MT10—36 [пунктир].

MT10-36 vs. MT-32 Engine (uraldnepr.ru)

- **Change from MT10-36 (MB-650M and MT10.36) to MT10-32 (MT-11 and MT-16) Engine**
- **Reduce Fuel Consumption in Rural Area and Lower Demands for Higher Octane Gasoline**
 - MT10-36 Did Not Fully Satisfy Riders Who Live in Rural Areas (Most of Russia)
 - Rural Riders Almost Never Use the Maximum Power (36 Hp) of MT10-36 Attainable at Very High Speed (5900 rpm)
 - Torque Insufficient at Low and Medium Speed, Typical for Such Conditions
 - Increased to 50 Nm (5 kg-m) and Changes Little in a Fairly Large Range of Speeds
- **Both Engines Produced at Kiev (Dnepr) Motorcycle Plant**
- **New Engine MT10-32 Replaces MT10-36**
 - From mid-1985 to Establish the MT-11 / MT-16
- **Result**
 - Improved Traction and Dynamic Quality
 - Increased So-Called Coefficient of Adaptability, Which Characterizes Ability of Engine to Keep Engine Speed When Load Increases
 - Easier to Drive on Bad Roads

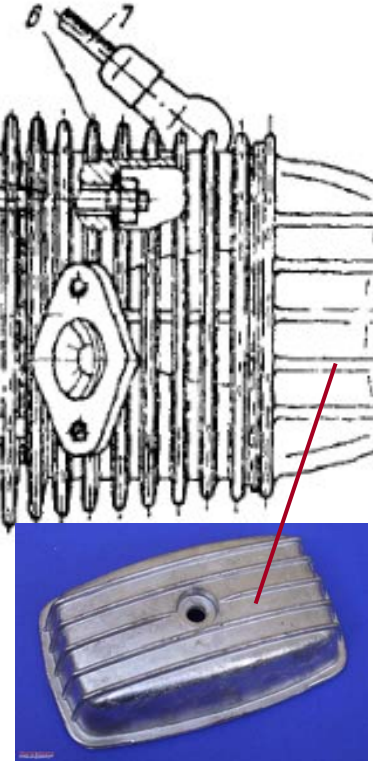
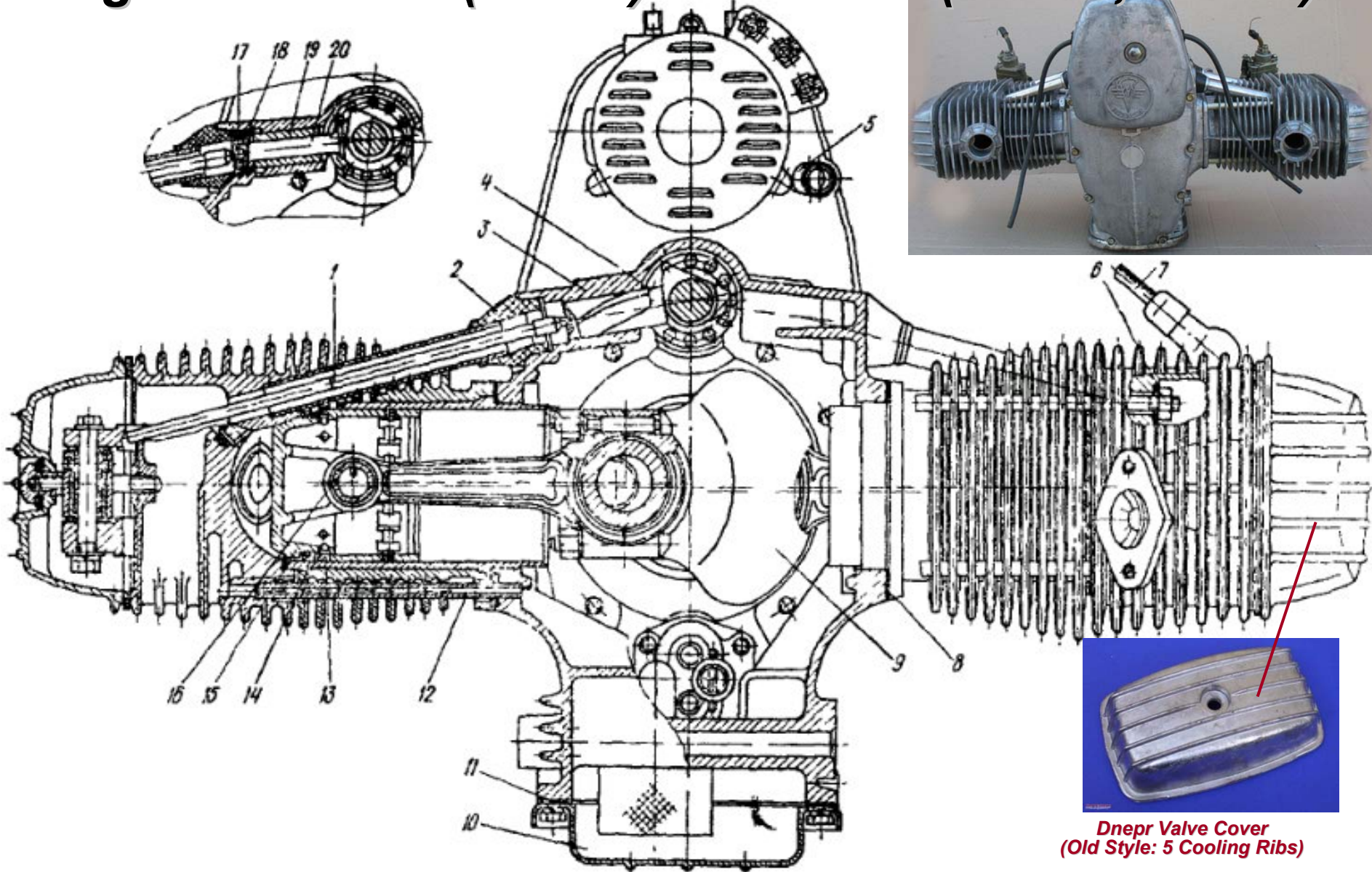
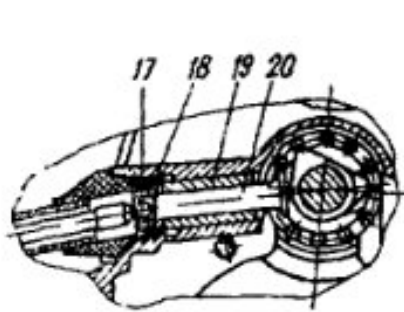


Engine MT10-32 (650cc) Top View MT-11,



1. Cylinder Head Cover, 2. Head Cover Gasket, 3. Right-Hand Cylinder Head with Valves, 4. Cylinder Head Gasket, 5. Right-Hand Carburetor, 6. Cylinder, 7. Filler Plug, 8. Rubber Plug, 9. Rod Casing, 10. Left-hand Carburetor, 11. Carburetor Gasket, 12. Left-Hand Head with Valves, 13. Spark Plug, 14. Generator Gasket, 15. Emergency Oil Pressure Sensor, 16. Piston with Rings and Pins, 17. Piston Pin Lock Ring, 18. Inlet Valve, 19. Exhaust Pipe Fastening Nut, 20. Valve Stem Cap, 21. Right-Hand Rocker, 22. Outlet Valve, 23. Adjusting Bolt, 24. Locknut, 25. Lower Disk, 26. Valve Outer Spring, 27. Valve Inner Spring, 28. Upper Sisk, 29. Left-Hand Rocker, 30. Block

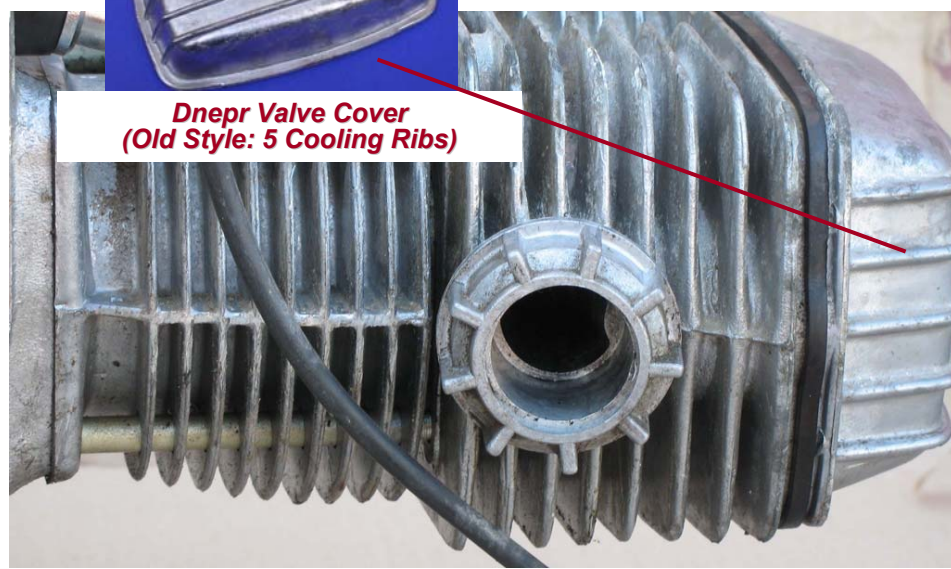
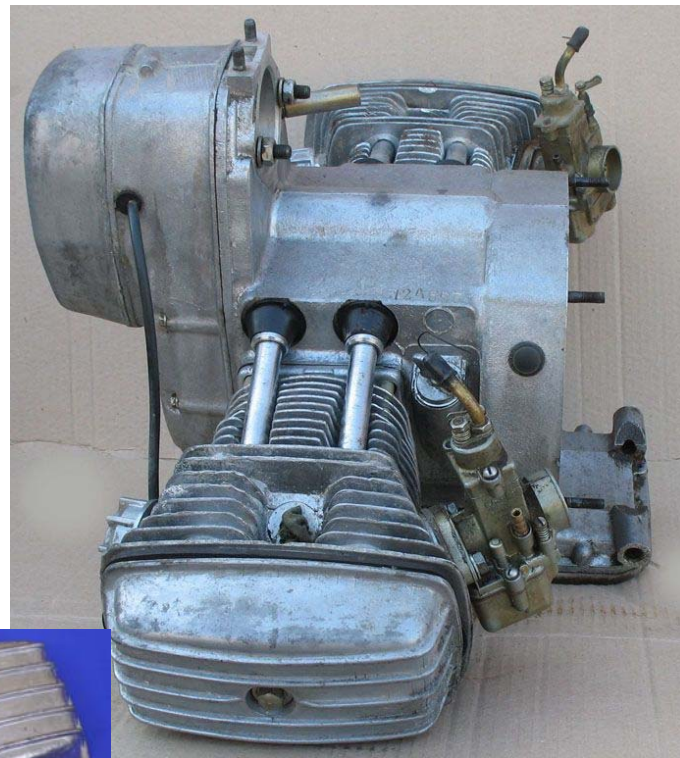
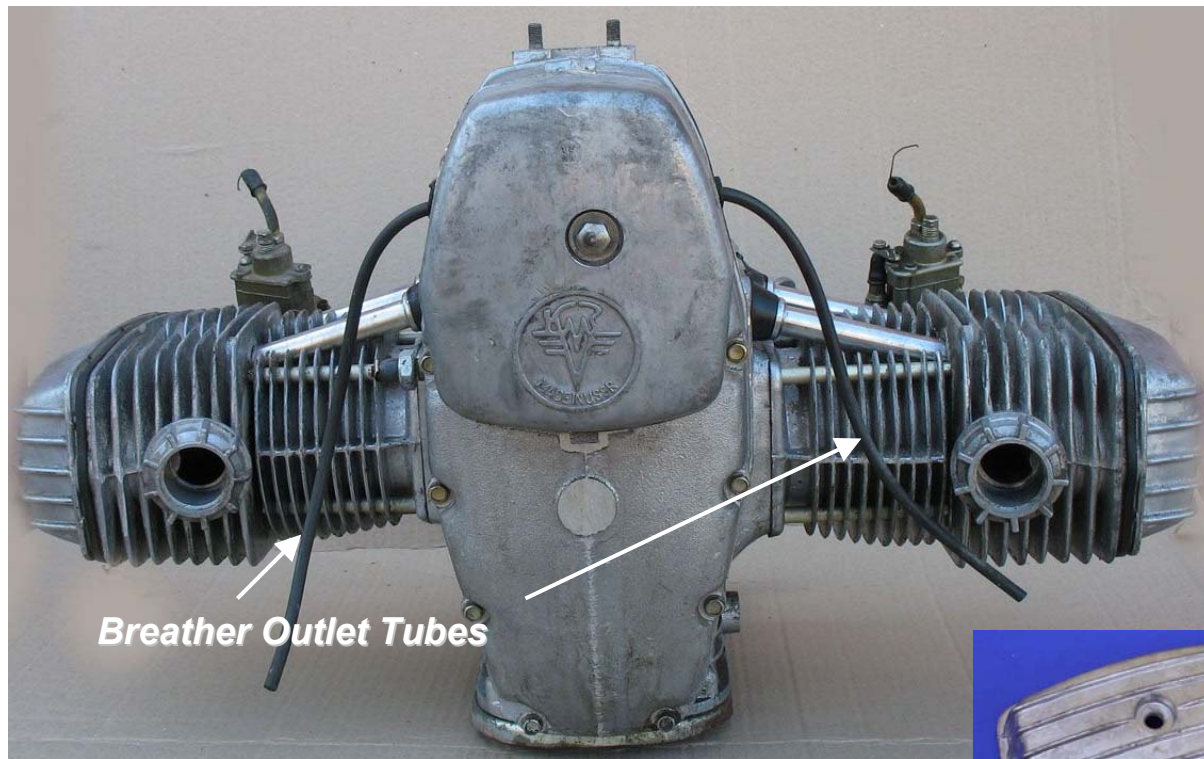
Engine MT10-32 (650cc) Rear View (MT-11, MT-16)



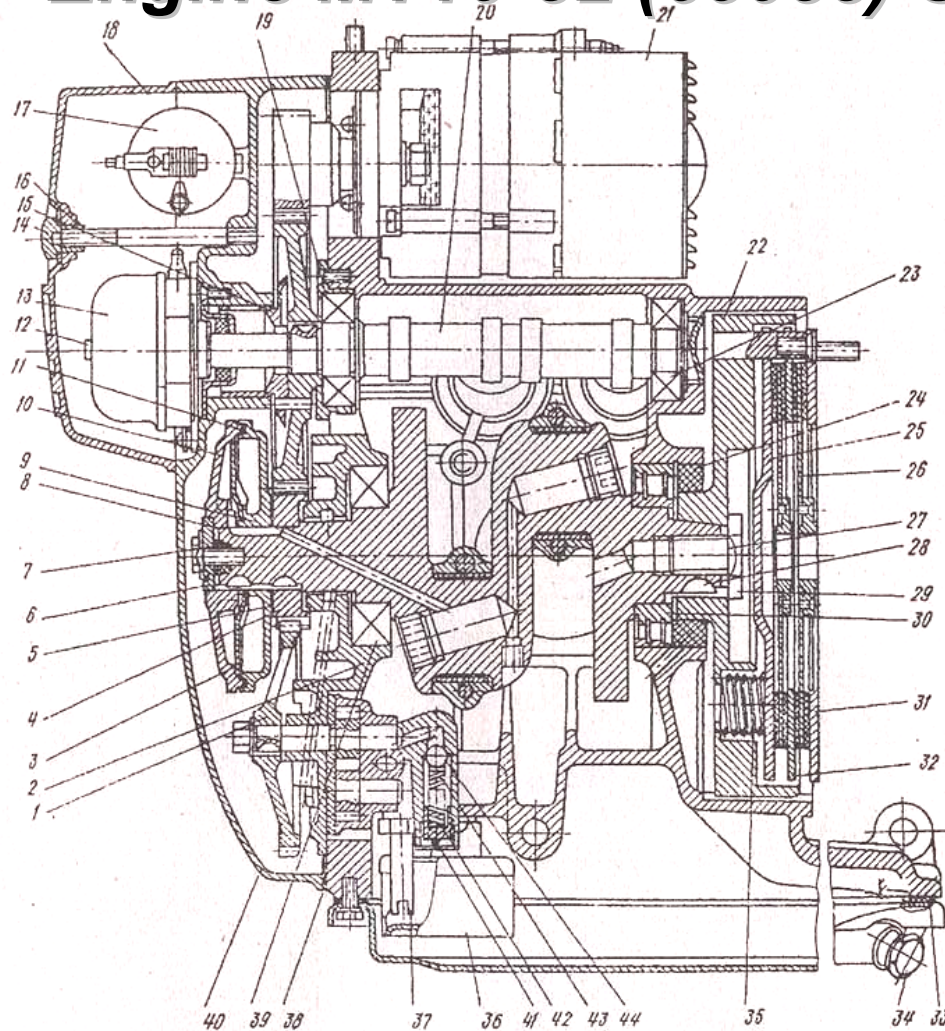
**Dnepr Valve Cover
(Old Style: 5 Cooling Ribs)**

1. Rod, 2. Sealing Cap, 3. Crankcase, 4. Tappet, 5. Breather Outlet Tube, 6. Special Nut, 7. High-Voltage Wire, 8. Cylinder Gasket, 9. Crankshaft with Connecting Rods, 10. Pan (Sump), 11. Sump Gasket, 12. Drain Pipe, 13. Oil Ring, 14. Compression Ring, 15. Piston, 16. Piston Pin, 17. Lock Ring, 18. Spring, 19. Pushrod (Tappet) Guide, 20. Push Rod (Tappet)

Engine MT10-32 650cc (MT-11, MT-16)



Engine MT10-32 (650cc) Side View (MT-11, MT-16)



**Dnepr Valve Cover
(Old Style: 5 Cooling Ribs)**

1. Oil Pump Gear, 2. Front Bearing with Oil Pump, 3. Screen Centrifuge, 4. Distributor Drive Gear, 5. Laying, 6. Centrifuge Washer, 7. Ring, 8. Laying Washer Centrifuge 9. Centrifuge Housing, 10. Cap Centrifuge, 11. O-Ring, 12. Breaker Cover with Bracket, 13. Breaker, 14. Nut Cover, 15. Breather, 16. Lock Ring, 17. Ignition Coil, 18. Crankcase Cover, 19. Front Bearing Camshaft, 20. Camshaft with Gear, 21. Generator with Gear, 22. Flywheel with Clutch Fingers, 23. Rear Bearing Camshaft, 24. Crankshaft Seal, 25. Push the Drive Clutch Plate, 26. Clutch Disc, 27. Flywheel Closing Disk, 28. Flywheel Woodruff Key, 29. Flywheel Bolt, 30. Rear Crankshaft Bearing, 31. Disk Clutch Leading Bearing, 32. Intermediate Host Clutch Disc, 33. Oil Sump, 34. Drain Plug, 35. Spring Clutch 36. Oil Receiver, 37. Oil Tube, 38. Installation, 39. Front Crankshaft Bearing, 40. Box Cover, 41. Pin, 42. Cork, 43. Spring, 44. Ball

KMZ/Dnepr Engine OHV 650cc (MT-11, MT-16)



Engine, 650cc
(MT-11, MT-16)
Part #: KMZ-8.15501
List Price: \$1,300
(www.dnepr-kiev.com)



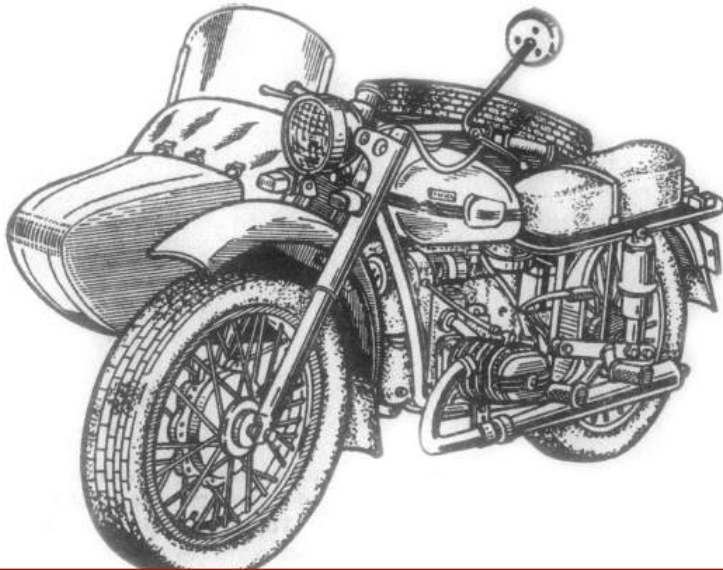
Dnepr Valve Cover
(Old Style: 5 Cooling Ribs)



IMZ/Ural M-67 (1974-1976) with Ural 650 Engine

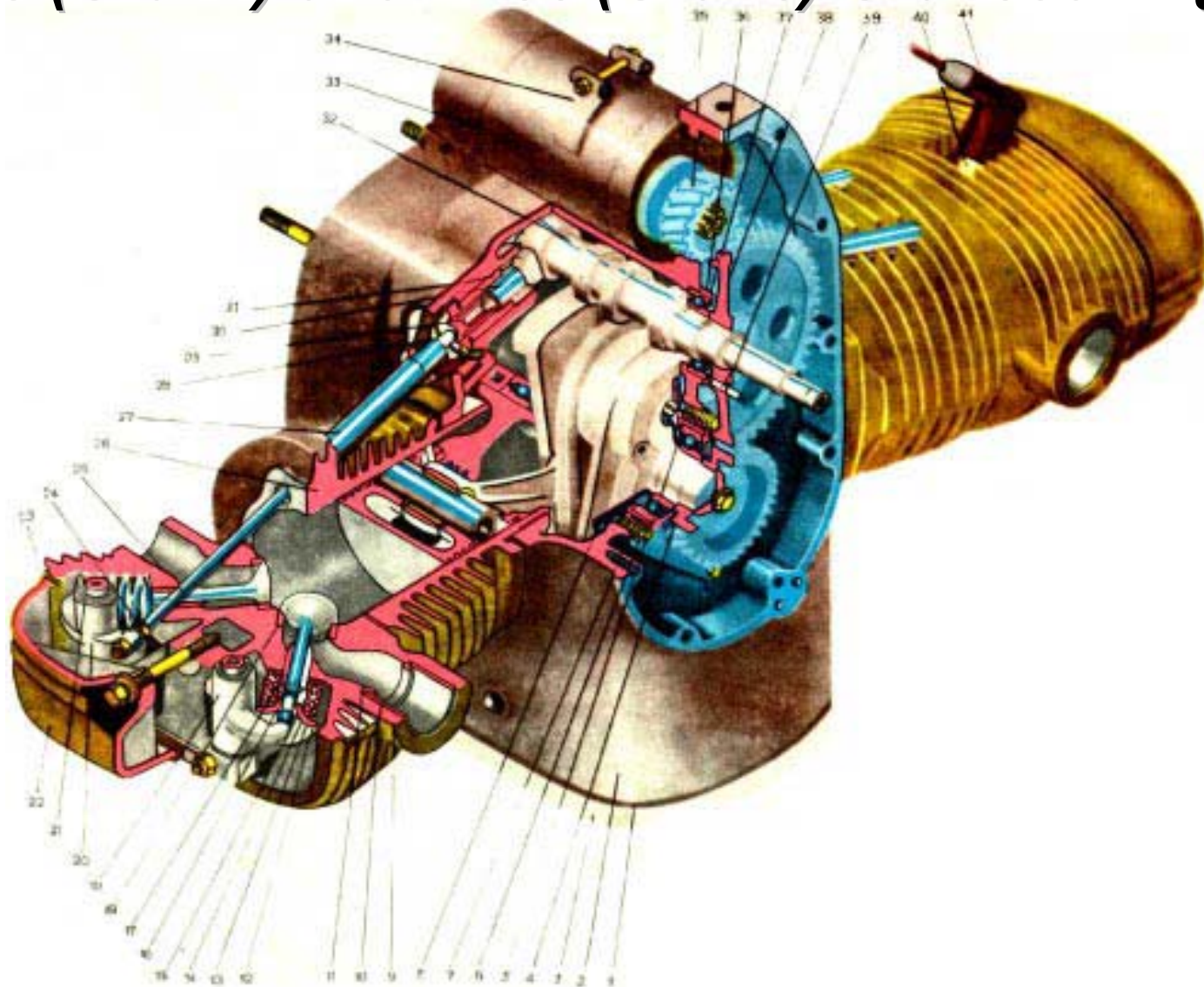


IMZ/Ural M-67.36 with M67-36 Engine



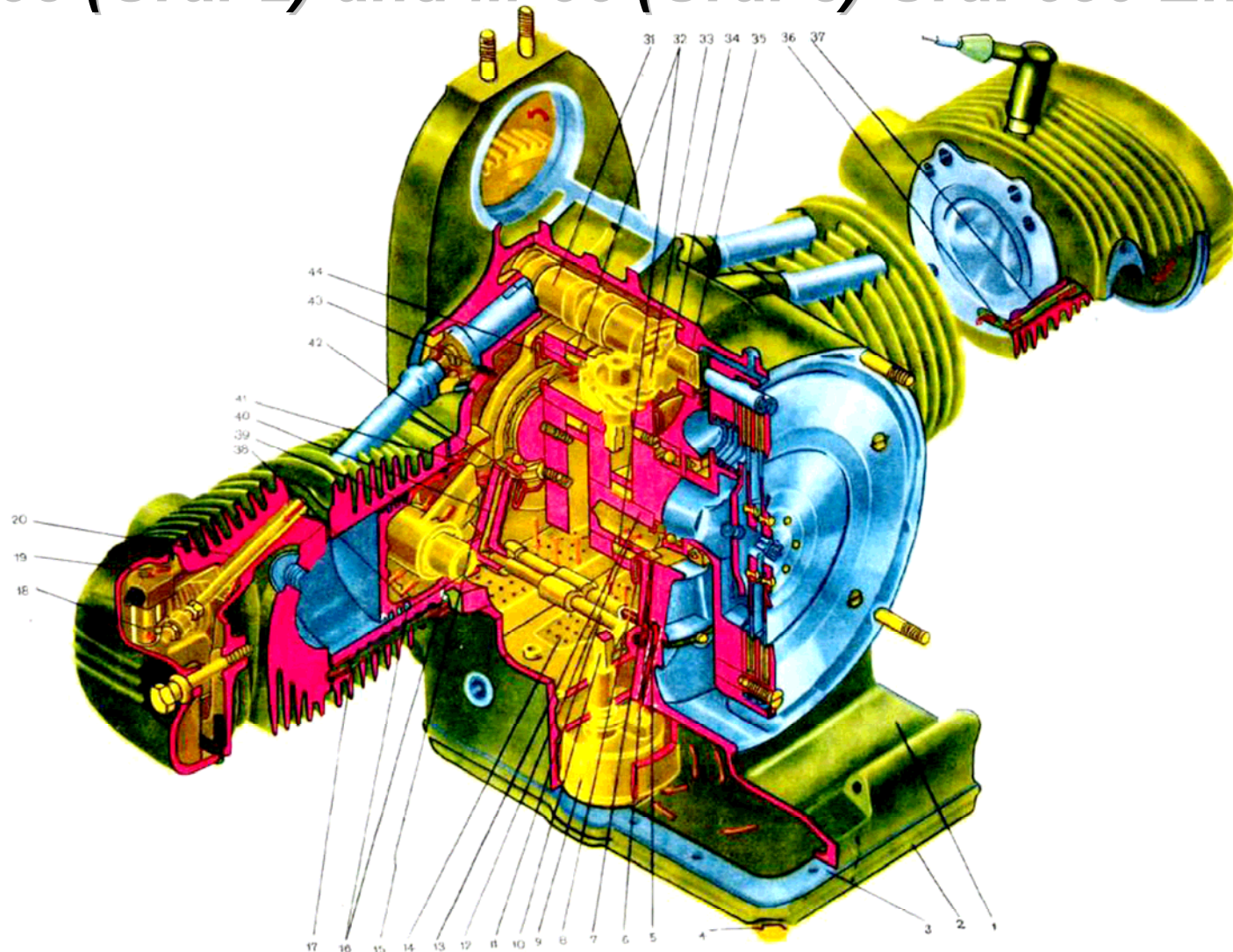
At the end of 1974 IMZ began to produce the Ural M-67. In 1976, the engine was increased from 32 to 36 Hp, and the motorcycle was named Ural M-67.36. The new higher-power engine was designated the M67-36.

M-63 (Ural-2) and M-66 (Ural-3) Ural 650 Engine



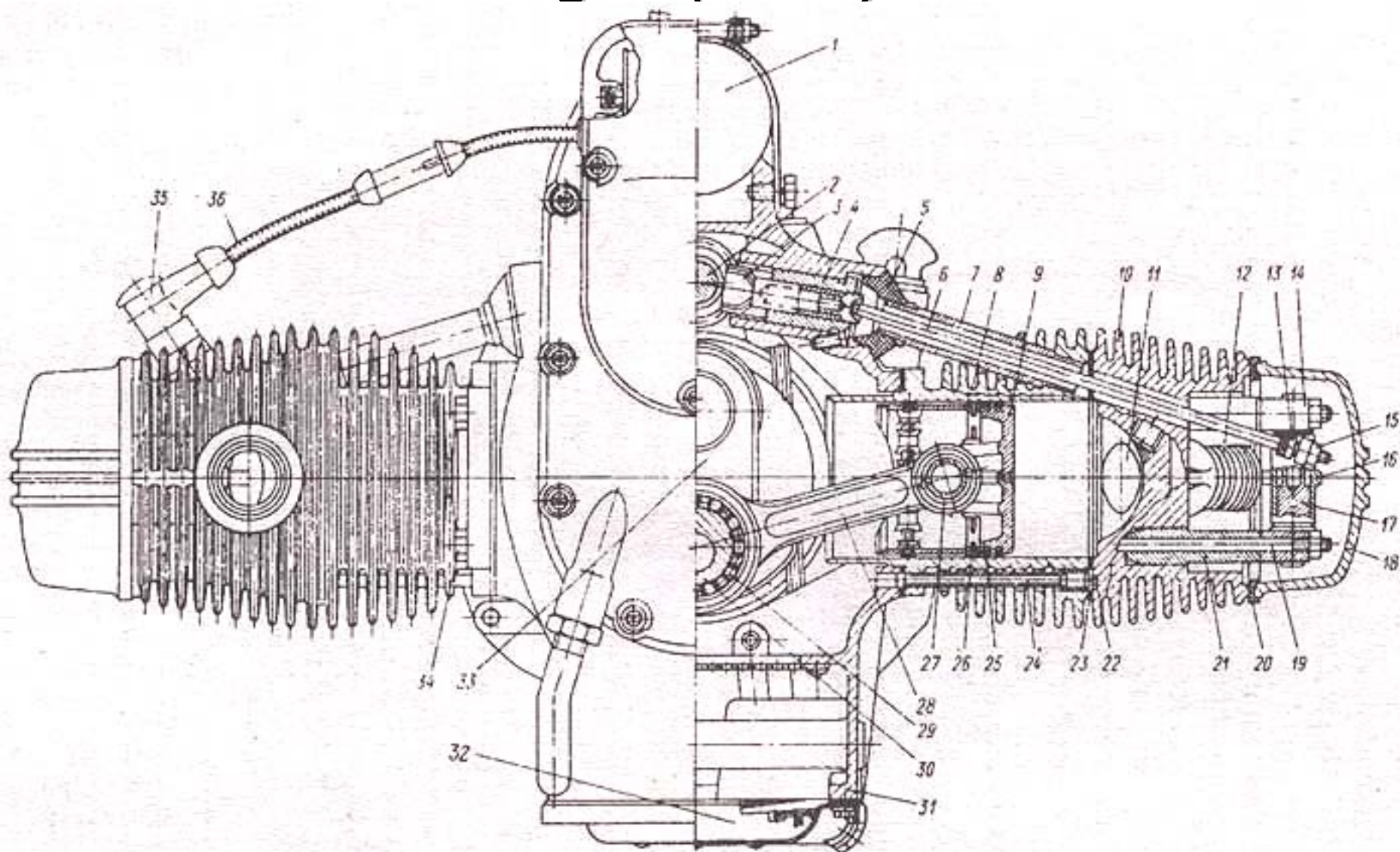
1. Sump Gasket, 2. Crankcase, 3. Sump, 4. Camshaft Driving Gear, 5. Front Bearing Housing, 6. Front Bearing Housing Cover, 7. Crankshaft Front Bearing, 8. Oil Catcher, 9. Right Cylinder Head, 10. Cylinder Head Exhaust, 11. Exhaust Washer, 12. Valve Spring Retainer, 13. Outer Valve Spring, 14. Inner Valve Spring, 15. Valve Spring Seat, 16. Valve, 17. Valve Guide, 18. Valve Seat, 19. Right Rocker Arm, 20. Left Rocker Arm, 21. Rocker Shaft, 22. Cylinder Head Cover, 23. Cylinder Head Cover Gasket, 24. Adjusting Bolt, 25. Push Rod, 26. Cylinder, 27. Push Rod Tube, 28. Sealing Collar, 29. Tappet Tip, 30. Tappet, 31. Tappet Guide, 32. Camshaft, 33. Generator Γ -414, 34. Generator Strap, 35. Generator Drive Gear, 36. Camshaft Front Bearing, 37. Camshaft Flange, 38. Camshaft Gear, 39. Breather Tenon, 40. Spark Plug, 41. Spark Plug Terminal Cap, 42. Crankshaft Rear Journal, 43. Crankshaft Cheek, 44. Connecting Rod, 45. Crankshaft Front Journal, 46. Crankpin, 47. Oil Control Ring, 48. Connecting Rod and Bushing, 49. Piston Pin, 50. Piston Pin Circlip, 51. Piston, 52. Compression Ring, 53. Chrome-Plated Compression Ring

M-63 (Ural-2) and M-66 (Ural-3) Ural 650 Engine



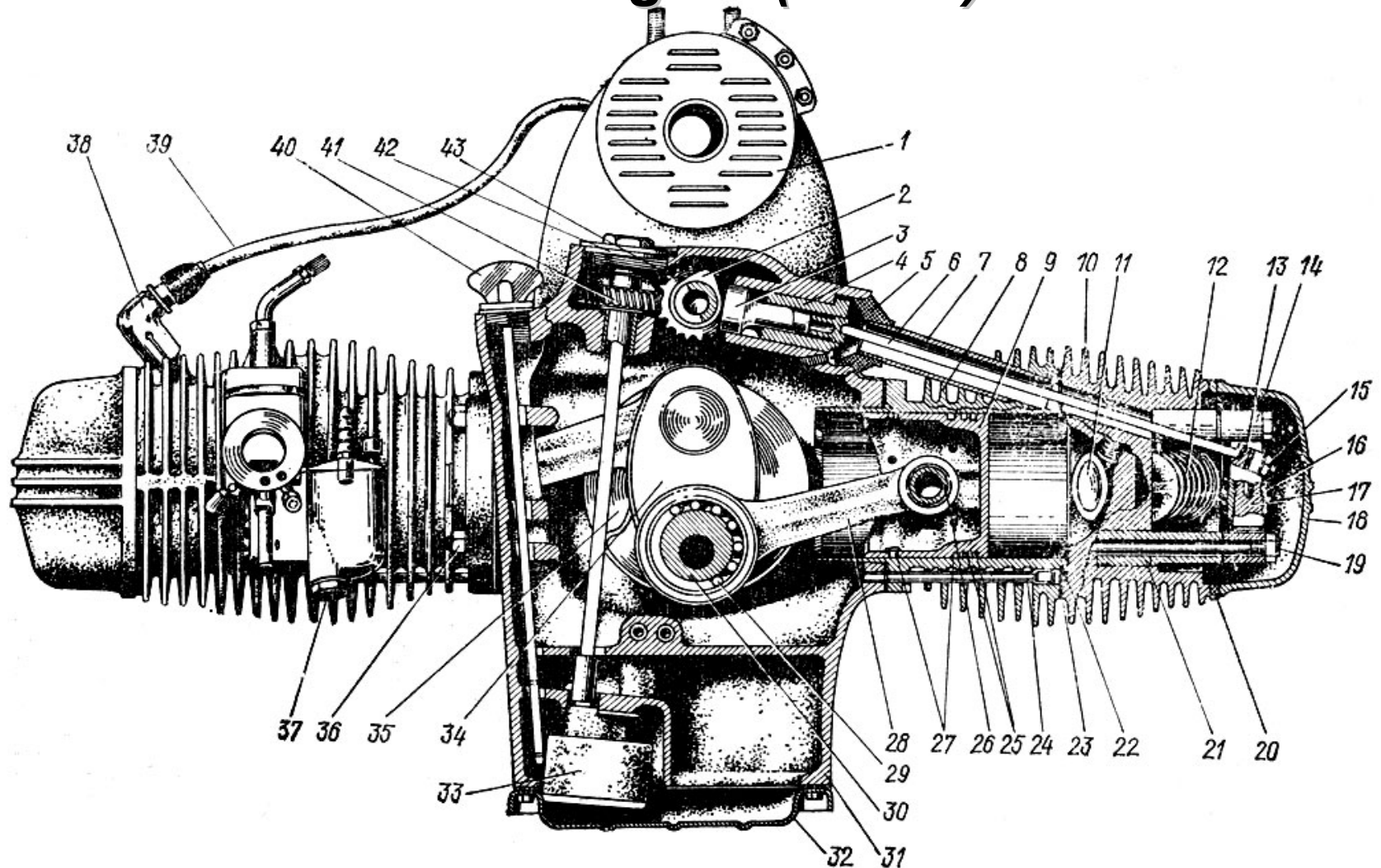
1. Crankcase, 2. Sump, 3. Sump Gasket, 4. Drain Hole Plug, 5. Oil Flow Duct into Filter, 6. Oil Flow Duct into Rear Bearing Housing, 7. Calibrated Oil Hole into Rear Bearing Housing, 8. Rear Oil Catcher, 9. Oil Pump, 10. Oil Pump Drive Bar, 11. Main Line, 12. Hole in Crankshaft for Lubricating Big End Connecting Rod Bearing, 13. Crankshaft, 14. Gauze Oil Filter, 15. Duct for Lubricating Left Cylinder, 16. Oil Rings, 17. Oil Drain Duct from Cylinder Head, 18. Lubricating Hole in Crankshaft, 19. Hole in Crankshaft for Collecting Atomized Oil, 20. Duct for Atomized Oil from Crankcase to Cylinder Head, 21. Tube for Lubricating Timing Gears, 22. Drill-Hole in Crankcase, 23. Camshaft Drive Gear, 24. Oil Flow Duct into Filter, 25. Valve Bypass Duct, 26. Oil Outlet Hole into Main Line, 27. Oil Filter Plug, 28. Bypass Valve, 29. Bypass Valve Plug, 30. Oil Filter, 31. Camshaft, 32. Big End Connecting Rod Bearings, 33. Oil Pump Driven Gear, 34. Oil Pump Driving Gear, 35. Camshaft Rear Bearing, 36. Oil Drain Duct in Cylinder Head Flange, 37. Oil Drain Duct from Cylinder Head, 38. Piston Hole for Oil Drain, 39. Hole for Lubricating Piston Pin, 40. Oil Flow Duct to Front Bearing Housing, 41. Bore and Hole for Lubricating Left Cylinder, 42. Calibrated Hole in Bearing Housing, 43. Hole for Passing Atomized Oil to Cylinder Head, 44. Front Oil Catcher

IMZ/Ural M67-36 Engine (650cc) Front / Rear View



1. Generator, 2. Camshaft, 3. Ram, 4. Pusher Guide, 5. Sealing Cap, 6. Pusher Rod, 7. Rod Tube, 8. Cylinder, 9. Piston, 10. Cylinder Head, 11. Valve, 12. Valve Spring, 13. Adjustment Bolt, 14. Rocker Arm Axis, 15. Adjusting Bolt Lock Nut, 16. Rocker, 17. Rocker Arm, 18. Cylinder Head Cover, 19. Cylinder Head Studs, 20. Gasket, 21. Front Rocker Arm, 22. Lubrication Line, 23. Gasket, 24. Cylinder Tube Drainage, 25. Compression Ring, 26. Oil Ring, 27. Piston Pin, 28. Rod, 29. Roller Bearing, 30. Crankshaft Pin, 31. Crankcase, 32. Pallet, 33. Crankshaft Cheek, 34. Cylinder Nut, 35. Spark Plug, 36. High-Voltage Wire

IMZ/Ural M67-36 Engine (650cc) Rear View

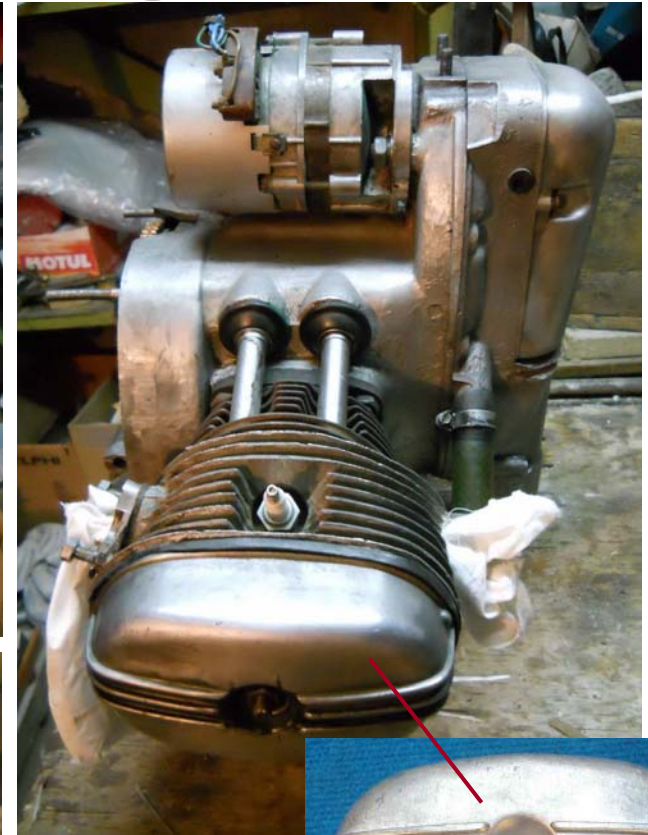


1. Alternator, 2. Camshaft, 3. Cam, 4. Guide Pusher, 5. Sealing Cap, 6. Rod Pusher, 7. Rod Tube, 8. Cylinder, 9. Piston, 10. Cylinder Head, 11. Valve, 12. Valve Spring, 13. Adjusting Bolt, 14. Rocker Arm Axis, 15. Adjusting Bolt Locknut, 16. Rocker, 17. Rocker Arm, 18. Head Cover, 19. Cylinder Head Studs, 20. Gasket, 21. Front Rocker Arm, 22. Oil Lubrication Line from Cylinder Head, 23. Gasket, 24. Cylinder Tube Drainage, 25. Compression Ring, 26. Oil Ring, 27. Oil Control Ring, 28. Connecting Rod, 29. Roller Bearing, 30. Crankshaft Pin, 31. Crankcase, 32. Sump, 33. Oil Pump, 34. Crankshaft Cheek, 35. Oil Catch, 36. Cylinder Nut, 37. Carburetor, 38. Spark Plug, 39. High-Voltage Wire, 40. Fill Plug with Dipstick, 41. Oil Pump Driven Gear, 42. Oil Pump Drive Plug, 43. Master Drive Gear Oil Pump

IMZ/Ural M67-36 OHV 650cc (1978) Engine



IMZ/Ural M67-36 OHV 650cc Engine (uraldnepr.ru)



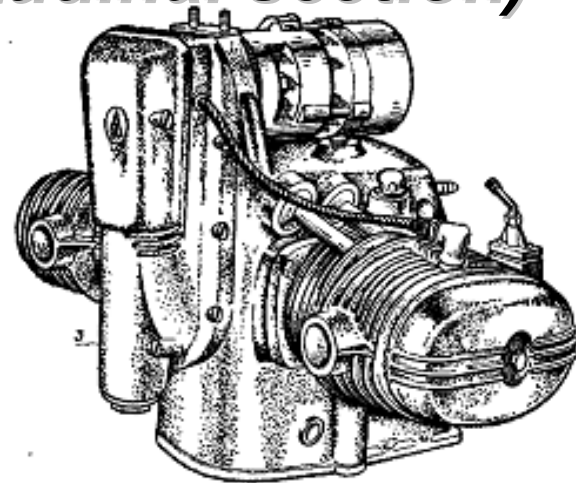
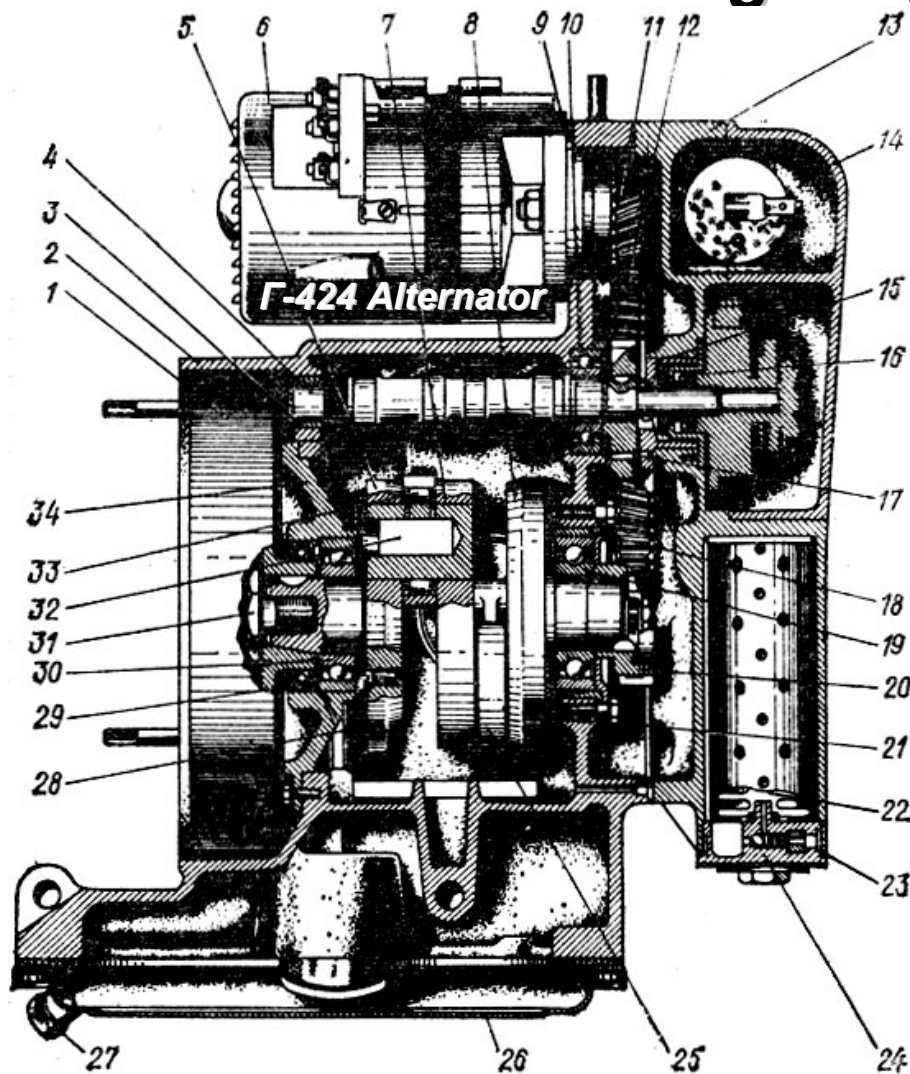
Г-424 Alternator



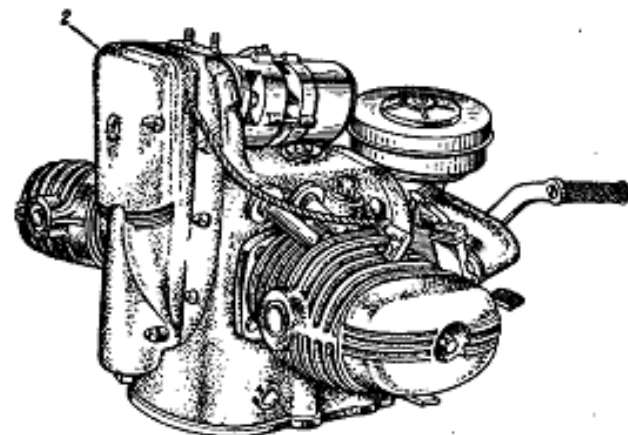
IMZ/Ural M67-36 OHV 650cc Engine (1985)



IMZ/Ural M67-36 Engine (longitudinal section)



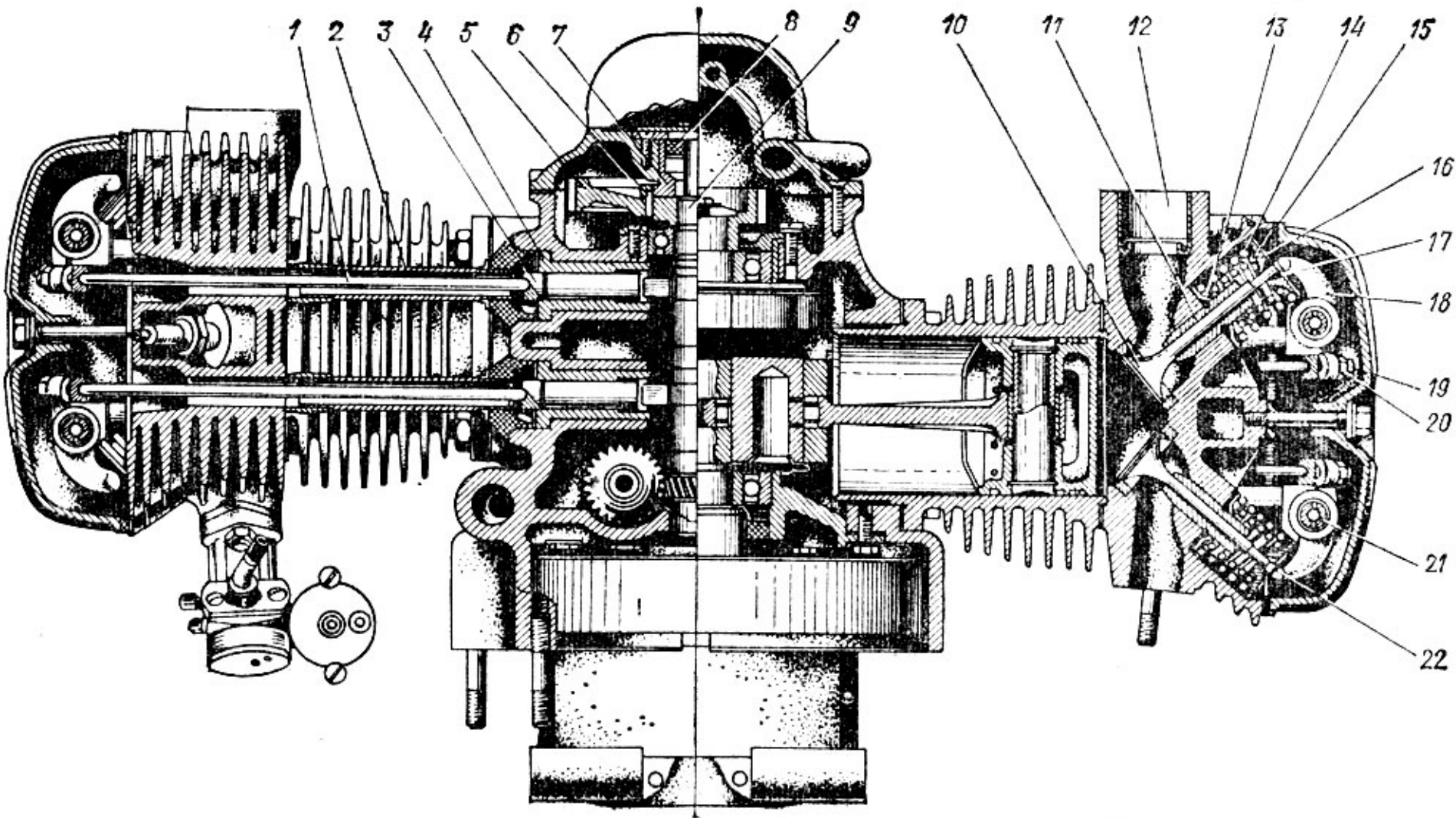
IMZ-8.101-01001: Engine Assembly



IMZ-8.101-00011: Engine with Gearbox

1. Flywheel, 2. Crankcase, 3. Camshaft Bushing, 4. Camshaft, 5. Rear Crankshaft Pin, 6. Generator, 7. Crankshaft Cheek, 8. Front Crankshaft Pin, 9. Generator Seal, 10. Camshaft Bearing, 11. Generator Gear, 12. Camshaft Gear, 13. Timing Cover, 14. Front Crankcase Cover, 15. Breather, 16 and 29. Glands (Seals), 17. Lead Breather, 18. Front Ball Bearing Housing, 19. Ball Bearing, 20. Driving Gear Allocation, 21 and 28. Oil Separators, 22. Oil Filter, 23. O-ring, 24. Oil Filler Plug, 25. Bolt Tray, 26. Sump, 27. Drain Plug, 30. Ball Bearing, 31. Flywheel Fastening Bolt, 32. Crankshaft Pin, 33. Roller Bearing, 34. Rear Bearing Housing

IMZ/Ural M67-36 Engine OHV 650cc (IMZ-8.103)



1. Push-Rod, 2. Tube (Housing), 3. Pusher, 4. Pusher Guide, 5. Gear Driven Camshaft, 6. Breather Leash 7. Breather, 8. Gland, 9. Camshaft, 10. Exhaust Valve, 11. Valve Guide, 12. Exhaust, 13. Bottom Plate, 14. Valve Spring Appearance, 15. Inner Valve Spring, 16. Upper Valve Plate, 17. Biscuit Valve, 18. Rocker, 19. Adjusting Bolt, 20. Adjusting Bolt Lock-Nut, 21. Rocker Arm, 22. Intake Valve

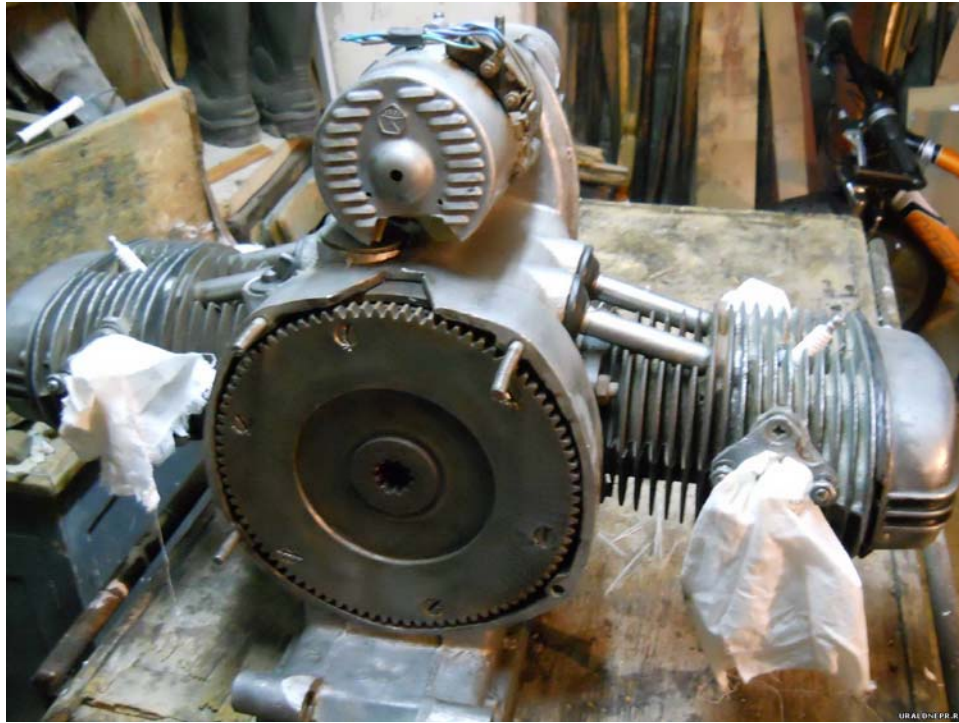
IMZ/Ural M67-36 OHV 650cc Engine

- ***Significant Differences from MT 10-32 Engine***
 - ***One Piece Construction Crankshaft***
 - ***Removed Only by Means of Special Devices***
 - ***Connecting Rod Inserted Roller Bearing with Cage***
 - ***Cast Iron Cylinders***
 - ***Mounting Cylinders and Their Heads Split. By crankcase cylinders mounted pins.***
 - ***Pushers Have Rectangular Head Guides***
 - ***Rocker Arm Shaft Installed in Special Brackets Attached by bolts to Head***
 - ***Intake and Exhaust Valves Smaller in Diameter***
 - ***Low-Pressure Lubrication System Has Full-Flow Paper Oil Filter***
 - ***Oil Pump Rotated by a Camshaft***
 - ***Gases from Crankcase Pushed Directly to Atmosphere thru Breather***
- ***OHV (Overhead Valve) Engine***
- ***Compression Ratio: 7.0:1, 8.0:1, etc.***
- ***X Stroke Bore - 68mm x 78mm***
- ***Maximum Power: 36 Hp / 26.5 kW***
- ***Maximum Torque: 45 Nm***
- ***Maximum Power Speed: 4600 to 4900 rpm***

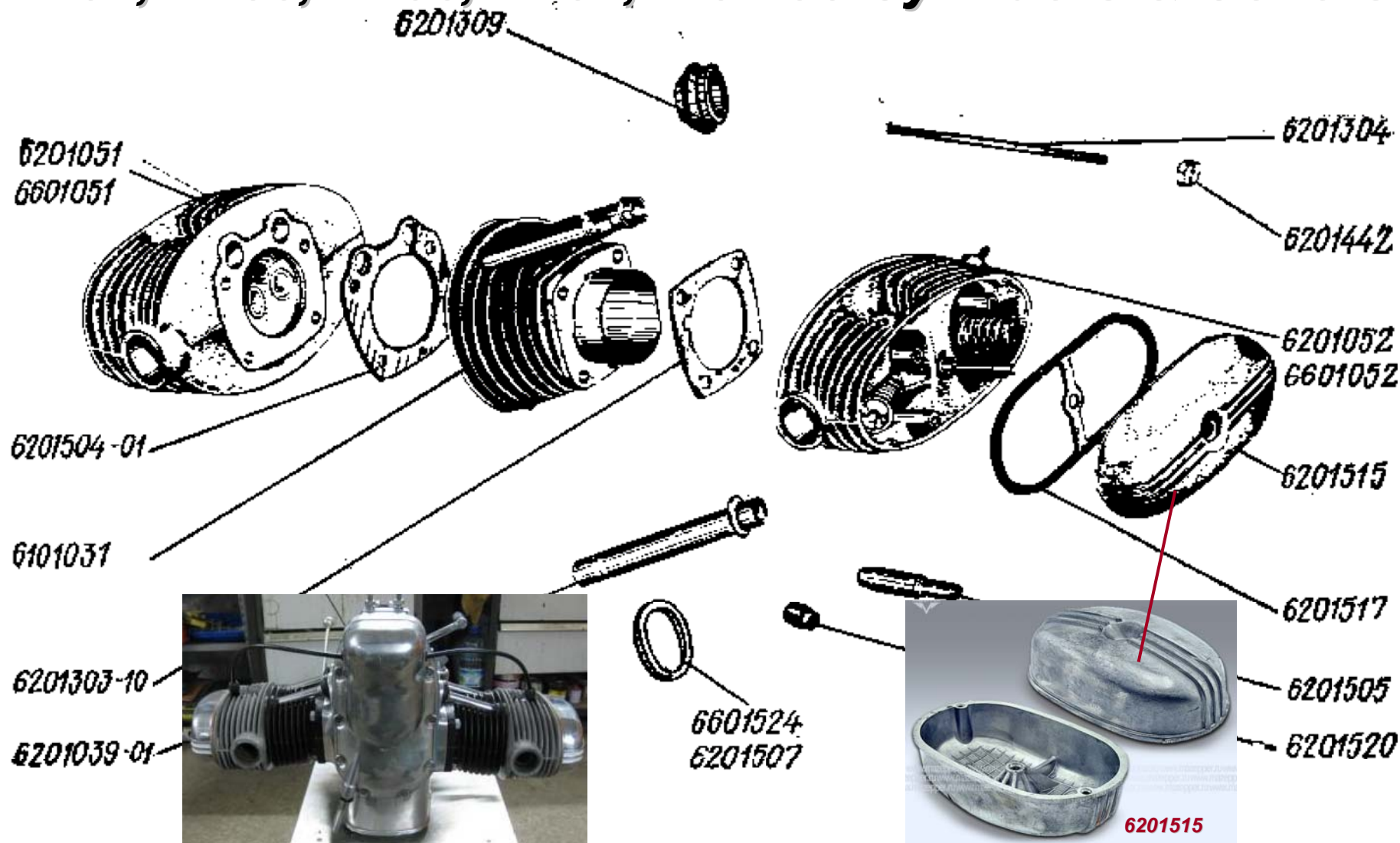
Differences between Ural M67-36 and Dnepr MT10-36 Engines

- **End of 1974 Ural Began Production of M-67**
- **1976, Engine Power Increased from 32 to 36 Hp, and Motorcycle Named Dnepr M67-36**
- **Basic Difference between Interface Connecting Rod to Crankshaft**
 - **Ural Used Conventional Bearings, Demanding Oil Filtration and Need to Feed at Higher Pressure than Roller Bearing**
 - **Dnepr Liners Provide Minimal Friction at Work and Also (in theory) Very Durable**
- **Dnepr and Ural Oil Pumps Differ in Performance, Location and Drive**
 - **"KMZ" (Dnepr) Lubrication System More Complex than "IMZ" (Ural)**
 - **Dnepr Used Special Gear from Crankshaft**
 - **Urals Powered from Back of Camshaft Helical Gears and Roller**
 - **Pumps Are Nearly Identical, Difference in Speed of Rotation**
 - **Dnepr Pump Installed Pressure-Reducing Valve, Preventing Excessive Pressure Rise**
 - » **Valve Has Ability to Become Clogged, Leading to Abnormal Pressure Drop**
 - » **Oil Pressure Warning Light on Dnepr**
 - **Dnepr Used Centrifuge Oil Cleaner that Separates Dirt Particles from Oil by Centrifugal Force, but Only Works Well with High Speed Crankshaft**
- **Crankshaft**
 - **Ural: Crankshaft Integral, Molded, Connecting Rod Roller Bearings**
 - **Advantages of Design: Relative Vitality of Lubrication System at Low Oil Pressure**
 - **Cardboard Oil Filter**
 - **Reducing Valve In Parallel, Allowing Oil to Bypass Filter if Clogged or Thick Oil**
 - **Dnepr: One-Piece Crankshaft, Bearings Bottom Heads of Rods - on the Liner (sleeve bearings)**
- **Cylinders**
 - **Urals: Aluminum with a Sleeve, and Cast Iron**
 - **Dnepr: Aluminum, Can Not Press Out**
- **Cylinder Heads**
 - **Interchangeable**
- **Valve Covers**
 - **Ural: Oval**
 - **Dnepr: Closer to Rectangular**

IMZ/Ural IMZ-8.103.10 Engine (uraldnepr.ru)

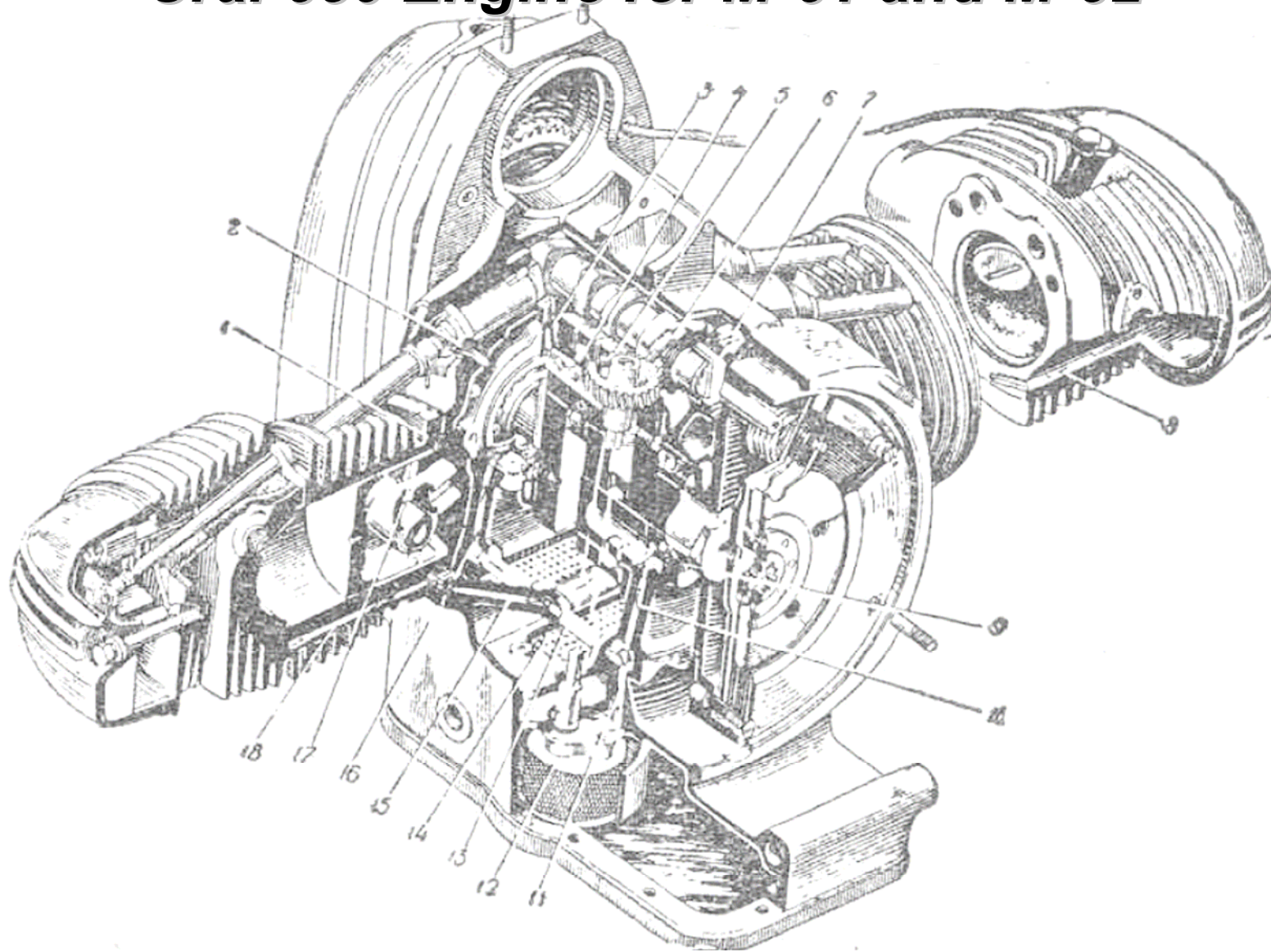


M-62, M-63, M-66, M-67, M67.36 Cylinders & Covers



Description	M-62, M-63	M-66, M-67	M-67.36
Right-Hand Cylinder Head with Valves	6201051	6601051	IMZ-8.101-01051
Left-Hand Cylinder Head with Valves	6201052	6601052	IMZ-8.101-01052
Cylinder Head Cover	6201515	6201515	6201515

Ural 650 Engine for M-61 and M-62



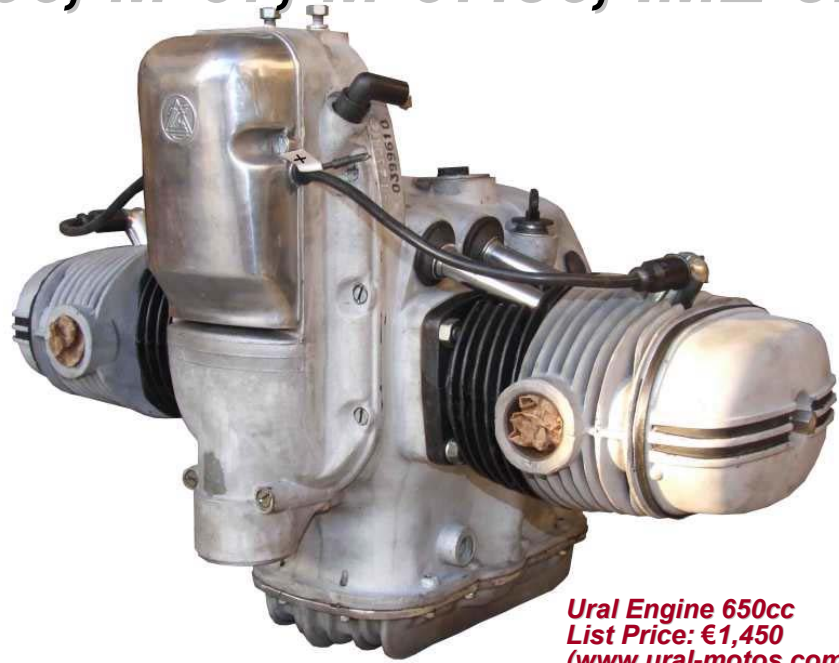
- 1. Cylinder Wall Oil Channel, 2. Channel Oil Flow Housing Tubes, 3. Oil Separator (Centrifuge), 4. Crankshaft Cavity Floor, 5. Oil Pump Drive Pinion (Gear), 6. Camshaft Gears, 7. Oil Pocket, 8. Cylinder Head Channel, 9. Crankshaft Oil Seal, 10. Oil Channel in Rear Housing, 11. Oil Channel Feed from Oil Pump, 12. Oil Pump, 13. Oil Central Channel, 14. Defoamers, 15. Oil Supply Channel in Ring Groove Cylinder, 16. Oil Channel in Front Wall Carter, 17. Hole in Upper Crosshead, 18. Cylinder Head***

Ural 650 Engine for M-66, M-67, M-67.36, IMZ-8.103

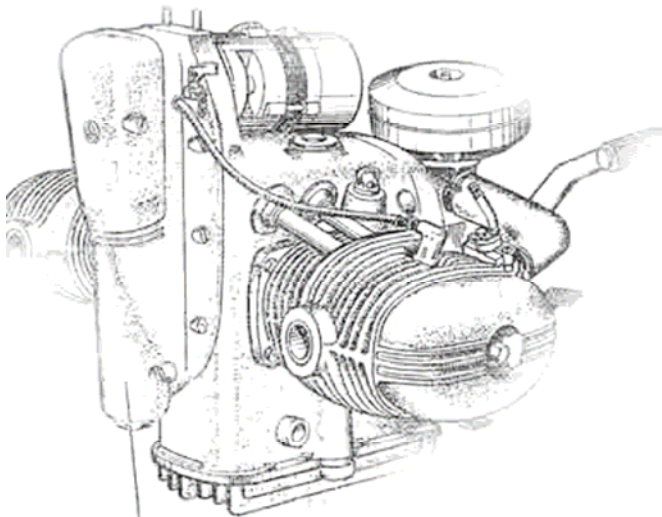


No: 284 188

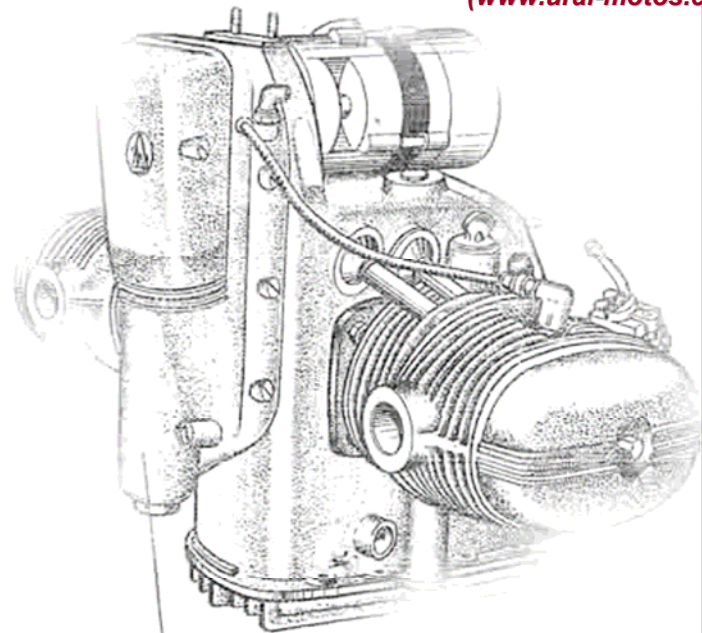
Ural Engine 650 cc
(M-66, M-67, M-67.36, IMZ-8.103)
List Price: €1,480
(www.ural-motos.com)



Ural Engine 650cc
List Price: €1,450
(www.ural-motos.com)

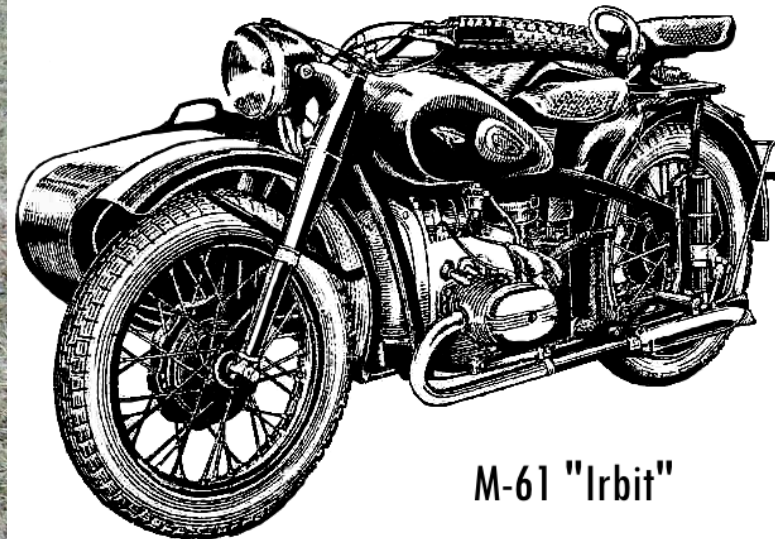


HM3-8.103-00011-03



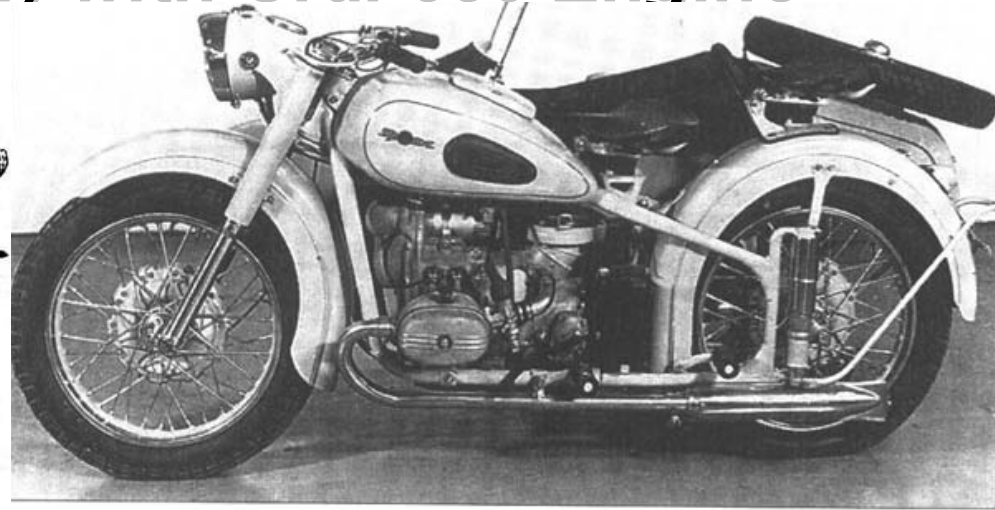
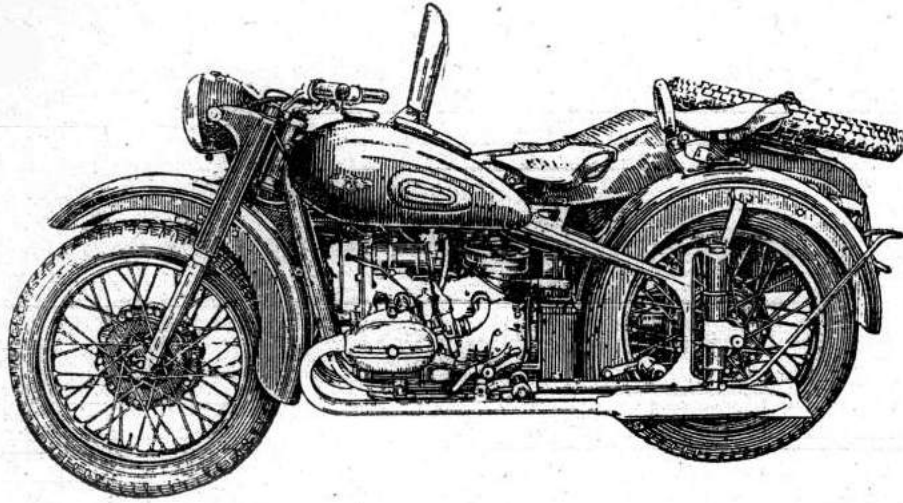
HM3-8.103-01001-01

IMZ/Ural M-61 with Ural 650 Engine



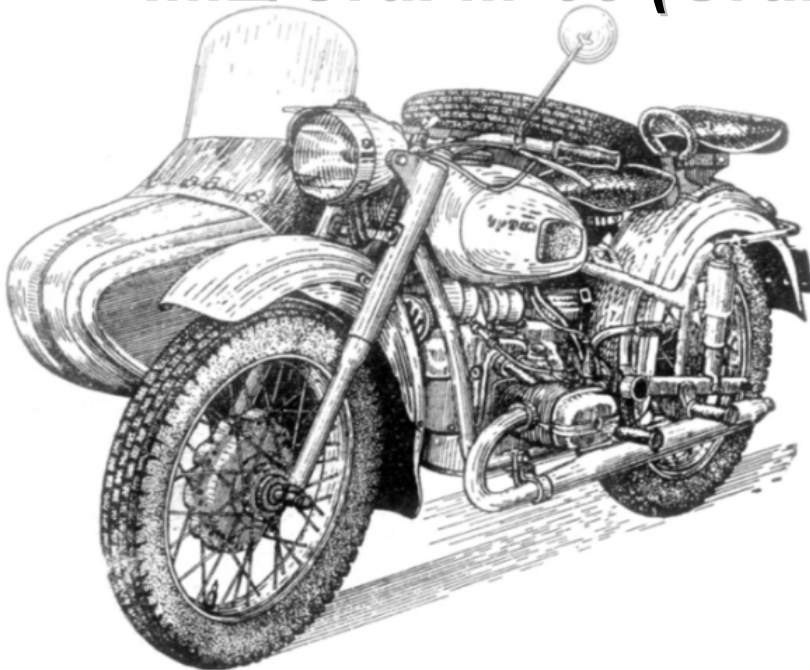
M-61 "Irbit"

IMZ/Ural M-62 (Ural-1) with Ural 650 Engine

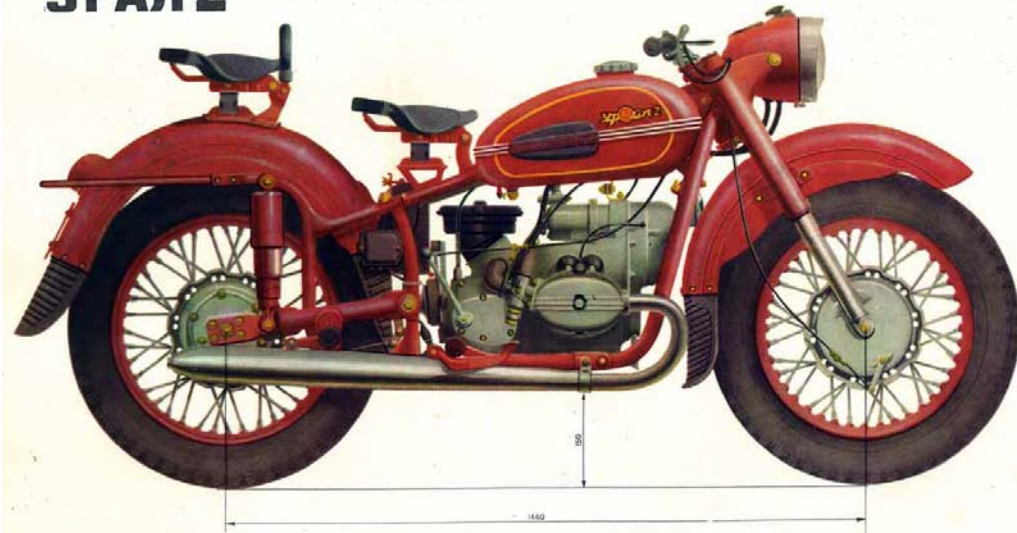


М-62 «Урал» с коляской, 1964 г.

IMZ/Ural M-63 (Ural-2) with Ural 650 Engine



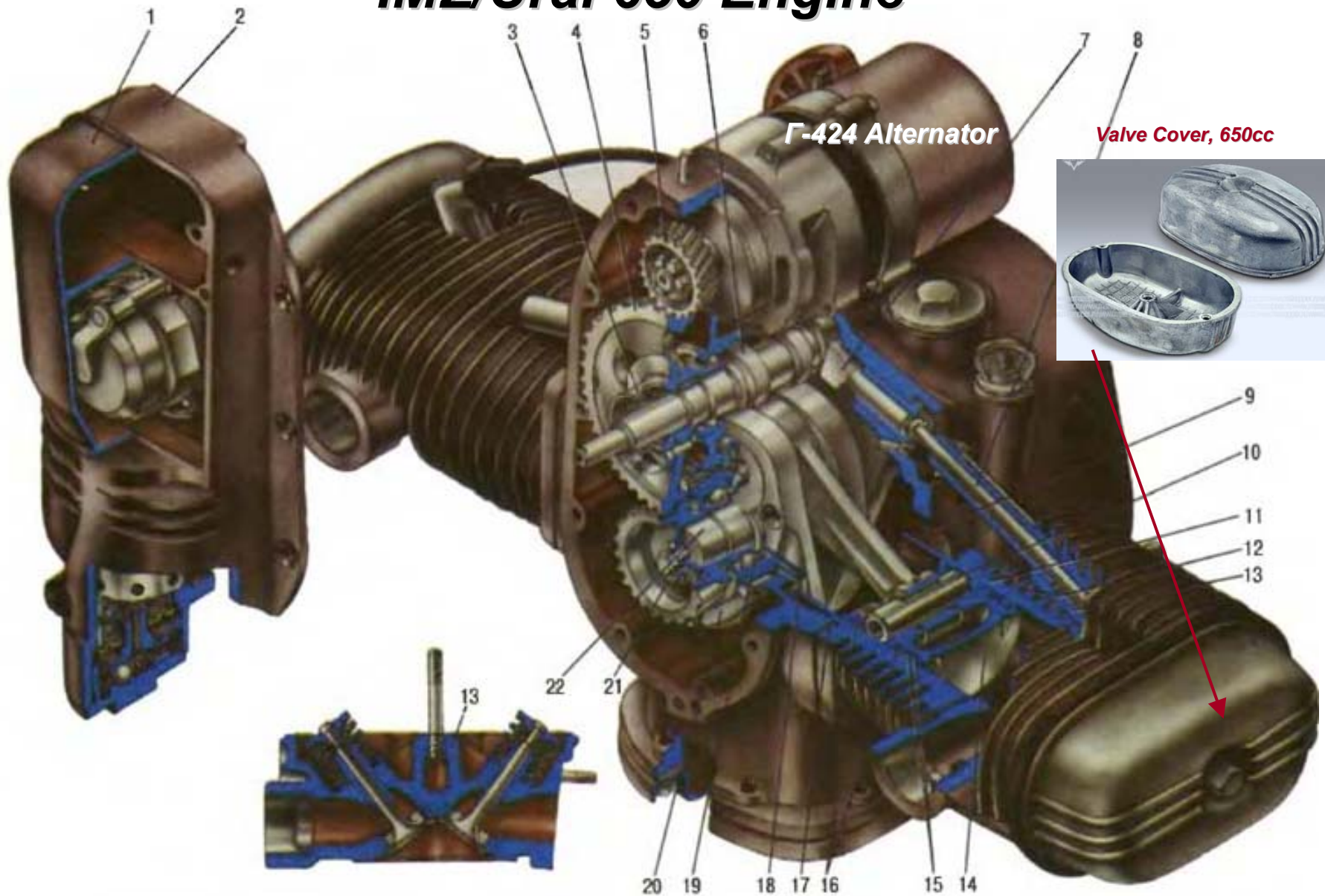
УРАЛ-2



IMZ/Ural M-66 (Ural-3) with Ural 650 Engine

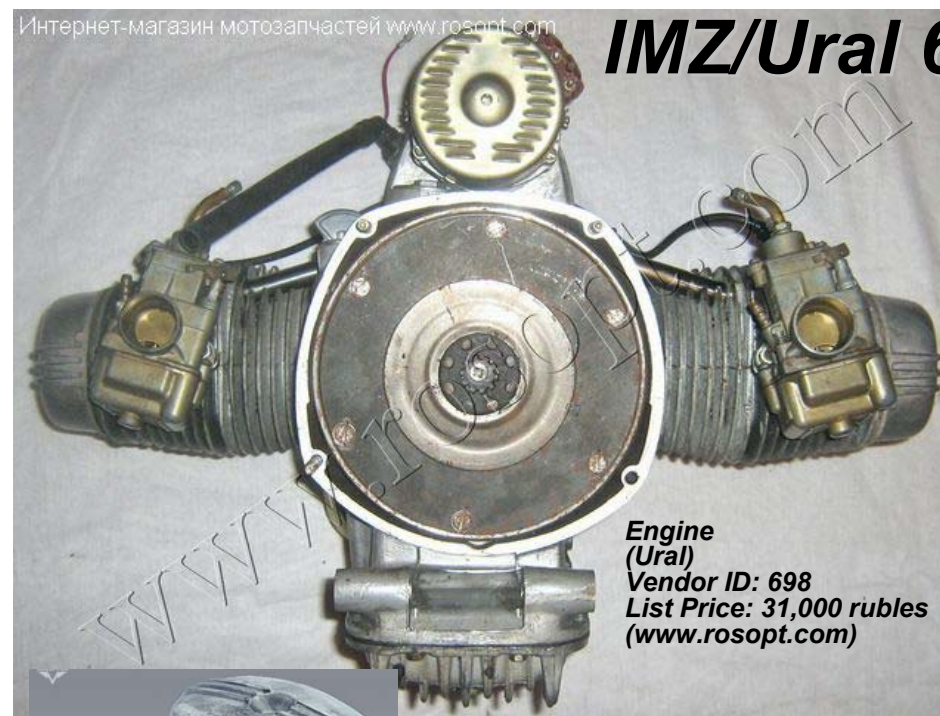


IMZ/Ural 650 Engine



1. Front Cover, 2. Junction Box Cover, 3. Breather, 4. Camshaft Gear, 5. Generator Pinion (Gear), 6. Camshaft, 7. Push Rod, 8. Push Rod Pad, 9. Piston Rod, 10. Piston Pin, 11. Cylinder, 12. Gasket, 13. Valve Assembly, 14. Piston, 15. Piston Ring, 16. Piston Ring, 17. Gasket, 18. Washer, 19. Bearing, 20. Bearing Housing, 21. Gear, 22. Crankshaft

IMZ/Ural 650 Engine



**Engine
(Ural)
Vendor ID: 698
List Price: 31,000 rubles
(www.rosopt.com)**



Valve Cover, 650cc



Г-424 Alternator

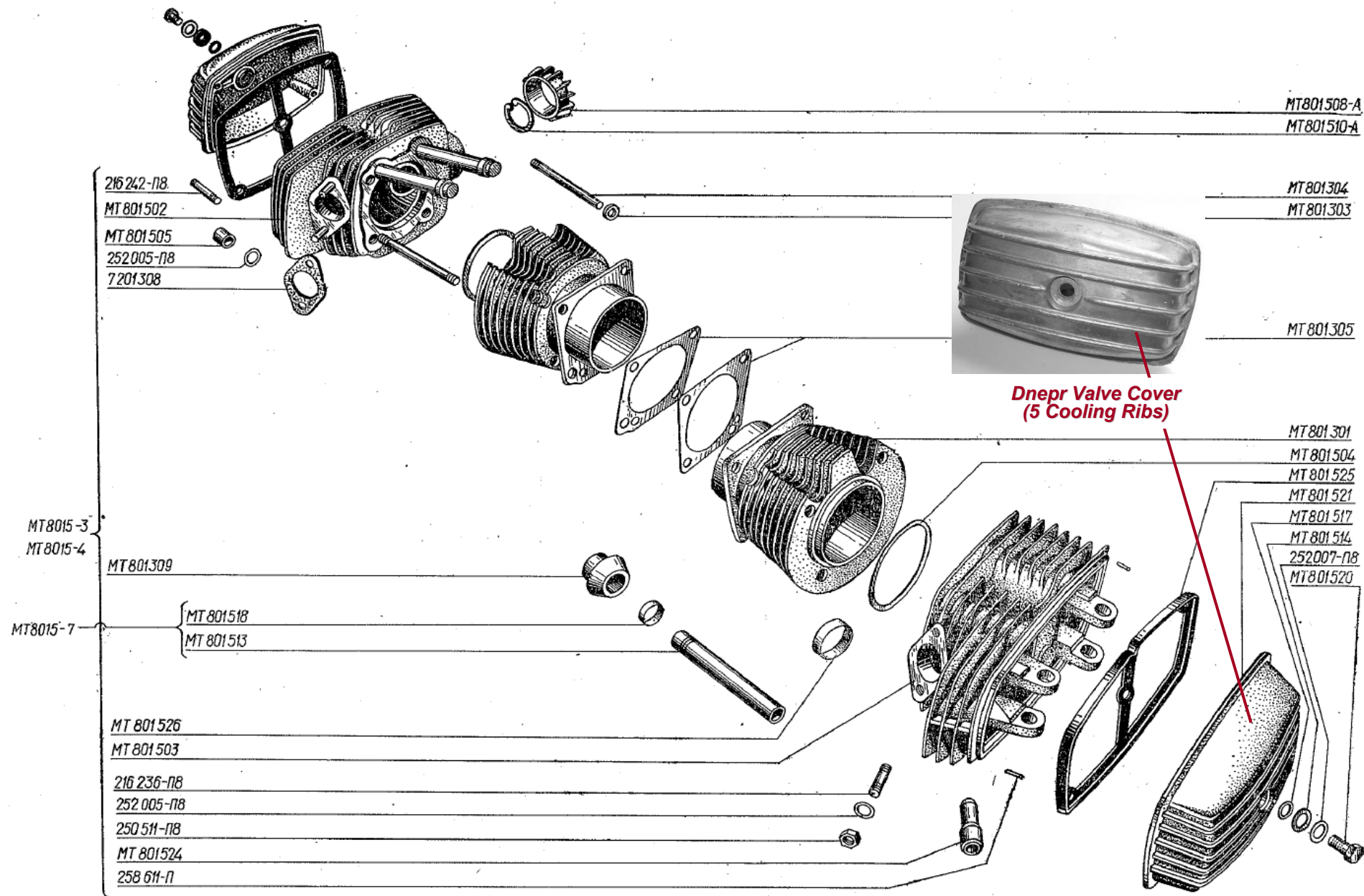
IMZ/Ural 650 Engine



MAZEPPER
Engine, 650cc
(Ural)
List Price: 25,200 rubles
(www.mazepper.ru)



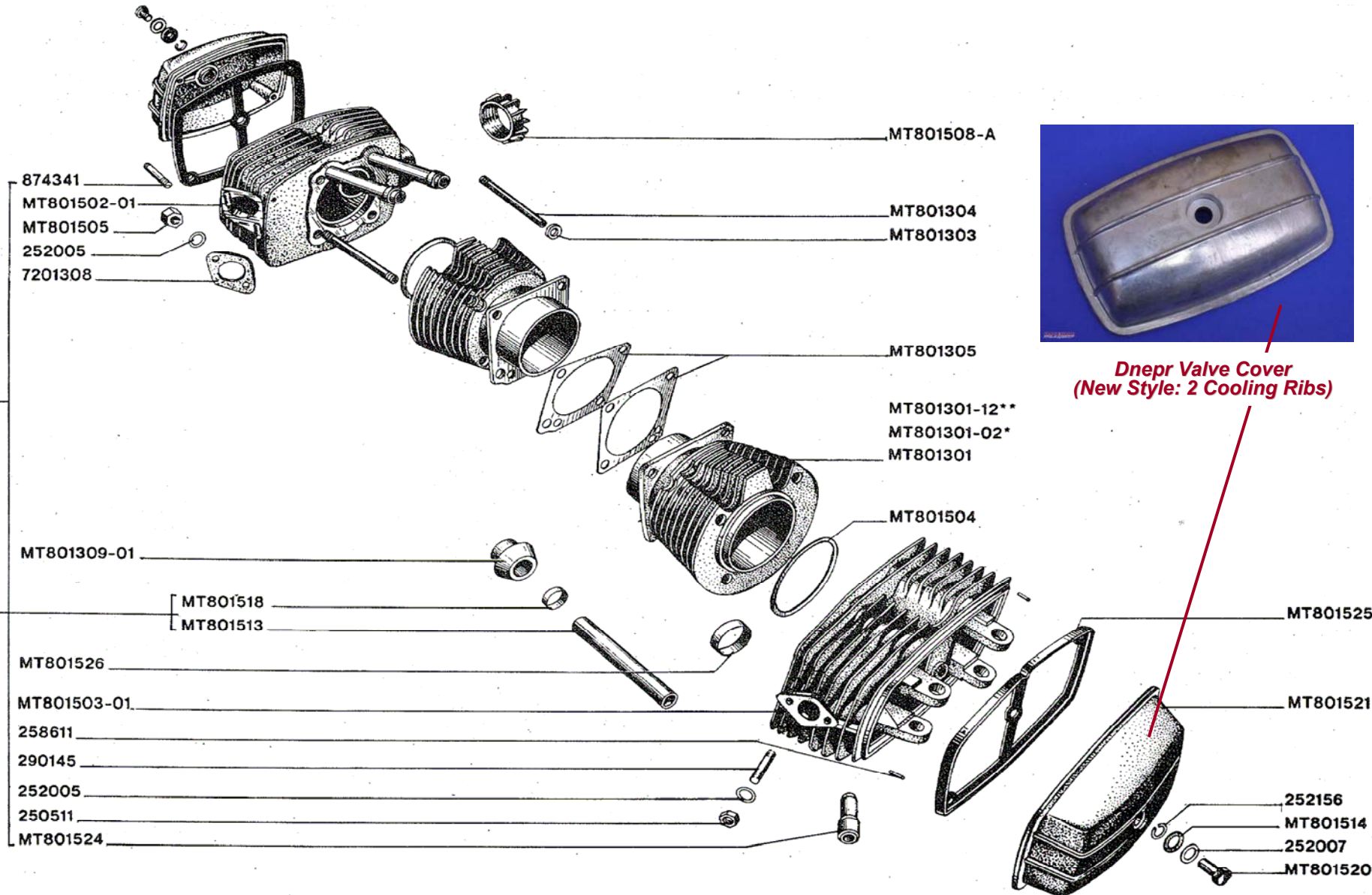
KMZ/Dnepr MT801 Engine for MT-9, MT-10



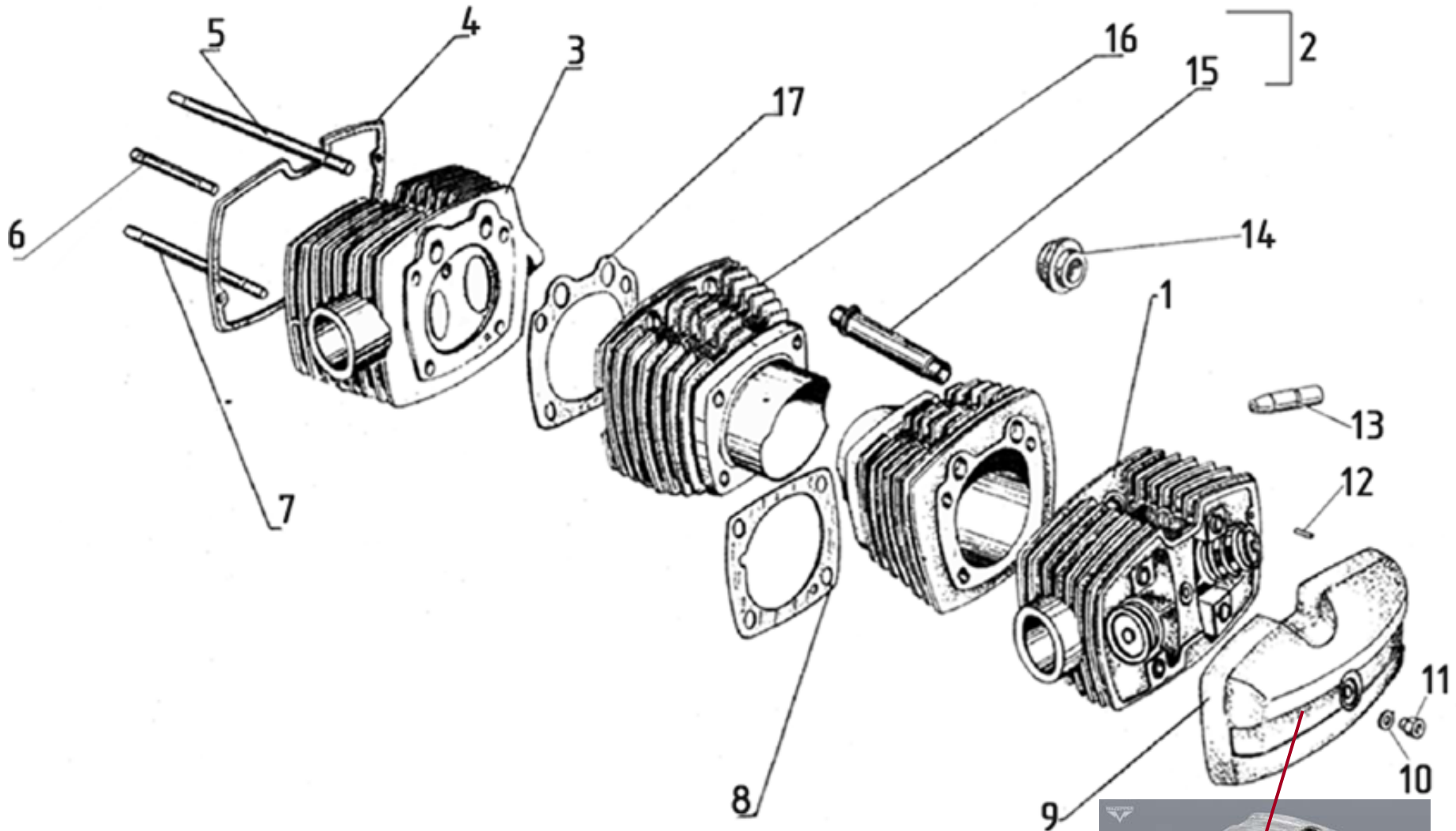
MB-650, MT-10.36, MT-11, MT-16 Cylinders and Covers

MT8015-3-01
MT8015-4-01

MT8015-7
MT8015-7-02*



IMZ-8.103 650cc Cylinders and Covers



750cc

- 1. IMZ-8.1087-01052 - Cylinder head, LH, with Valves Assy**
- 3. IMZ-8.1087-01051 - Cylinder head, RH, with Valves Assy**
- 9. IMZ-8.103-01515 - Cylinder head cover**



IMZ-8.103-01515

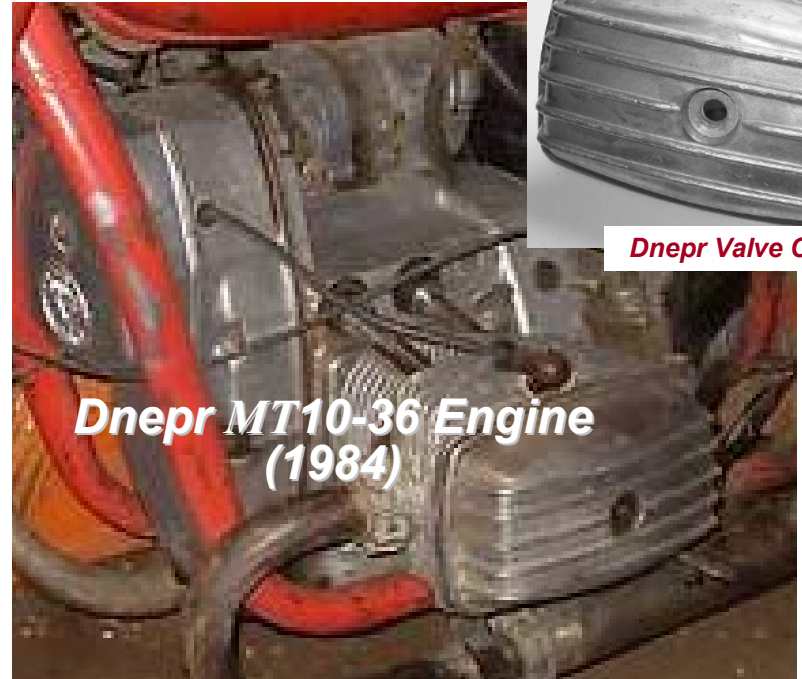
Valve Covers



Ural Valve Cover



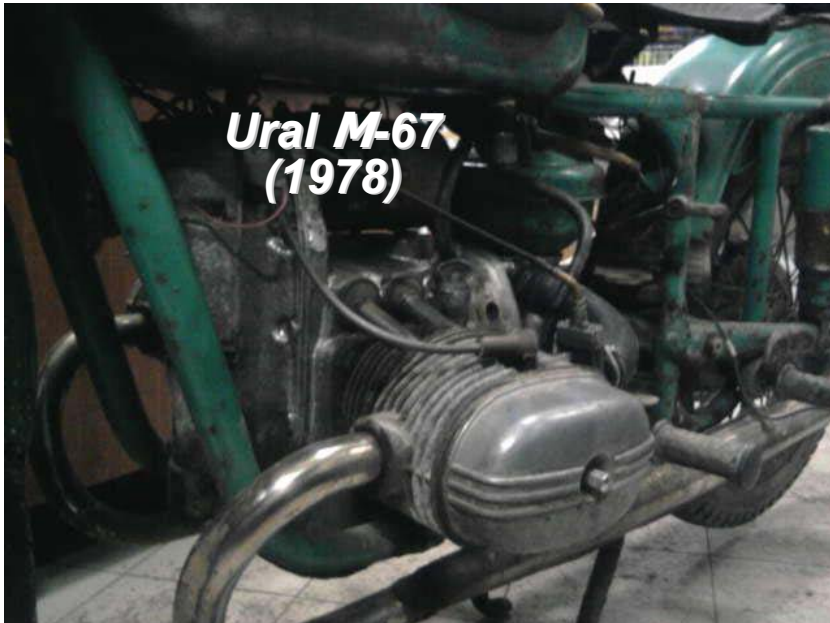
Dnepr MT-11



**Dnepr MT10-36 Engine
(1984)**



Dnepr Valve Cover



**Ural M-67
(1978)**



**Ural M-67
(1978)**

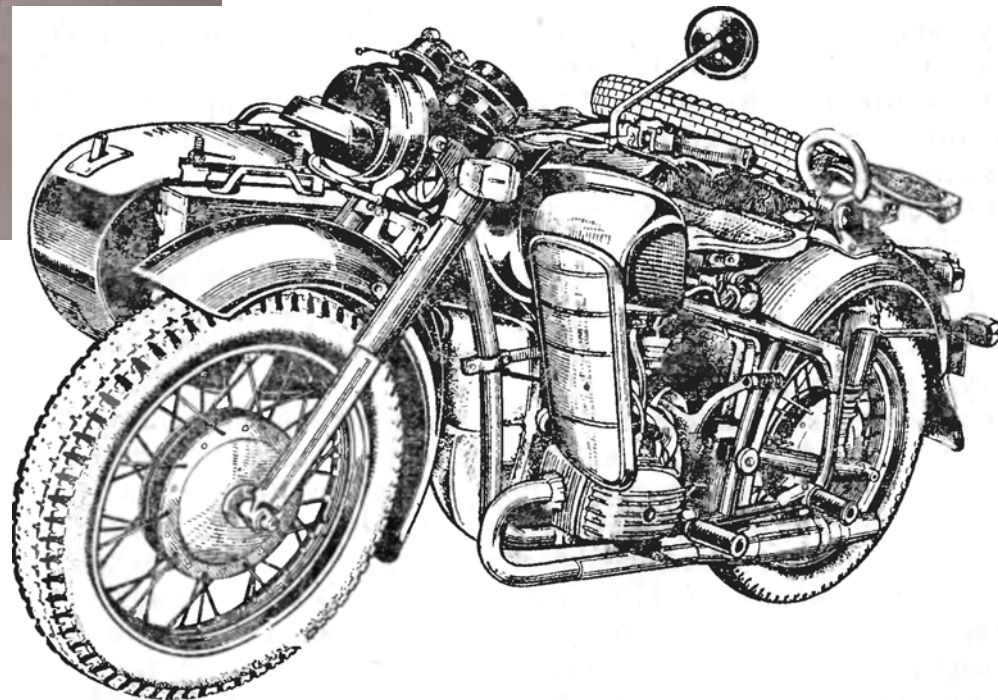
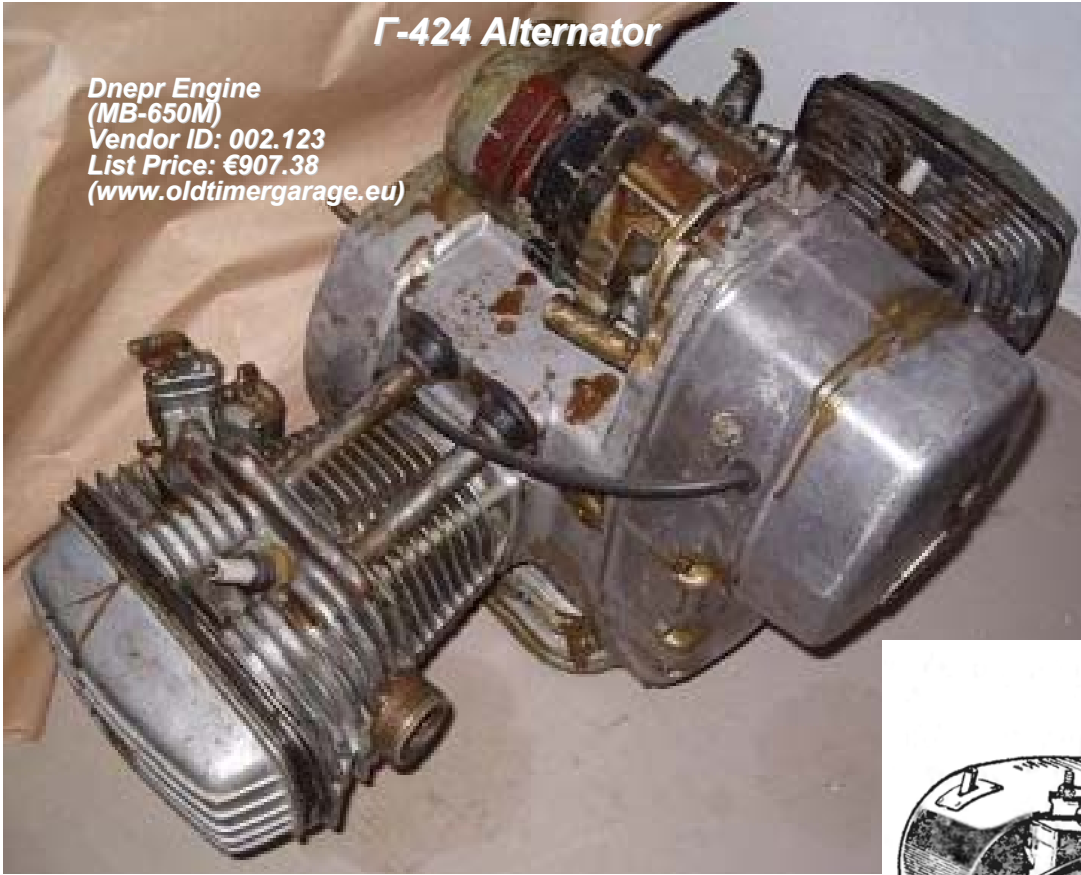
Valve Cover, 650cc



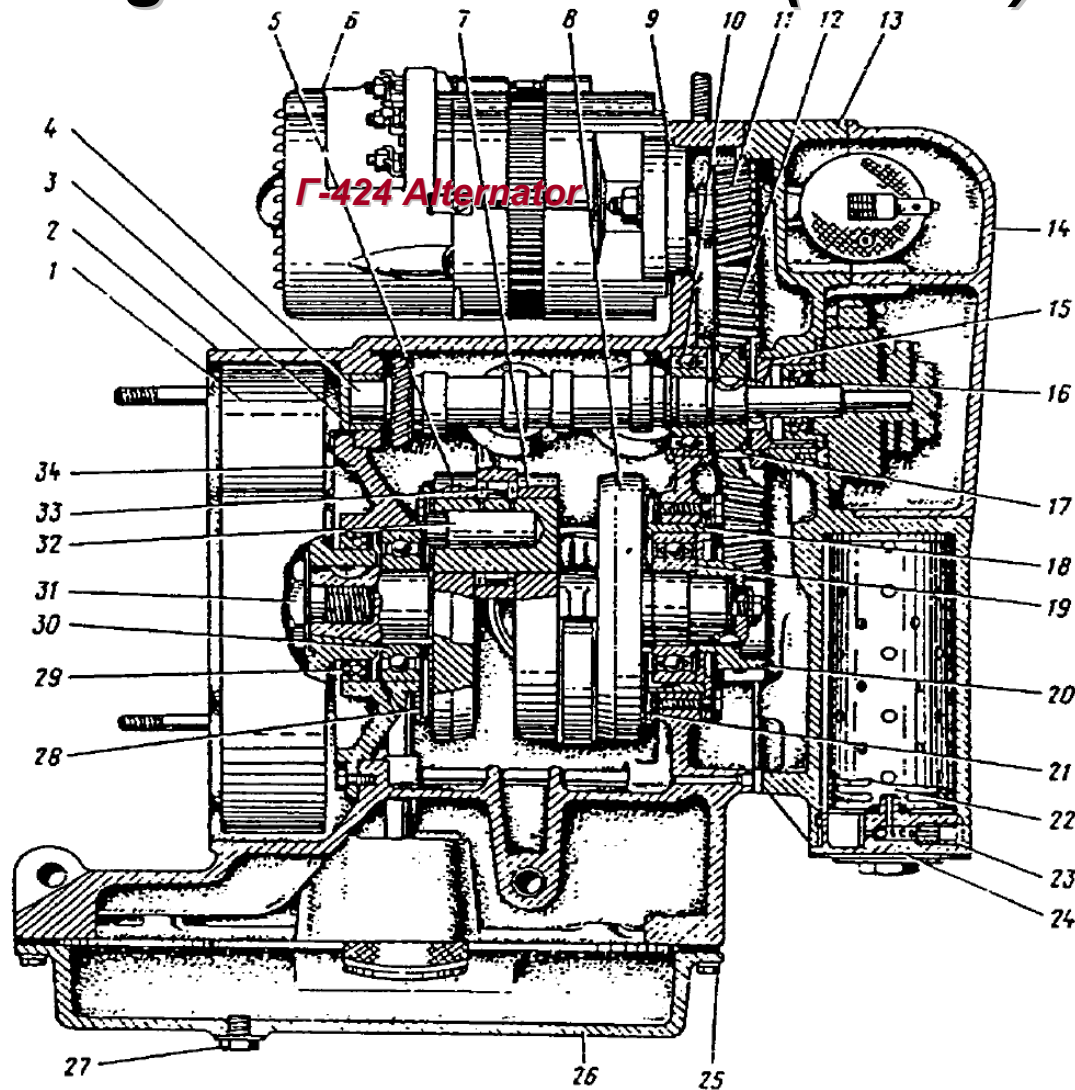
KMZ/Dnepr MB-650M Engine 650cc

Г-424 Alternator

Dnepr Engine
(MB-650M)
Vendor ID: 002.123
List Price: €907.38
(www.oldtimergarage.eu)

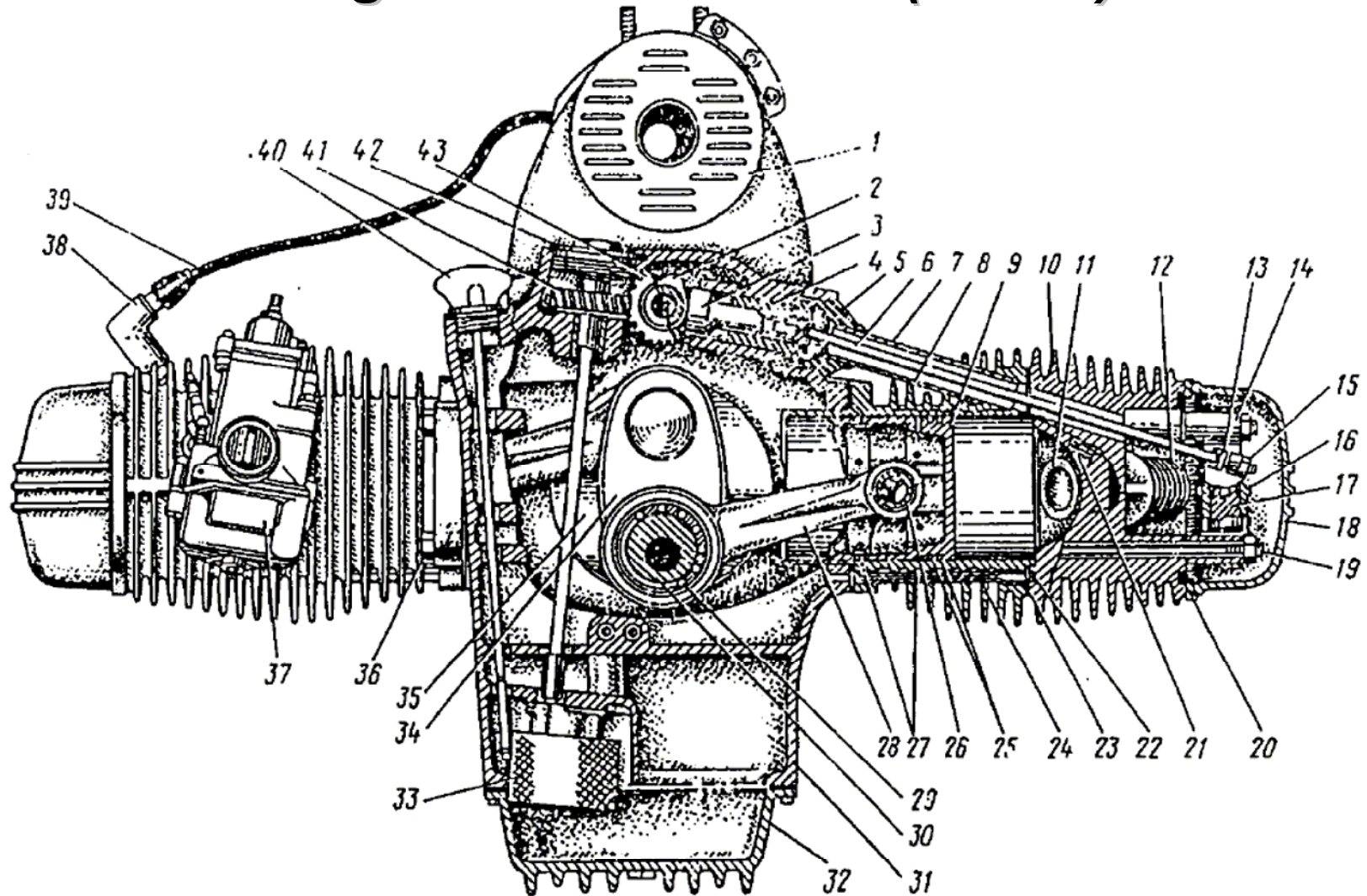


Engine for IMZ-8.103 (650cc)



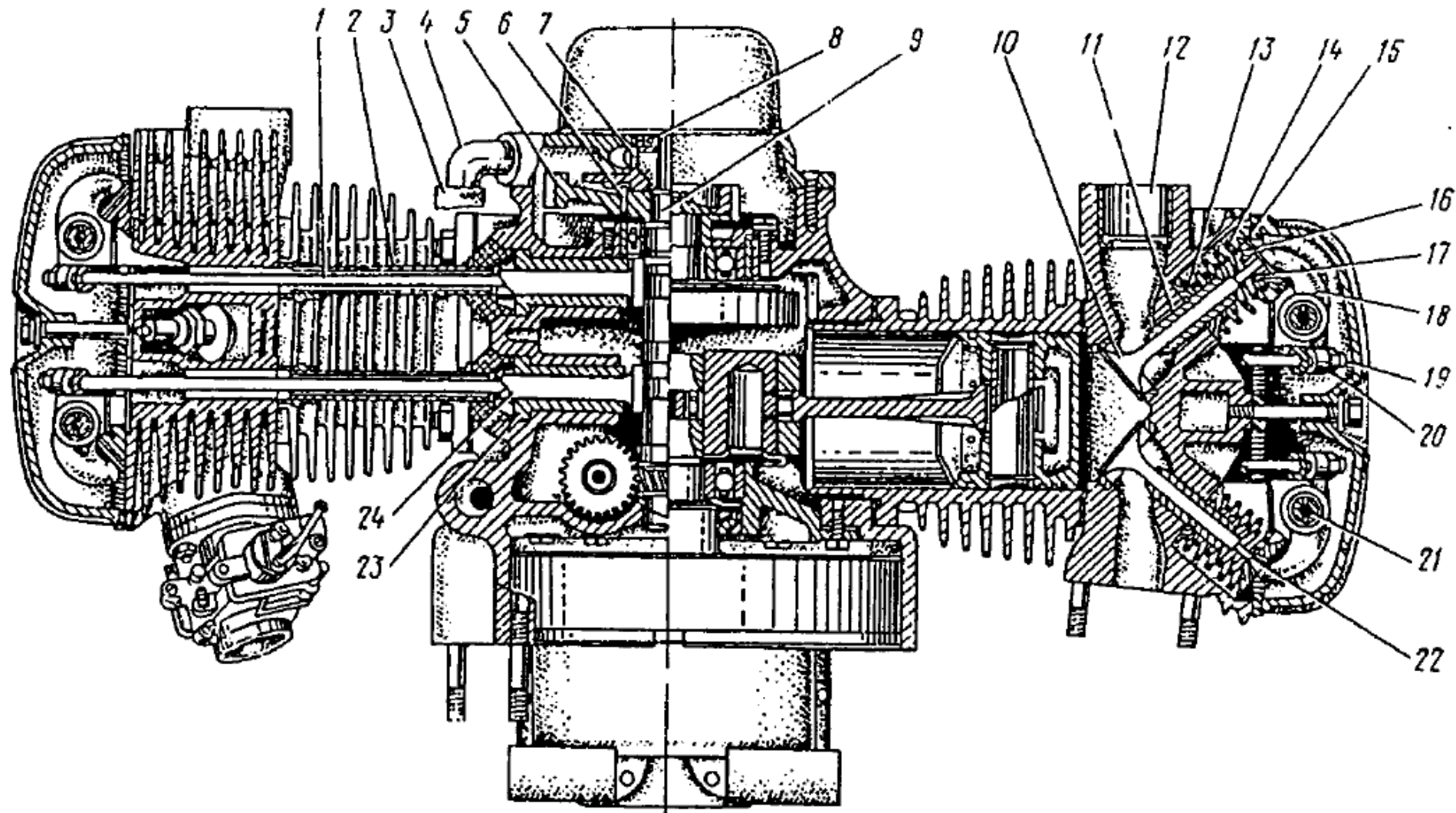
1. Flywheel, 2. Crankcase, 3. Camshaft Bushing, 4. Camshaft, 5. Rear Crankshaft Journal, 6. Starter / Generator, 7. Crankshaft Cheek, 8. Front Crankshaft Journal, 9. Generator Gasket, 10. Camshaft Bearing, 11. Generator Gear, 12. Camshaft Gear, 13. Timing Gear Cover, 14. Front Crankcase Cover, 15. Breather, 16. Seal, 17. Breather Tenon, 18. Front Ball Bearing Housing, 19. Ball Bearing, 20. Timing Pinion (Gear), 21. Oil Trap, 22. Oil Filter, 23. Packing Ring, 24. Oil Filter Plug, 25. Sump Bolt, 26. Sump, 27. Drain Plug, 28. Oil Trap, 29. Seal, 30. Ball Bearing, 31. Flywheel Fastening Bolt, 32. Crank Pin, 33. Roller Bearing, 34. Rear Bearing Housing

Engine for IMZ-8.103 (650cc)



1. Starter/Generator, 2. Camshaft, 3. Tappet, 4. Tappet Guide, 5. Sealing Cap, 6. Push Rod, 7. Push Rod Tube, 8. Cylinder, 9. Piston, 10. Cylinder Head, 11. Valve, 12. Valve Spring, 13. Adjusting Bolt, 14. Rockshaft Bracket, 15. Adjusting Bolt Locknut, 16. Rocker Arm, 17. Rockshaft, 18. Cylinder Head Cap, 19. Cylinder Head Stud, 20. Gasket, 21. Ignition Plug, 22. Duct for Oil Out of Cylinder Head, 23. Gasket, 24. Cylinder Oil Drain Tube, 25. Compression Rings, 26. Piston Pin, 27. Oil Rings, 28. Connecting Rod, 29. Roller Bearing, 30. Crankpin, 31. Crankcase, 32. Sump, 33. Oil Pump, 34. Crankshaft Cheek, 35. Oil Trap, 36. Cylinder Fastening Nut, 37. Carburetor, 38. Spark Plug Tip, 39. High Voltage Wire, 40. Filler Plug with Dipstick, 41. Oil Pump Drive Gear, 42. Oil Pump Drive Plug, 43. Oil Pump Drive Pinion (Gear)

Engine for IMZ-8.103 (650cc)



1. Push Rod, 2. Push Rod Housing, 3. Hose, 4. Breather Pipe, 5. Camshaft Gear, 6. Breather Tenon, 7. Breather, 8. Seal, 9. Camshaft, 10. Exhaust Valve, 11. Valve Guide, 12. Exhaust Branch, 13. Lower Retainer, 14. Outer Valve Spring, 15. Inner Valve Spring, 16. Upper Retainer, 17. Valve Block, 18. Rocker Arm, 19. Adjusting Bolt, 20. Adjusting Bolt Locknut, 21. Rockshaft, 22. Intake Valve, 23. Tappet Guide, 24. Tappet

Ural IMZ-8.xxx (Ural 650) 650cc OHV (1983-1990)



The IMZ-8.XXX (800 series) served as Ural's basic machine, carried on into the modern 650 solo and sidecar models with various cosmetic and design options.

Ural 750cc Engine



**IMZ-8.128-00011-20
(with Gearbox)**



2010 Ural Patrol-T



**IMZ-8.128-01001-20
(without Gearbox)**



**Ural Engine 750cc
List Price: €1,950
(www.ural-motos.com)**

