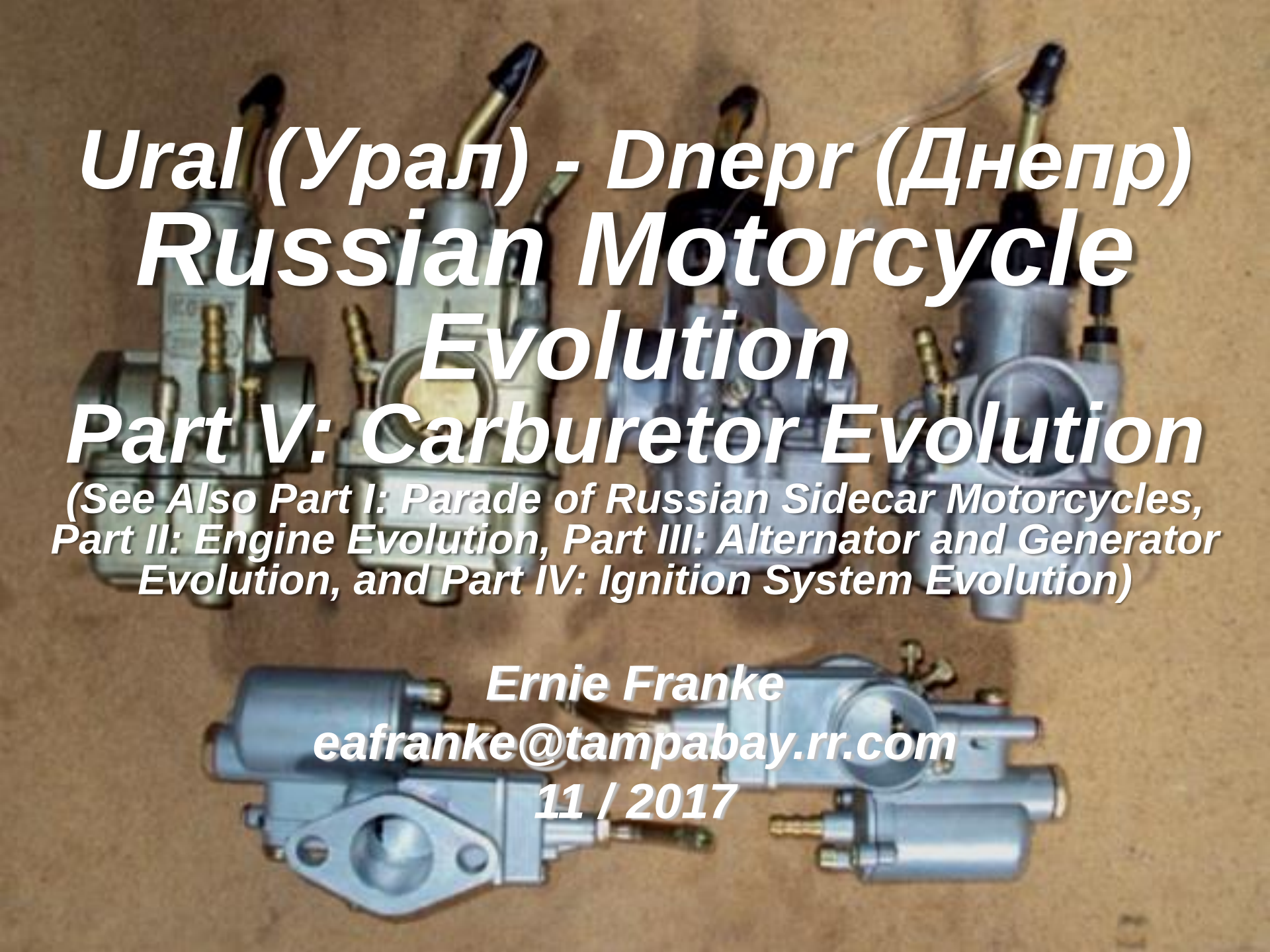

Ural (Урал) - Dnepr (Днепр) Russian Motorcycle Evolution

Part V: Carburetor Evolution

(See Also Part I: Parade of Russian Sidecar Motorcycles, Part II: Engine Evolution, Part III: Alternator and Generator Evolution, and Part IV: Ignition System Evolution)

Ernie Franke

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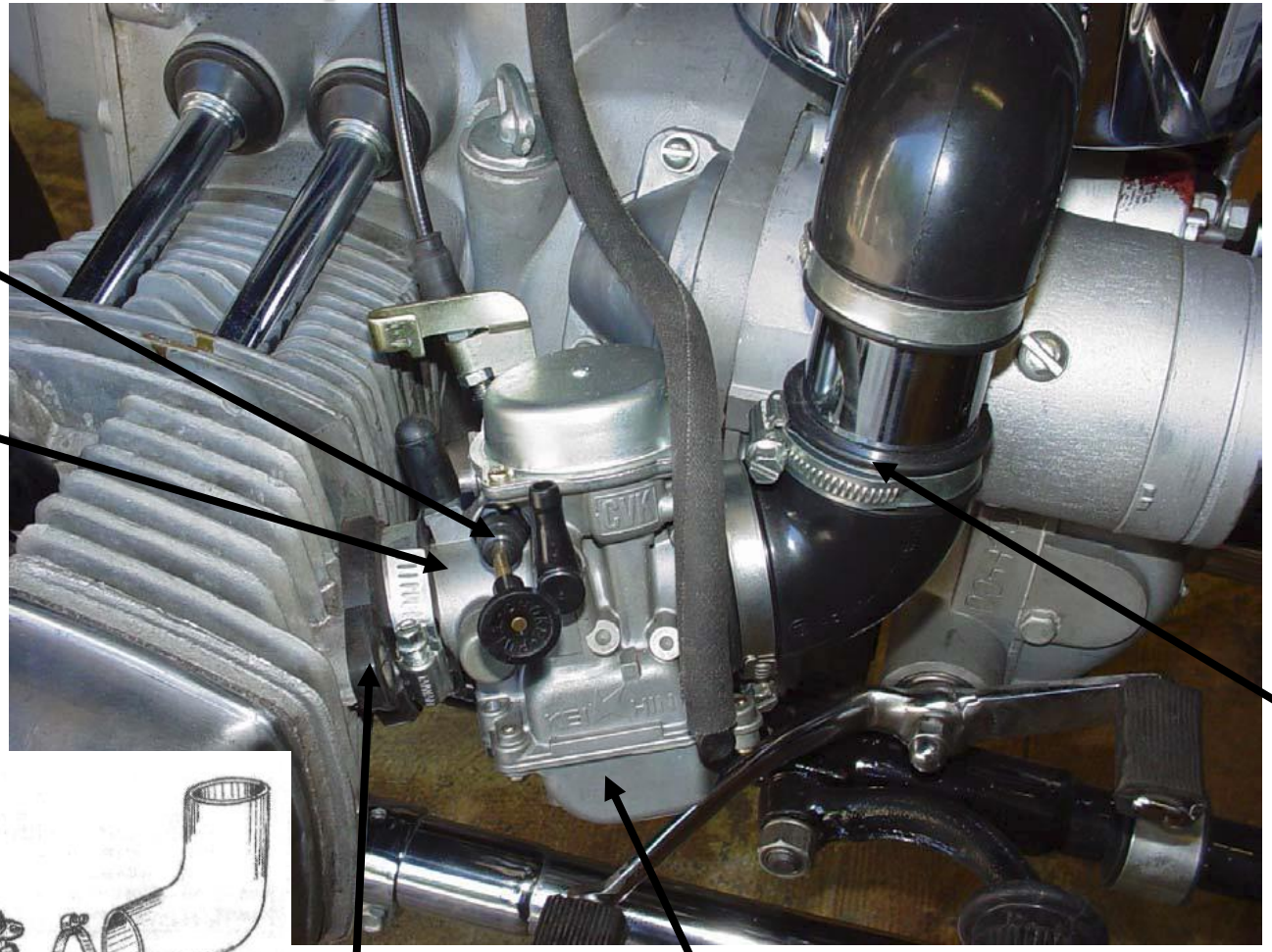
11 / 2017

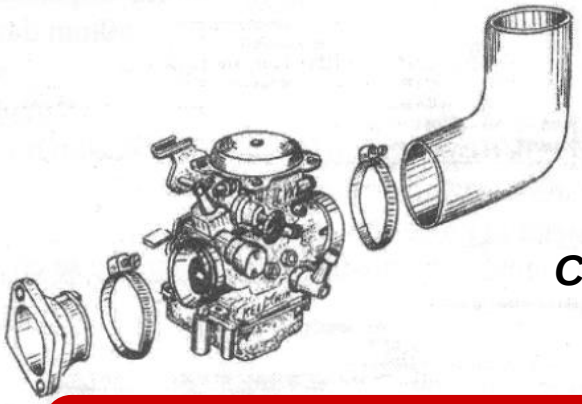
Carburetor Evolution

- ***First We Trace the Evolution of the Ural & Dnepr Motorcycle Sidecar History***
- ***We Then Establish a Time-Line for Carb Development***
- ***Next We Display Enough Photos of Carburetors that the Operator Can Clearly Identify Their Carburetor***

We have included ample photos, assembly drawings and line drawings to help identify the correct carburetor on each Ural / Dnepr. Identification of the carburetor, along with the electrical system and engine displacement, helps the operator pin-point the year of manufacture (assuming the motorcycle has not been modified).

Distinctive Components of Russian Carburetors





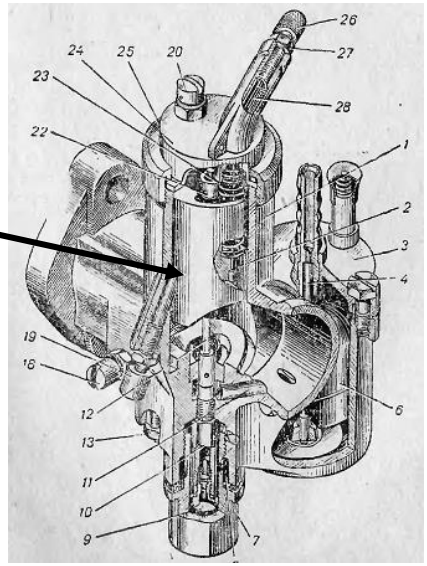
An example of identifying distinctive parts of a carburetor is shown on a modern (Keihin CVK32) with a spigot mount and butterfly valve throttle.

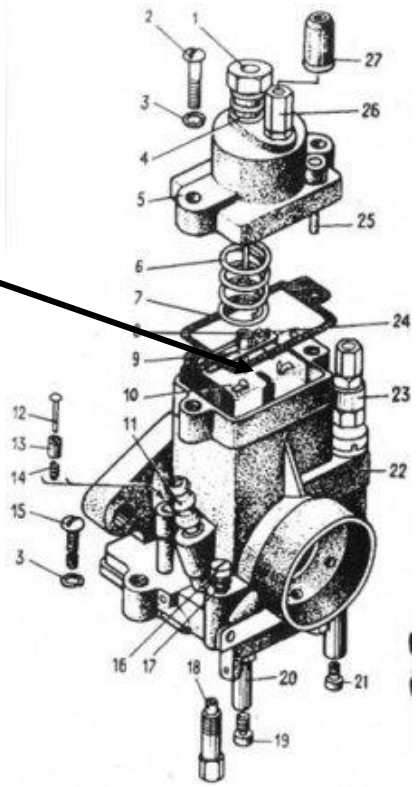
Characteristics: Round-Slide vs. Flat-Slide vs. Butterfly Throttle Valves

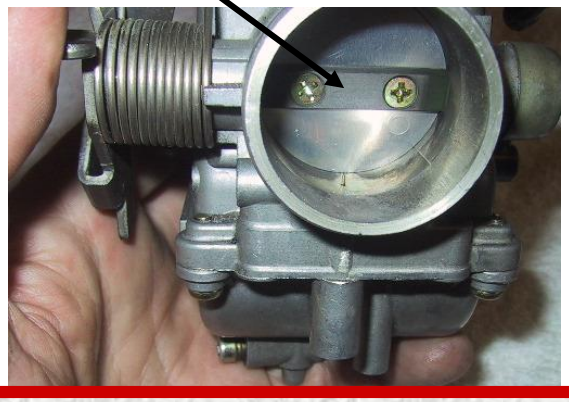
- **Round-Slide Throttle Valve**
  - –K-37 / K-38 / PZ-28D
  - –Kaptex VDC-RAM
  - –K-68
  - –Mikuni VM-28
  - –Jikov 2928

- **Flat-Slide Throttle Valve**
  - –K-301 / K-302
  - –K-62 / K-63 / K-65

- **Butterfly Throttle Valve**
  - –Keihin CVK32





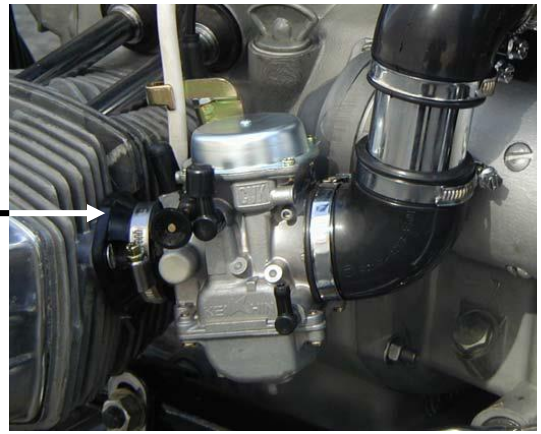


One term describing carburetors is round-slide, flat-slide or butterfly throttle valves.

Characteristics: Flange vs. Spigot Intake Manifold Mount

- *Flange-Mount*
  - *–Bolts Directly on Cylinder Head or Adapter*
    - *K-37 / K-38 / PZ-28D*
    - *K-301 / K-302*
    - *K-62 / K-63 / K-65 / K-68*
    - *Kaptex VDC-RAM*

- *Spigot-Mount*
  - *–Rubber Compliant Mount to Cylinder Head*
  - *–Mikuni VM-28*
  - *–Jikov 2928CE*
  - *–Keihin CVK32*



Another term describing carburetors is flange-mount or spigot-mount.

Characteristics: Vertical vs. Horizontal Flange-Mount

- *Vertical Mounting Holes*
  - *–K-37 / K-38 / PZ-28D, K-301 / K-302*

- *Horizontal Mounting Holes*
  - *–K-62 / K-63 / K-65 / K-68, Kaptex VDC-RAM*

- *Transition from Vertical-to-Horizontal*
  - *–Used to Transition from Older K-37/38 and K-301/302 Carbs to Modern K-62 / K-65 / K-68 Carbs*
  - *–Adapter Plates Readily Available*

An adapter plate is needed to upgrade older motorcycles to the modern horizontal pattern for the K-63 / K-65 / K-68 type carbs.

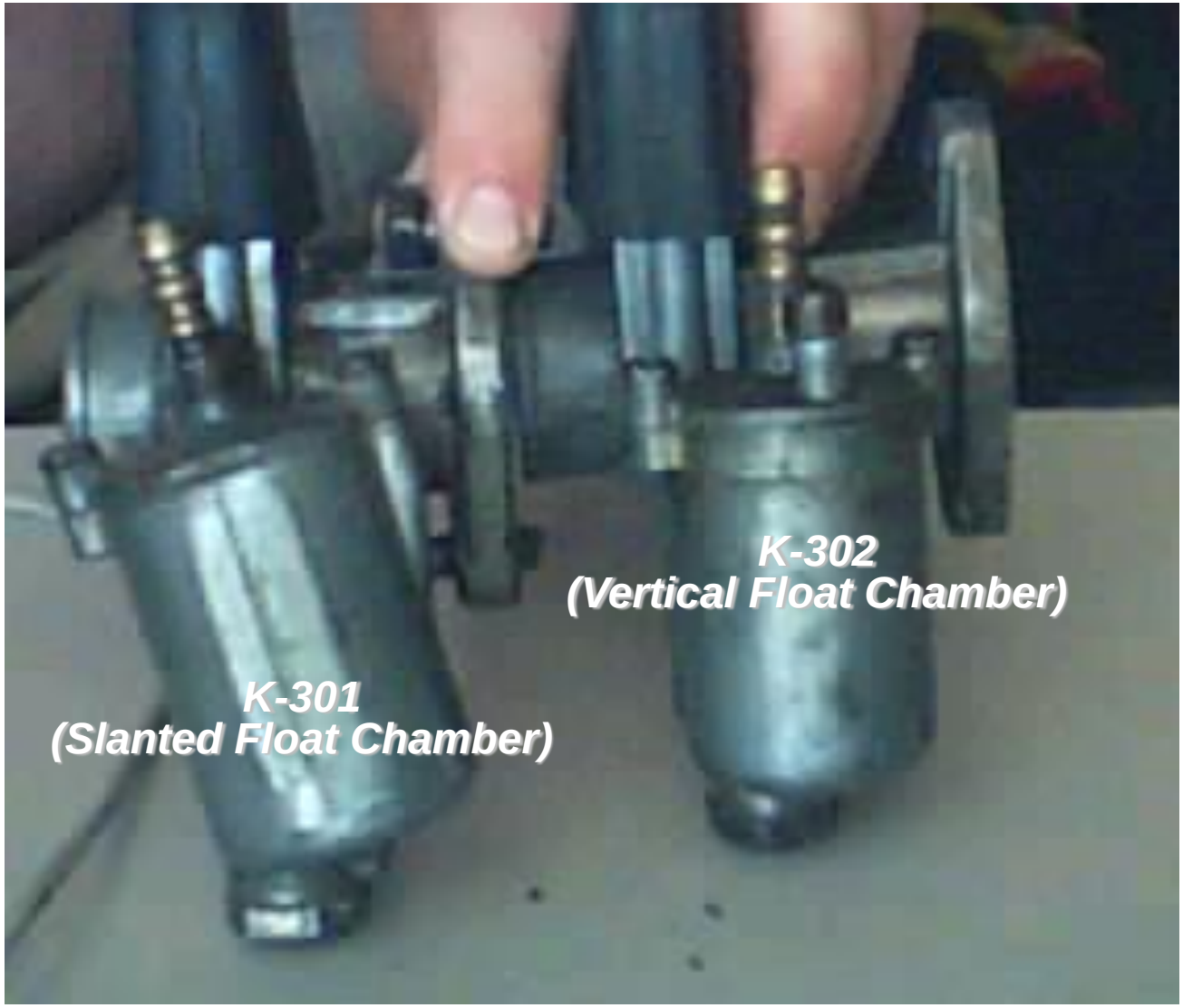
Characteristics: In-Line vs. Off-Axis Float Chamber Mount

- Float Chamber (Bowl) Offset from Carburetor Body
  - –Vertical vs. Slanted Float Chamber (Bowl) Mount
    - Vertical: K-37 / K-37A / K-38 / PZ-28D, K-301 / K-302

- Float Chamber (Bowl) In-Line with Center of Carburetor Body
  - –K-62 / K-63 / K-65 / K-68, Mikuni VM-28, Jikov 2928CE, Keihin CVK32

Older Russian carburetors had external float bowls, with some built on a slant, with greater foaming of the fuel under vibration.

Characteristics: Vertical vs. Slanted Float Chambers



The K-301, on the left, has an angled fuel bowl, compared to the later K-302 on the right.

Characteristics: Left-or Right-Hand vs. Similar Construction

- **Left-Hand or Right-Hand Construction (mixture-adjust on opposite sides)**
  –K-37 / PZ-28D, K-301 / K-302, K-68, Kaptex VDC-RAM *(Ukrainian Copy of Pekar K-68)*

- **Identical Construction (mixture-adjust on same side, top or bottom)**
  –K-62 / K-63 / K-65, Mikuni VM-28, Keihin CVK32 *(L22A)*

A few Russian carburetors were built so that the mixture-adjust screw was always on the outside.

Russian Carburetor Time-Line

K-37 (M-72)

K-37A (M-72, M-72K, M-72M, M-72H, K-750, MB-750)

K-38 (K750, M-61, M-62, M-63)

K-301Б (M-63, M-66, K-650/MT-8/MT-9)

K-301В (M-63, MT-10)

K-301Г (M-63, M-66, M-67, M-67.36)

K-301Д (MT-10, MT-10.36, MB-650M, K-650/MT-8/MT-9, MT-16)

Jikov 2928CE (Urals Exported to U.K.)

K-37

K-37A

K-38

K-301

1940 1945 1950 1955 1960 1965 1970 1975

K-302 (K-750, MB-750,K-650/MT-9, MT-10, MT-11, MT-12, IMZ-8.103)

K-62 (M-63, MB-650, MT-11 ,MT-16)

K-63/K-65 (K-750, MB-650, MT-10, MT-11, MT-12, MT-16)

28 mm Mikuni (8.103)

K-68 (MB-650, MT-11, MT-16)

CVK32 Keihin (8.103 (650&750cc), 8.107)

K-302

K-62

K-63/K-65

K-68

Urals

Last of the Dneprs

1975 1980 1985 1990 1995 2000 2005 2010

We have seen the gradual migration of the K-37 to the K-37A and then the K-38. The K-301 went through several iterations before the K-302 came along, followed by the K-Series carburetors.

Table I: IMZ (ИМЗ) - Ural (Урал) Sidecar Model/Year vs. Engine and Carburetor

Model	Use	Year	Engine Size (cm^3 / $inch^3$)	Compression Ratio	Horse Power BHP (hp / kW)	Max Power (rpm)	Voltage	Carburetor
M-72	Military	1941-50	746 / 45.3 SV	5.5:1	22 / 16.2	4,500-4,800	6-Volt	K-37, K-37A after 1950
M-72K	Military	1951-58	746 / 45.3 SV	5.5:1	22 / 16.2	4,500-4,800	6-Volt	K-37A (1950)
M-72M	Military	1956-60	746 / 45.3 SV	5.5:1	22 / 16.2	4,500-4,800	6-Volt	K-37A (1950)
M-61	Civilian	1958-61	649 / 39.4 OHV	6.2:1	28 / 20.6	4,800-5200	6-Volt	K-38
M-62 (Ural-1)	Civilian	1961-65	649 / 39.4 OHV	6.2:1	28 / 20.6	4,800-5,200	6-Volt	K-38
M-63 (Ural-2)	Civilian	1965-71	649 / 39.4 OHV	7.0:1	32 / 23.5	5,200-5,800	6-Volt	K-38, K-301Б, K-301В, K-301Г, K-301Д, K-62
M-66 (Ural-3)	Civilian	1971-73	649 / 39.4 OHV	7.0:1	32 / 23.5	5,600-5,900	6-Volt	K-301Б, K-301Г
M-67	Civilian	1974-76	649 / 39.4 OHV	7.0:1	32 / 23.5	5,000-5,200	12-Volt	K-301Г
M-67.36	Civilian	1976-85	649 / 39.4 OHV	7.0:1	36 / 26.5	4,600-4,900	12-Volt	K-301Г
8.103, 8.107 Series “650”	Civilian	1984-2002	649 / 39.4 OHV	7.0:1	36 / 26.5	5,000-5,200	12-Volt	K-302, K-63Y, 28mm Mikuni (1994), Keihin CVK32 (2000)
8.103 “750”Series	Civilian	2003-present	745 / 45.2 OHV	8.6:1	45 / 29	5,600	12-Volt	Keihin CVK32 (2000)

Prompted by the need to meet the stringent EPA requirements, Ural ended with the CVK32 Keihin in 2000 and has remained today.

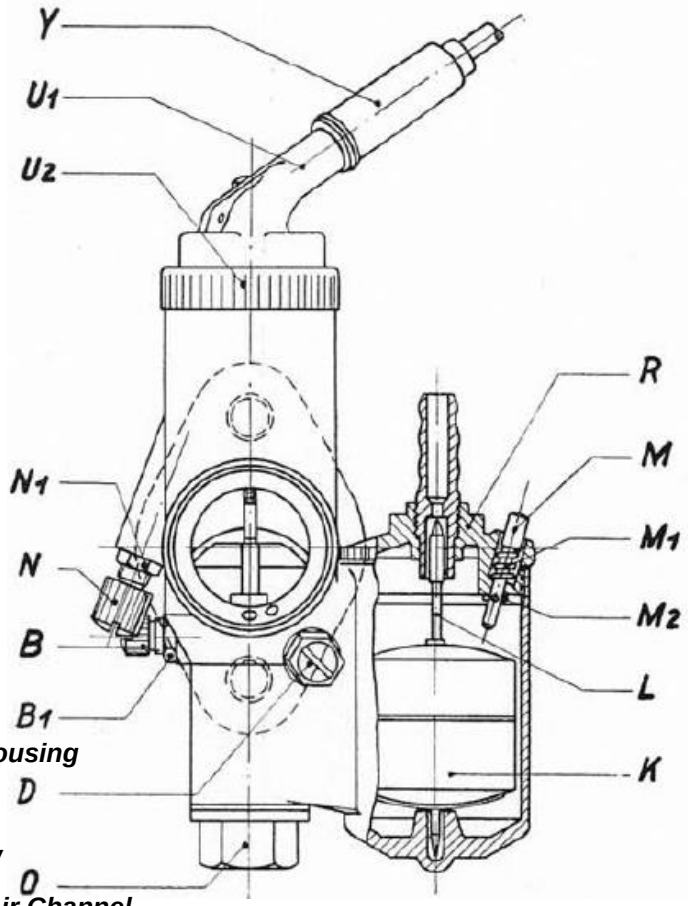
Table II: KMZ (КМЗ) - Dnepr (Днепр) Sidecar Model/Year vs. Engine and Carb

Model	Use	Year	Engine Size (cm^3 / $inch^3$)	Compression Ratio	Horse Power BHP (hp / kW)	Max Power (rpm)	Voltage	Carburetor
M-72	Military	1951-56	746 / 45.3 SV	5.5:1	22 / 16.2	4,500-4,800	6-Volt	K-37A (1950)
M-72N	Military	1956-60	746 / 45.3 SV	5.5:1	22 / 16.2	4,500-4,800	6-Volt	K-37A (1950)
K-750	Military	1958-63	746 / 45.3 SV	6.0:1	26 / 19.1	4,600-4,800	6-Volt	K-37A (1950), K-38, K-63Ф
K-750M	Military	1963-77	746 / 45.3 SV	6.0:1	26 / 19.1	4,500-4,800	6-Volt	K-37A, K-302
MB-750	Military 2WD	1964-73	746 / 45.3 SV	6.0:1	26 / 19.1	4,600-4,900	6-Volt	K-37A, K-302
MB-750M	Military 2WD	1973-77	746 / 45.9 SV	6.0:1	26 / 19.1	4,500-4,900	6-Volt	K-302, K-63Ф
MT-12	Civilian 2WD	1974-82	746 / 45.3 SV	6.0:1	26 / 19.1	5,000-5,800	6-Volt	K-302, K-63Ф
K-650/MT-8	Civilian	1967-71	649 / 39.4 OHV	7.0:1	32 / 23.5	5,000-5,200	6-Volt	K-301Б, K-301Д
K-650/MT-9	Civilian	1971-76	649 / 39.4 OHV	7.0:1	32 / 23.5	4,800-5,200	6-Volt	K-301, K-301Б, K-301Д, K-302
MT-10	Civilian	1973-76	649 / 39.4 OHV	7.0:1 (7.5:1)	32 / 23.5 (36 / 26.5)	5,600-5,800	12-Volt	K-301В, K-301Д, K-63T
MB-650	Civilian 2WD	1976-84	649 / 39.4 OHV	7.0:1	32 / 23.5	5,000-5,200	12-Volt	K-301Б, K-62, K-63, K-65T, K-68
MB-650M	Military 2WD	1985-91	649 / 39.4 OHV	7.5:1	36 / 26.5	5,000-5,200	12-Volt	K-301Д
MT-10.36	Civilian	1976-84	649 / 39.4 OHV	7.0:1 (7.5:1)	32 / 23.5 (36 / 26.5)	5,600-5,800	12-Volt	K-301Д
MB-650-M1	Military (MT-16)	1985-1995	649 / 39.4 OHV	7.0:1	32 / 23.5	5,000-5,200	12-Volt	K-301Б
MT-11 (Dnepr-11)	Civilian	1984-1995	649 / 39.4 OHV	7.0:1 (7.5:1)	32 / 23.5 (36 / 26.5)	4,800-5,200	12-Volt	K-301Д, K-302, K-62, K-63T, K-65T, K-68
MT-16 (Dnepr-16)	Civilian & Military 2WD	1985-1995	649 / 39.4 OHV	7.0:1 (7.5:1)	32 / 23.5 (36 / 26.5)	5,600-5,900	12-Volt	K-301Д, K-62, K-63T, K-65T, K-68

To reduce heat-stress on the MT-10.36 engine at low speeds on difficult roads and to use lower octane fuel, the compression ratio was reduced from 7.5:1 to 7.0:1. This was achieved by an increase of 0.9 mm cylinder height.

German R71 Vergaser (German for Carburetor): Father of Russian K-37

- *BMW R71 Motorcycle*
  - *–746 cc Flathead (SV)*
  - *–Production: 1938-1941*
  - *–Father of Ural M-72, which begat the K-750, etc.*
  - *–2 X Graetzin G24 (24 mm) Carburetors*

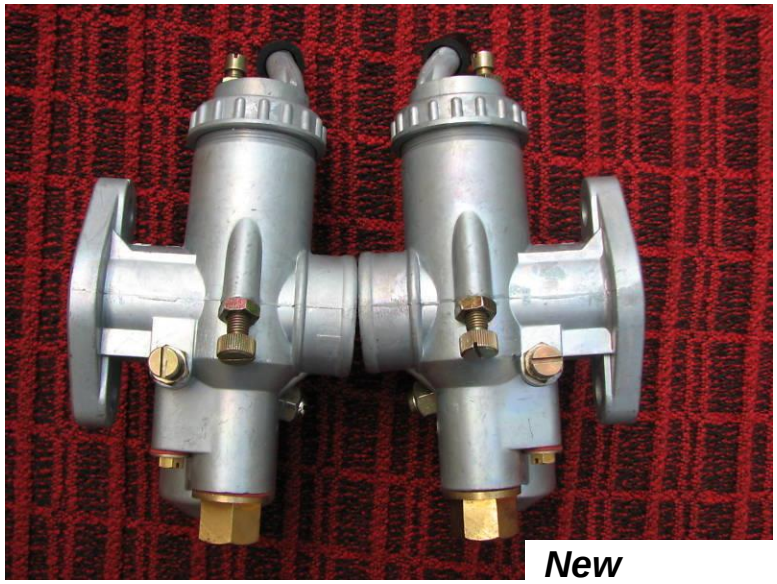


Y = Rubber Sleeve
U_1 = Cover of Slide-Valve Housing
U_2 = Screw Connection
N = Slide Valve Stop Screw
N_1 = Locknut for N
B = Idling Regulating Screw
B_1 = Locknut for B
D = Safety Screw in Idling Air Channel
O = Cap Nut with Strainer
R = Cover of Float Chamber
M = Tickler
M_1 = Tickler Spring
M_2 = Split Pin
L = Float Needle
K = Float

Graetzin G24 Carburetor

"Amal" carburetors were fitted to the German R51, R61 and R66 machines and the "Graetzin" carburetor to the BMW R71, the father of the Russian M-72.

Graetzin G28 (28 mm) Carburetor for BMW R12, R51 / 3, R61, R75, R71 (father of Russian M-72)



New
Item #: 320968957585
List Price: €200 pair
(www.ebay.de)

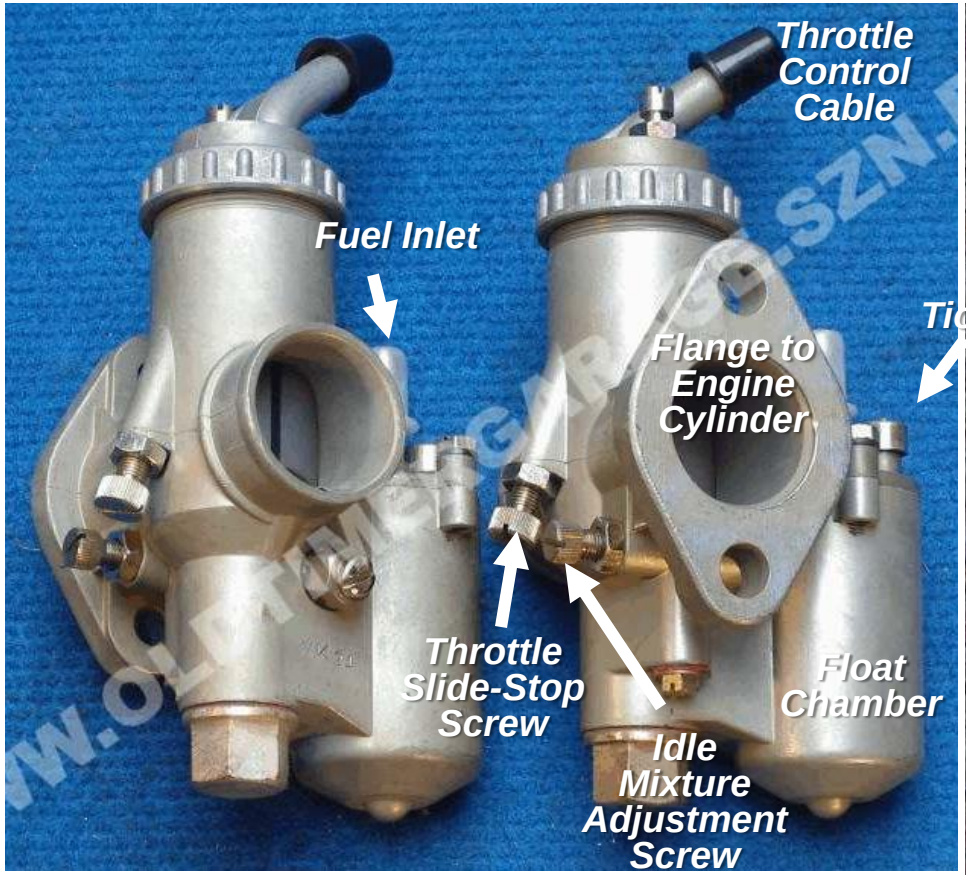
Graetzin G28 carburetor was optimized for the later OHV engines.

K-37 and K-37A Carburetor

- Used in Dnepr M-72, MB-750 and K-750 750cc Engines
- Later Replaced by K-38 and K-301
- Motorcycle has Two Carburetors
  - –Right and Left-Side Version
  - –Similar, but Mirror-Images
- Specifications:
  - –Diameter of Inlet Pipe: 24 mm
  - –Diameter of Mixing Chamber: 24 mm
  - –Distance from Fuel Level in Float Chamber to Plane of Connector: 21 mm
  - –Weight of Float: 8.5 g
  - –Carburetor Weight: 0.85 kg
  - –Capacity of Main Jet: 160 cm^3/min
  - –Capacity of Main Jet: 21 cm^3/min

K-38 carbs were used on the M-72, K-750 and MB-750, until replaced by the K-38 carburetor.

K-37 Carburetor



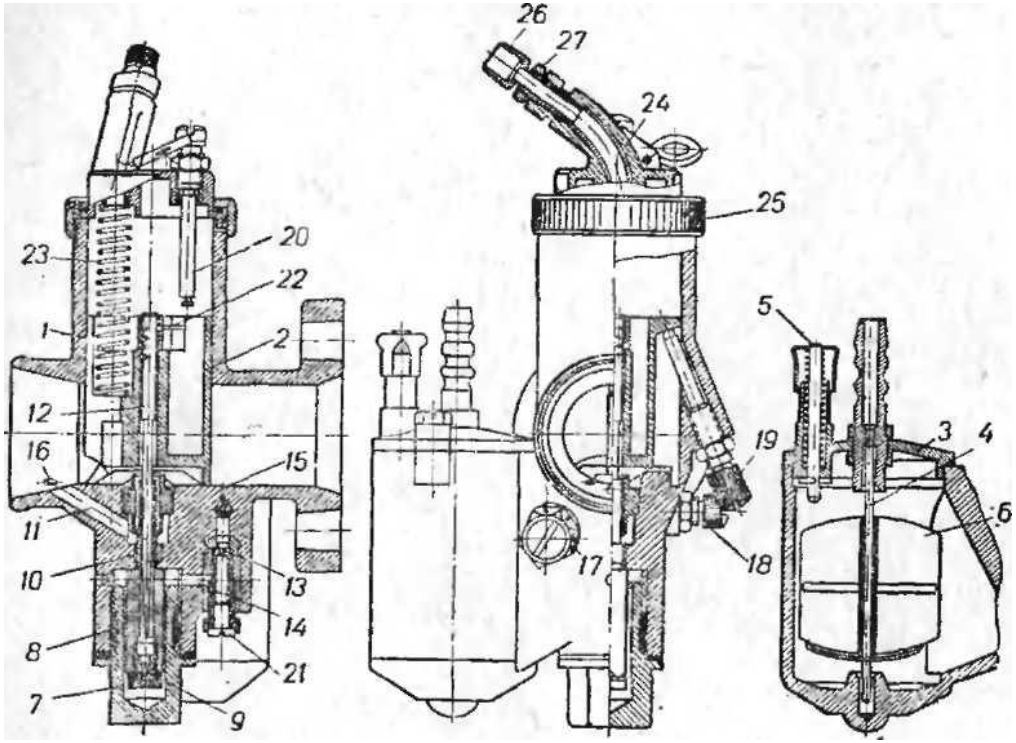
Round-Slide Throttle Valve
Off-Axis Float Chamber
Left-Hand and Right-Hand Versions
Vertical Float Chamber

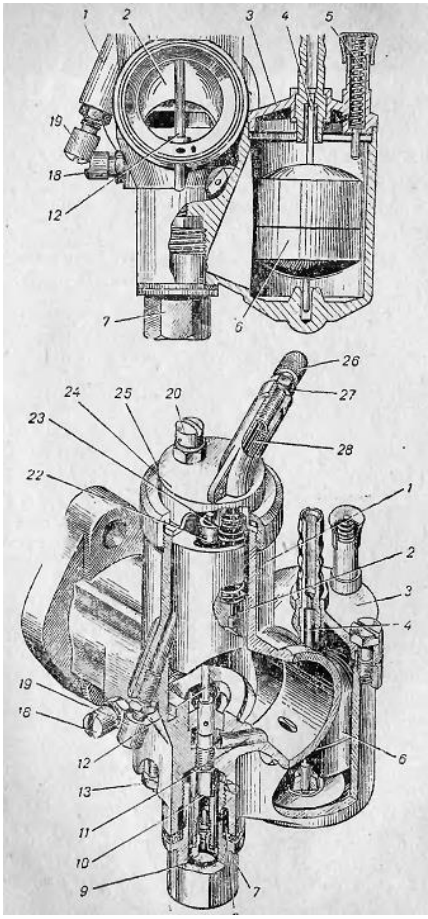
K-37 Carburetor

K-37's come in left- and right-side, mirror-images.

Carburetor K-37 Parts Breakdown

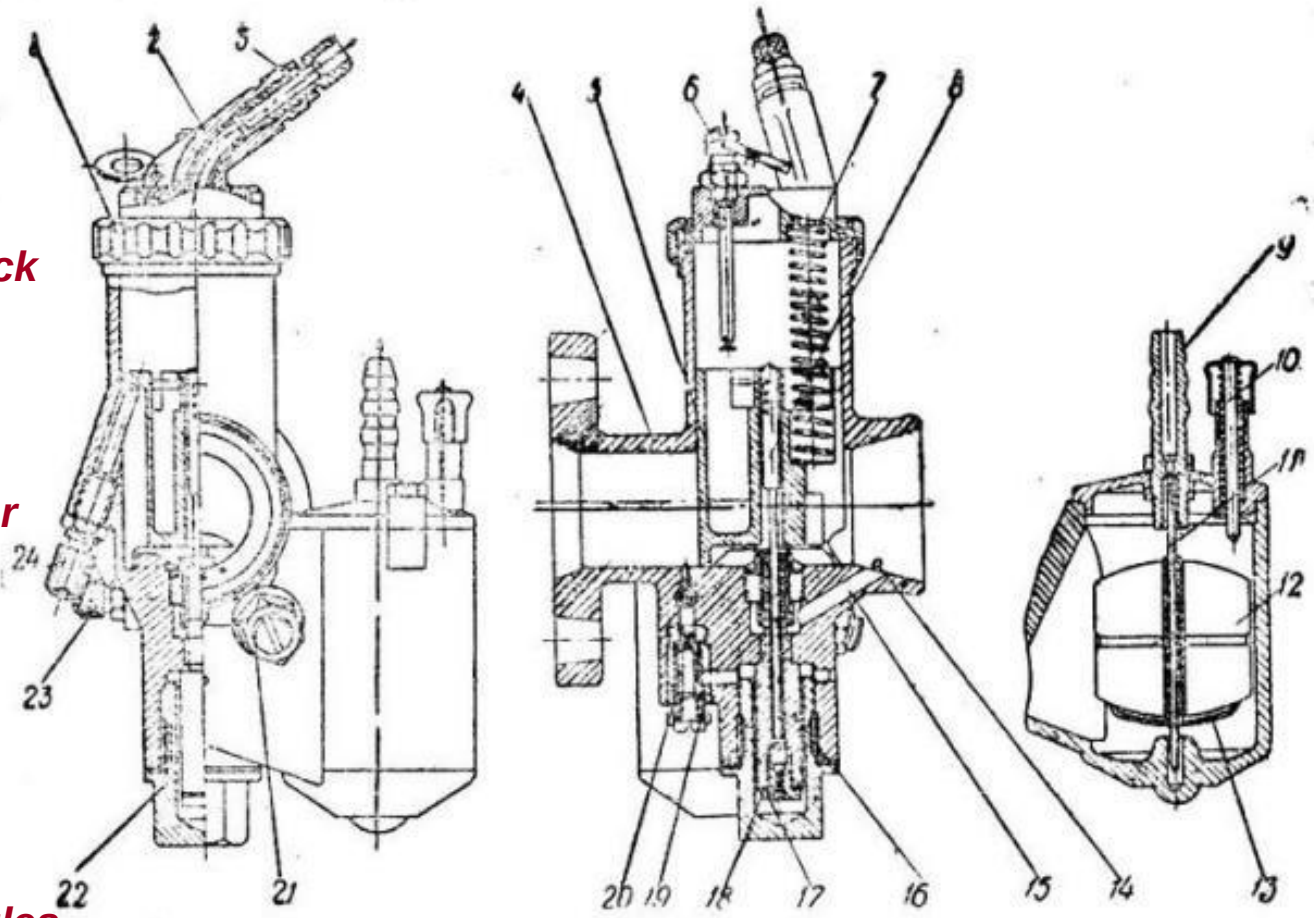
(5mv.ru/article.php & Manual for Motorcycle with Sidecar M-72, City of Irbit, 1954)





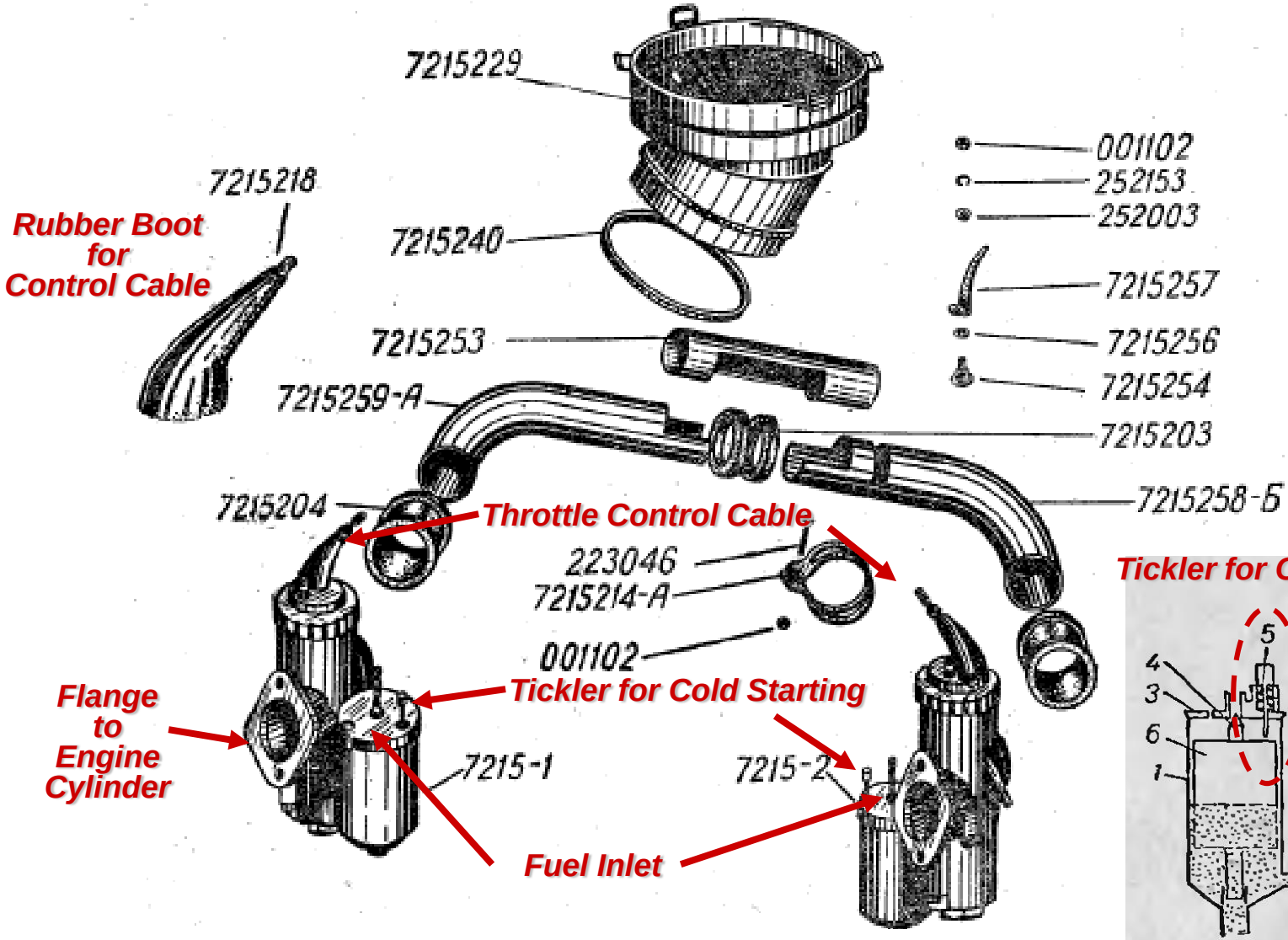
1 - Carburetor Body
2 - Round-Slide Throttle Valve
3 - Cover of Float Chamber
4 - Float Needle Valve
5 - Enichener (Tickler)
6 - Float
7 - Connecting Piece
8 - Filter Screen
9 - Main Jet
10 - Atomizer
11 - Air Duct of Atomizer
12 - Jet Needle
13 - Low-Speed (Idle) Jet
14 - Fuel Channel of Idle Jet
15 - Atomizer (Spray Nozzle) Idle Jet
16 - Air Duct of Idle Jet
17 - Filter of Auxiliary Air Duct Idle Jet
18 - Idle Mixture Adjustment Screw
19 - Throttle Slide Stop Screw
20 - Throttle Stroke Limiter
21 - Lock Screw of Idle Jet
22 - Attachment Split-Pin of Jet Needle
23 - Spring
24 - Housing Cover
25 - Union Nut
26 - End of Control Cable
27 - Lock Nut
28 - Control Cable

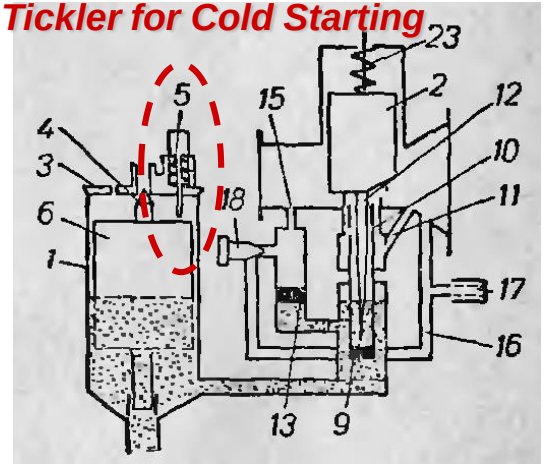
Carburetor K-37 (kotjar.spb.ru)



1 - Nut Cover
2 - Housing Cover
3 - Cable Sheath Screw Lock
4 - Carburetor Body
5 - Throttle Valve
6 - Throttle Valve Stop
7 - Throttle Valve Spring
8 - Needle Cone
9 - Fitting the float chamber
10 - Enrichener (Tickler)
11 - Float Needle
12 - Float
13 - Float Spring Latch
14 - Air Duct Idling Jet
15 - Air Duct Spray
16 - Spray
17 - Main Jet
18 - Strip Nozzle
19 - Screw-Cap idling Nozzles
20 - Idling Jet
21 - Filter of Auxiliary Air Duct Idle Jet
22 - Lower Tube Body
23 - Idle Screw
24 - Stop Screw (Limit for Throttle Valve)

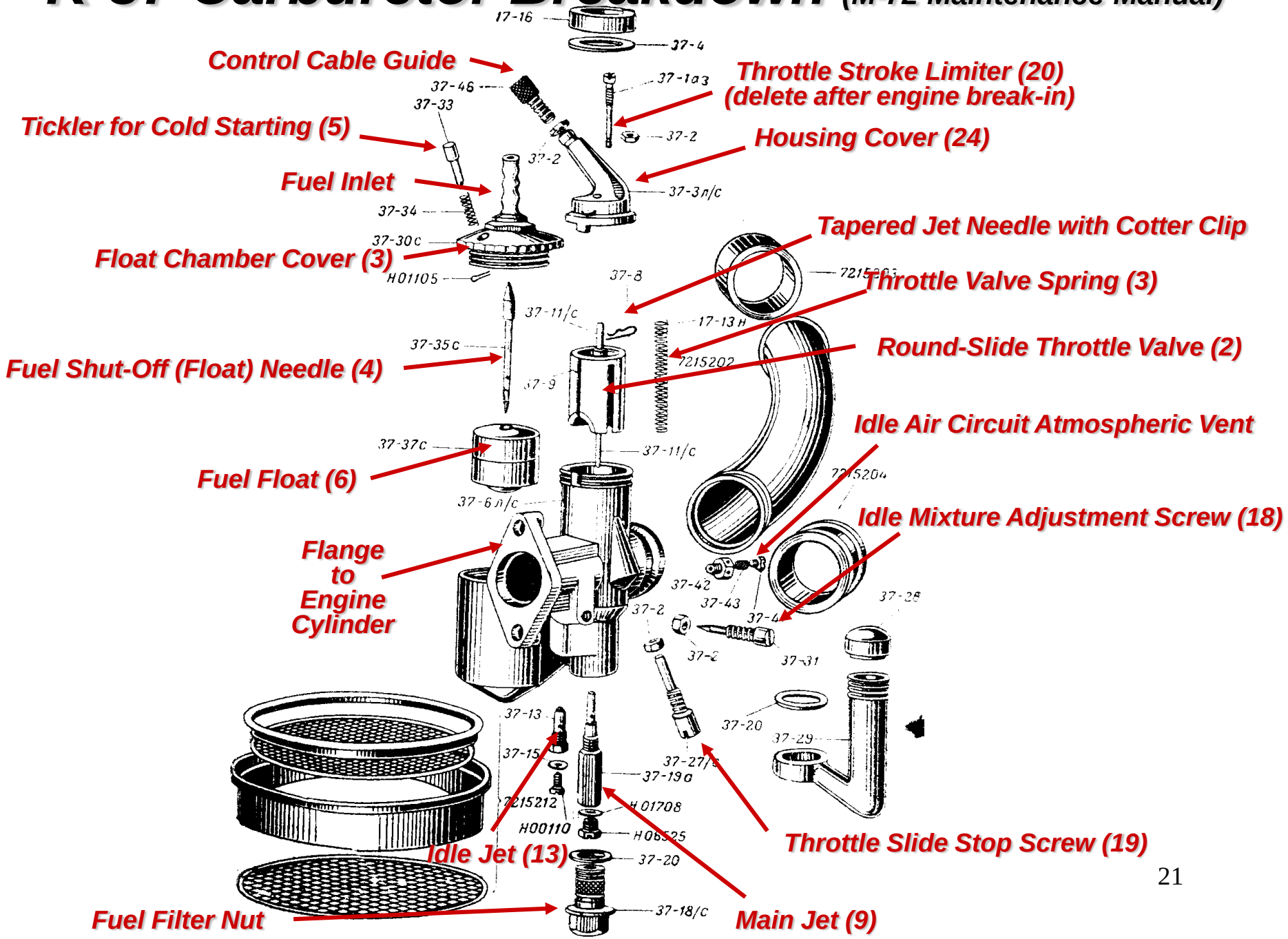
M-72 and K-750, K-750M, MB-750 and MT-12
Parts: 7215-1(RH), 7215-2(LH)



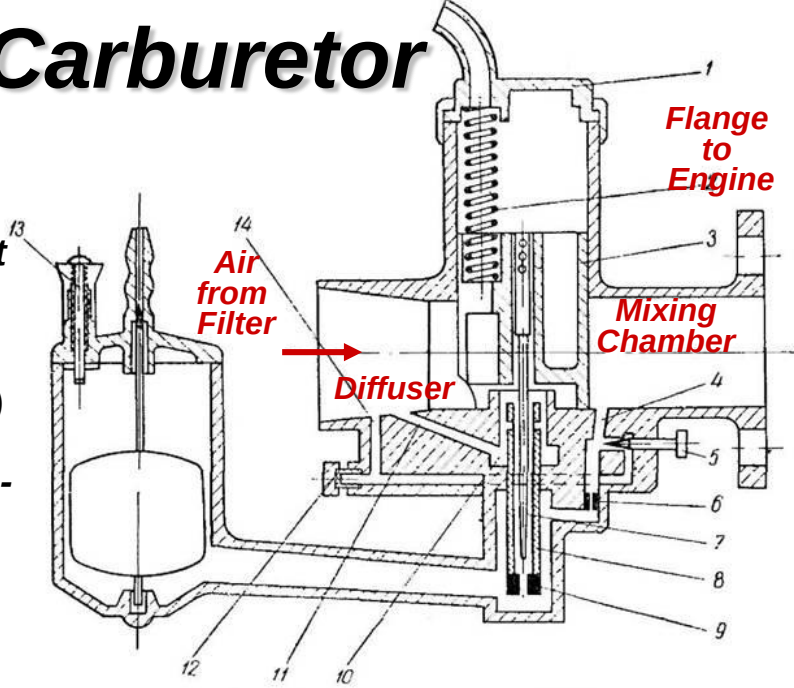


Ticklers (5), used for starting at cold temp, are clearly seen in the parts diagram. Pressing on the tickler pushes against the float and allows extra fuel.

K-37 Carburetor Breakdown (M-72 Maintenance Manual)



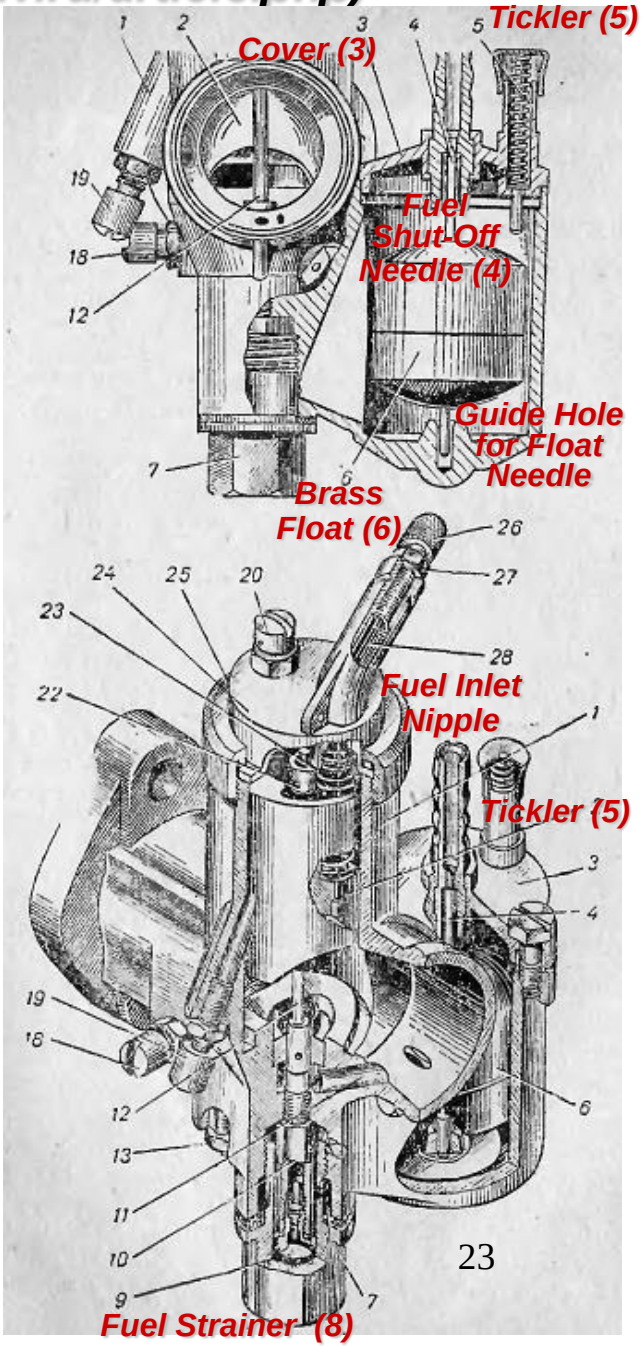
Operation of K-37 Carburetor



- Both Right and Left Carburetor Design and Adjustment Are Identical
  - Mirror Images of Each Other
- Air/Fuel Mixture Adjusted by Controlling Fuel thru Shaped Jet Needle and Vacuum of Main Jet
  - Round-Slide Throttle Valve (3) in Vertical Channel
  - Tapered Jet Needle (7) in Vertical Channel
- Throttle Valve (3) Pushed Down by Spring (2), between Lid (1) and Valve
- Maximum Travel of Throttle Valve Limited by Abutment (Slide-Stop) Screw
- Rise of Throttle Valve Controlled by Cable
- Main Dosing System Consists of Main Fuel Jet Nozzle (8), Air Chamber (10) with Conduit (11) and Jet Needle (7)
- Main Jet (9) Screwed into Body of Carburetor Bottom
- At Diffuser Are Two openings for Passage of Air Entering thru Channel (11)
- Nipple with Strainer at Bottom Filters Fuel Entering from Float Chamber
- Fuel Idle Injector (6) in Bottom Side of Carburetor Body
- Air Supply System Idle Carried Out Air Suction Pipe thru Channel (14), a Hole Near the Opening of Main System Channel, as Well as from Ambient thru Opening Protected by Mesh Filter (12), Located in Side of Carburetor Body
- Idle-Speed Adjusting Screw (5) Regulates Air Entering Carburetor Mixing Chamber
- Idle (Low-Speed) Operation
  - Fuel from Idling System Goes thru Channel (4)
    - Outlet Located in Mixing Chamber
  - At Low-Speed (Idle), Throttle Valve Closed
    - Fuel Enters Fuel Channel thru Nozzle (6) in Idling Channel (4)
    - Upon Leaving Nozzle (6) Atomizes Air, Going from Environment thru Strainer (12) and Suction of Air thru Carburetor Nozzle (14)
    - Adjust Carburetor at Idle Screw by Limiting Closing Throttle Valve, and Screw (5), Altering Composition of Combustible Mixture
    - With Rise of Throttle Valve, Carburetor Action Enters Main Dosing System

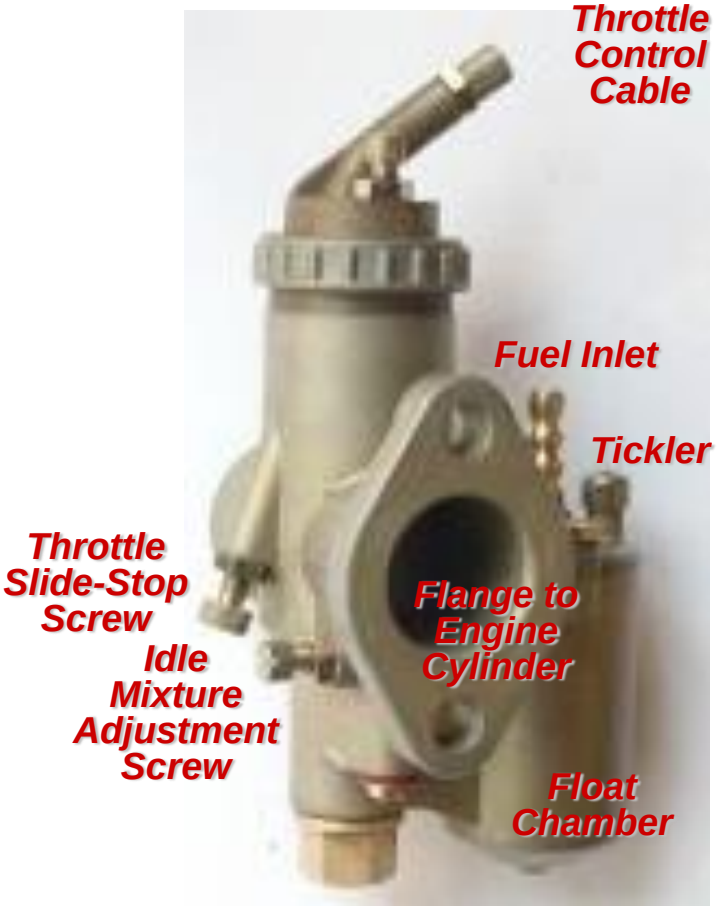
Fuel Flow and Tickler (5mv.ru/article.php)

- Float Chamber Cast In One Piece with Carburetor Body
  - –Reservoir for Fuel
  - –Fuel Enters Float Chamber thru Brass Fuel Inlet Nipple, Located in Cover (3)
  - –Fuel Quantity Entering Float Chamber Automatically Regulated by Fuel Shut-Off Needle (4), Connected to Hollow Brass Float (6)
  - –Bottom of Float Chamber and Lid Have Guide Holes for Float Needle
  - –When Filling Float Chamber, Brass Fuel Float Rises with Float Needle
  - –Needle's Upper Conical End Fits Hole in Lid, Stopping Further Access of Fuel into Chamber
  - –As Fuel Flow from Float Chamber of Float Falls, Needle Hole Opens and Fuel Starts Flowing Again into Fuel Cell
- Tickler (5) In Float Chamber Cover
  - –Temporarily Pushes Down Float to Enrich Mixture when Starting Engine by Increasing Level of Fuel in the Float Chamber
- From Float Chamber, Fuel Enters Bottom of Carburetor
  - –In Bottom of Carb Are Two Concentric Threaded Holes
  - –In Smaller, Upper Hole Is Screwed Atomizer (10), which Is Screwed into Main Jet (9), Sealed with Fiber Washer
  - –In Larger, Bottom Hole Is Screwed Fitting Hole (7) with Screen Filter (8), Also Sealed with Fiber Washers
- Fuel Passes from Float Chamber thru Filter Strainer (8) and Chamber of Main Jet

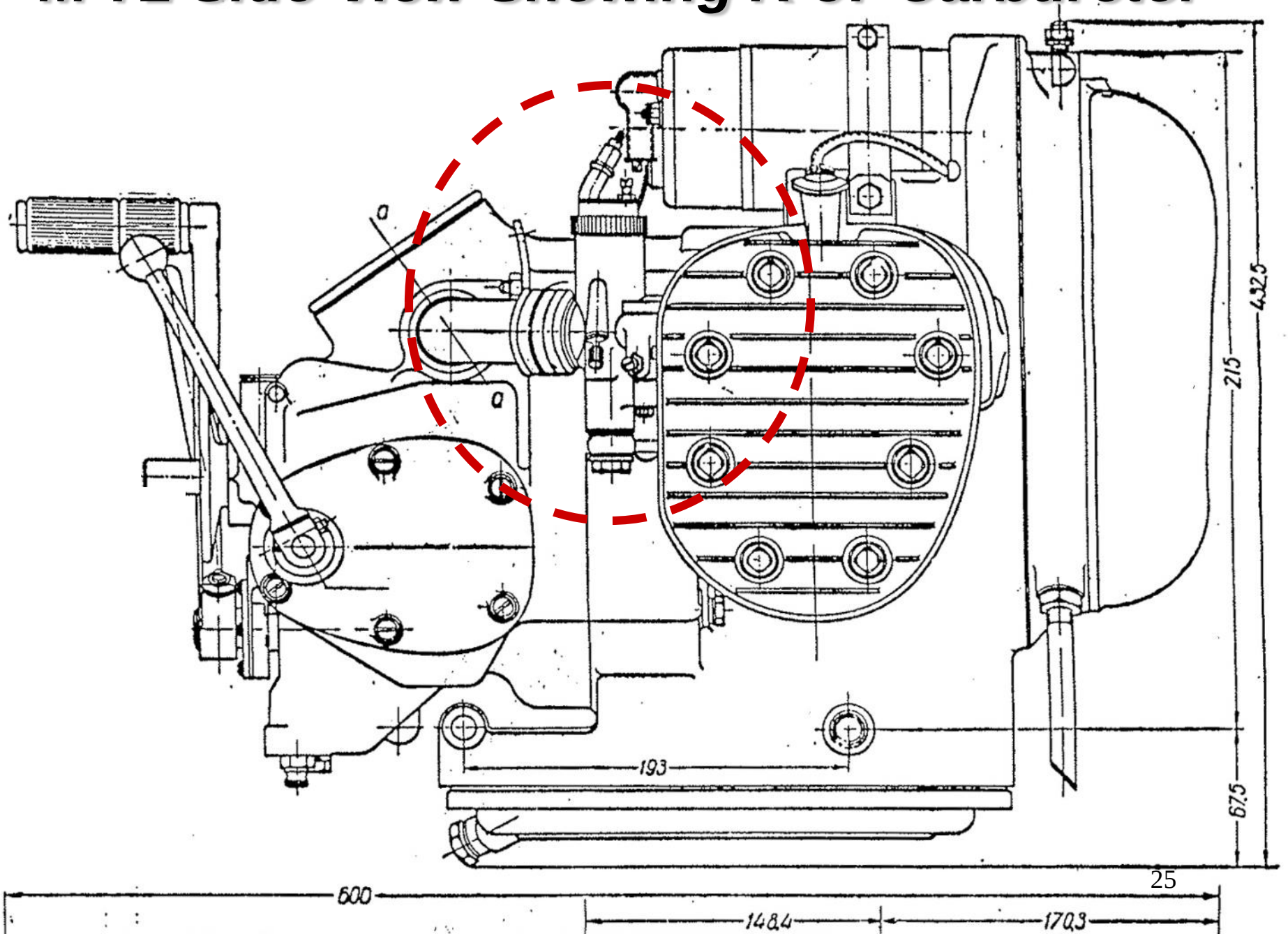


Medium and Full-Throttle Operation of K-37 Carb (cont.)

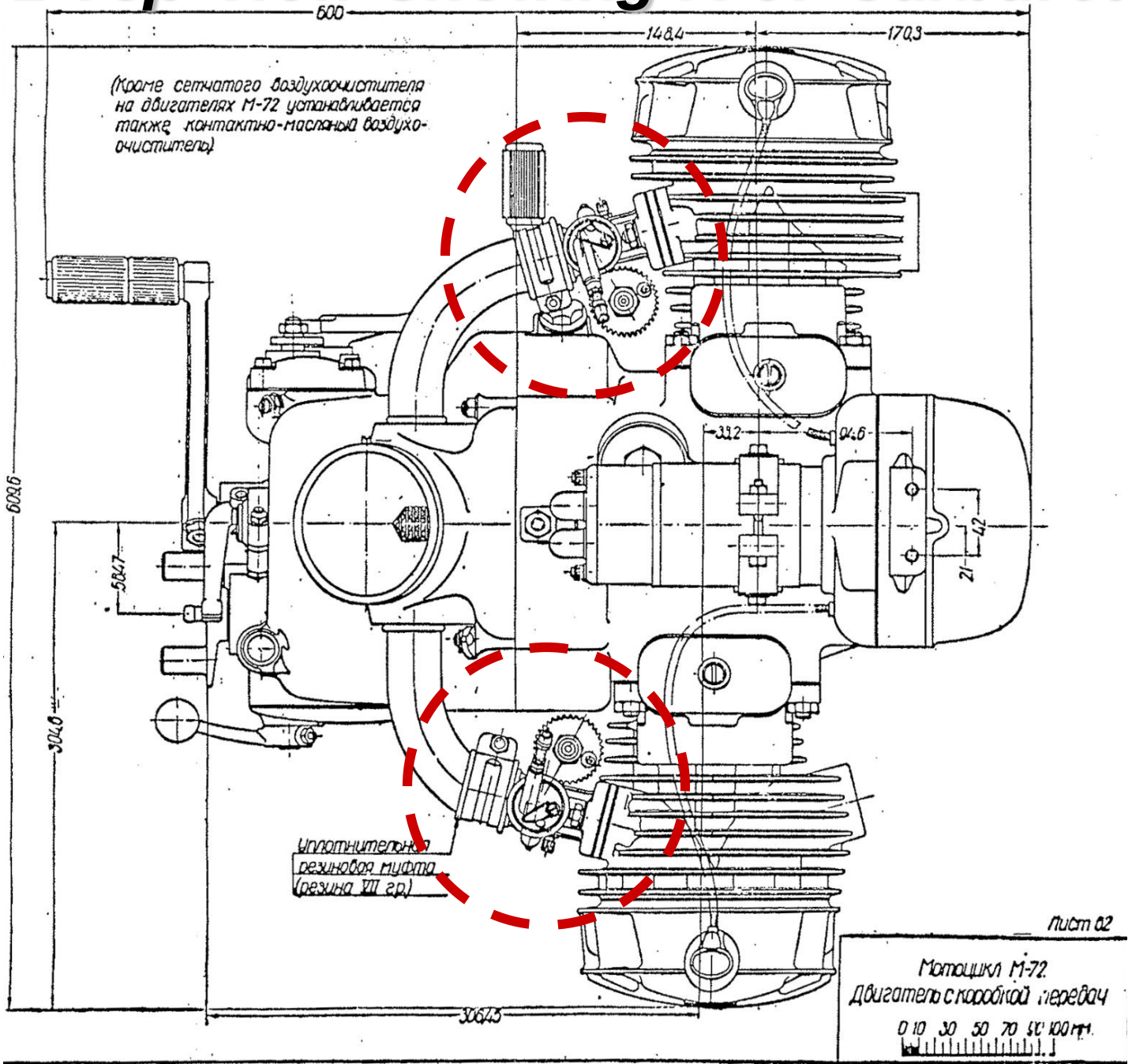
- Fuel from Float Chamber Enters Mixing Chamber thru Main Jet Atomizer (9) and (8)
- When Fuel Flows into Nozzle, Mixed with Air Coming from Air chamber (10) thru Two Holes Made in Diffuser
- Air/Fuel Mixture Regulates the Negative Pressure behind Main Jet (9)
- Composition of Mixture at Medium Loads Mainly Determined by Annular Section between Inner Walls of Atomizer and Tapered Dosing Needle (Jet Needle)
- When Engine at Constant Position of Throttle Valve, but with Change in Load, Air/Fuel Ratio Adjusted by Air Supplied to the Spray from Air Chamber (10)
- At Full-Throttle, Round-Slide Valve at Highest Position
  - –Provides Rich Fuel Mixture Needed for Maximum Power
  - –Adjustment of Mixture Also Set by Size of Main Jets



M-72 Side-View Showing K-37 Carburetor



M-72 Top-View Showing K-37 Carburetors



PZ-24 and PZ-28 Carburetor (Карбюратор)

- PZ-24 and PZ-28 Are Chinese Knockoffs of Russian K-37's, but Better Made
  - –K-37 Carb Was a Russian Knockoff of the German Graetzin G24 for the BMW 71
  - –Used in Chang Jiang 750 (CJ750) Motorcycle
    - CJ750 Was Chinese Knockoff of Russian M-72
    - Russian M-72 Was Knockoff of German R-71 Motorcycle
- Later Replaced by K-38 and K-301 / K-302
- PZ-24 and PZ-28 Characteristics:
  - –Motorcycle has Two Carburetors
    - Right and Left-Side Version
    - Similar, but Mirror-Images
  - –Round-Slide Throttle Valve
  - –Float Chamber (bowl) Offset from Carburetor Axis

The PZ-24 and PZ-28 were good substitutes for the K-37 carbs used on the M-72, K-750 and MB-750 motorcycles.

Chinese Carburetors and Motorcycles

- *Three Models of Chang Jiang (CJ) Motorcycles*
  - *Chang Jiang M1*
    - *Sidevalve (flathead) Engine and 6-Volt Electrical System*
    - *Clone of the Russian M-72 and Closely Resembles the German 1938 BMW R71*
  - *Chang Jiang M1M*
    - *Sidevalve (flathead) Engine and 12-Volt Electrical system*
  - *Chang Jiang M1S (or "Super CJ")*
    - *Overhead-Valve (OHV) Engine and 12-Volt Electrical System*
    - *Chinese Design*
- *Three Types of PZ-XX Carburetors for CJ Motorcycles*
  - *Dash Number Indicates Caburetor Size (PZ-24 Is 24 mm)*
  - *PZ-24 (24 mm) Original Flatheads (SV's): M1 and Early (1972-1980) M1M*
    - *Designed for 6:1 Compression, 24 H.P. Engine*
  - *PZ-26 (26 mm) Early OHV's; Later (1980-1986) M1M and the M1S*
    - *Works Great for Flatheads*
    - *Hard to Find*
  - *PZ-28 (28 mm) Later OHV*
    - *Seems to Be Too Much to Get a Good Idle on Flatheads, but Works Good at Highway Speeds!*
    - *Designed for 8:1 Compression, 32 H.P. Engine*

Chang Jiang has been making a clone of the Russian M-72 in China since the late 1950's. Chang Jiang bikes are still made, but often in more or less artisan ways. Sometimes of very good quality, sometimes not. Bike parts are still mostly unaltered since the original M-72 construction. Engines are either old side-valve (SV) 24 hp, or overhead-valve (OHV), 32 hp.

Comparison Data

CJ Model	Engine Type	Engine Designation	Engine Size	Produced	Horse-Power	Carb	Electrical	Compress Ratio	Remarks
M1	SV	Type I	746 cc	1957-1966	22 HP / 4500-4800 rpm	QHQ15 (72	6-Volt	5.7:1	Almost exact copy of Russian M-72 engine
M1	SV	Type II	746 cc	1966-1972	22 HP / 4500-4800 rpm	QHQ-15	6-Volt	6:1	Minor improvements/changes made to Type I engine
M1M	SV	Type II	746 cc	1972-1980	24 HP / 4500-4800 rpm	PZ-24	12-Volt	6:1	
M1M	OHV	Model 750E	746 cc	1980-1986	32 HP / 4700-5500 rpm	PZ-28	6-Volt	7:1	
M1S ("Super")	OHV	Model 750E	746 cc	1986-?	32 HP / 4700-5500 rpm	PZ-28 D	12-Volt	7:1	Difference between "D" and "F" in size of jets
M1S ("Super")	OHV	Model 750F	746 cc	1986-?	32 HP / 4700-5500 rpm	PZ-28 F	12-Volt	7:1	Difference between "D" and "F" in size of jets

Carb	Used On:	Size
Graetzin G24	German R71 (father of M-72)	24 mm
Graetzin G28	BMW R12, R51/3, R61, R71	28 mm
K-37/-37A	M-72,K-750, K-750M, MB-750	24 mm
CJ QHQ15	CJ M1 (SV)	24 mm
PZ-24	CJ M1 (SV)	24 mm
PZ-26	SV or OHV	26 mm
PZ-28D	SV or OHV, Ural 650, M-67	28 mm
PZ-28F	OHV	28 mm
K-38	Ural M-61, M-62, M-63 (all OHV's), Dnepr K-750 (SV)	24 mm

Notes:
1. SV = Side Valve ("Flathead"), 2. OHV = Over-Head Valve, 3. CJ = Chang Jiang, 4. PZ-24 = K-37 = QHQ15,
5. 1 H.P. = 0.746 kW, 1 kW = 1.341 H.P., 6. Carb Size = Inlet Pipe Diameter

The PZ-24 or K-37 (both 24 mm) carbs give good performance for flat head (SV) engines. The PZ-26 gives better performances for the OHV engines, and the optimum carb for the flathead. PZ-28, G28 were optimized for the OHV.

Chang Jiang QHQ-15 Carburetors (www.changjiangunlimited.com)

QHQ-15 carburetors appeared on Chang Jiang's M1 (SV) and M1M (SV) engines, a copy of the Russian K-37.

PZ-24 on a Chang Jiang 750 Motorcycle (SV)

Item #: 120820187818
List Price: $90.00 pair
(www.ebay.com)

Left-Side

Right-Side

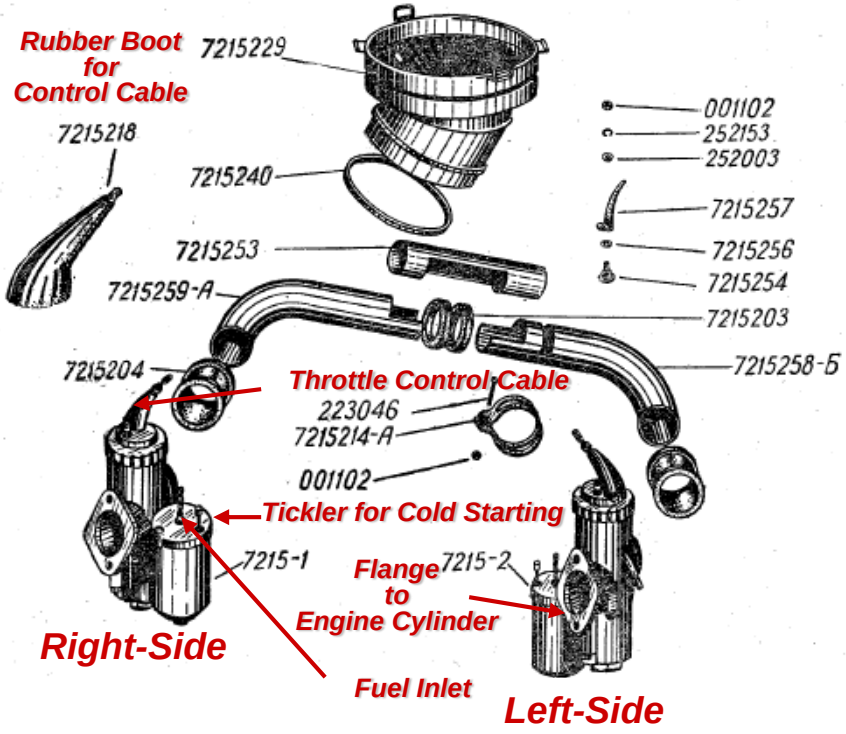
Item #:04-0001
List Price: $70 pair
(www.changjiang750sidecar.com)

Replica of G24 (24 mm)
List Price: €239 pair
(classicdepartment.com)

Carburetor PZ-28

Left-Side
Item #: 7215-2
List Price: €60
(www.henriksson.ee)

Right-Side
Item #: 7215-1
List Price: €55
(www.henriksson.ee)

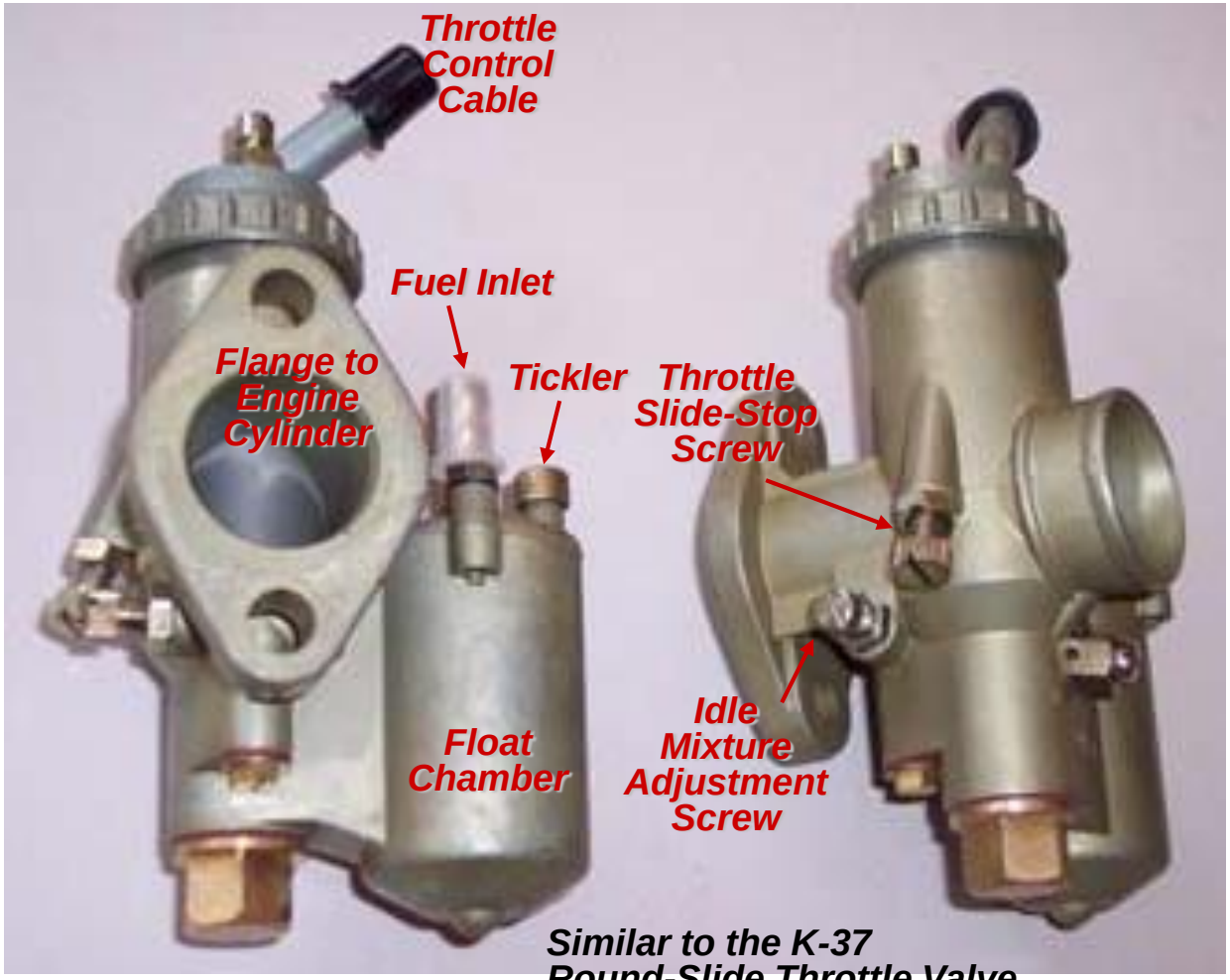


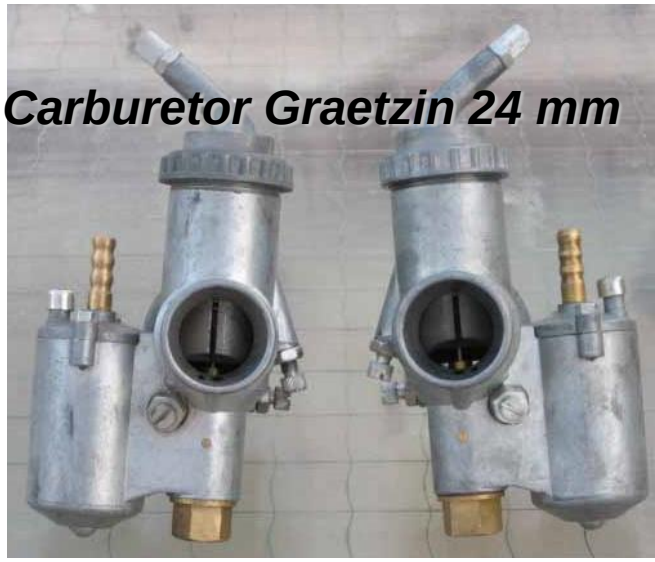
Air Intake on a M-72 and CJ750

Pair (left + Right)
Item #: 72152-1 + 7215-2
List Price: €110
(www.henriksson.ee)

Carburetor PZ-28 is a good quality replica of the K-37 and the Graetzin carburetors, as seen on the M-72, K-750M, MB-750 and MT-12.

PZ-28D Carburetor

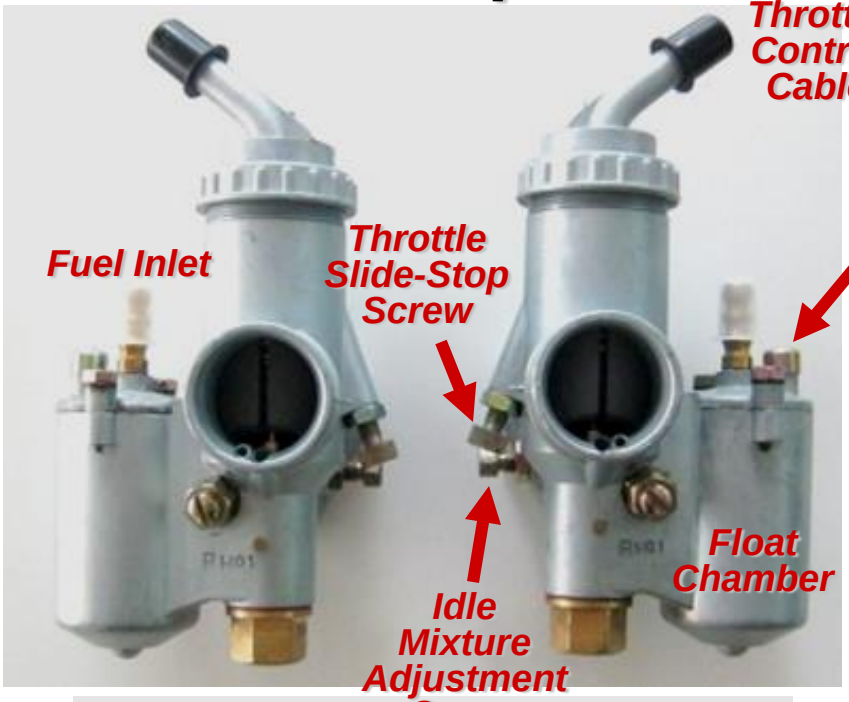


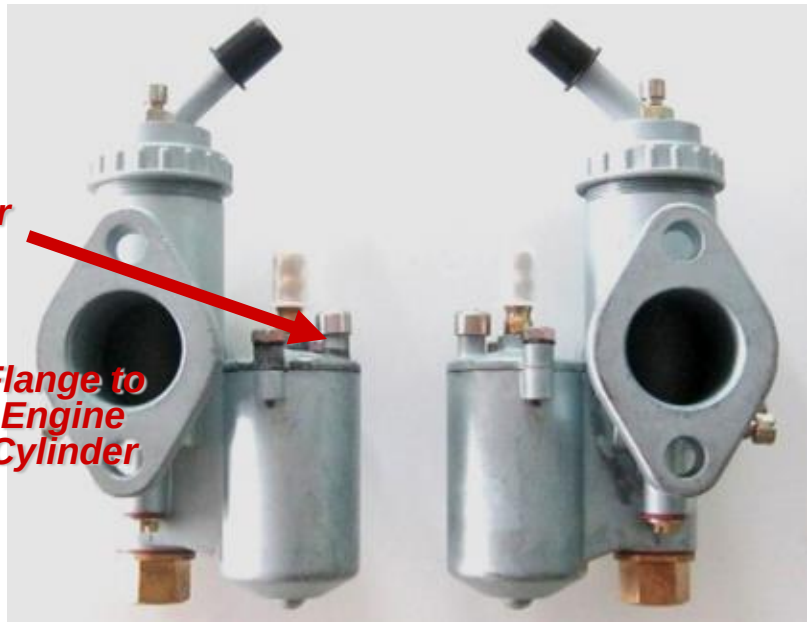


Similar to the K-37
Round-Slide Throttle Valve
Off-Axis Float Chamber
Left-Hand and Right-Hand Versions
Vertical Float Chamber

The PZ-28D is a replica of the Graetzin carburetor, which was fitted to the BMW R71 of 1938. Since 1941, this carb was produced as K-37 for the Russian M72.

Modern Copies of PZ-28D Carburetor *(made in China)*



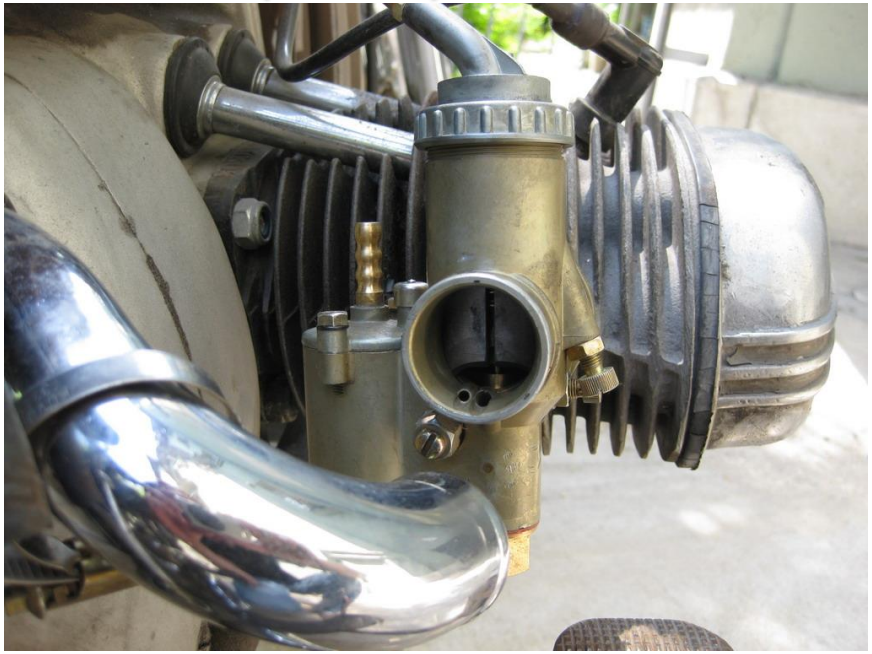


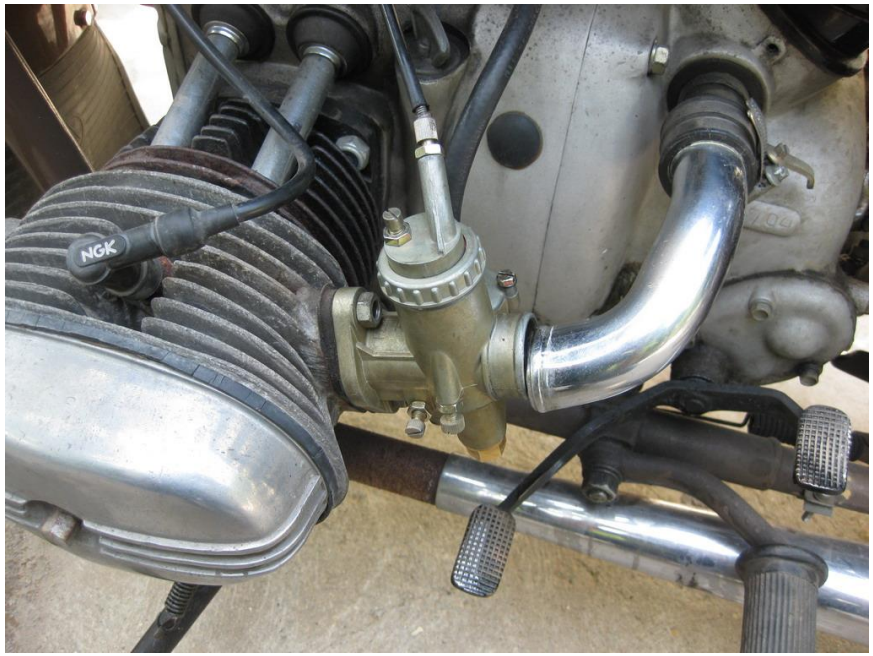
Carburetor Deni PZ-28D (replica Graetzin) Carburetor

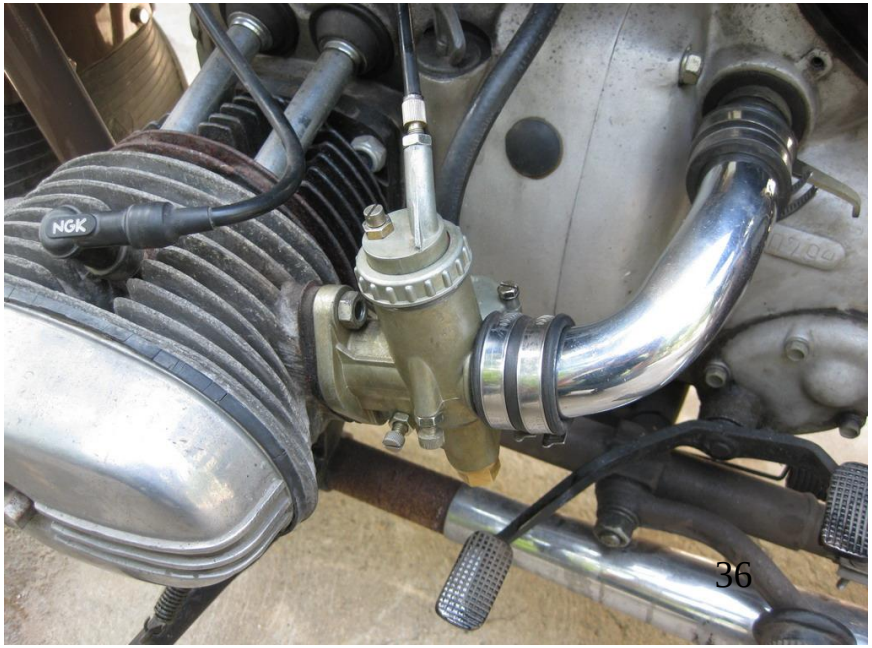
Deni PZ-28D (left side)
Product #: S245-Li
List Price: €49.50
(www.ural-zentrale.de)

Deni PZ-28D (right side)
Product #: S245-Re
List Price: €49.50
(www.ural-zentrale.de)

PZ-28D Installation (ural.hu)

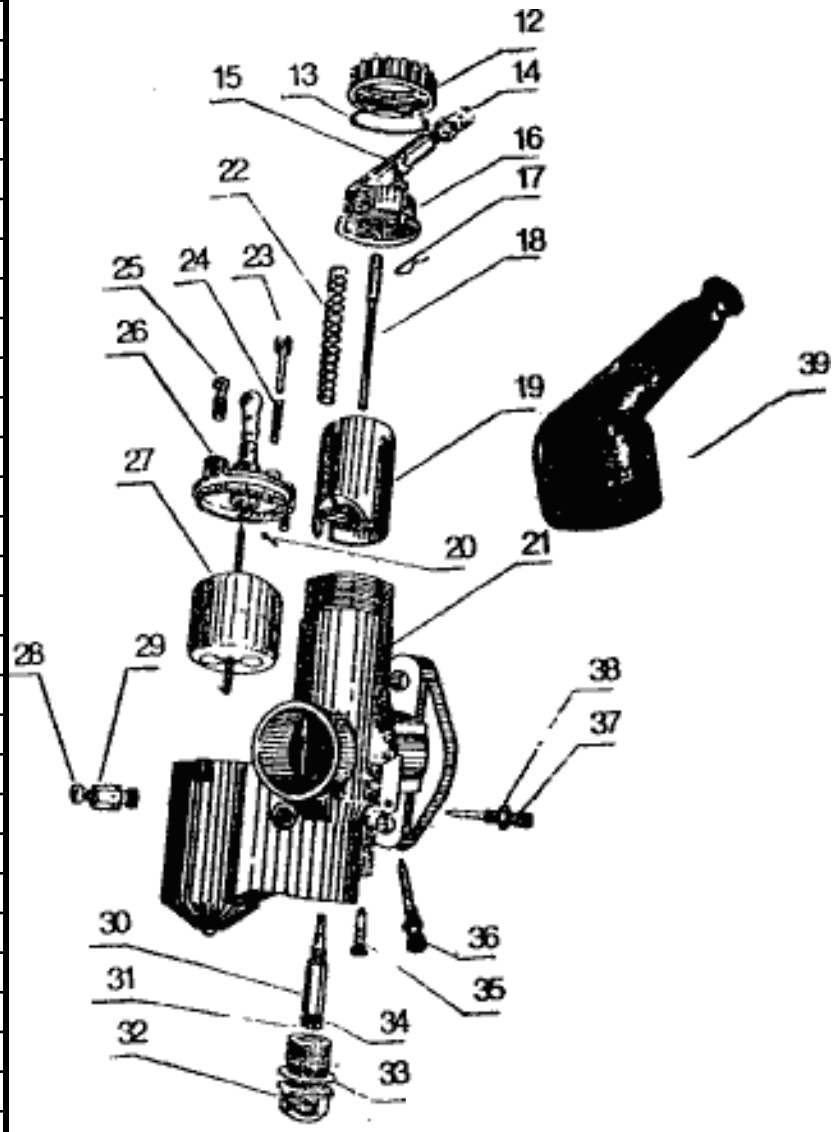






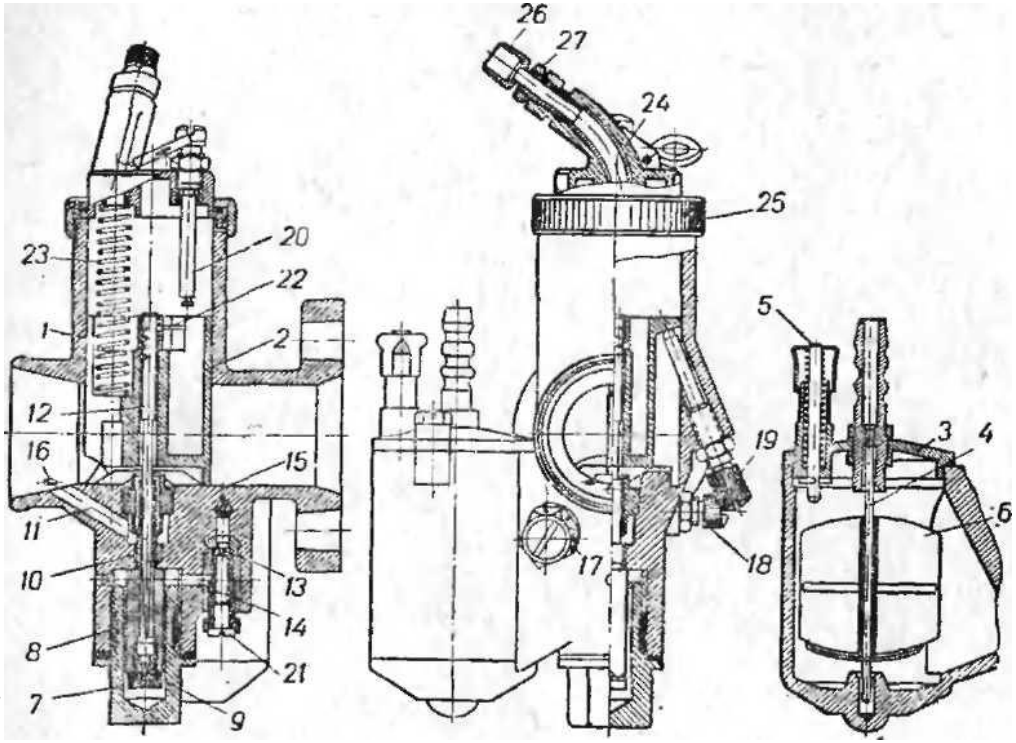
Chang Jiang CJ750 M1 PZ-28 Carburetor

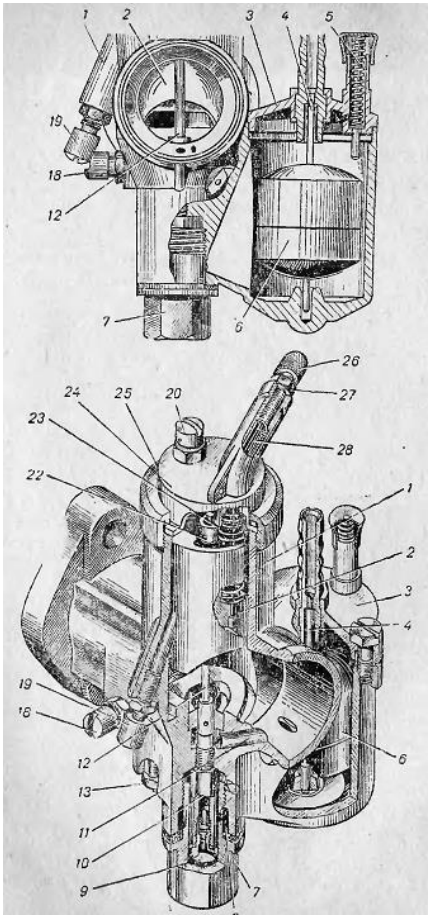
Part #	CJ 750 Part Name	Part #
12	Cap Nut	QHQ-15-18K
13	Spacer	QHQ-15-20
14	Union	QHQ-15-22
15	Upper stop screw	QHQ-15-11
16	Right cover	QHQ-15-19AK
	Left Cover	QHQ-15-19K
17	Clip	QHQ-15-28
18	Main Jet Needle	QHQ-15-02
19	Round-Slide Throttle Valve	QHQ-15-01K
20	Split Pin	GB91-58 (1 X 6)
21	Right Case	QHQ-15-10-01
	Left Case	QHQ-15-10-01A
22	Spring	QHQ-15-21
23	Tickler (Enrichener)	QHQ-15-20-00
24	Tickler Spring	QHQ-15-17
25	Screw	QHQ-15-24
26	Oil Cup Cover	QHQ-15-03K
27	Float Assembly	QHQ-15-30-00
28	Screw head	QHQ-15-16
29	Air Adjustment Screw	QHQ-15-14 (inclg QHQ-15-15 Air Filter)
30	Main Jet Nozzle	QHQ-15-04
31	Main Jet Nozzle Screw	QHQ-15-05K
32	Oil Filter Assembly	QHQ-15-40-00
33	Spacer	QHQ-15-23
34	Spacer	QHQ-15-06
35	Idle Nozzle	QHQ-15-07K
36	Lower Stop Screw	QHQ-15-12
37	Idle Adjust Screw	QHQ-15-10
38	Hexagonal left and right screw	QHQ-15-27 (M6 X 0.75)
39	Rubber Hood or Sleeve	K7211325



Chinese maintenance manuals use M-72 part numbers; 7211902 (QHQ15) right carburetor and 7211901 (QHQ15) left carburetor.

PZ-24 / PZ-28 Carburetor Parts Breakdown

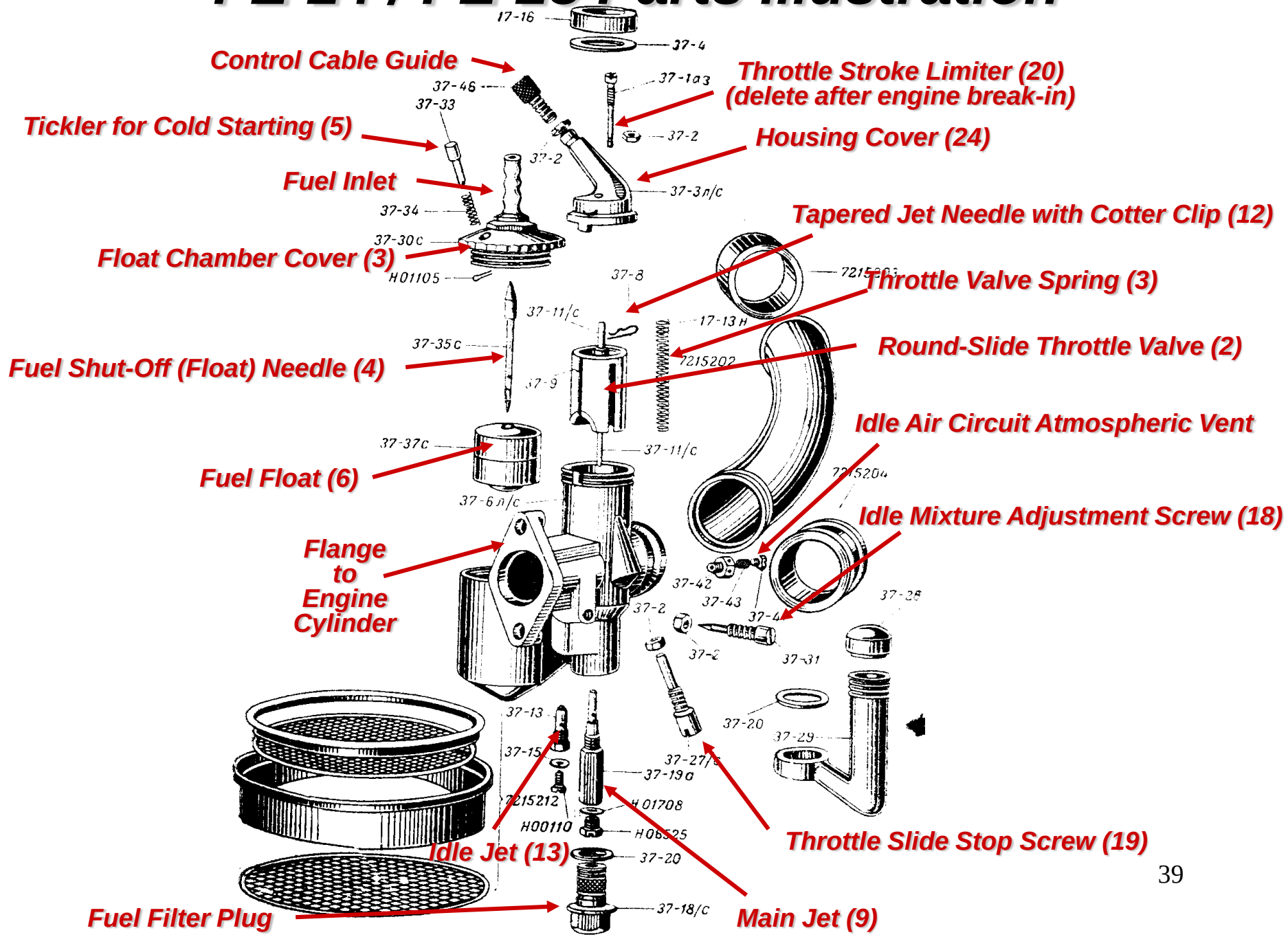




1 - Carburetor Body
2 - Round-Slide Throttle Valve
3 - Cover of Float Chamber
4 - Float Needle Valve
5 - Enrichener (Tickler)
6 - Float
7 - Lower Filter Plug
8 - Filter Screen
9 - Main Jet
10 - Atomizer
11 - Air Duct of Atomizer
12 – Conical Throttle Jet Needle
13 - Low-Speed (Idle) Jet
14 - Fuel Channel of Idle Jet
15 - Atomizer (Spray Nozzle) Idle Jet
16 - Air Duct of Idle Jet
17 - Filter of Auxiliary Air Duct Idle Jet
18 - Idle Mixture Adjustment Screw
19 - Throttle Slide Stop-Screw
20 - Throttle Stroke Limiter (Discard after Engine Run-In)
21 - Lock Screw of Idle Jet
22 - Attachment Split-Pin of Jet Needle
23 – Throttle Valve Spring
24 - Housing Cover
25 - Union Nut
26 - Control Cable Union
27 - Lock Nut
28 - Control Cable

The PZ-24 / PZ-28 is a Chinese copy of the Russian K-37 carburetor.

PZ-24 / PZ-28 Parts Illustration

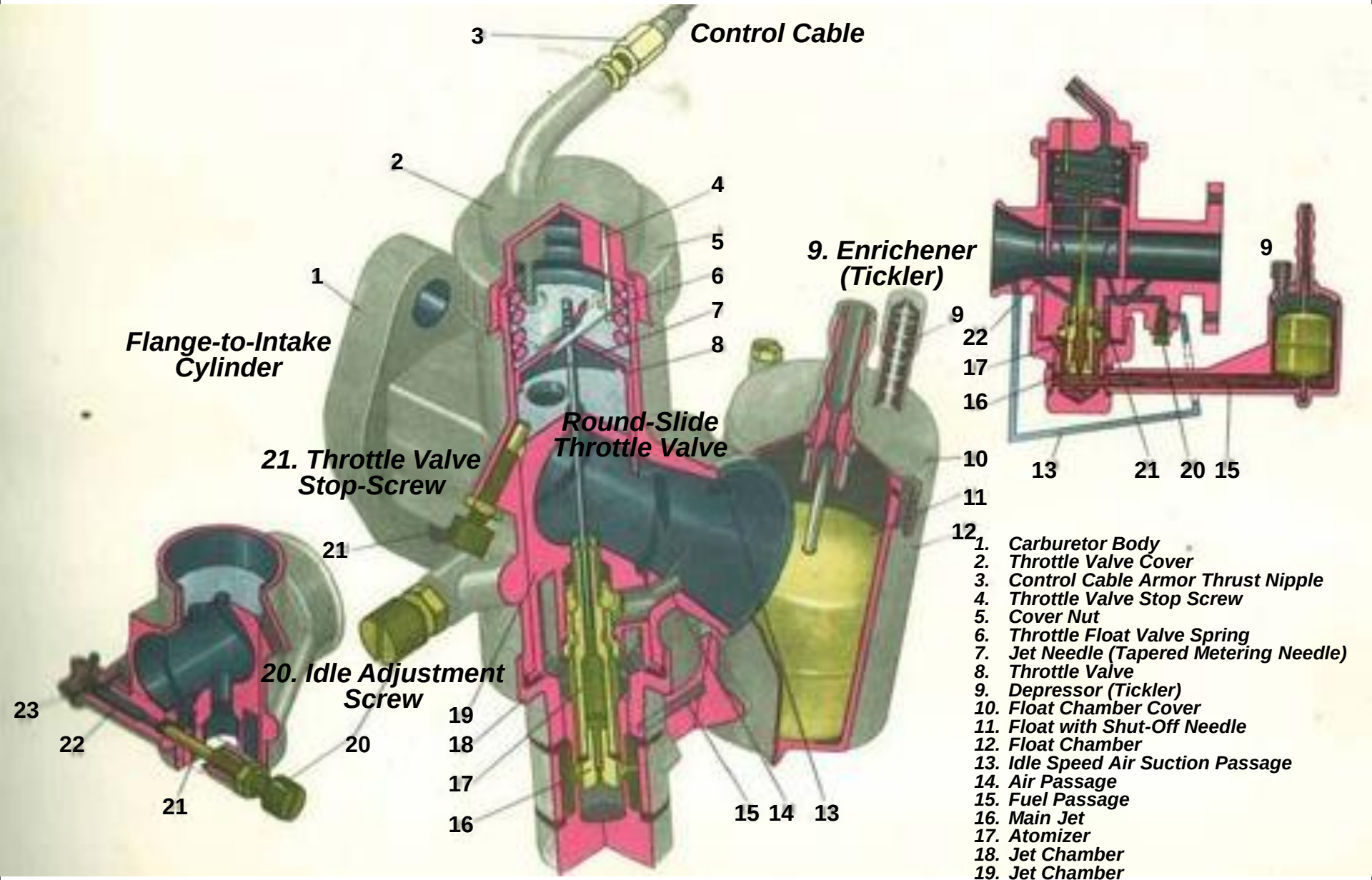


K-38 Carburetor

- *Used in Later Dnepr K-750 (750 cc) Boxer Engines*
- *Used in Ural M-61 and M-62 (650 cc) Boxer Engines*
- *Left and Right Carburetors Are Completely Similar*
- *Later Replaced by K-301*
- *Specifications:*
  - *Diameter of Inlet Pipe: 24 mm*
  - *Diameter of Mixing Chamber: 24 mm*
  - *Distance from Fuel Level in Float Chamber to Plane of Connector: 19 mm*
  - *Weight of Float: 8.8 g*
  - *Diameter of Fuel Holes Idle Nozzle Chamber: 0.5 mm*
  - *Carburetor Weight: 0.85 kg*
  - *Capacity of Main Jet: 150 cm^3/min*

K-38 carbs were used on Later Dnepr K-750's, and Ural M-61's thru M-63's, until replaced by the K-301 carburetor.

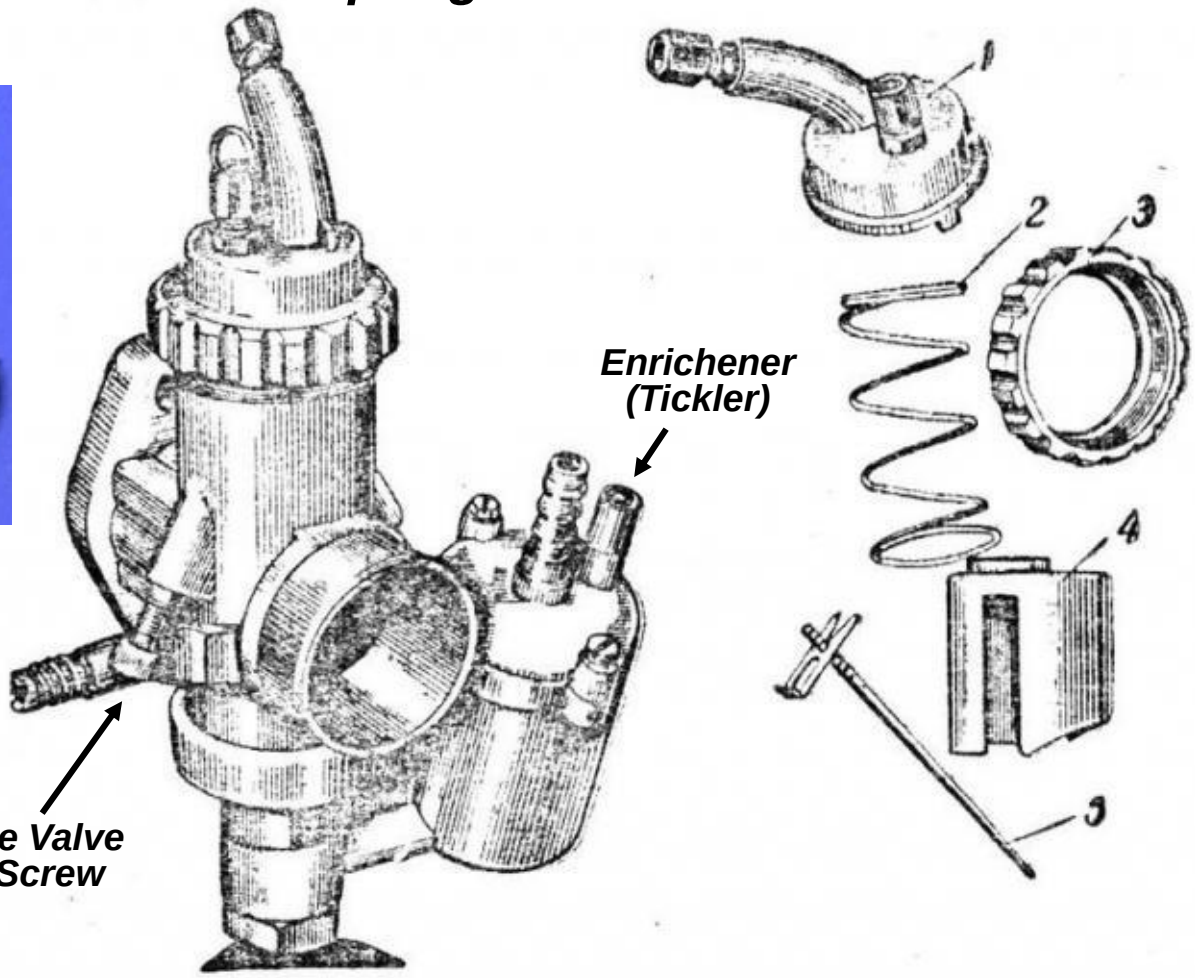
K-38 Carburetor *(M-63 Maintenance Manual)*



1. Carburetor Body
2. Throttle Valve Cover
3. Control Cable Armor Thrust Nipple
4. Throttle Valve Stop Screw
5. Cover Nut
6. Throttle Float Valve Spring
7. Jet Needle (Tapered Metering Needle)
8. Throttle Valve
9. Depressor (Tickler)
10. Float Chamber Cover
11. Float with Shut-Off Needle
12. Float Chamber
13. Idle Speed Air Suction Passage
14. Air Passage
15. Fuel Passage
16. Main Jet
17. Atomizer
18. Jet Chamber
19. Jet Chamber
20. Idle-Speed Adjustment Screw
21. Throttle Valve Stop-Screw
22. Idle-Speed Fuel Passage
23. Drain-Hole Gauze

Карбюратор К-38 (kotjar.spb.ru)

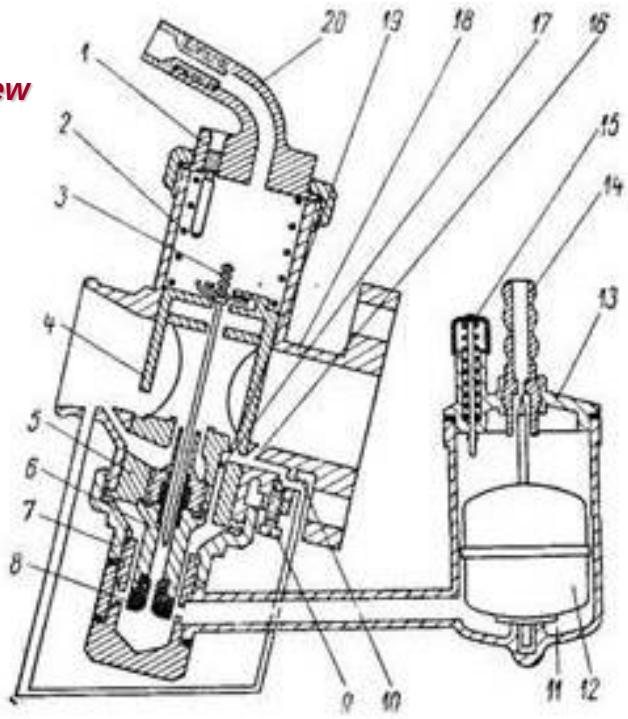
1 - Cover Carburetor Body
2 - Throttle valve Spring
3 - Nut Cover
4 - Throttle Valve
5 - Tapered Jet Needle with Spring Lock

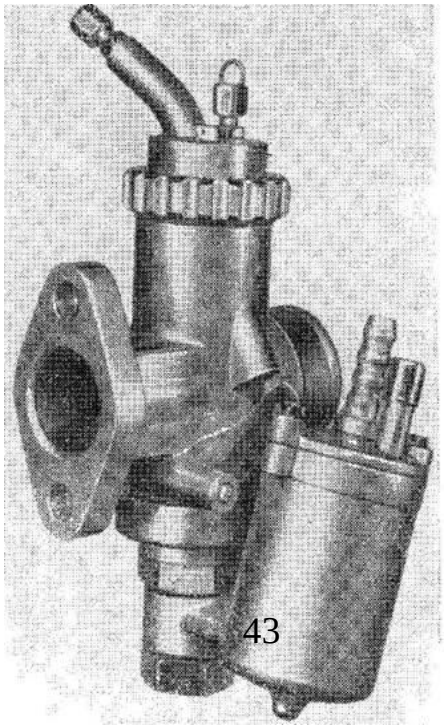


Карбюратор К-38 Operation

- Adjusting Air/Fuel Mixture Carried Out by Dosing Needle Shaped and Management Vacuum in Dispenser Main Dosing System
- In Addition, Carburetor Has Independent System Idling
- Carburetor Consists of Mixing Chamber (18), with Connecting Flange, Nozzle Chamber (5), Float Chamber (11), Throttle Valve (4) and Lid of Mixing Chamber (1)
- Housing of Carb K-38 and Air Path to Horizontal Plane Makes an Angle of 15 °
- All Major Carburetor Parts Made of Zinc Alloy Injection Molding
- Mixing Chamber (18) for Right and Left Carburetor Are the Same Casting thru Appropriate Mechanical Refinements Specially Provided for This Purpose and Channels
- Nozzle Chamber Inserted into Bottom of Mixing Chamber and Pressed against Contoured Threaded Sleeve (7)
- Between the clutch and the casing is installed Fibre Sealing Strip.
- In Nozzle Chamber Is Channel to Install a Spray of Main System, a Channel for Supplying Air to Main System, a Fuel Channel Idle and Outlet Idling (19)
- Body Spray Made of Zinc Alloy with Brass Calibrated Tube in the Middle

1. Mixing Chamber Lid and Throttle Valve Stop-Screw
2. Throttle Valve Spring
3. Tapered Metering Needle
4. Throttle Valve
5. Nozzle Chamber
6. Atomizer
7. Contoured Threaded Sleeve
8. Main Jet
9. Idle-Speed Adjustment Screw
10. Drainage Hole
11. Float Chamber and Fuel Float Shut-Off
12. Float in Float Chamber
13. Float Chamber Cover
14. Brass Fuel Nipple
15. Depressor (Tickler)
16. Idle Passage
17. Jet Chamber
18. Mixing Chamber
19. Outlet Idling Channel
20. Throttle Valve Control Wire Conduit

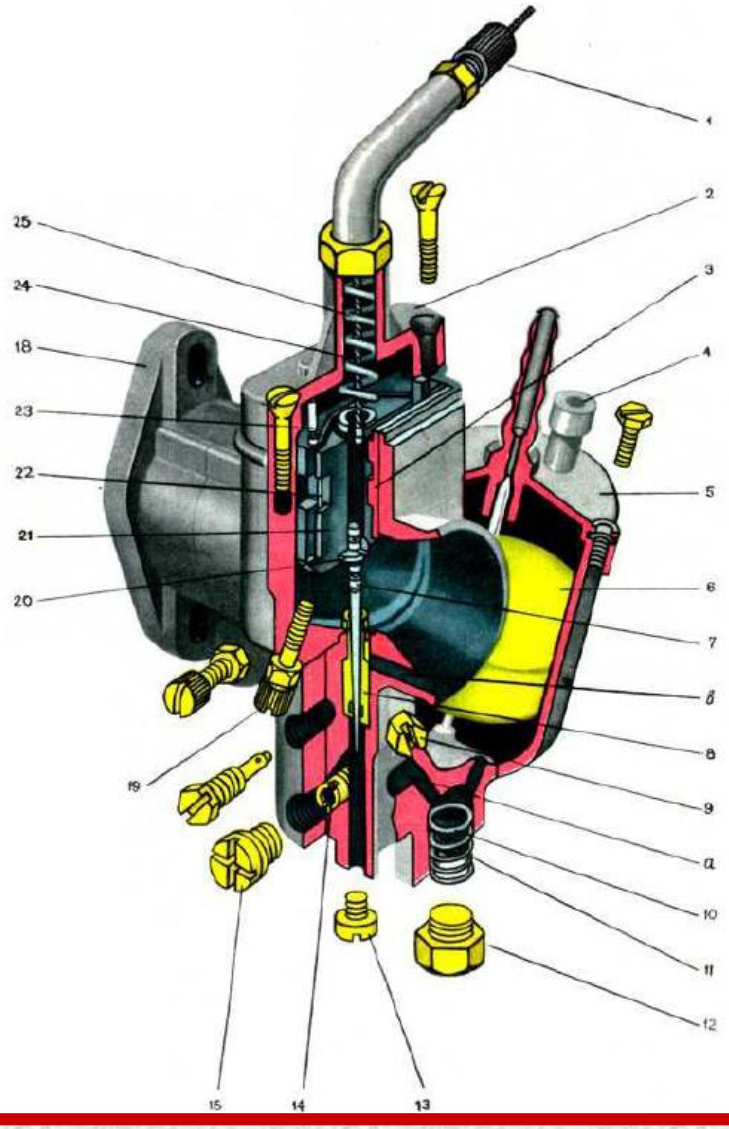


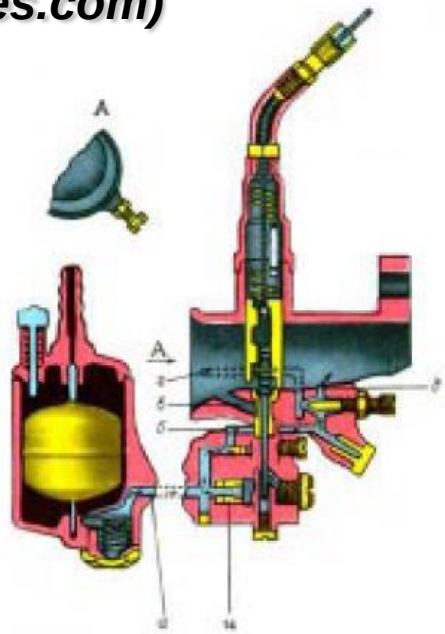


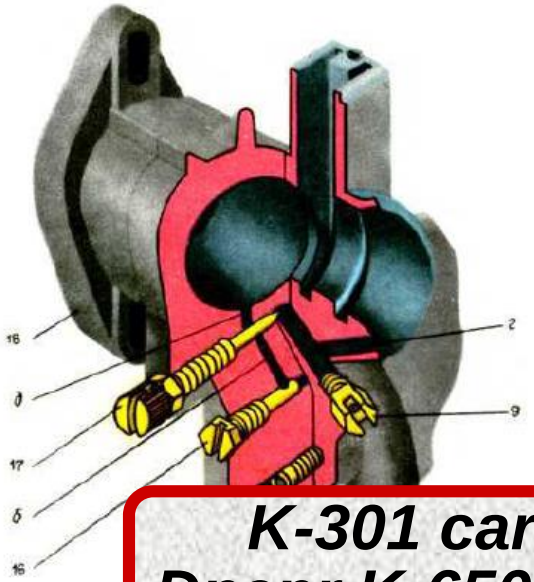
K-38 on a Ural M-62 (www.ural-m62.com)

K-301 Carburetors (www.russiancycles.com)

1 control cable armour thrust needle
2 carburettor cover
3 throttle cheek
4 depressor
5 float chamber cover
6 float with shut-off needle
7 throttle valve needle
8 atomizer
9 air filter
10 fuel filter
11 filter spring
12 filter plug
13 atomizer duct plug
14 main jet
15 main jet plug
16 low speed jet
17 idle speed screw
18 carburettor body
19 throttle valve screw
20 throttle needle lock
21 throttle body
22 throttle distance spring
23 throttle stop screw
24 throttle lift cable
25 throttle spring





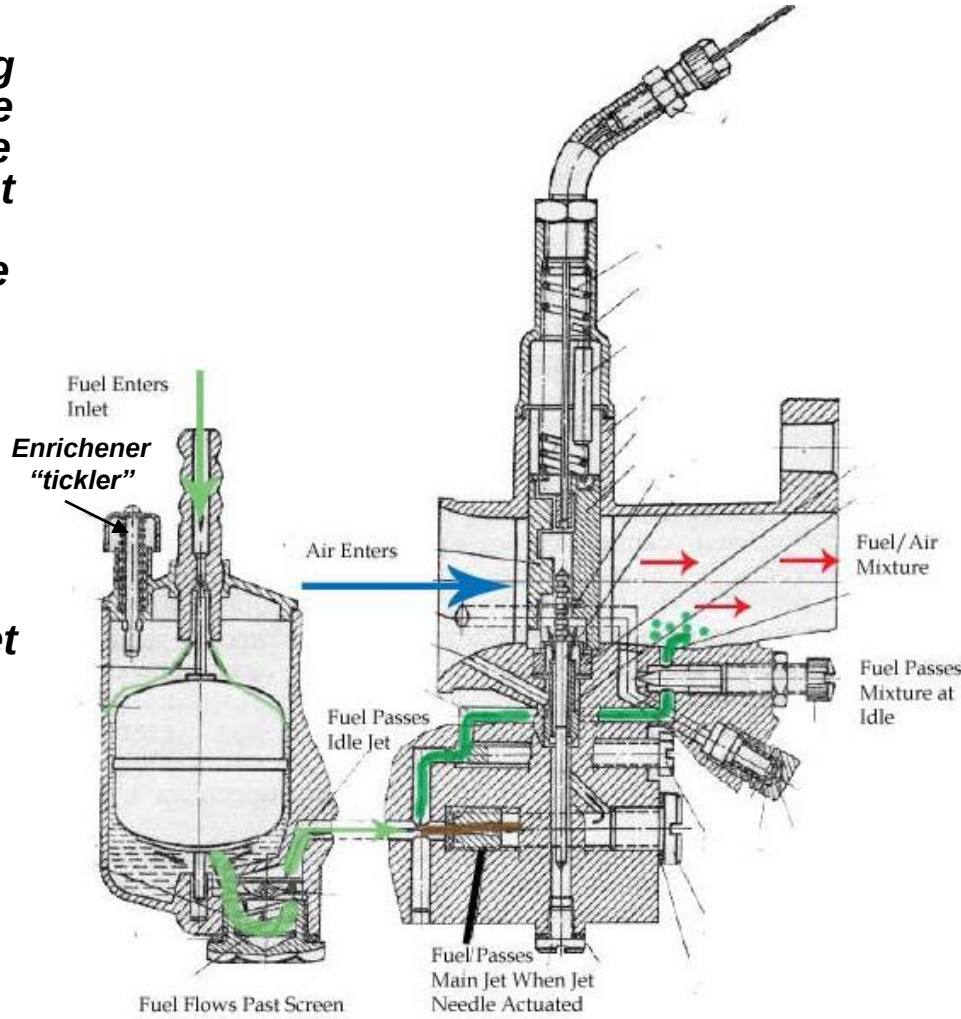


а fuel passage
б idle speed system fuel passage
в main metering system air passage
г idle speed system air passage
е idle speed system atomizer hole

K-301 carbs introduced with Ural M-63, M-66 and Dnepr K-650 and were used on the Dnepr MT-9 as well.

K-301 Basics (www.russiancycles.com)

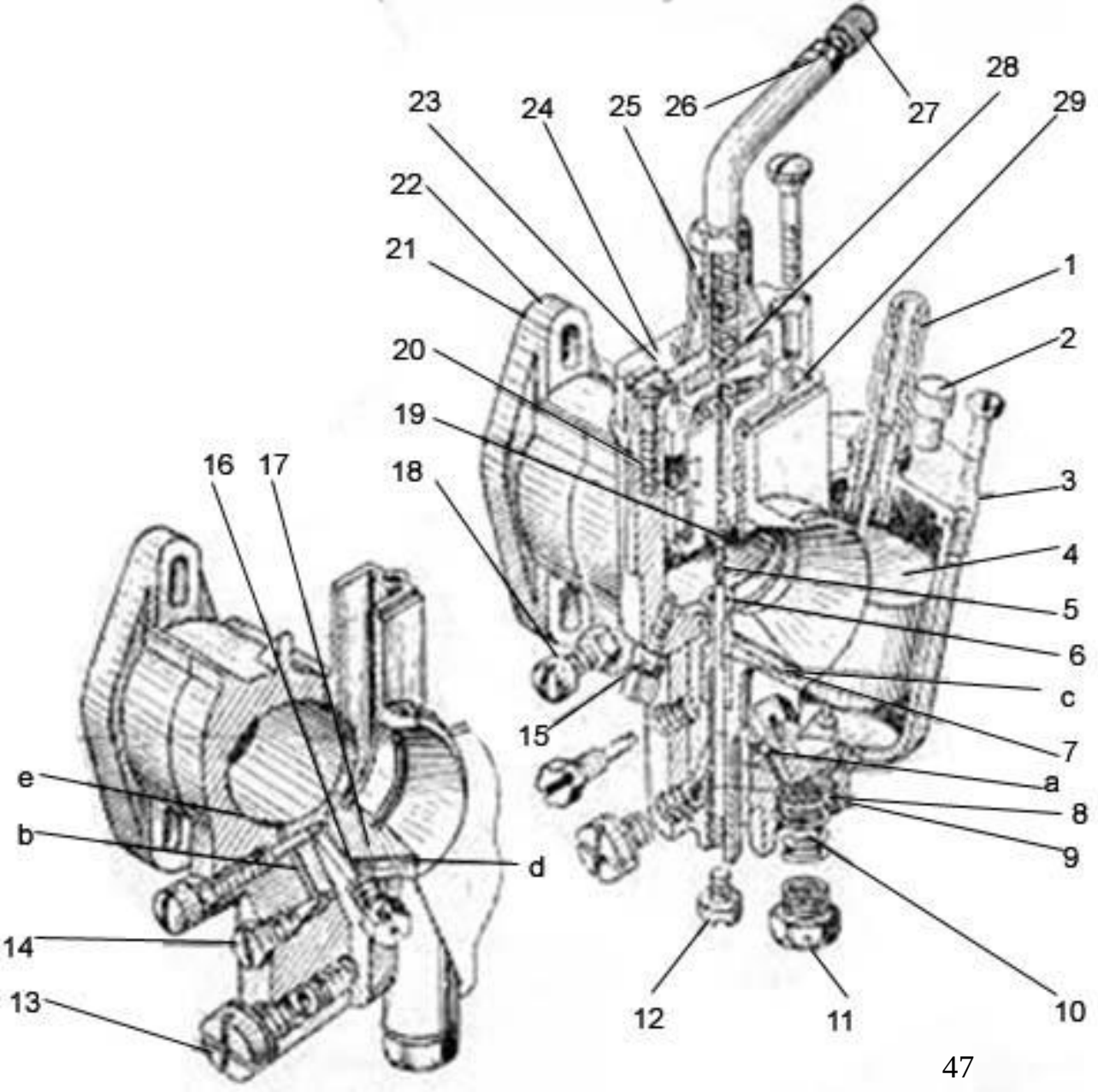
- Air Enters Carb Throat via Air Filter
- Fuel from Tank, Metered into Bowl by Float Mechanism, Is Siphoned thru Jets (depending upon the amount of air entering), into Throttle Body by Passing Air and Low Pressure where It Is Atomized into Mixture of 14.7:1 by Weight
- Air Volume Changed by Height of Flat-Slide Throttle, Directly Controlled by Throttle Cable
- Since Each Carb Has It's Own Cable, It's Important that Each Slide (throttle valve) Operates Similarly
- Air/Fuel Mixture Passes into Body of Carb, Past Intake Seals, into Combustion Chamber
- Role Played Depends Upon Operating Range
  - Idle: Idle Jet and Idle Mixture Screw
  - 1/8 to 1/4 throttle: Radius of Jet Needle
  - 1/4 to Open Throttle: Tapered Section of Jet Needle and Main Jet
- If Engine Runs Well at Idle, but Pinging or Knocking Under Load, If It's Not a Timing Issue, It Might Be an Overly-Lean Mixture
  - Adjust Jet Needle as Necessary
- When Everything Is Cold, Fuel Doesn't Vaporize Well, and Enrichening (tickler) Is Used



K-301/302 carburetors had a "tickler," to increase (enrichen) the fuel/air mixture to achieve a lean starting mixture.

K-301 Carburetors (www.russiancycles.com)

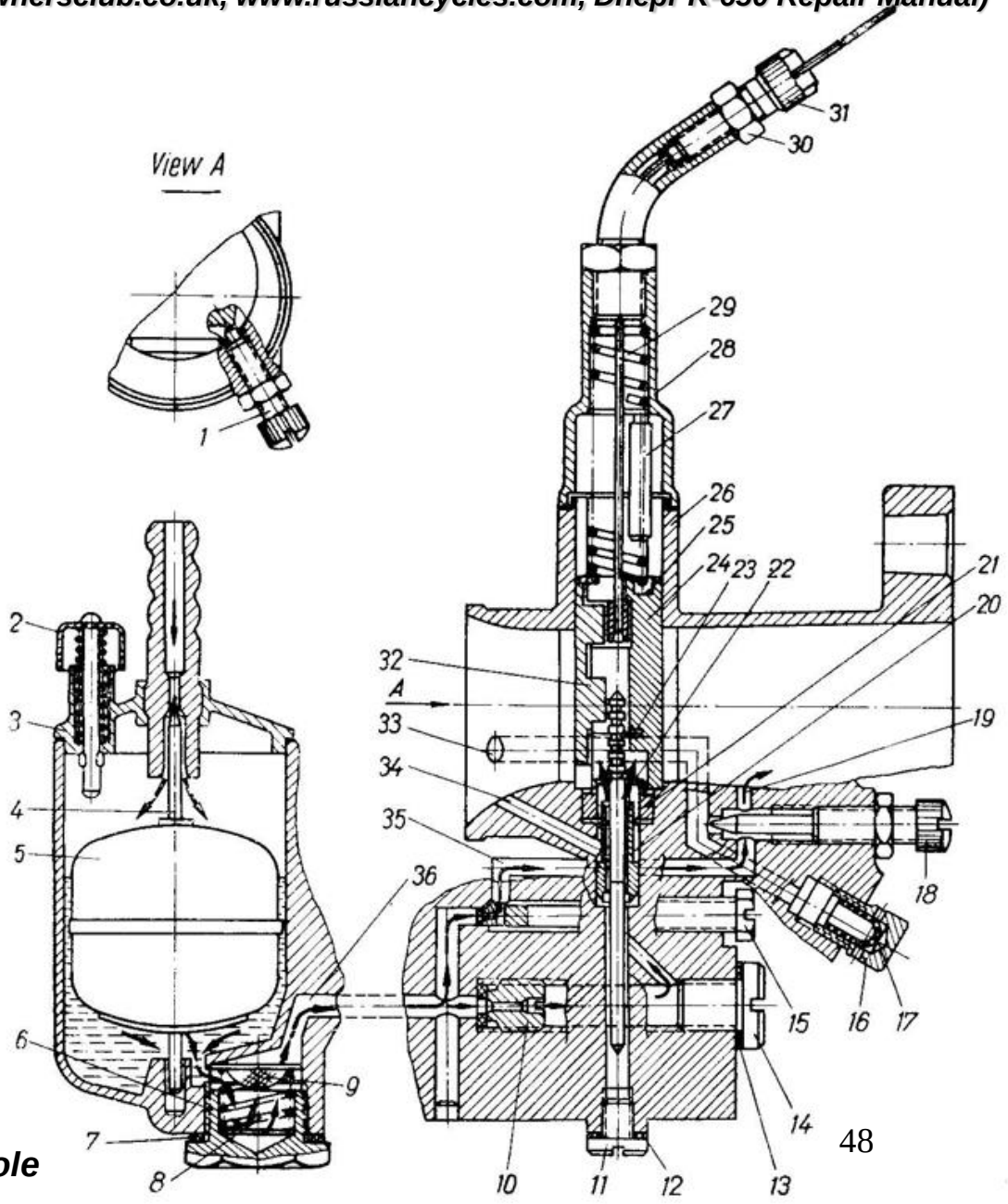
1 – Fuel Inlet
2 – Float Depressor "tickler"
3 – Float Chamber Cover
4 –Float with Shut-Off Needle
5 – Throttle Valve Jet Needle
6 – Needle Jet
7 – Inlet Atomizer Chamber
8 – Main Jet
9 – Fuel Filter Screen
10 –Filter Spring
11 – Filter Plug
12 – Needle Jet Passage Plug
13 – Main Jet Plug
14 – Idling Jet
15 – Throttle Valve Screw
16 – Air Filter Body
17 – Chamber Filter Screw
18 – Idle Adjustment Screw
19 – Throttle Needle Lock
20 – Throttle Body
21 – Throttle Expansion Spring
22 – Carburetor Body
23 – Throttle Rise Stop
24 – Carburetor Cover
25 – throttle Control Cable
26 – Locknut
27 – Control Cable Thrust Nipple
28 – Throttle Spring
29 – Slide Body
a – Fuel Passage
b – Idle Adjustment Fuel Passage
c – Main Jet Air Passage
d – idle Adjustment Air Passage
e – idle Adjustment Atomizer



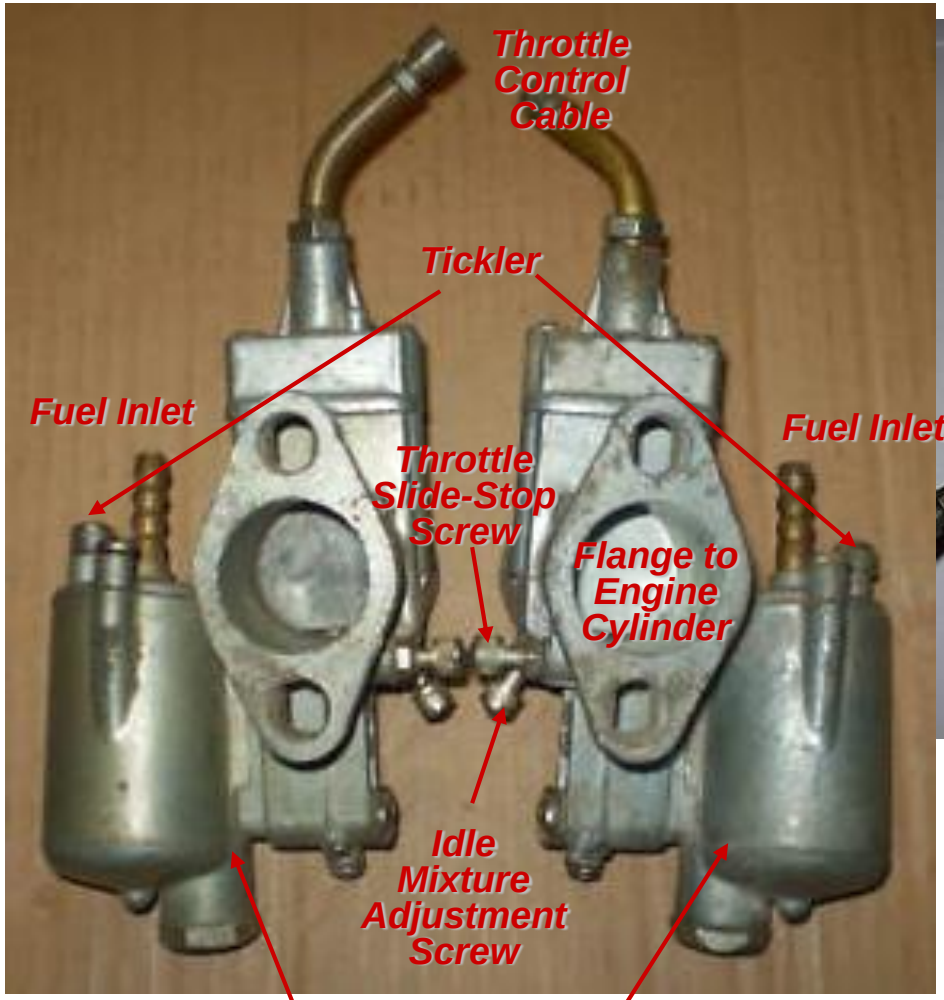
K-301 Carburetors

(http://oppozit.ru/article1057.html, info@cossackownersclub.co.uk, www.russiancycles.com, Dnepr K-650 Repair Manual)

- *1 - Throttle Stop Screw*
- *2 - Float Depressor (Tickler)*
- *3 - Float Chamber Cover*
- *4 - Float Shut-Off Needle*
- *5 - Float*
- *6 - Fuel Screen (Filter) Spring*
- *7 - Fuel Screen Plug and Gasket*
- *8 - Filter Spring*
- *9 - Fuel Filter Screen (Filter)*
- *10 - Main Needle Jet*
- *11 - Atomizer Passage (Needle Jet) Plug*
- *12 - Main Jet Gasket*
- *13 - Gasket*
- *14 - Main Jet Plug*
- *15 - Idling Jet*
- *16 - Locknut*
- *17 - Throttle Valve Screw*
- *18 - Idle Adjustment Screw (Air/Fuel Ratio)*
- *19 - Idling Jet Atomizer Hole*
- *20 - Jet Needle (Atomizer)*
- *21 - Needle Jet*
- *22 - Adjusting Needle*
- *23 - Throttle Needle Retainer*
- *24 - Throttle Body*
- *25 - Throttle Slide Spring*
- *26 - Carburetor Body*
- *27 - Throttle Rise Stop (Travel Limit)*
- *28 - Carburetor Cover*
- *29 - Spring*
- *30 - Stop Lock Nut*
- *31 - Union*
- *32 - Throttle Side Piece*
- *33 - Idling Jet Air Channel*
- *34 - Atomizer Air Channel*
- *35 - Channel Supply of Fuel to Atomizing Hole*
- *36 - Main Fuel Supply Channel*



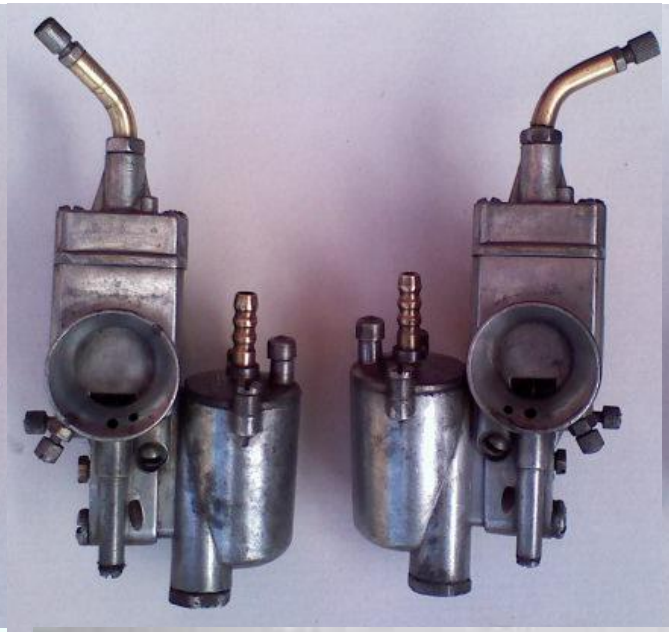
K-301 Carburetors



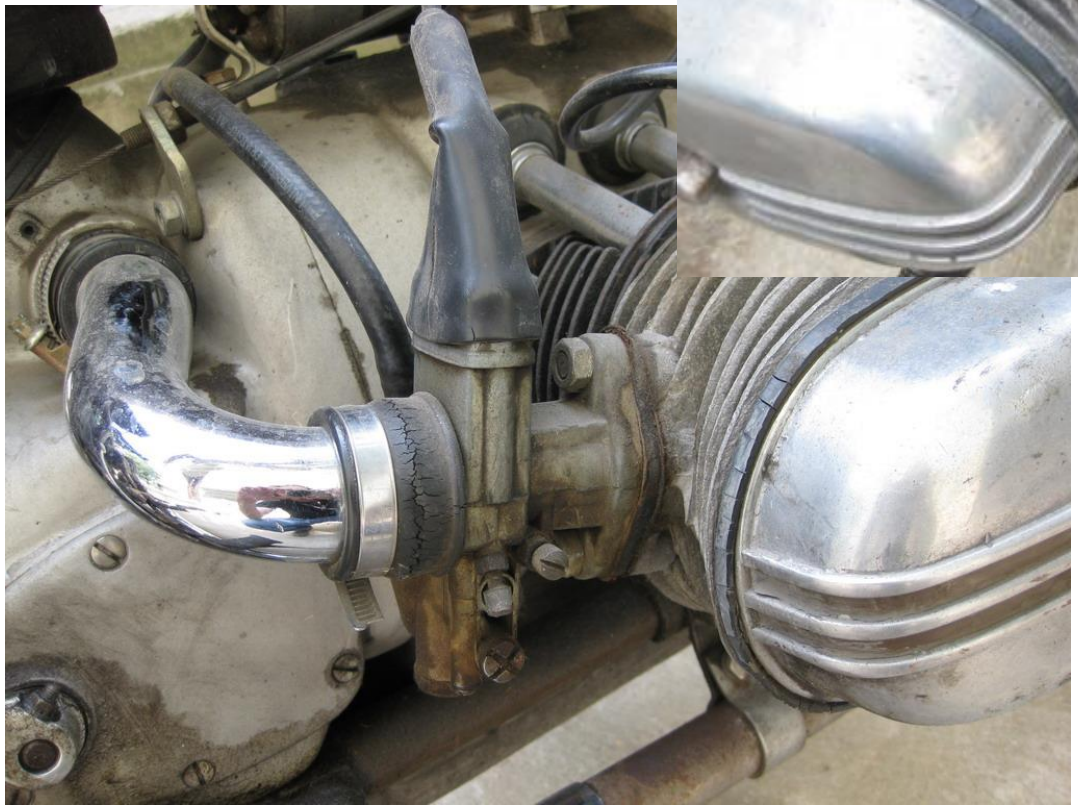
Flat-Slide Throttle Valve
Off-Axis Float Chamber
Left-Hand and Right-Hand Versi
Slanted Float Chamber

K-301's are right and left-handed, which allows the mixture control to be on the outside in each case.

K-301 Carburetors



K-301 on a Ural



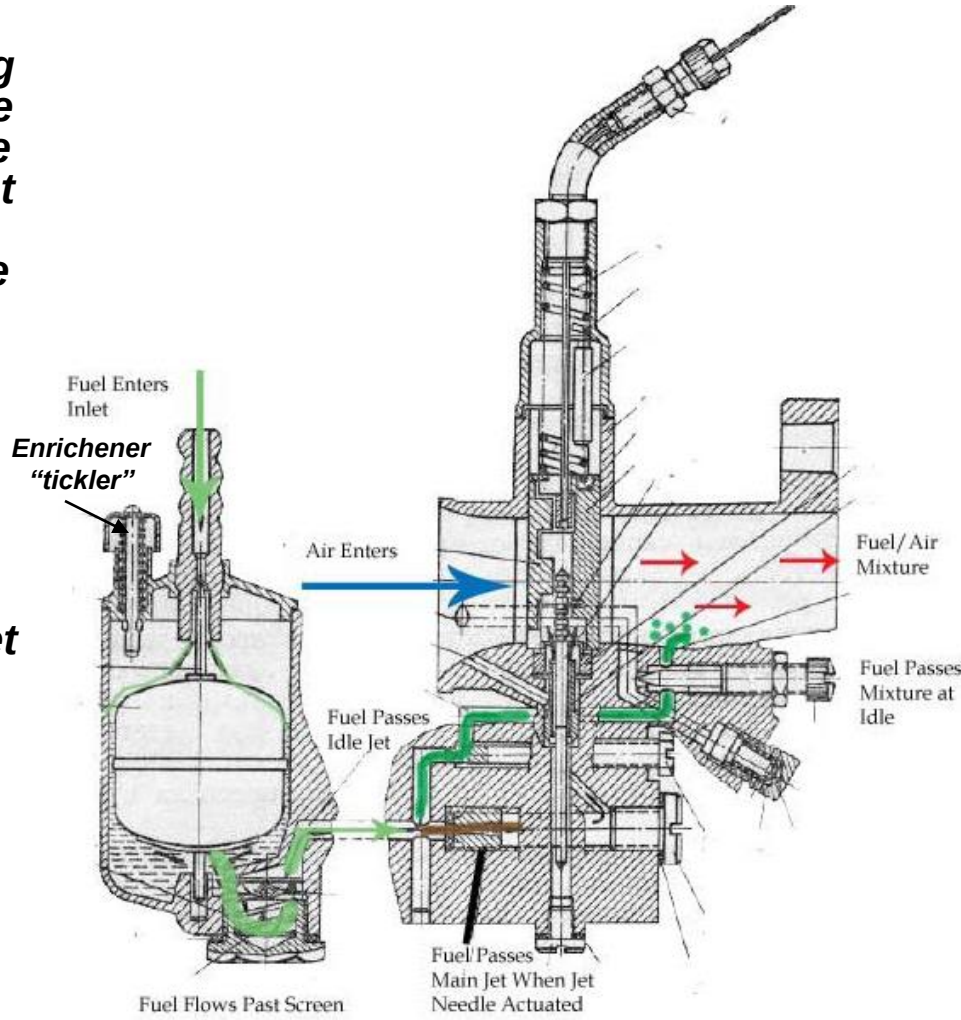
K-302 Carburetor

- Replacement for K-301Г(G) Russian Carburetor
  - Same Flange Size and Orientation (Vertical)
- Better than K-301, but Not Good Enough
- Replaced by K-Series (K-62, -63, -65, and -68) of Carburetors
- K-301 Fitted to Dnepr K-650, MT-9, & MT-10 and Ural M-63, M-66 & M-67 (All 650 cc OHV Models)
- Later Dnepr MT-11 & MT-12 and Later K-750 & MB-750s Used K-302
  - Main Difference Would Be the Jets for Larger Engine
- K-301 vs. K-302 Carburetors
  - K-301 and K-302 Carburetors Are Similar
  - Typically Treated Together in Repair Manuals
  - K-301 Has an Angled Fuel Bowl, Compared to Vertical K-302

The K-302 captured all the changes during the development of the K-301 series, but was quickly over-taken by the K-63/K-65 carburetors.

K-301 / K-302 Basics (www.russiancycles.com)

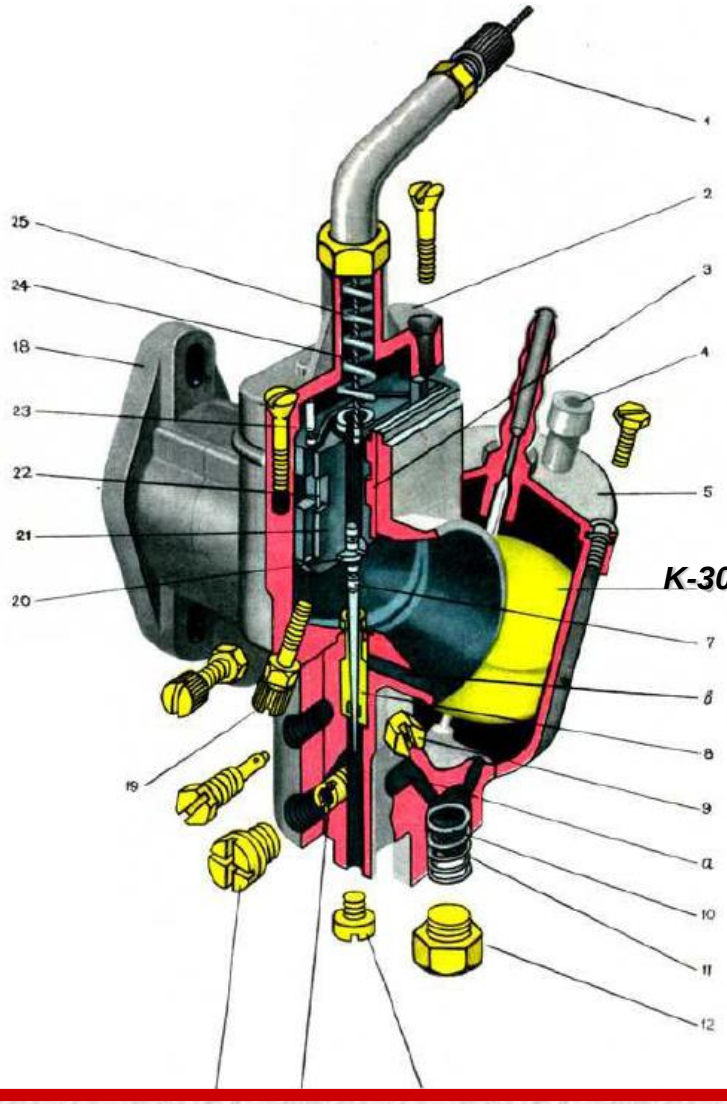
- Air Enters Carb Throat via Air Filter
- Fuel from Tank, Metered into Bowl by Float Mechanism, Is Siphoned thru Jets (depending upon the amount of air entering), into Throttle Body by Passing Air and Low Pressure where It Is Atomized into Mixture of 14.7:1 by Weight
- Air Volume Changed by Height of Flat-Slide Throttle, Directly Controlled by Throttle Cable
- Since Each Carb Has It's Own Cable, It's Important that Each Slide (throttle valve) Operates Similarly
- Air/Fuel Mixture Passes into Body of Carb, Past Intake Seals, into Combustion Chamber
- Role Played Depends Upon Operating Range
  - Idle: Idle Jet and Idle Mixture Screw
  - 1/8 to 1/4 throttle: Radius of Jet Needle
  - 1/4 to Open Throttle: Tapered Section of Jet Needle and Main Jet
- If Engine Runs Well at Idle, but Pinging or Knocking Under Load, If It's Not a Timing Issue, It Might Be an Overly-Lean Mixture
  - Adjust Jet Needle as Necessary
- When Everything Is Cold, Fuel Doesn't Vaporize Well, and Enrichening (tickler) Is Used

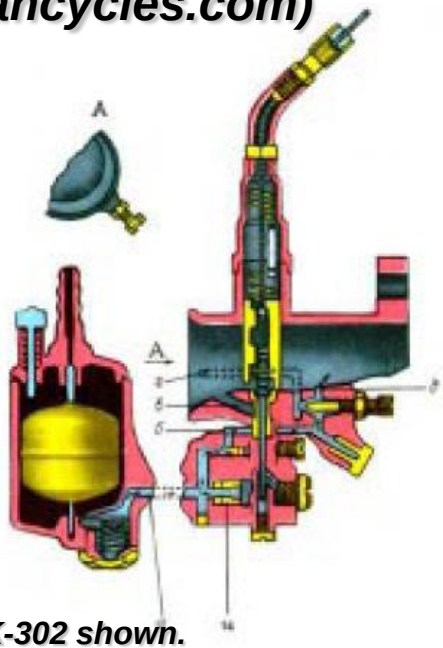


K-301/302 carburetors had a "tickler," to increase (enrichen) the fuel/air mixture to for starting.

K-301 / K-302 Carburetors *(www.russiancycles.com)*

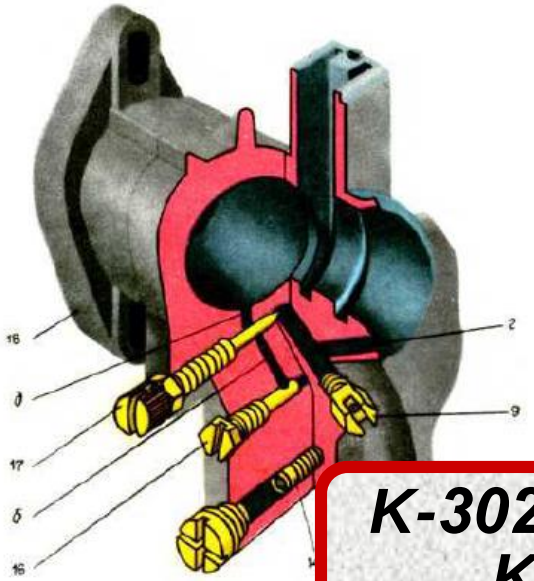
1 control cable armour thrust needle
2 carburettor cover
3 throttle cheek
4 depressor
5 float chamber cover
6 float with shut-off needle
7 throttle valve needle
8 atomizer
9 air filter
10 fuel filter
11 filter spring
12 filter plug
13 atomizer duct plug
14 main jet
15 main jet plug
16 low speed jet
17 idle speed screw
18 carburettor body
19 throttle valve screw
20 throttle needle lock
21 throttle body
22 throttle distance spring
23 throttle stop screw
24 throttle lift cable
25 throttle spring





Note: K-302 shown.
K-302 has vertical float chamber.

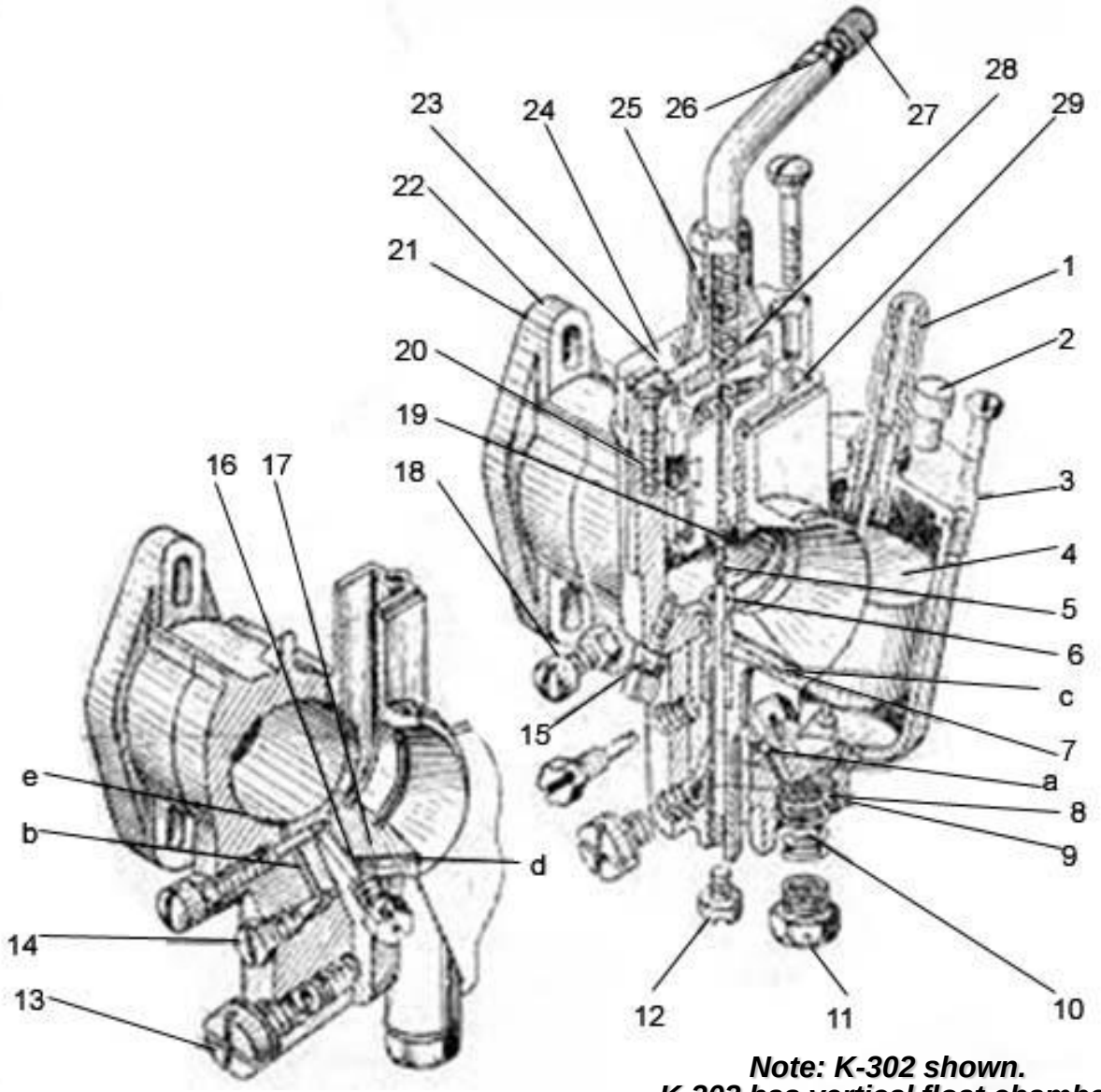
а fuel passage
б idle speed system fuel passage
в main metering system air passage
г idle speed system air passage
е idle speed system atomizer hole



K-302 carbs were introduced with Dnepr's K-750M, MB-750, MT-11 and MT-12.

K-301 / K-302 Carburetors (www.russiancycles.com)

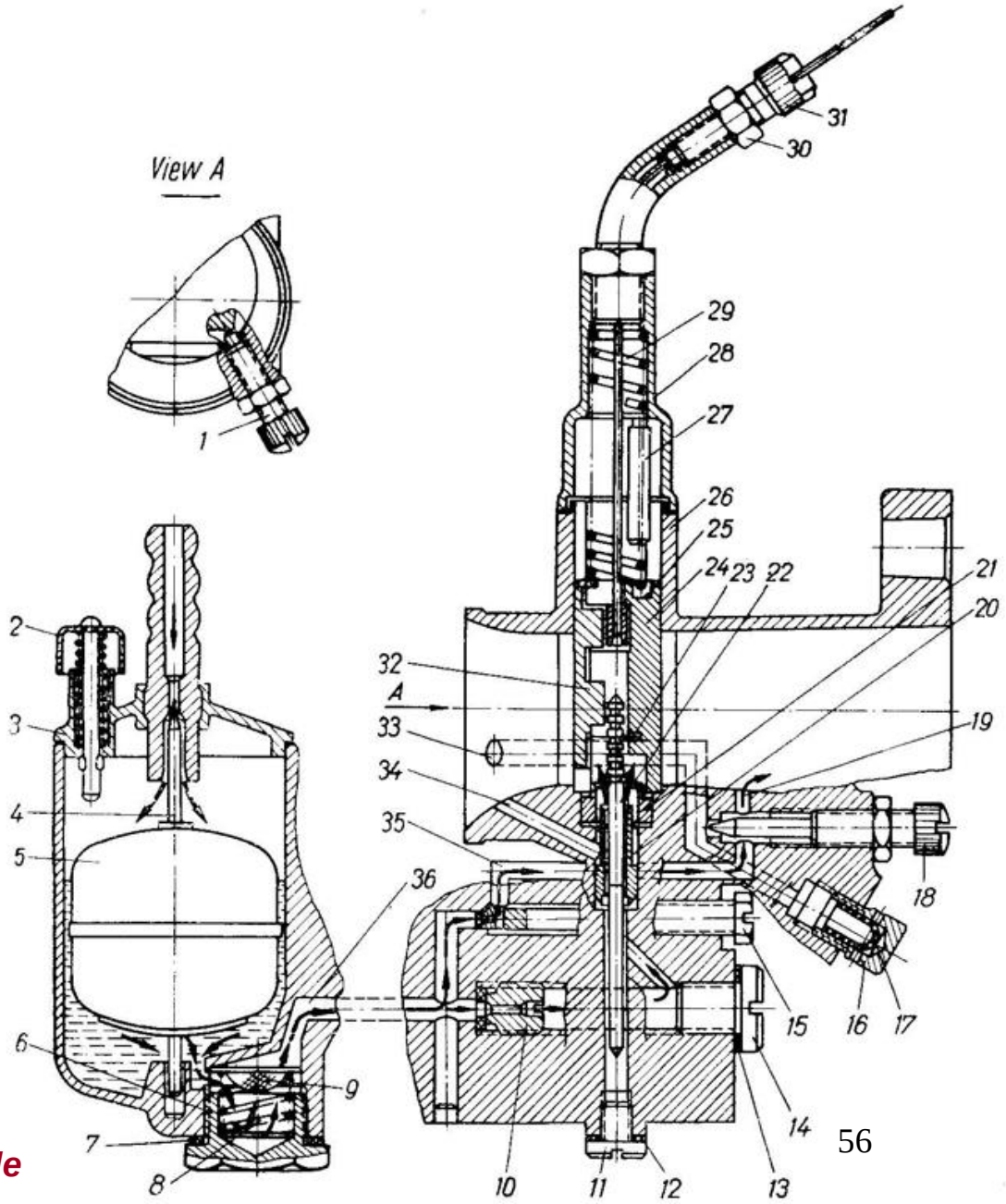
1 – Fuel Inlet
2 – Float Depressor "tickler"
3 – Float Chamber Cover
4 –Float with Shut-Off Needle
5 – Throttle Valve Jet Needle
6 – Needle Jet
7 – Inlet Atomizer Chamber
8 – Main Jet
9 – Fuel Filter Screen
10 –Filter Spring
11 – Filter Plug
12 – Needle Jet Passage Plug
13 – Main Jet Plug
14 – Idling Jet
15 – Throttle Valve Screw
16 – Air Filter Body
17 – Chamber Filter Screw
18 – Idle Adjustment Screw
19 – Throttle Needle Lock
20 – Throttle Body
21 – Throttle Expansion Spring
22 – Carburetor Body
23 – Throttle Rise Stop
24 – Carburetor Cover
25 – Throttle Control Cable
26 – Locknut
27 – Control Cable Thrust Nipple
28 – Throttle Spring
29 – Slide Body
a – Fuel Passage
b – Idle Adjustment Fuel Passage
c – Main Jet Air Passage
d – idle Adjustment Air Passage
e – idle Adjustment Atomizer



Note: K-302 shown.
K-302 has vertical float chamber.

K-301 / K-302 Carburetors

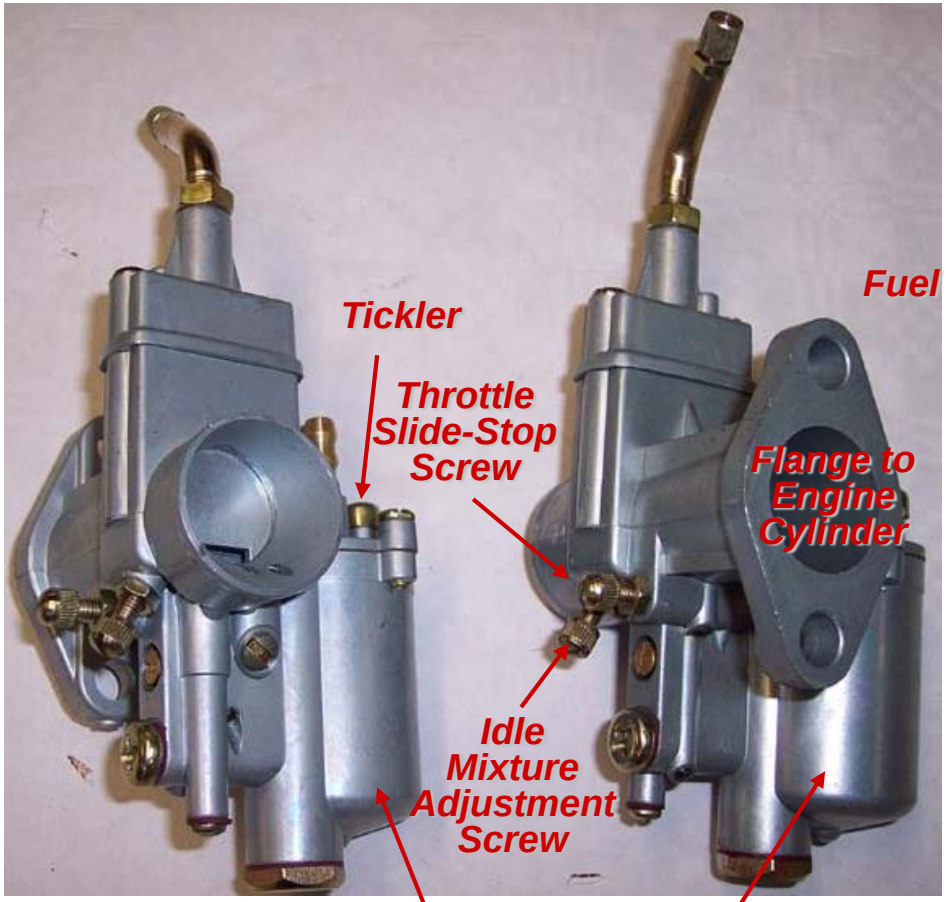
- 1 - Throttle Stop Screw
- 2 - Float Depressor (Tickler)
- 3 - Float Chamber Cover
- 4 - Float Shut-Off Needle
- 5 - Float
- 6 - Fuel Screen (Filter) Spring
- 7 - Fuel Screen Plug and Gasket
- 8 - Filter Spring
- 9 - Fuel Filter Screen (Filter)
- 10 - Main Needle Jet
- 11 - Atomizer Passage (Needle Jet) Plug
- 12 - Main Jet Gasket
- 13 - Gasket
- 14 - Main Jet Plug
- 15 - Idling Jet
- 16 - Locknut
- 17 - Air Cleaner Strainer
- 18 - Idle Adjustment Screw
- 19 - Idling Jet Atomizer
- 20 - Jet Needle (Atomizer)
- 21 - Needle Jet
- 22 - Adjusting Needle
- 23 - Throttle Needle Retainer
- 24 - Throttle Body
- 25 - Throttle Slide Spring
- 26 - Carburetor Body
- 27 - Throttle Rise Stop (Travel Limit)
- 28 - Carburetor Cover
- 29 - Spring
- 30 - Stop Lock Nut
- 31 - Nylon Spacer
- 32 - Throttle Side Piece
- 33 - Idling Jet Air Channel
- 34 - Atomizer Air Channel
- 35 - Channel Supply of fuel to atomizing hole
- 36 - Main Fuel Supply Body

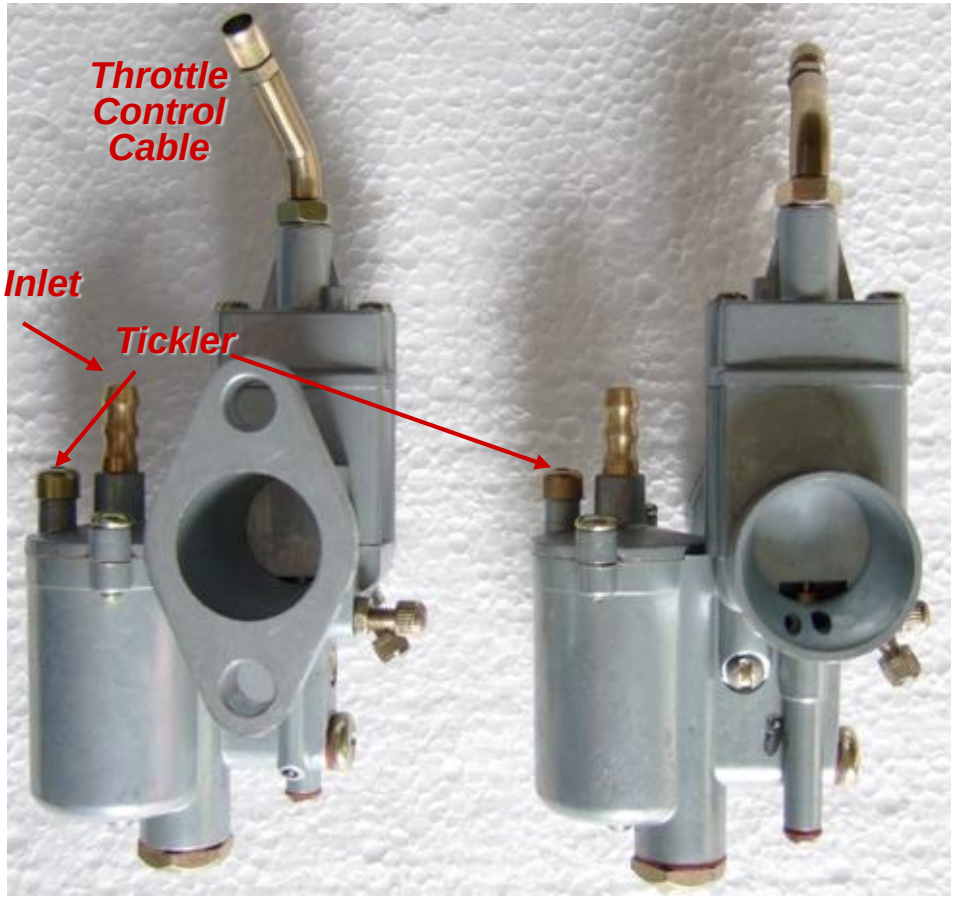


Simple Identification of the K-302

The K-302 appeared around 1976 as a direct replacement for the K-301. Much of the information from the K-301 applies to the K-302.

K-302 Carburetors

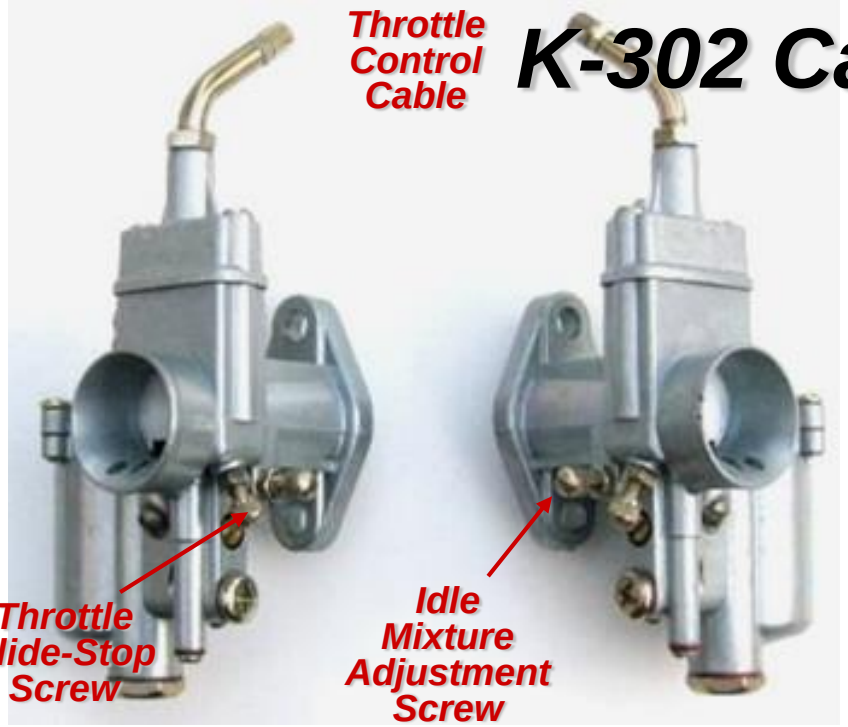


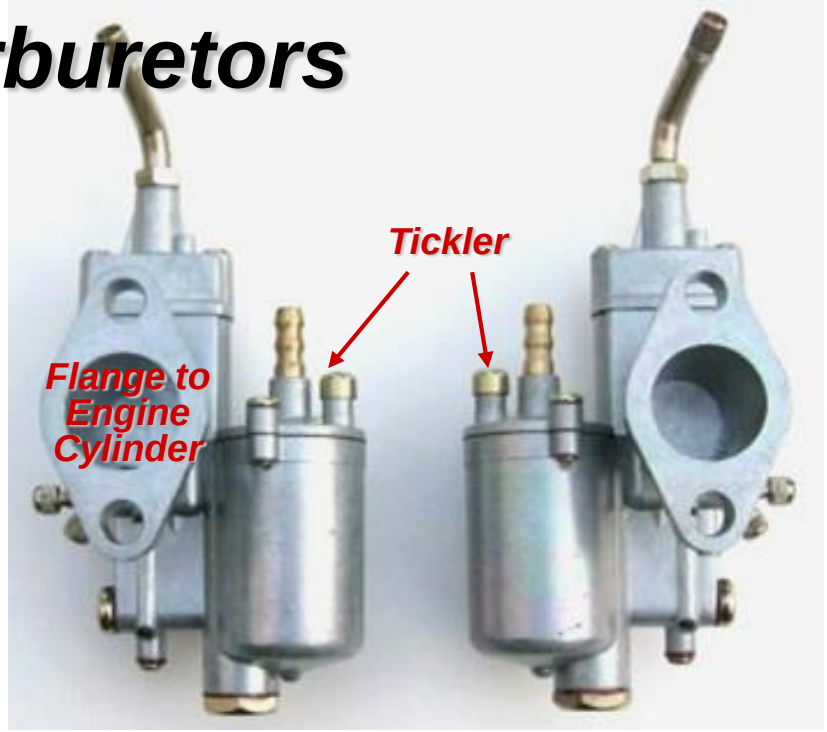


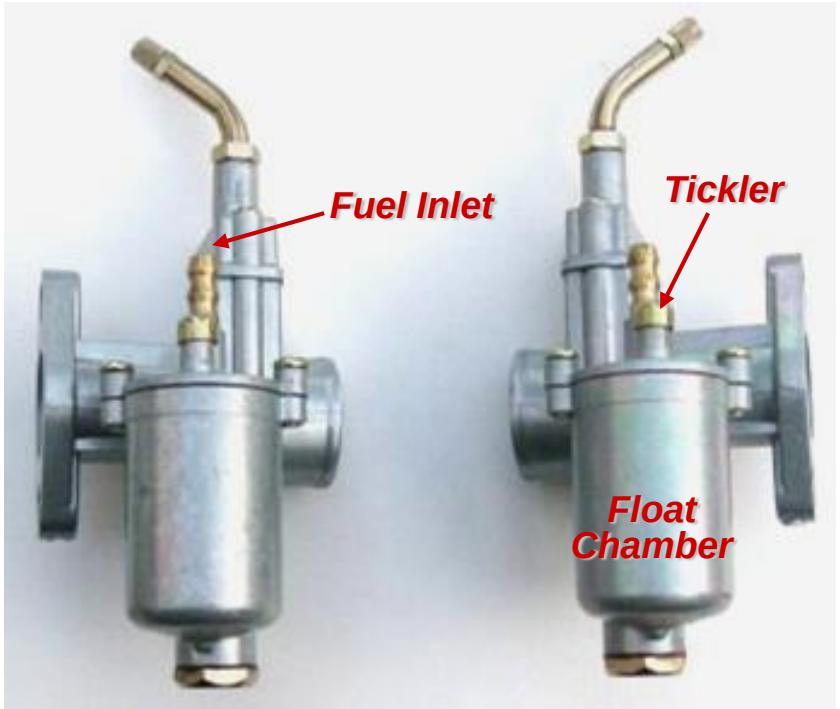
Flat-Slide Throttle Valve
Off-Axis Float Chamber
Left-Hand and Right-Hand Versions
Vertical Float Chamber

The bodies of K-302's are right and left-handed, which allows the Idle Adjusting Screw to be on the outside in each case.

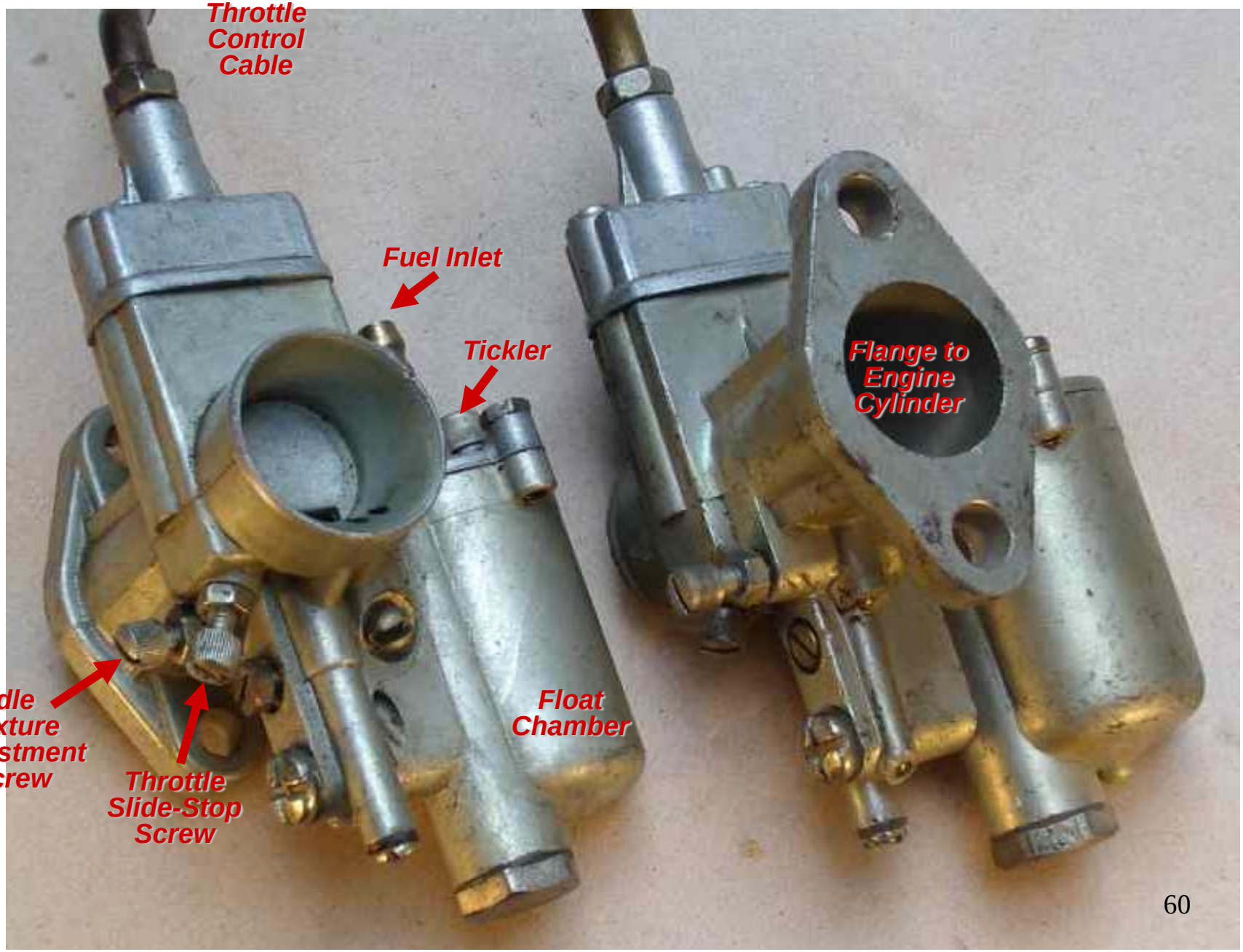
K-302 Carburetors



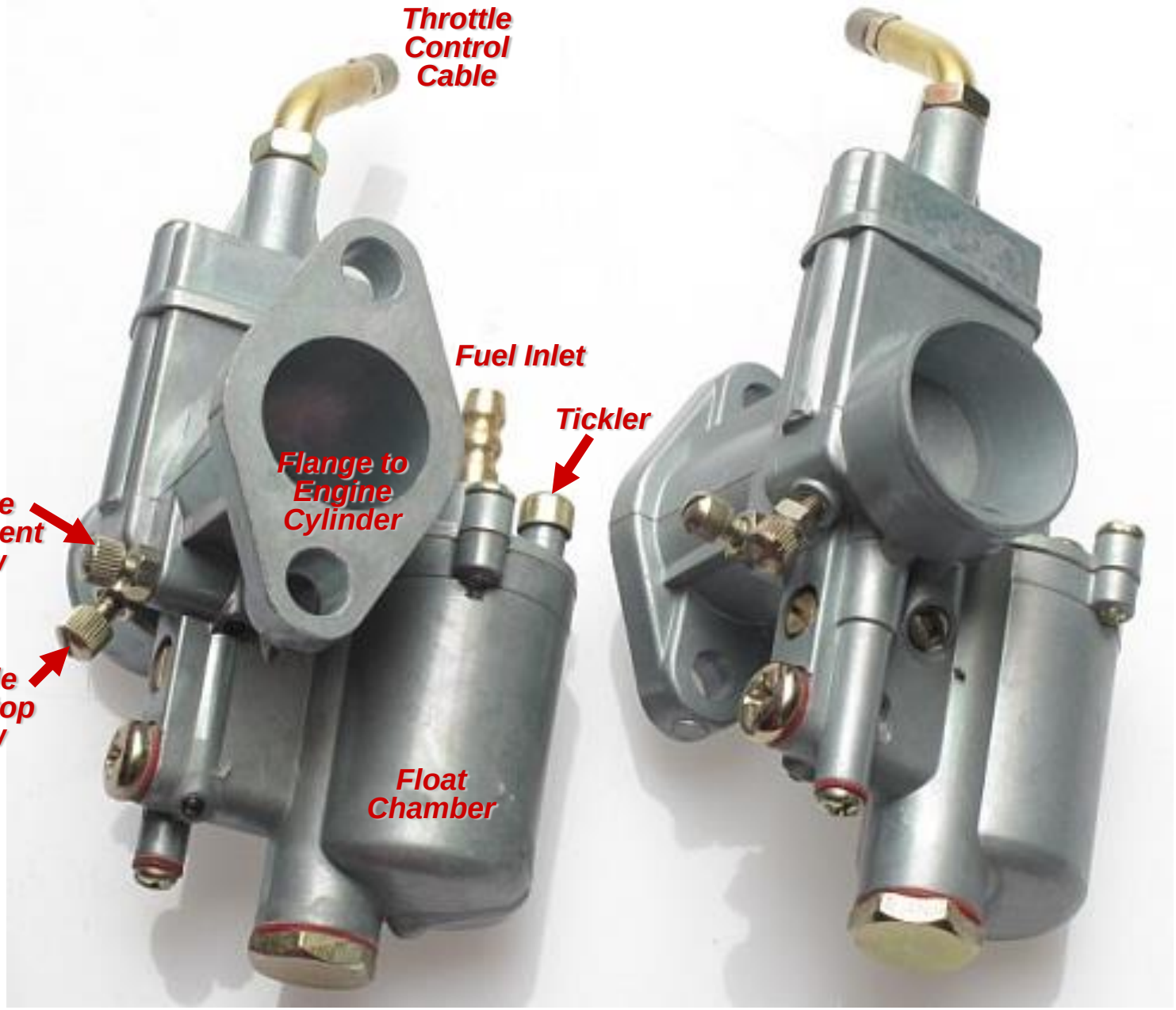




K-302 Carburetors

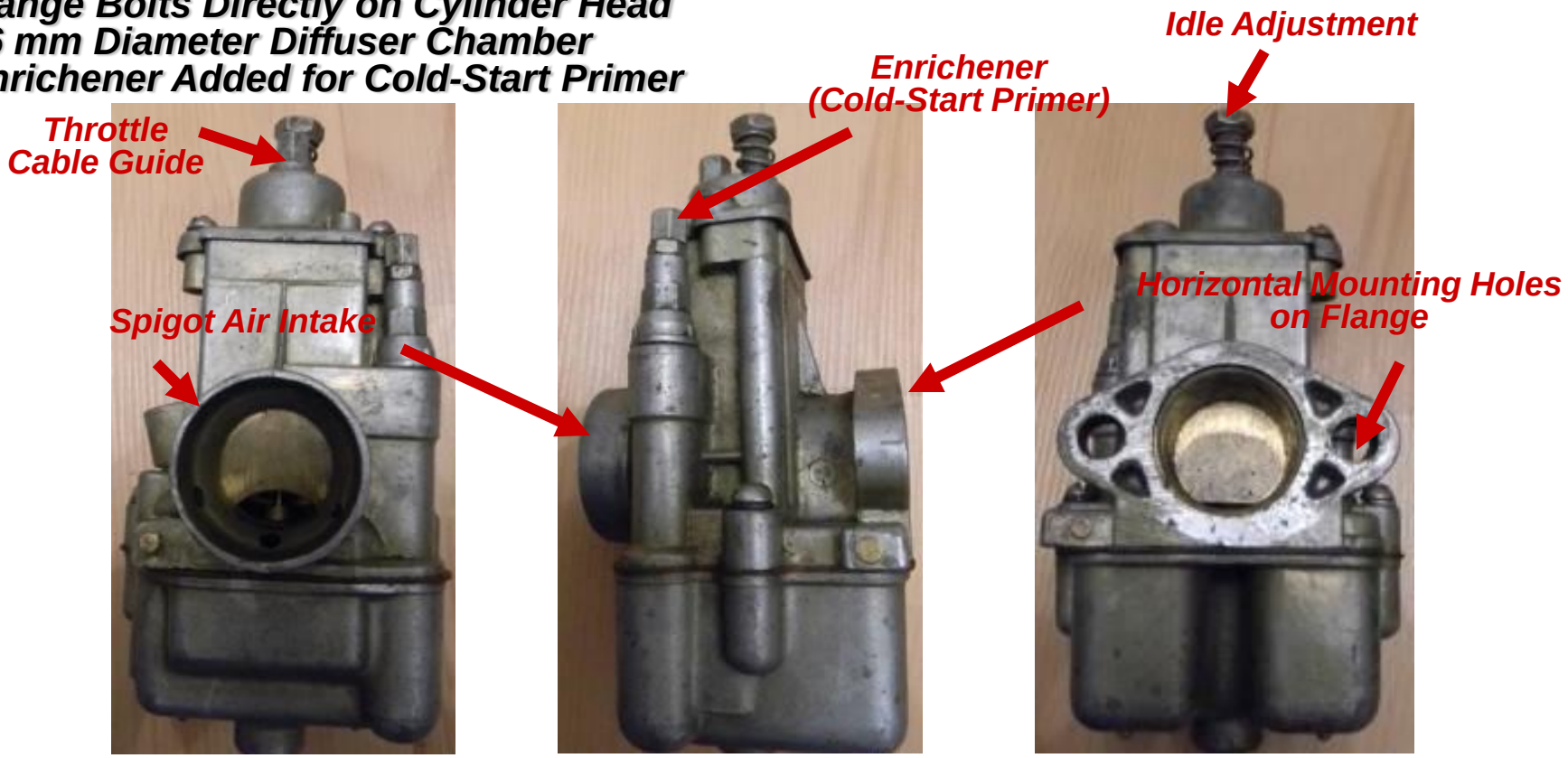


K-302 Carburetors *(replicas)*



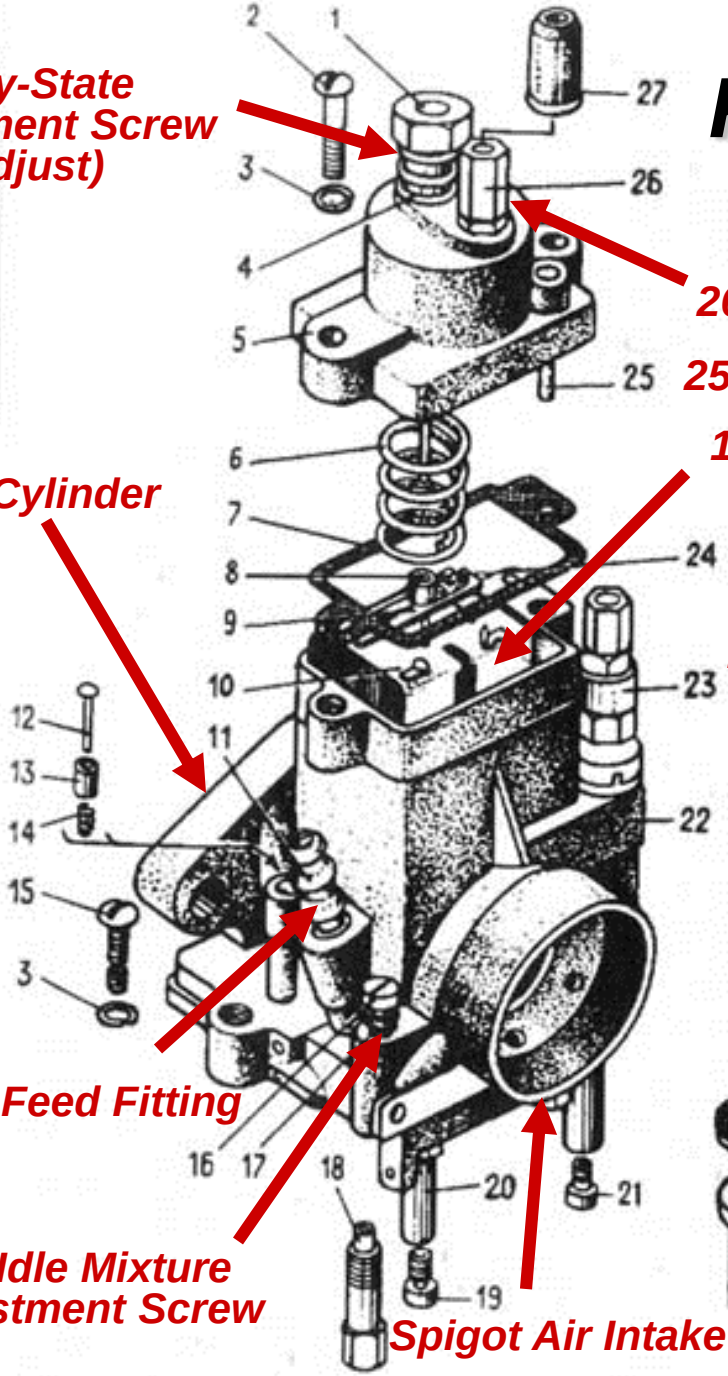
K-62 Carburetor

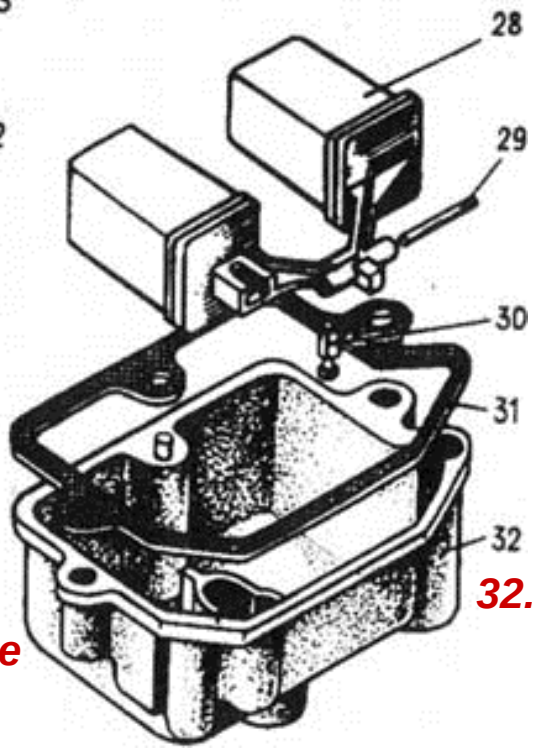
- Used on Dnepr 650cc Engines
  - Older Models of MB-650
  - Early Models of MT-16 / MT-11
- Used on Ural 650 cc Engines
  - Later Models of M-63
- Appeared in 1987-to-1989 Time Frame
- Not Recommended
- Recommendation: Replace with K-65 (modernized K-62) or K-68
- Flange Bolts Directly on Cylinder Head
- 26 mm Diameter Diffuser Chamber
- Enrichener Added for Cold-Start Primer



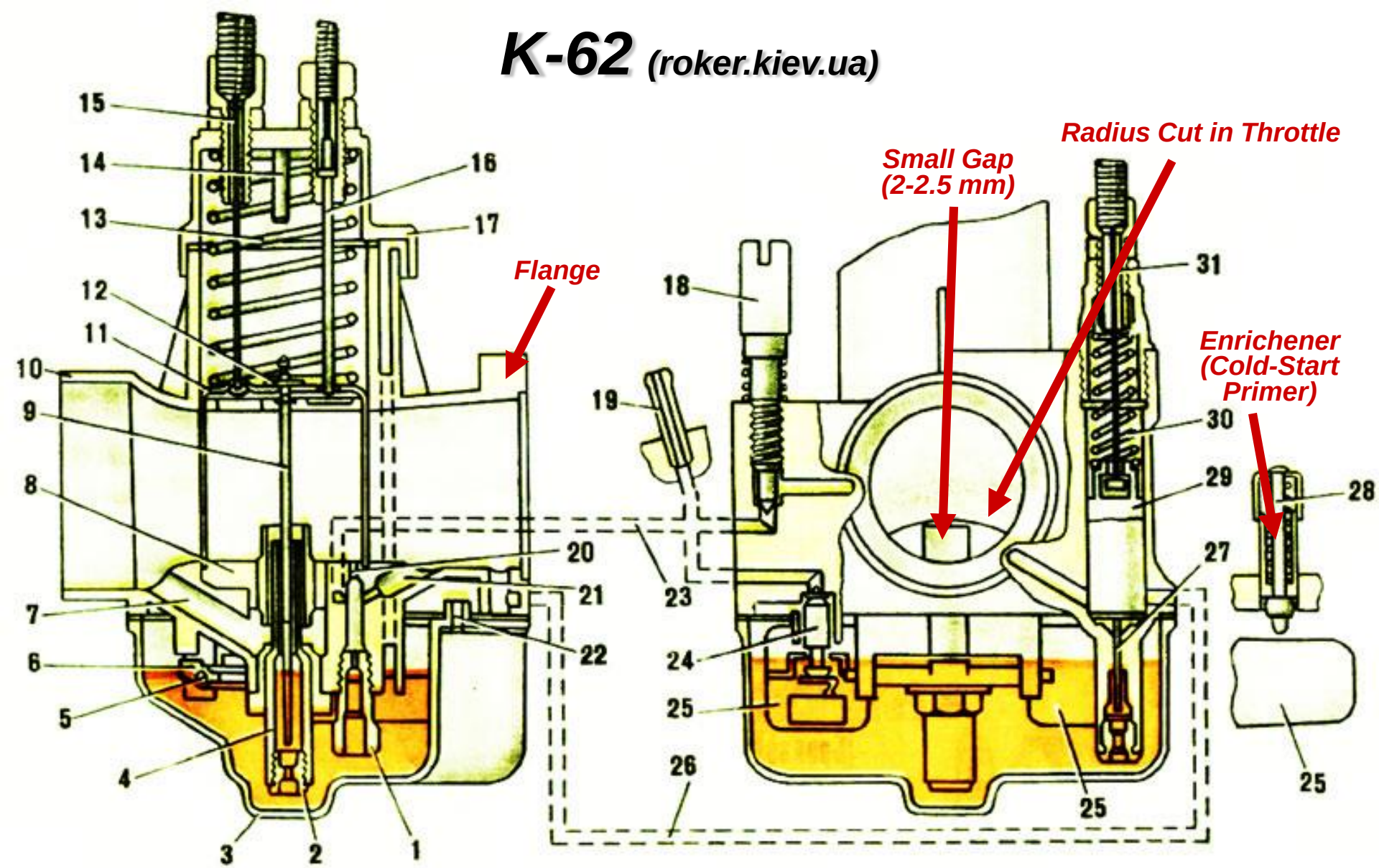
The K-62 carburetor appeared in the mid 1980's, on Dnepr's MB-650's and early MT-16/MT-11's and Ural's M-63.

K-62 Parts Diagram





K-62 (roker.kiev.ua)



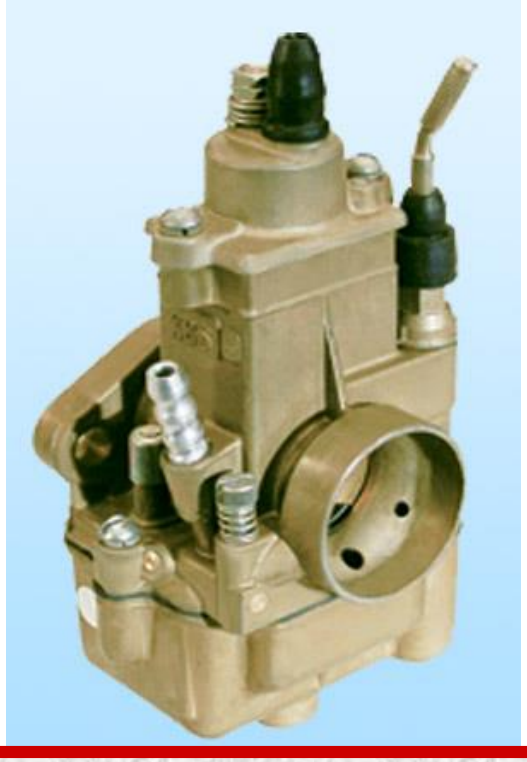
1 – Idling Fuel Jet, 2 - Main Jet, 3 - Float Chamber, 4 – Spray, 5 - Float Axle, 6 - Float Arm Bushing, 7 - Air Channel, 8 – Cap, 9 - Metering Needle, 10 – Housing, 11 – Throttle Valve, 12 – Throttle Needle Groves, 13 - Throttle Spring, 14 - Throttle Limiter (removed after running the engine), 15 – Throttle Wire Control, 16 - Minimum Idle Adjustment (throttle descent), 17 - Cover, 18 - Idle Mixture Adjust Screw, 19 - Fuel-Receiving Socket, 20 – Transition Hole, 21 – Idle Emulsion Channel, 22 – Drain Hole, 23 – Idle Air Channel, 24 – Fuel Valve, 25 - Float, 26 - Emulsion Channel Equalizer, 27 - Dispensing Needle, 28 – Enrichener Float, 29 – Plunger, 30 - Plunger Spring, 31 - Control Cable Equalizer.

K-62 Carburetor Construction (roker.kiev.ua)

- *K-62 carburetor consists of three main (zinc alloy) parts; housing (10), float chamber (3) and cover (17).*
- *Float lever-type mechanism consists of two floats (25), which are held by the float axle (5), passed through a brass sleeve (6).*
- *Fuel valve is designed as a needle (24) which rests on the bottom of the plate of the float, and the top closes the channel for supplying the fuel. The level of the floats in the float chamber is controlled by bending the supporting plate.*
- *The throttle valve (11) is a vertical flat U-shaped cross-section of brass sheet. In its wall facing the air cleaner, the bottom of the throttle valve is cut on a radius, which provides a given dilution of the spray.*
- *The upper wall of the idle-adjust throttle rod (16) is fixed with a screw, screwed into the lid. Rotate it to limit the lowest value of the throttle.*
- *Throttle needle (9) can hold the throttle is one of three positions - depending on the desired composition of the mixture. It is held in a grove (12) with a circlip.*
- *The enrichener (cold-start primer) consists of a plunger (29) with dispensing tip (27), which moves in the well casing, the spring (30) and cable (31). The mixture enrichener (28) float facilitates the start-up in the winter (below 15°C).*
- *A tickler (28) bypasses the float valve to give an extra shot of fuel during cold-start. To avoid excess fuel falling into the cylinder, which can lead to water hammering with devastating consequences, a drain hole (22) is provided in the float chamber.*
- *During run-in of a new engine it is not recommended to speed to the maximum. Inside the lid is molded a rod (14), which limits raising the throttle valve to the max. This limiter is made removable, following the engine break-in period.*

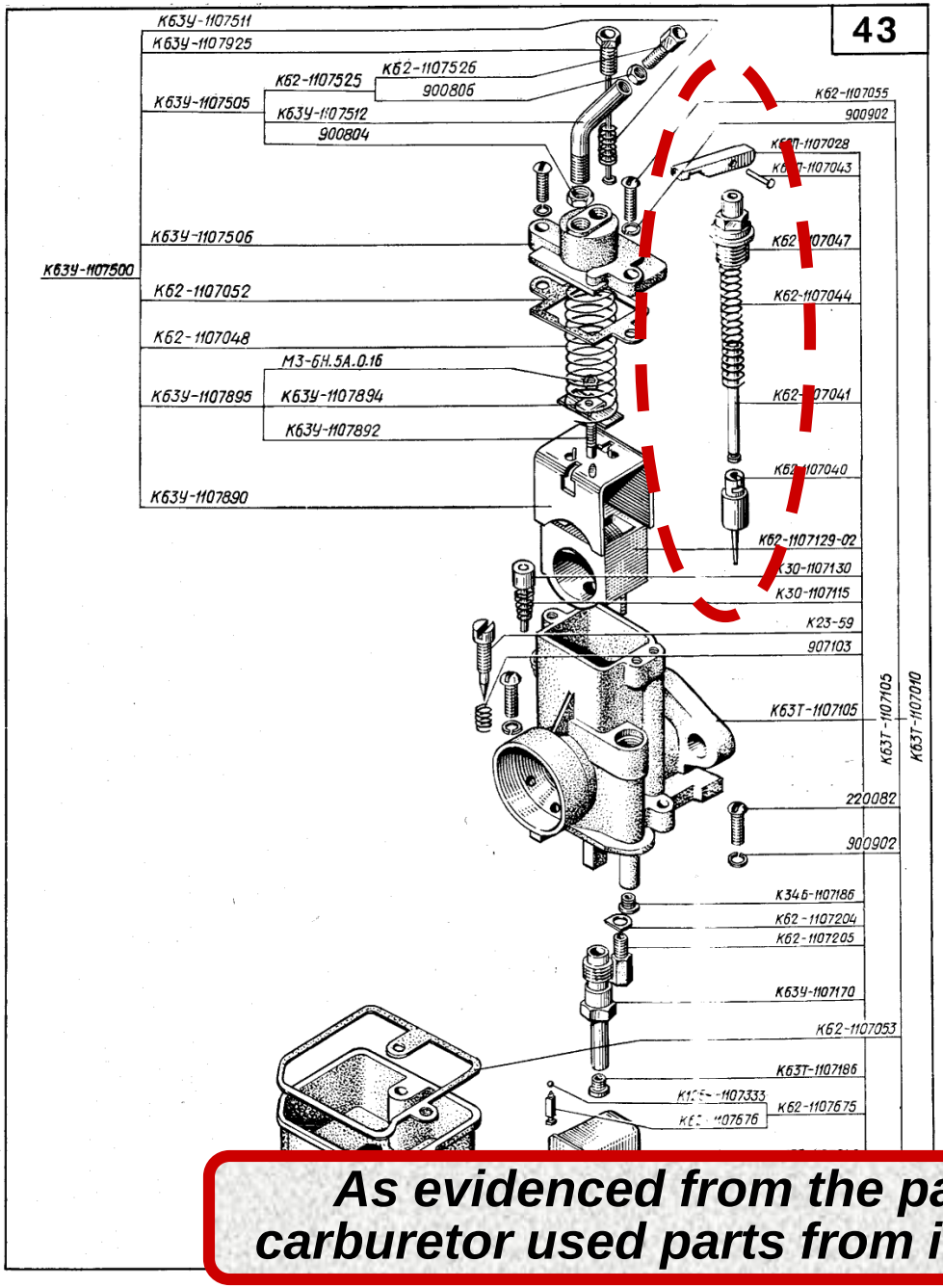
K-63 Carburetor

- *Common Carburetors Found on Urals and Dneprs*
- *K-63Ф (K-63F in English) Introduced to Dnepr K-750M and Later to MT-12*
- *K-63T (most popular) Introduced in 1985 on Dnepr MT-11 and MT-12*
- *K-63У (K-63U in English) Introduced to Modern (8.101) Urals in 1998*
- *Significant Improvement Over Predecessor K-301 / K-302*
- *Similar to K-62 Carburetor*
  - *–Enrichener Added for Cold-Start Prime (twist up ¼ turn to lock)*
- *Very Reliable, but Needs Setting Often to Remain in Peak Condition*
- *Left and Right-Hand Versions Identical*
- *Flange Bolts Directly on Cylinder Head*
- *Later Replaced with K-65*
- *Re-Build and Repair Kits Readily Available*



The K-63 carburetor predominantly appeared in the late 1980's, on Dnepr MT-16 and MT-11 and modern Ural 8.103 (650cc).

K-63 Carburetor *(MT-11 and MT-16 Repair Manual)*



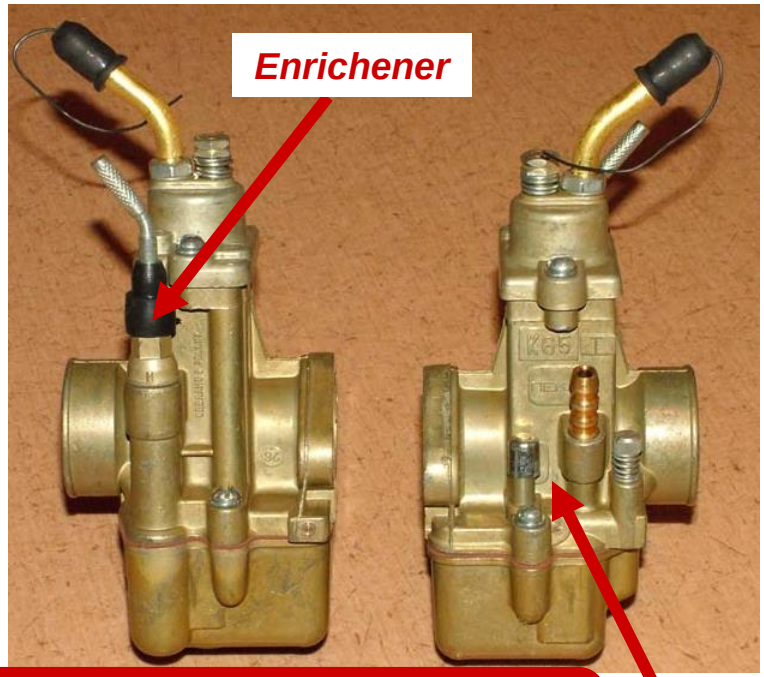
K62-1107028 Enrichener Lever
K62-1107043 Axle Pin

K62-1107047 Guide Spring

K62-1107044 Corrector Spring

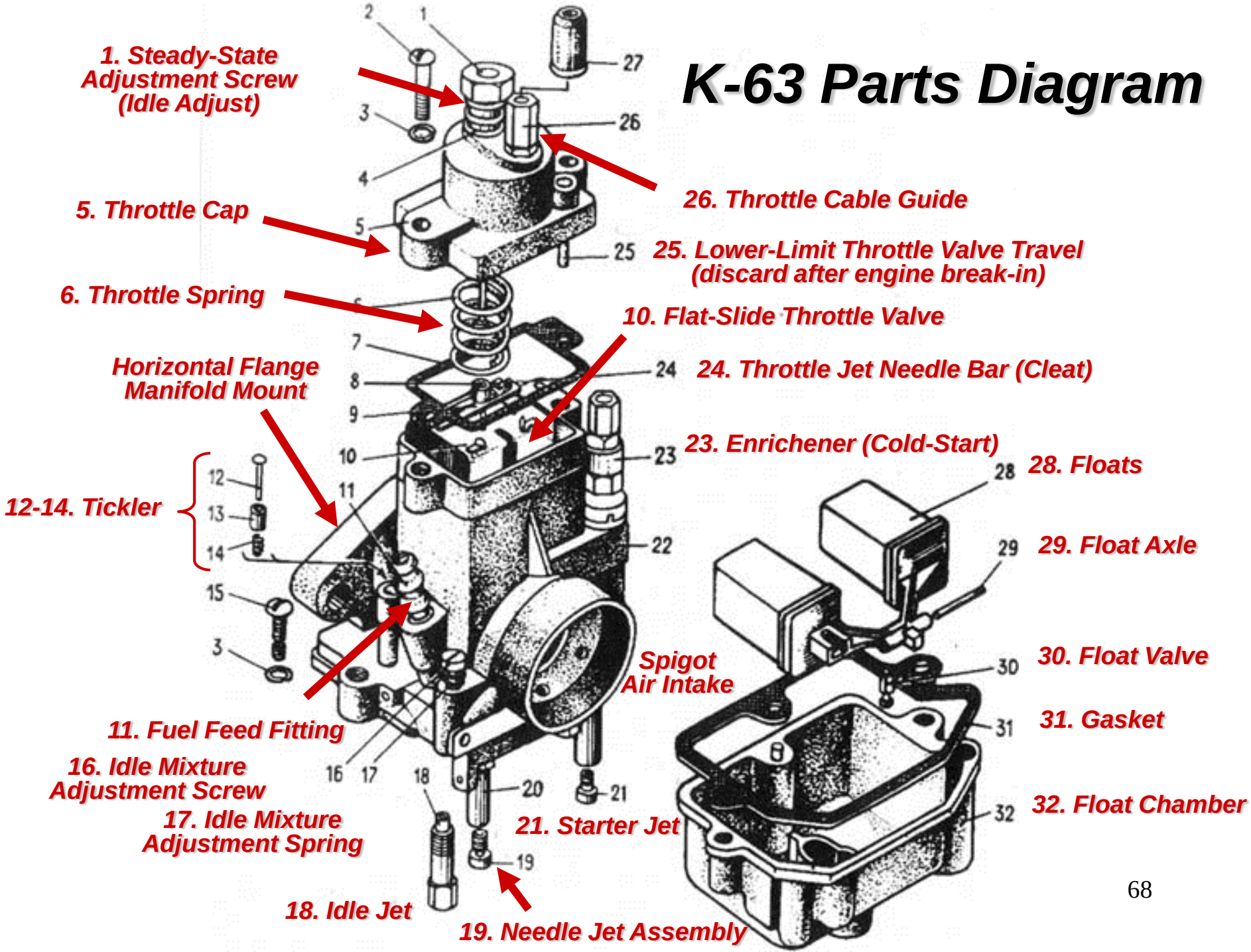
K62-1107041 Rod

K62-1107040 Corrector-Enrichener

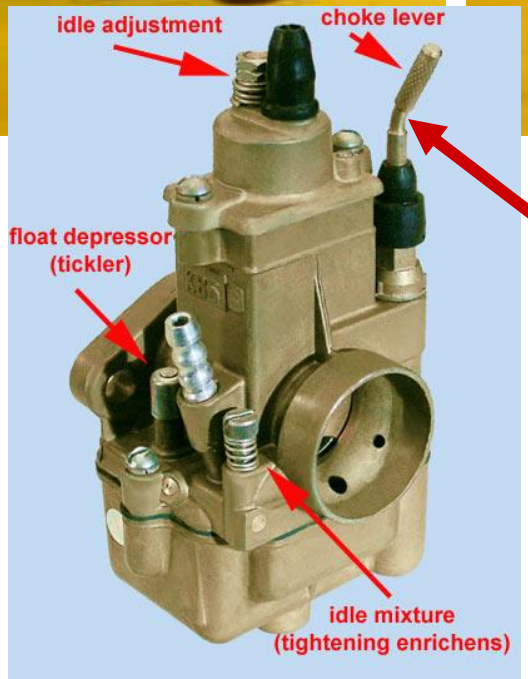


As evidenced from the part numbers, the K-63 carburetor used parts from its predecessor, the K-62.

K-63 Parts Diagram



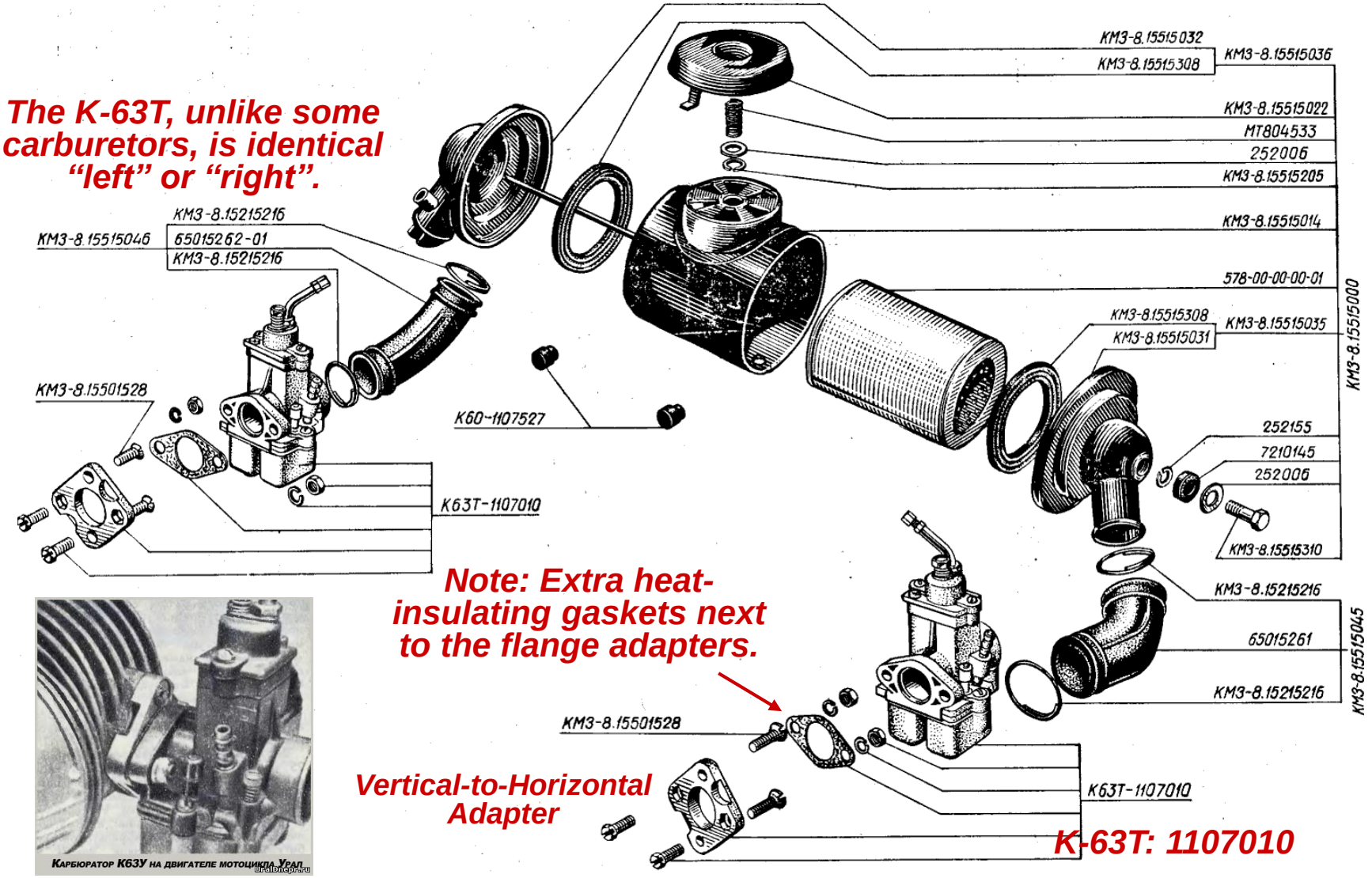
K-63 Carburetors



Enrichener (a.k.a. Choke)
Pull Up and Rotate 90° to Enable.
Disable (Un-twist and Release) Soon
after Warm-Up!

K-63T Carburetor on Dnepr MT-11 and MT-16

The K-63T, unlike some carburetors, is identical "left" or "right".



Note: Extra heat-insulating gaskets next to the flange adapters.

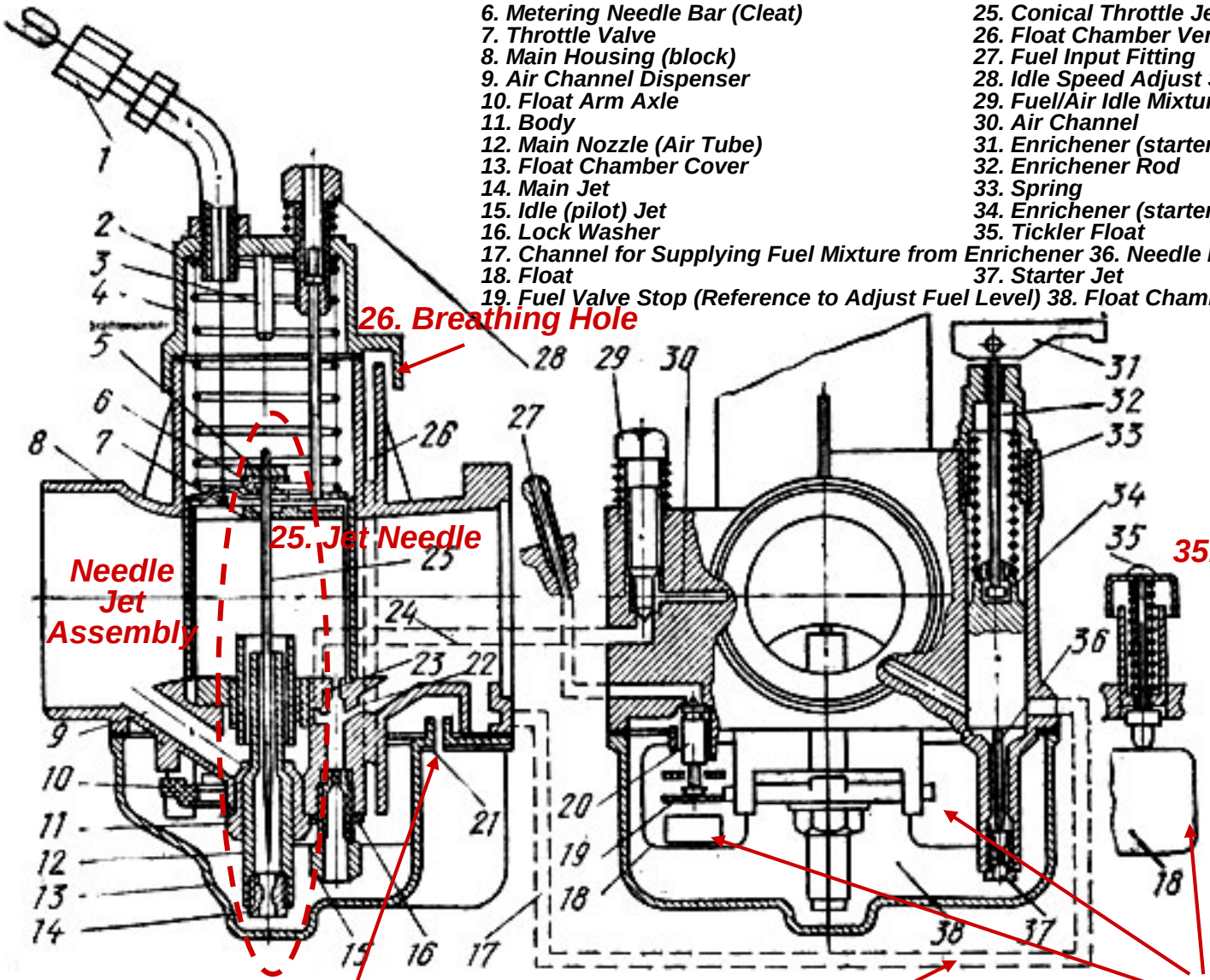
Vertical-to-Horizontal Adapter

K-63T: 1107010

The MT-11 and MT-16 maintenance manuals show the adapter plates needed to transform the vertical mounting pattern used by the K-37/K-301 carbs to the K-63 horizontal mounting pattern.

K-63 F,T,Y (Ф, Т, У) Carburetor Construction

1. Fitting with Lock-Nut
2. Throttle Spring
3. Max Throttle Travel Limiter (remove after engine break-in)
4. Throttle Housing Cover
5. Jet Needle Lock-Nut
6. Metering Needle Bar (Cleat)
7. Throttle Valve
8. Main Housing (block)
9. Air Channel Dispenser
10. Float Arm Axle
11. Body
12. Main Nozzle (Air Tube)
13. Float Chamber Cover
14. Main Jet
15. Idle (pilot) Jet
16. Lock Washer
17. Channel for Supplying Fuel Mixture from Enrichener
18. Float
19. Fuel Valve Stop (Reference to Adjust Fuel Level)
20. Fuel Valve
21. Drain Hole
22. Emulsion Hole
23. Transition Hole
24. Air Channel Idle Jet
25. Conical Throttle Jet (Metering) Needle
26. Float Chamber Vent
27. Fuel Input Fitting
28. Idle Speed Adjust Screw
29. Fuel/Air Idle Mixture Adjust Screw
30. Air Channel
31. Enrichener (starter) Lever
32. Enrichener Rod
33. Spring
34. Enrichener (starter) Piston
35. Tickler Float
36. Needle Plunger
37. Starter Jet
38. Float Chamber (bowl)



K-63 Carburetor Construction

- K-63 Construction Similar to K-62
- Carburetor Consists of Three Main (cast zinc alloy) Parts;
  - Body (8), Float Chamber (bowl) (38) and Throttle Cover (4)
- Float Chamber (38)
  - Breathing Hole Connected to External Environment via Opening (26)
  - Float Mechanism Consists of Two, Rectangular, Lever-Type Floats (18), Connected by a Common Shaft (axle) (10)
  - Float and Lever Made of One-Piece Plastic
  - Level of Fuel in Float Chamber Approximately the Same as in the K-62
    - When Carburetor Upside Down, Molding Line on Side of the Float Should be Parallel and 13 ± 1 mm to the Plane
  - Drain Hole (21) In Lid of the Float Chamber
- Fuel Valve (20)
  - Designed as Brass Needle which Rests on the Bottom of the Float Plate
  - Top Closes the Fuel Supply Channel
  - Disc of Elastic Material In Upper Cone of Fuel Valve (20)
  - Level of Floats in the Chamber (bowl) Controlled by Bending the Supporting Plate Tab
- Mixture Enrichener System (starter)
  - Before Starting a Cold Engine, Lever (31) or Bent Stick Raises Piston (34)
  - Fuel mixture from the Enrichener (starter) to Mixing Chamber Enters thru Channel (17)
  - Under the Influence of Vacuum, Formed when Turning Kick-Starter, Fuel Flows thru Starter Jet (37)
  - Spring (33) Prevents Conical Needle (36) from Sticking
- Throttle Valve (11)
  - Vertical, Flat, U-shaped Cross-Section of Sheet Brass
  - In Wall, Facing the Air Cleaner, the Bottom Is Cut on a Semi-Circular Radius to Provide Air/Fuel Mixture when Idling
- Throttle Jet (metering) Needle (25)
  - Made of Brass or Stainless Steel
  - Upper Part Has a Thread to Move to Change the Amount of Spray
  - Metering Needle Can Be Raised or Lowered by Loosening the Lock-Nut (5) and Screwing or Twisting the Throttle Needle (25) in the Needle Bar (6)
  - Need for Such Adjustments May Occur Under Seasonal Operation, Break-In Period, or In Conditions of High Temperature or Altitude (mountains)
  - Each Full-Turn Moves the Needle by 0.5 mm

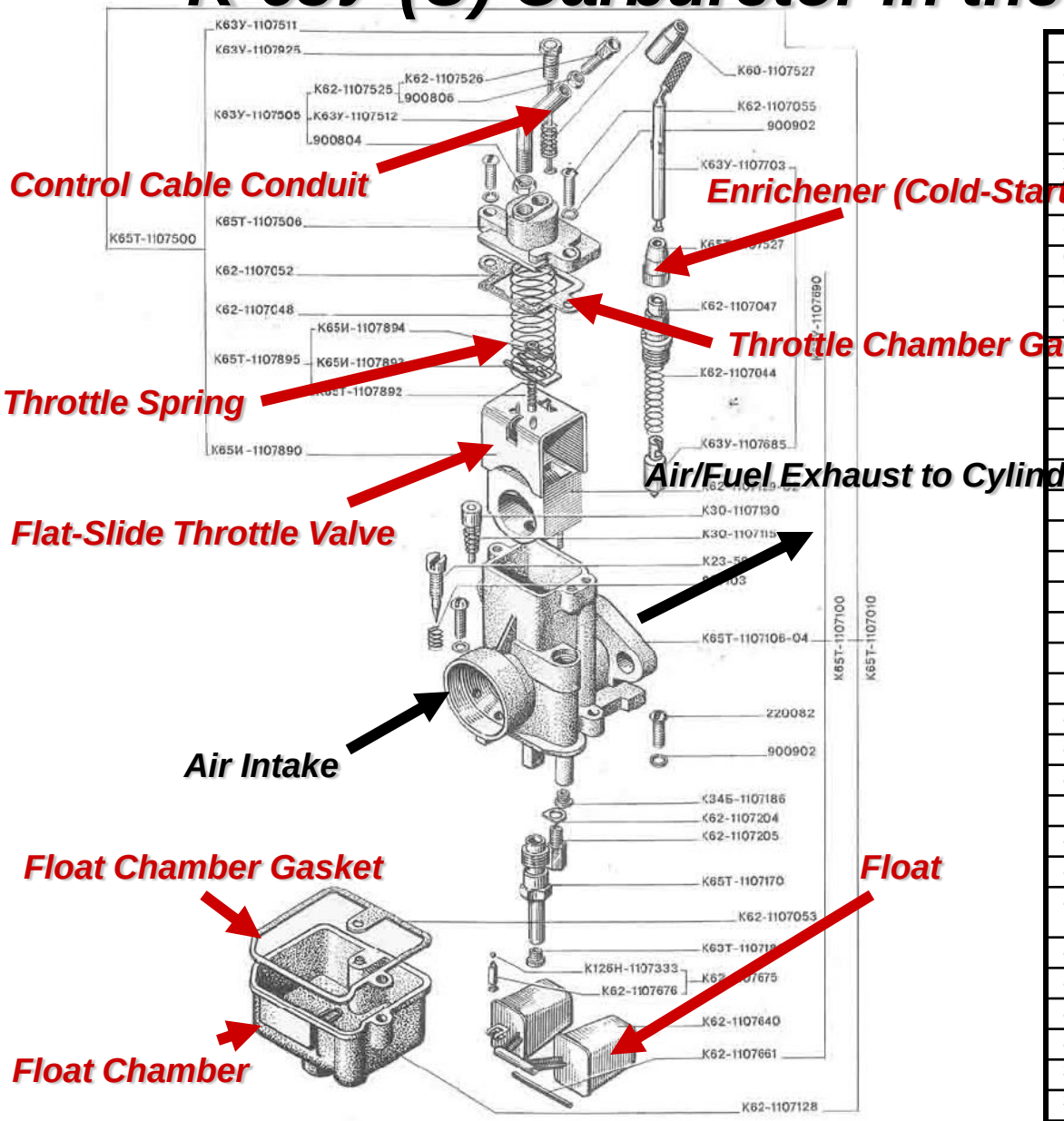
K-63 Carburetor Construction (cont.)

- At Low-Speed
  - Cylinders Need a Rich Mixture, When Idle Throttle Screw (28) Is Slightly Screwed In
  - Mixing Occurs in the Mixing Chamber thru the Emulsion Hole (22), from Fuel Leaving the Idle (pilot) Jet (15) and Air Coming thru Air Channel (30)
- In the First Quarter of the Throttle (when the throttle is lifted)
  - –When Lifting the Throttle Up to a Quarter, the Mixture Composition Is Determined by System Idling
  - –Idle Jet (15) Fuel Fed Directly from the Float Chamber thru Emulsion (22) and Transition (23) Holes
  - –Vacuum in the Air Tube (12) Increases
  - –Fuel Is Discharged from the Float Chamber thru the Main Jet (14) to the Annular Cavity between the Jet Needle (25) and the Walls of the Air Tube into the Air-Flow of the Main Air Duct
  - –Here, Fuel is Sprayed, Partially Evaporating and Entering the Cylinder
  - –Composition of the Mixture Is Controlled by Idle Mixture Screw (29) and Idle Speed Adjust Screw (28)
    - With Mixture Screw Turned Out (CCW) (29) Mixture Is Depleted (leaner)
    - Turned In (CW) Mixture Is Enriched (richer)
  - –Best Composition of Fuel/Air Mixture Depends on Position of Conical Jet Needle (25), the Capacity of the Main Jet (14) and the System Idling System
  - –Jet Needle (25) Provides Necessary Fuel Supply Over Most of Throttle Range, Corresponding to about ¼ to 3/4 of Range
  - –Since Moving Jet Needle Up Increases the Area of Annular Cross-Section between the Jet Needle and the Air Tube, and Consequently the Fuel
- In the Last Quarter of the Throttle
  - –Flow Area of Air Channel in Spray Zone Varies Relatively Little, so Air Flow Remains Almost Unchanged
  - –Amount of Fuel Supplied Determined Mainly by Diameter of Main Jet (14)
  - –Air Entering thru Channel (9) of Main Nozzle (12) in the Annular Gap between the Nozzle and Body, Substantially Improves Mixing

K-63 Carburetor Construction (cont.)

- *Tickler (cold-start) (35)*
  - *–Ensures Desired Mixture when Starting a Cold Engine (≤-15° C)*
  - *–Momentarily Bypasses Float Valve (20) to Give Extra Shot of Fuel during Cold-Start*
  - *–To Avoid Excess Fuel Ending Up in the Cylinder, Which Can Lead to Compression with Devastating Consequences, a Drain Hole (21) Is Provided in the Float Chamber*
- *Max Throttle Limiter (3)*
  - *–Rod (3) Molded Inside Carburetor Lid*
  - *–Limits Travel Height of Throttle Valve, Thus Limiting the Max Speed During New Engine Break-In*
  - *–Made To Be Removed following Engine Break-In Period*
- *Idle Speed Adjust Screw (28)*
  - *–Upper End of Idle-Adjust Throttle Rod (28) Is Fixed with a Screw, Screwed into the Lid*
  - *–Rotate to Limit the Lowest Value of the Throttle*
  - *–Engine Idle Speed Regulated by Screw (28)*
  - *–If Unscrewed: Speed Is Increased; if If Screwed In: Speed Is Reduced*
- *Idle Mixture Adjust Screw (29)*
  - *–Screw (29) Regulates Composition of the combustible mixture when the engine at Idle*
  - *–If Unscrewed (counter-clockwise): Mixture Is Leaned; If Screwed In (clockwise): Enriched*

K-63У (U) Carburetor in the MT-11/ MT-16

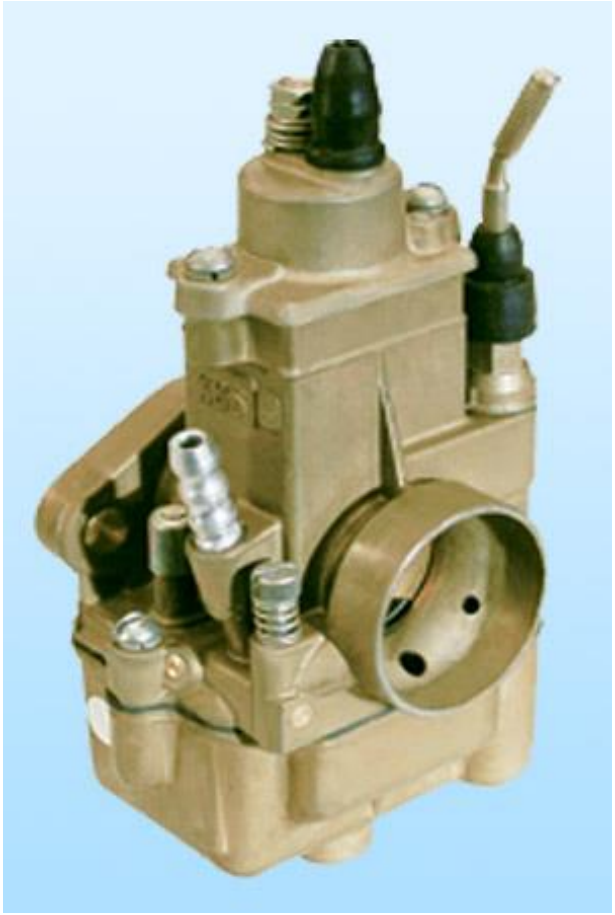


Item #	Part Number	Part Description
-	K63T-1107010	Carburetor
1	K63У-1107925	Steady-State Idle Adjust Screw
2	K62-1107055	Screw
3	900902-0	Washer
4	K63У-1107511	Spring
5	K63У-1107506	Throttle Cover
6	K62-1107048	Throttle Spring
7	K62-1107052	Throttle Gasket
8	K63У-1107892	Needle
9	K63У-1107894	Strap (Bar)
10	K63У-1107890	Throttle Valve
11	N/A	Fuel Input Fitting
12	K30-1107130	Depressor (Tickler) Knob
13	K30-1107130	Depressor (Tickler) Stem
14	K30-1107115	Depressor (Tickler) Spring
15	220082	Screw, M5-6gx20
16	K23-59	Idle Stroke Screw
17	907103-0	Idle Screw Spring
18	K62-1107205	Idle Jet
19	K63T-1107186	Main Fuel Jet
19	K34Б-1107186	Main Fuel Jet
20	K63У-1107170	Main System Atomizer
21	K63-1107185	Enrichener Jet
22	K62-1107044	Enrichener Spring
N/A	K62-1107047	Guide Spring
23	K63-1107690	Corrector-Enrichener
24	N/A	Throttle Needle Lock
25	N/A	Lower-Limit Throttle Valve Travel (remove after engine break-in)
26	K62-1107525	Guide Wire Assembly
27	K60-1107527	Cover
28	K62-1107640	Float assembly
29	K62-1107661	Axle
30	K62-1107675	Needle valve Assembly
31	K62-1107053	Float Chamber Gasket

The breakdown of the K-63 carb shows the flat-side throttle valve, and flange-mount. The part numbers clearly show a heritage to the K-62.

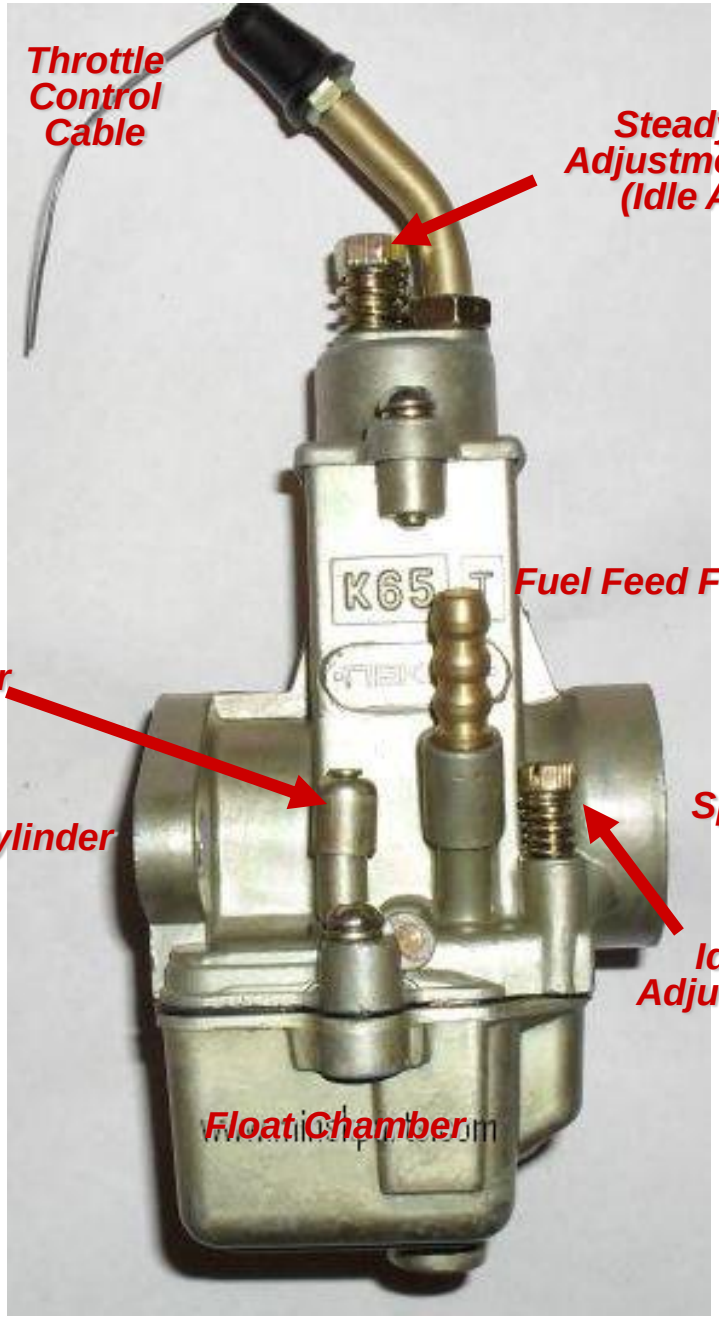
K-65 Carburetor

- *Common Carburetor Found on Urals and Dneprs*
  - *–K-63T (most popular) Introduced on Dnepr MT-10.36, MB-650, MT-11 and MT-16*
  - *–K-63У (K-63U in English) Introduced to Dnepr MT-10.36 and to Ural "Соло Классик" (Solo Classic, IMZ-8.123 (650 cc)) in Late 1980's*
- *Modernized Version of K-62 Carburetor*
- *Fit 650cc Urals from M-67 Onwards*
- *Manufactured by Pekar (St Petersburg, Russia)*
- *Most Ural and Dnepr 650 cc Motorcycles from 1985, Right thru to Late 1990's Were Fitted with These*
- *Left and Right-Hand Versions Identical*
- *Flat-Slide Throttle Valve*
- *Standard Jets: 50 and 165*
- *Flange Bolts Directly onto Cylinder Head*
  - *–Horizontal Mounting Bolt Holes*
- *Later Replaced with K-68 and 28 mm Mikuni*
- *Re-Build and Repair Kits Readily Available*

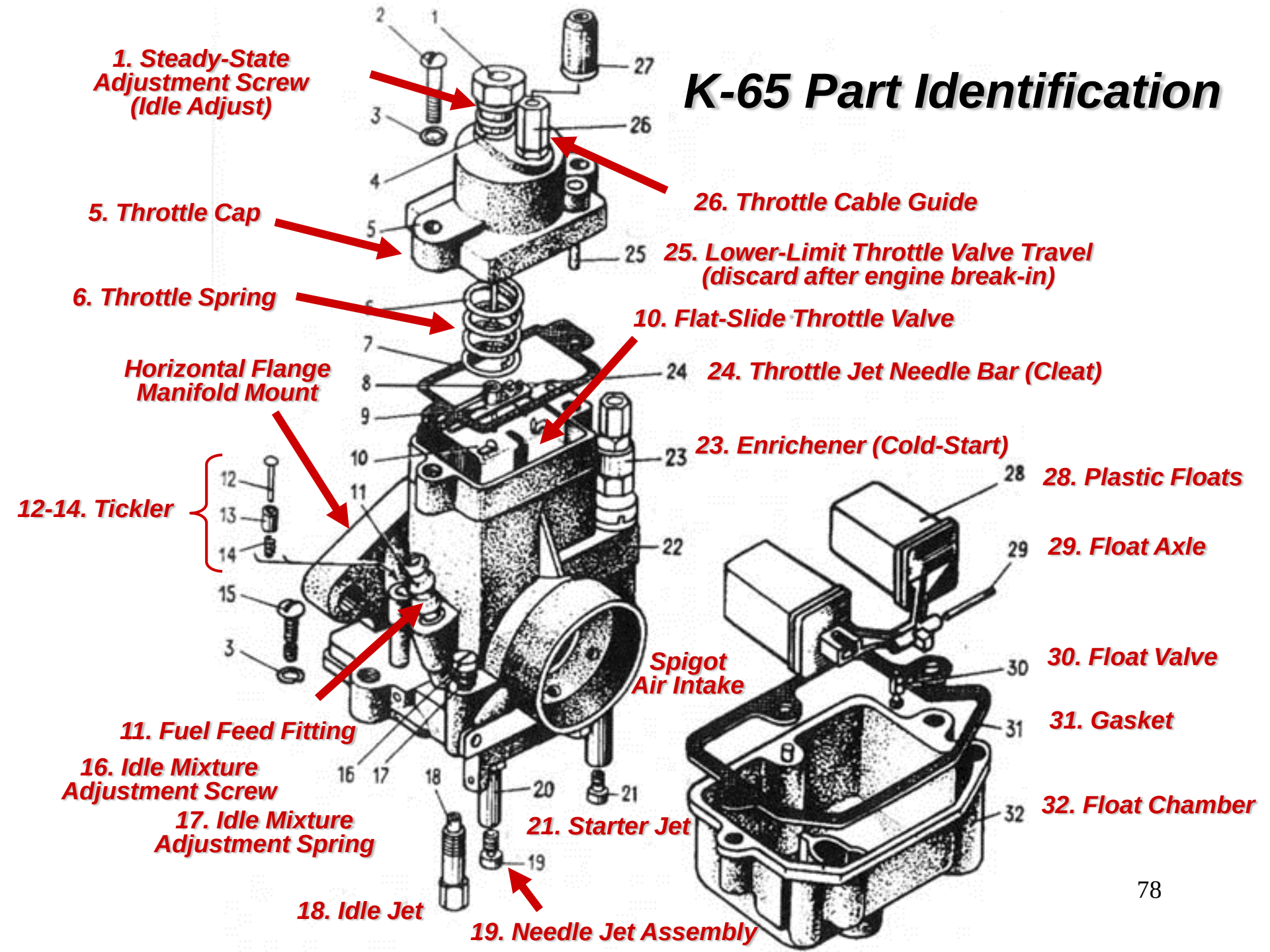


The K-65 carburetor appeared on Dnepr MT-10.36MB-650, MT-11, MT-16 and on the modern Ural IMZ-8.123 (650 cc) Solo Classic.

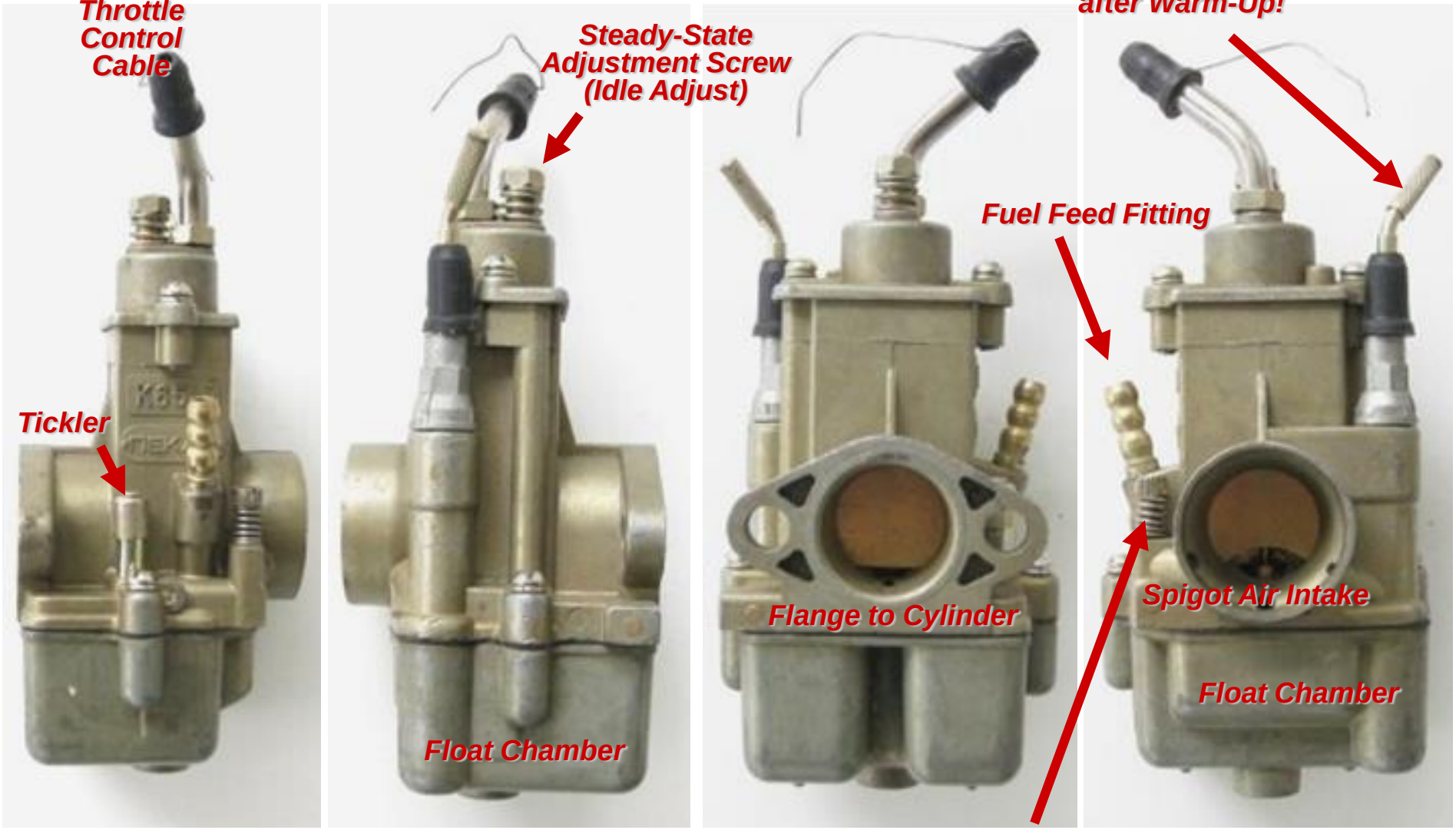
K-65 Carburetors *(after market)*



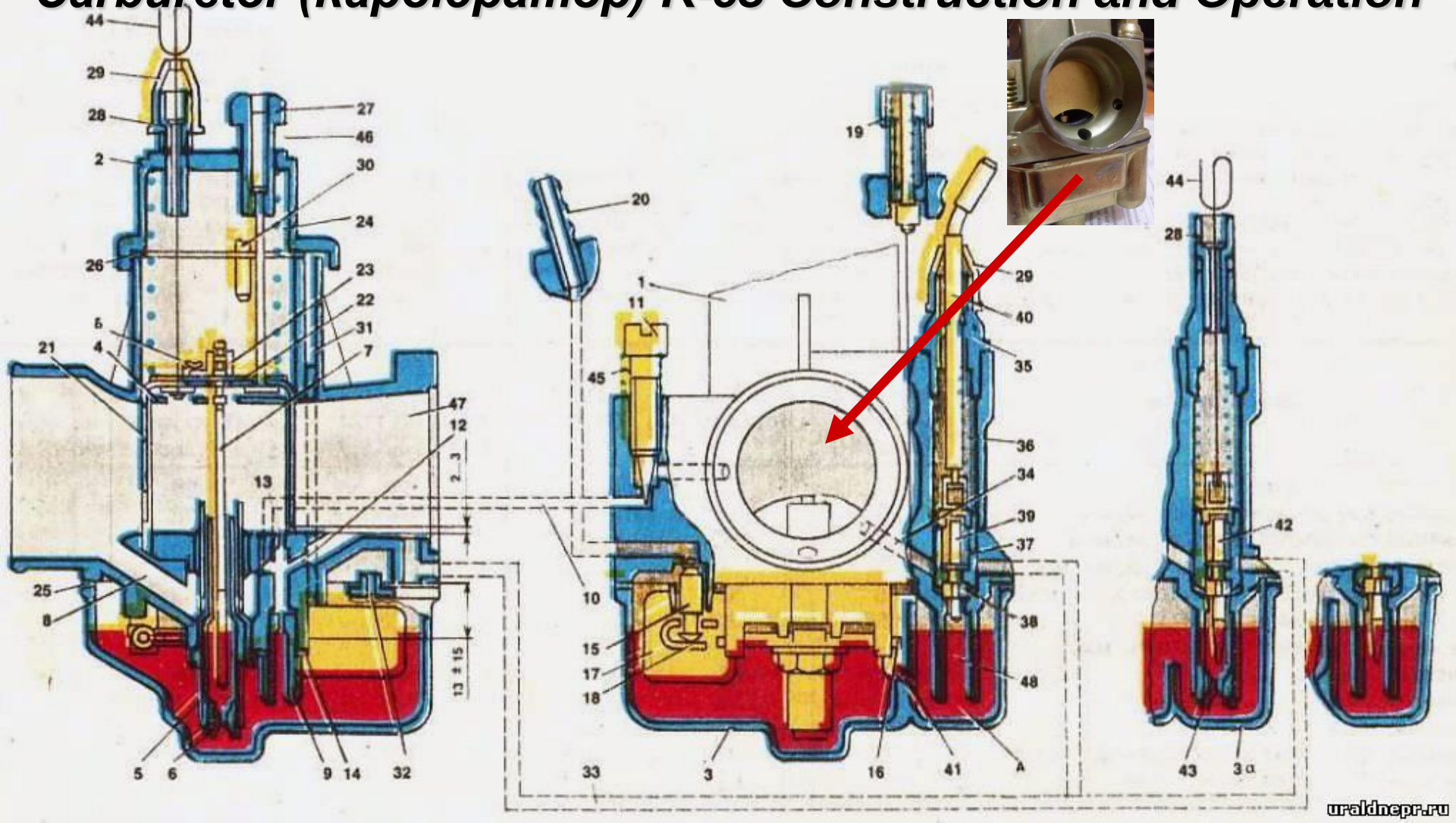
K-65 Part Identification



Major K-65T Carburetor Characteristics



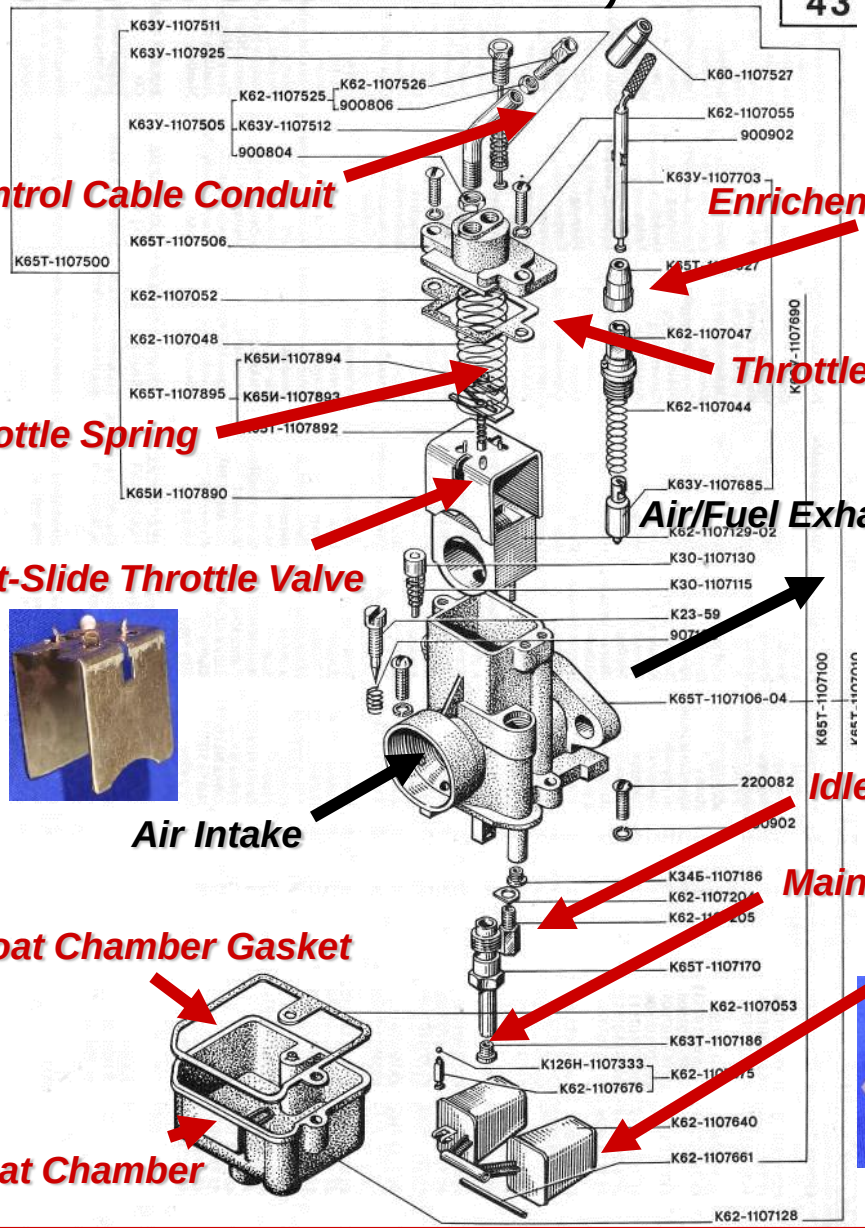
Carburetor (Карбюратор) K-65 Construction and Operation



1. Carburetor Body
2. Throttle Cover
3. Float Chamber (Bowl)
4. Flat-Side Throttle
5. Main Nozzle
6. Main Jet
7. Jet Throttle Needle
8. Air Channel Inlet
9. Idle (Pilot) Jet
10. Air Channel
11. Idle Mixture Adjust
12. Fuel/Air (Emulsion) Hole
13. Idle Transition Hole
14. Jet Lock Washer
15. Fuel Valve
16. Float Axle
17. Plastic Float
18. Elastic Stop Washer
19. Tickler
20. Fuel Inlet Fitting
21. Flat-Slide Throttle
22. Needle Bar (Cleat)
23. Needle Lock
24. Throttle Spring
25. Float Chamber
26. Throttle Gasket
27. Min. Idle Throttle Screw
28. Control Guide (Slide)
29. Protective Cap
30. Throttle Limiter Rod
31. Float Vent to Air
32. Excess Fuel Drain Hole
33. Fuel Channel
34. Fuel/Air Channel
35. Guide
36. Return Spring
37. Starter Piston or Plunger
38. Sealing Rubber
39. Starting Needle
40. Control Rod
41. Hole
42. Enrichener Rod
43. Enrichener Jet
44. Control Cable
45. Mixture Adjust Spring
46. Min. Ldle Spring
47. Flange Output
48. Fuel Channel

Note: 19 and 32 Absent on K-65A (A) and K-65Л (L)

K-65T from MB-650, MT-11 and MT-16 (Maintenance Manuals)



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11	N/A	Fuel Input Fitting
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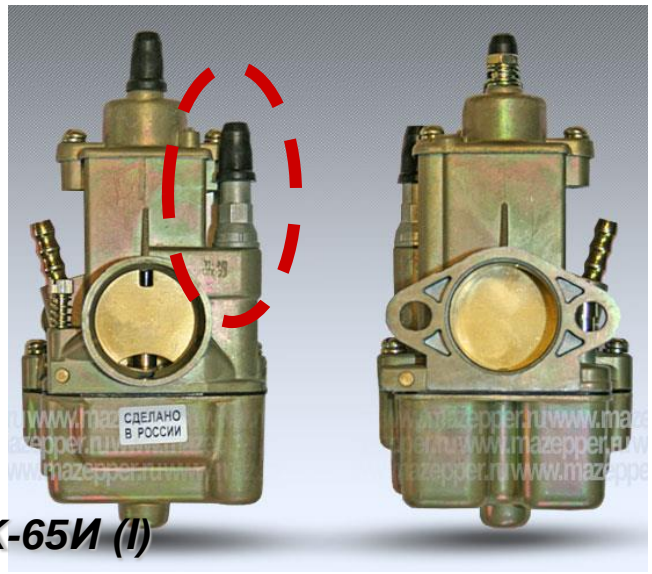
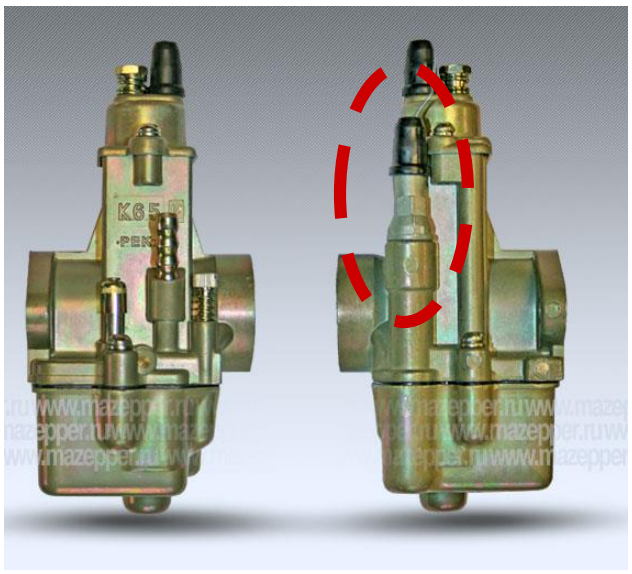
19	K63T-1107186	Main Jet
19	K34Б-1107186	Main Jet
20	K63У-1107170	Main System Atomizer
21	K63-1107185	Enrichener Jet
22	K62-1107044	Enrichener Spring
N/A	K62-1107047	Guide Spring
23	K63-1107690	Corrector-Enrichener
24	K62-1107893	Throttle Needle Lock
25	K28D-1107032	Lower-Limit Throttle Valve Travel (remove after engine break-in)
26	K62-1107525	Guide Wire Assembly
27	K60-1107527	Cover
28	K62-1107640	Float assembly
29	K62-1107661	Axle
30	K62-1107675	Needle valve Assembly
31	K62-1107053	Float Chamber Gasket
32	K62-1107128	Float Chamber

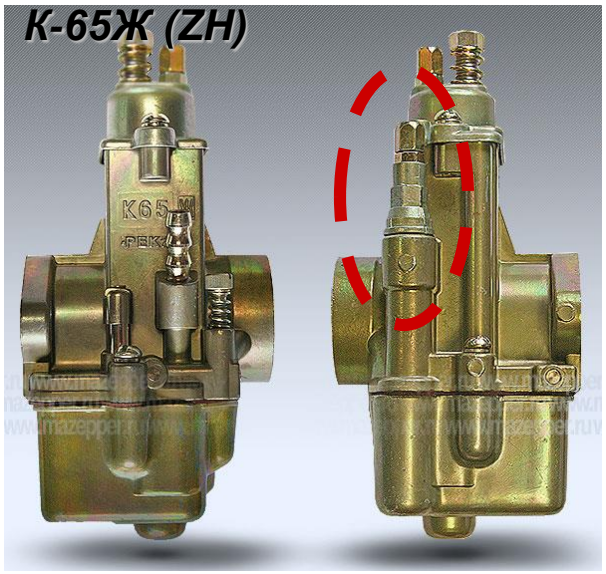
The breakdown of the K-65 carb shows the flat-side throttle valve, and flange-mount. The part numbers clearly show a heritage to the K-62 and K-63.

Карбюратор К-65И (I) and К-65Ж (ZH) Carburetors

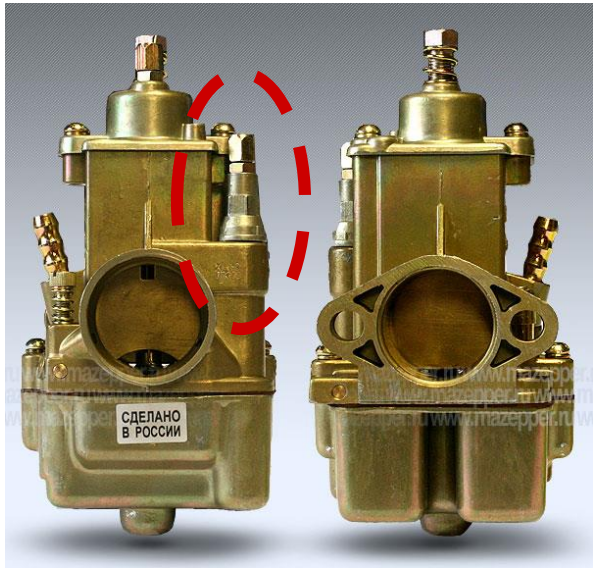




К-65И (I)

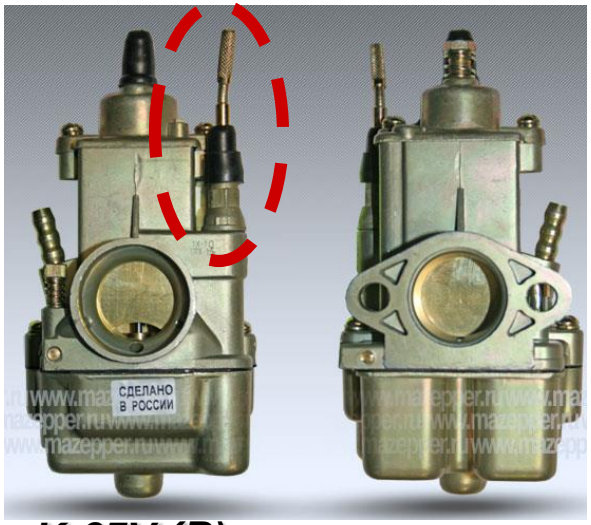


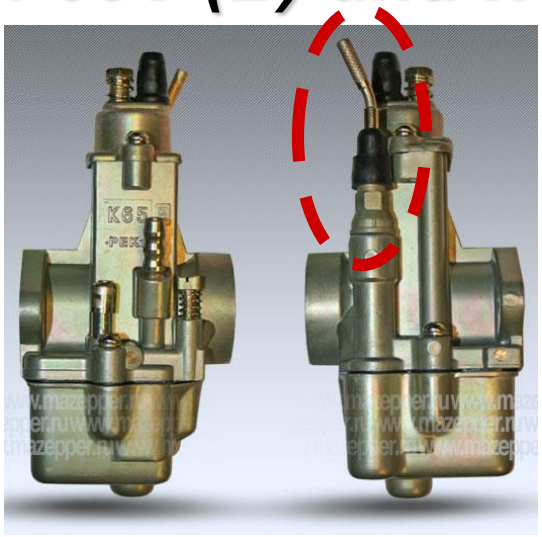
К-65Ж (ZH)



Control for the enrichener (corrector) of the "I" (И) and ZH (Ж) uses a cable that goes to a remote control.

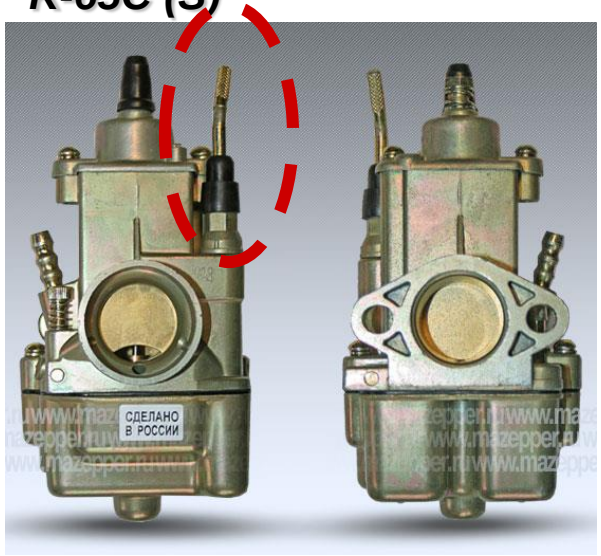
Карбюратор К-65V (В) and К-65С (S) Carburetors

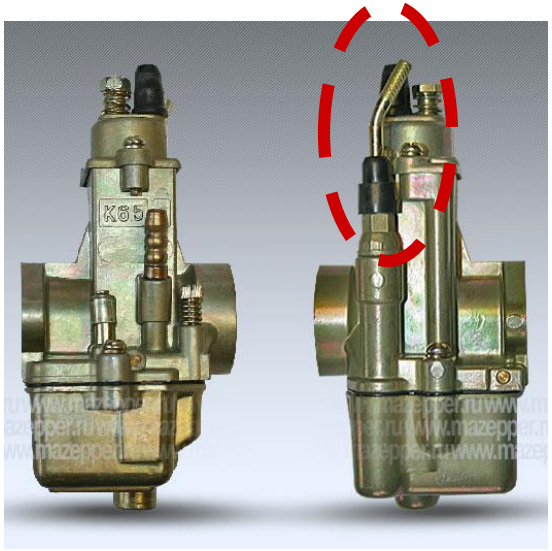




K-65V (B)

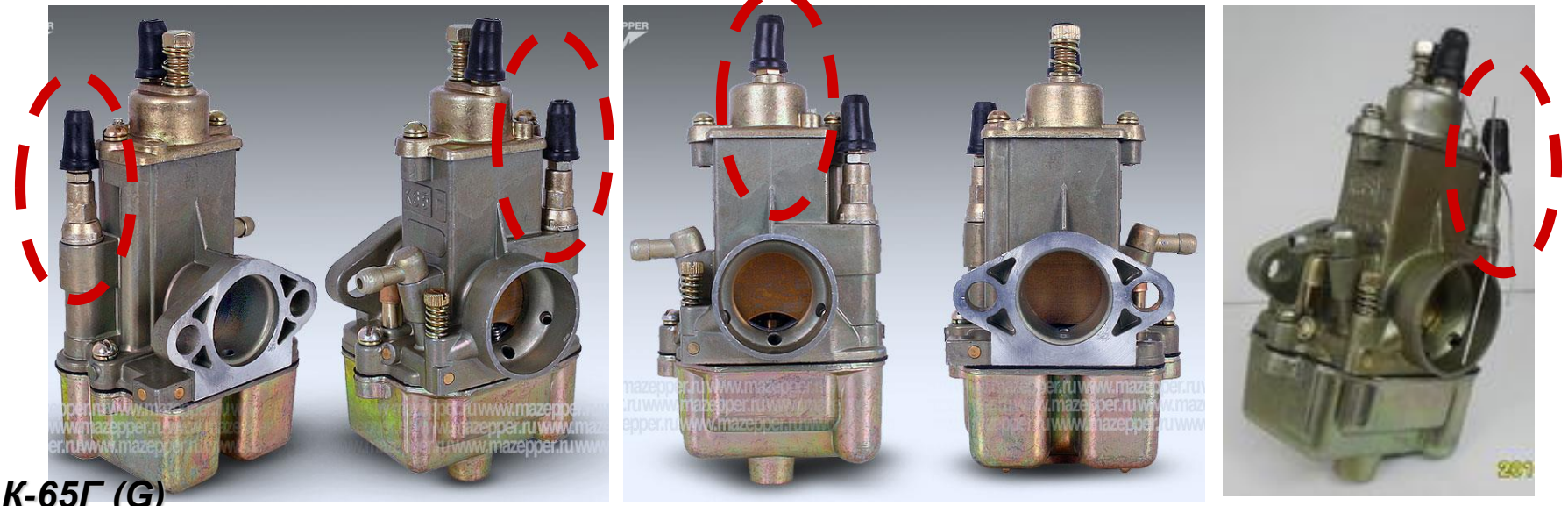
K-65C (S)





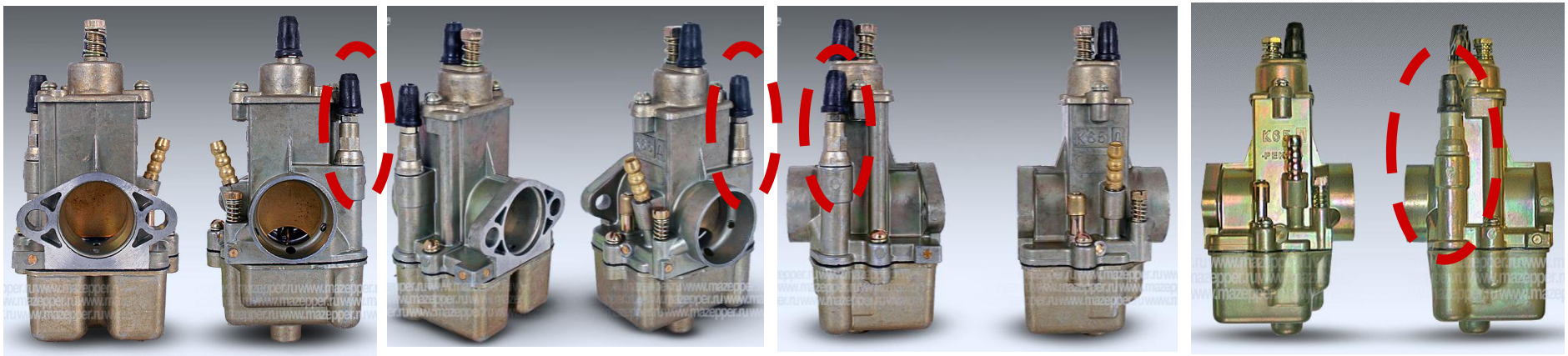
Both the K-65B and the K-65C use a twist handle to locally control the enrichener (corrector).

Карбюратор К-65Г (G) and К-65Д (D) Carburetors



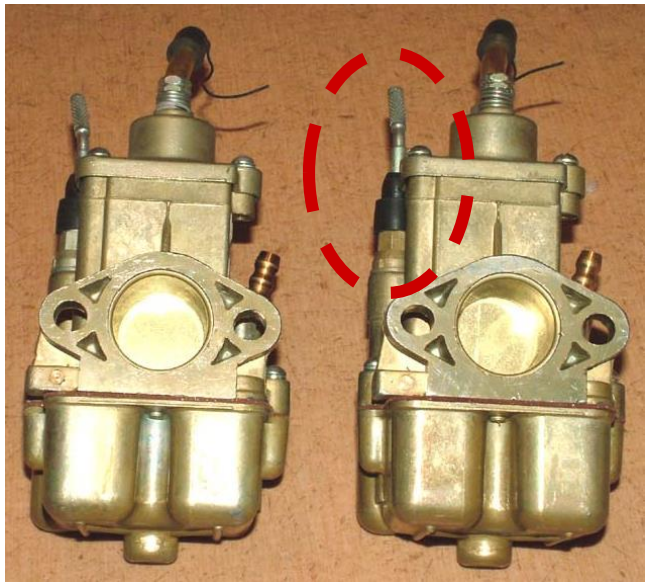
К-65Г (G)

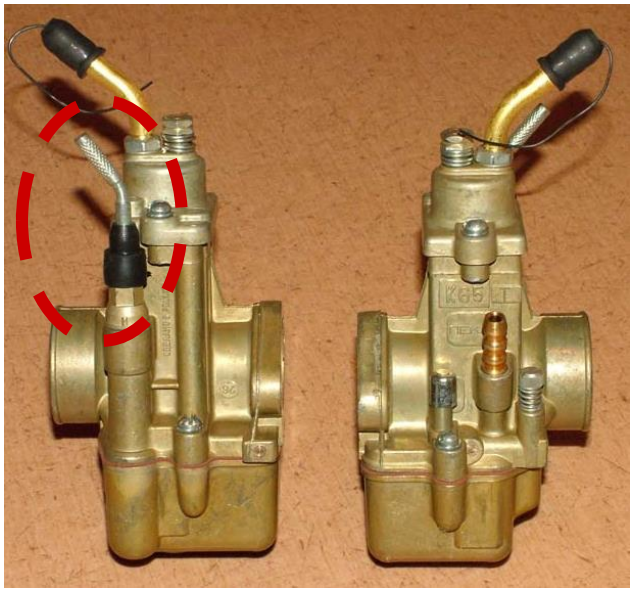
К-65Д (D)

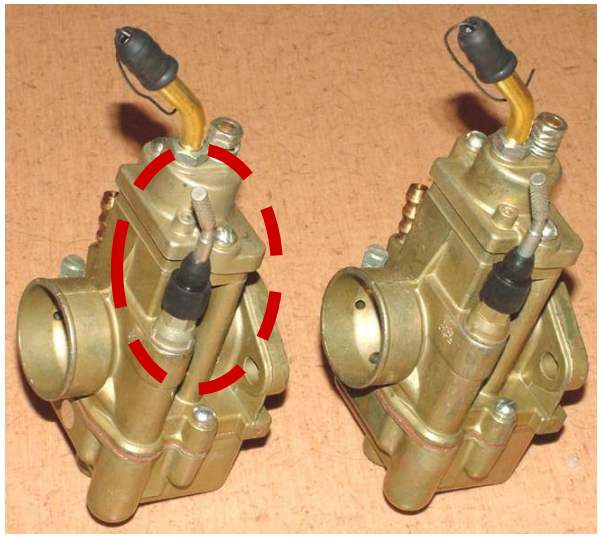


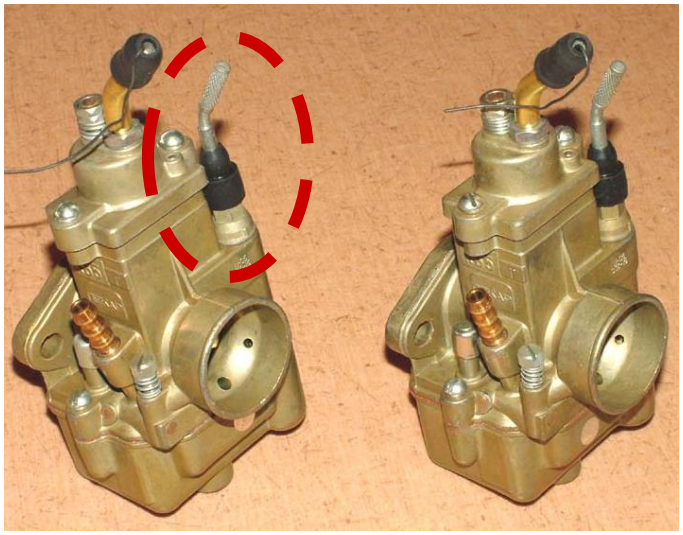
The control for the enrichener (corrector) of the gamma (Г) and delta (Д) versions of the K-65 carburetor is a cable that goes to a remote control.

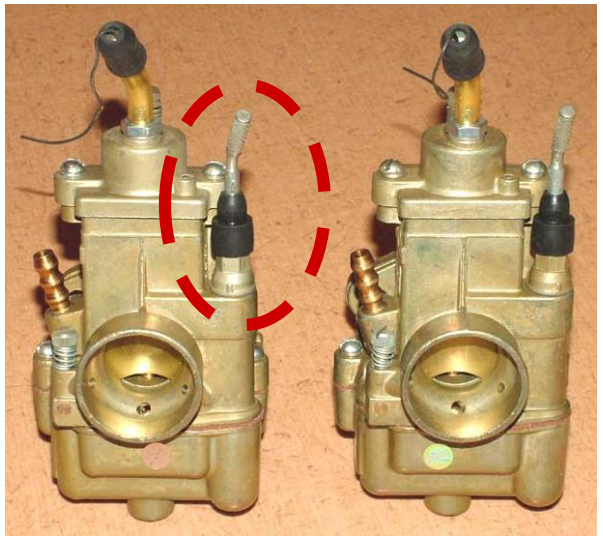
Карбюратор К-65Т (Т) with Local Choke Control
(90°Twist Knob on Enrichener)





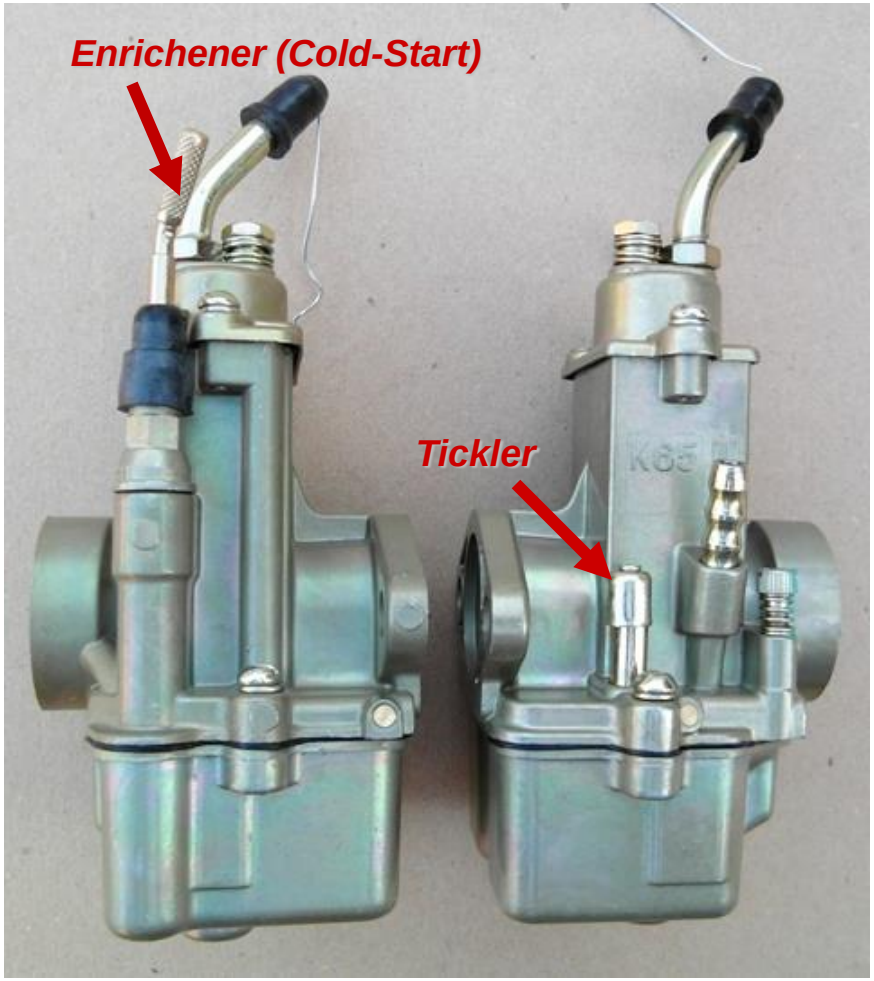


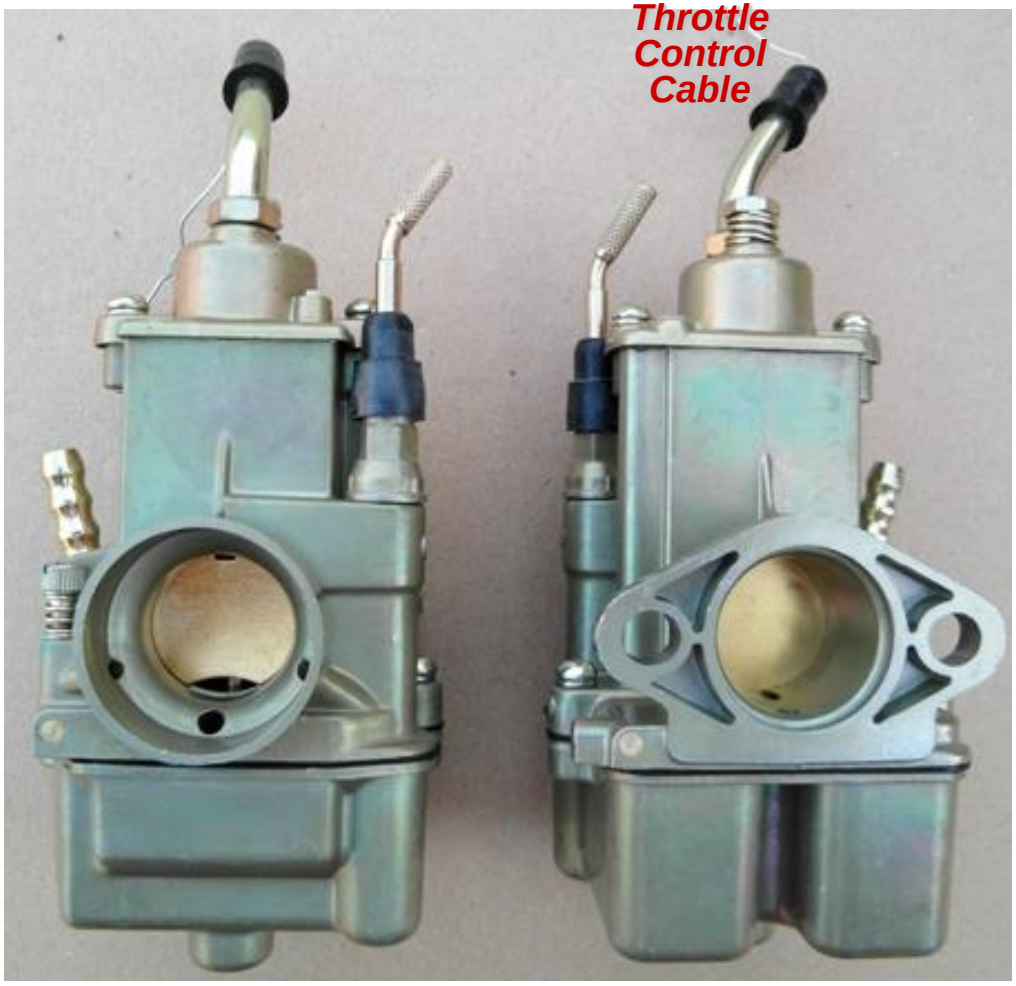




The control for the enrichener (corrector) of the "T" version of the K-65 carburetor is a twist handle.

K-65 Carburetors *(Made in China)*





Kaptex VDC-RAM Carburetor

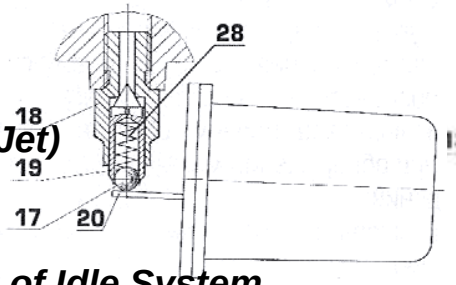
- Kaptex VDC-RAM Carburetor Is Ukrainian Copy of Pekar K-68
  - –Kaptex VDC-RAM Carburetor Not Made Anymore
    - When Kaptex Carbs Die, Replacements and Refurb Kits Will Not Be Sourced by the Factory
  - –Kaptex Is Just as Good as Original Russian Pekar K68 Carburetor
  - –Kaptex Has Metal Top/Cover, while Pekar K-68 Has Plastic Top/Cover
  - –Not To Be Confused with Chinese K-68 Copies
    - Chinese-Copies Look Like the Pekar K-68, but Poorly Fabricated
- Fully Interchangeable with K-301D, K-65T and K-68U Carburetors
- Parameters:
  - –Diameter of Mixing Chamber: 31.5 mm
  - –Diameter of Diffuser: 28 mm
  - –Main Jet: 190 mL/min
  - –Idling Jet: 50 mL/min
  - –Jet Launcher: 55 mL/min

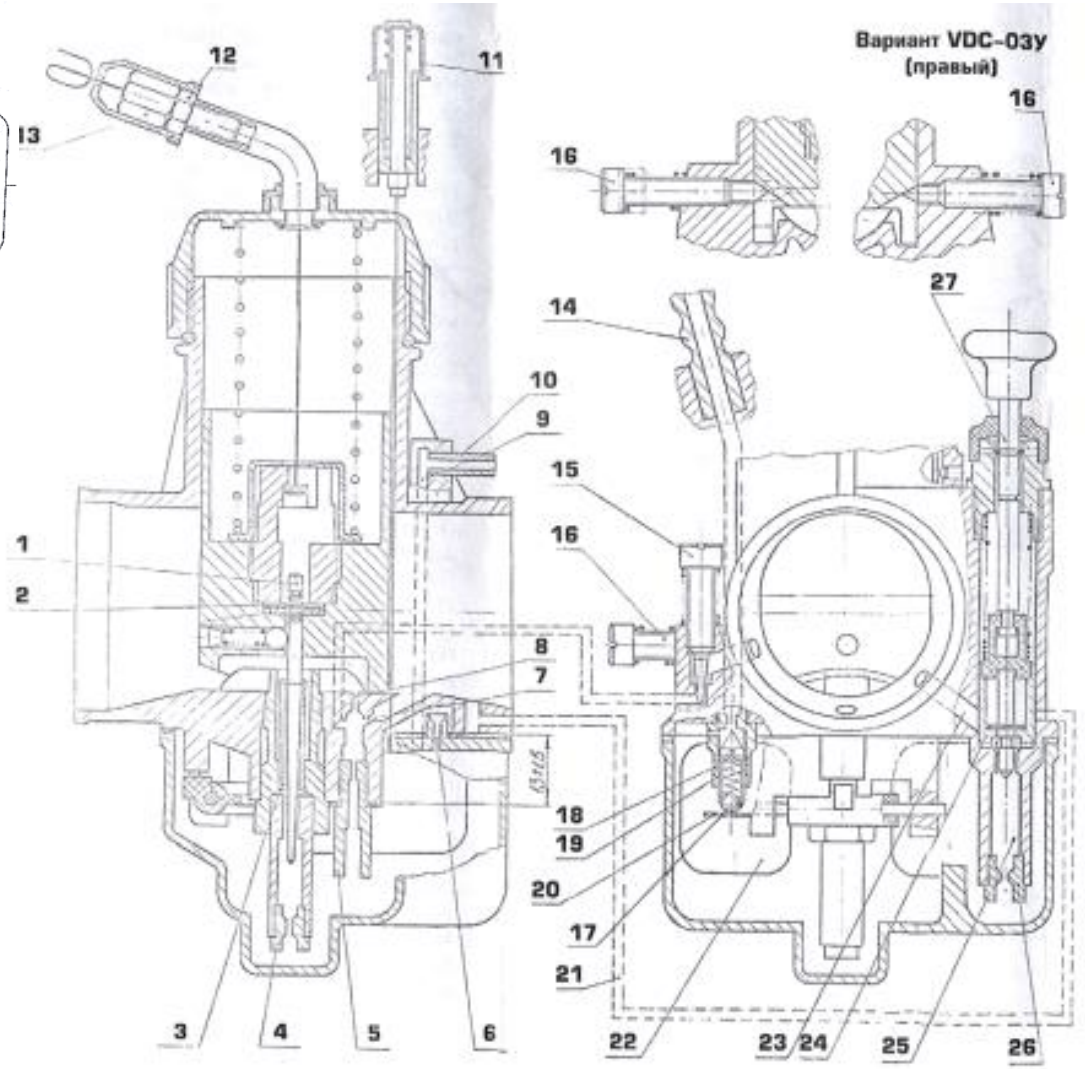
Kaptex VDC-RAM

Because the Kaptex is a copy of the Pekar K-68, many of the slides make a comparison and tune-up is the same.

Kaptex VDC-RAM Carburetor (moto-planeta.ru)

1 - Needle Valve
2 - Needle C-Clip
3 - Sprayer
4 - Main Fuel Nozzle (Jet)
5 - Idle Jet
6 - Drain Hole
7 - Idling Hole
8 - Transient Opening of Idle System
9 - Balance Channel of Float Chamber
10 - Balancing Port
11 - Enrichener “Tickler” Float
12 - Lock-nut
13 - Protective Cap
14 - Fuel Inlet Fitting
15 - Idle Mixture Adjustment Screw
16 - Idle Adjusting Screw
17 - Ball
18 - Fuel Valve Seat
19 - Needle Fuel Valve
20 - Adjust Float Element
21 - Channel of Starter
22 - Float
23 - Air Channel (Duct)
24 - Starter Plunger Assembly
25 - Fuel Channel
26 - Enrichener Needle
27 - Enrichener “tickler” (a.k.a. choke)
28 - Spring





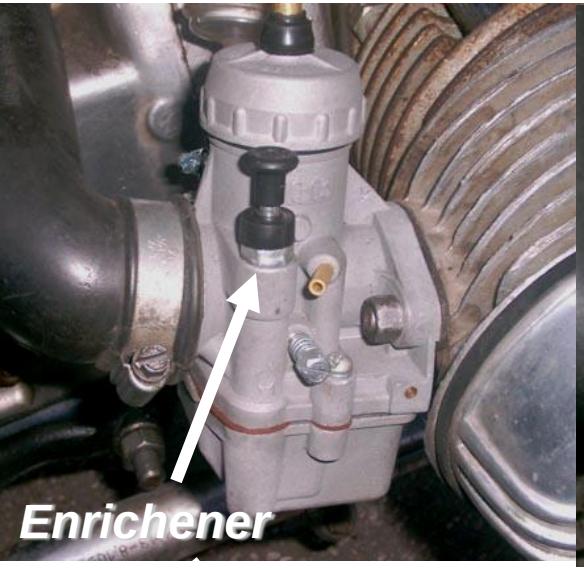
The Kaptex consists of four systems: (a) supplying and maintaining a constant level of fuel (14,17,18,19,20,22), (b) regulatory system of the combustible mixture; main (1,3,4) and idling (5,7,8,15,16), (c) unbalance and drain float chamber (6,9,10) and (d) starter enrichener float for cold starts (11,21,23,24,25,26,27).

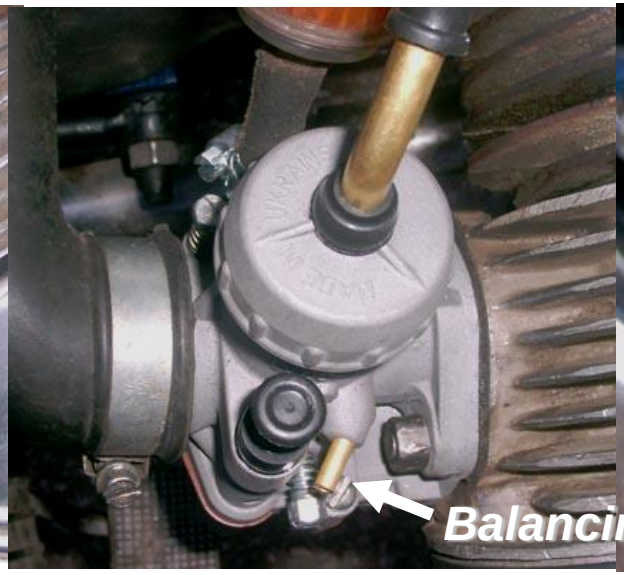
Identifying Kaptex Carbs in a Line-Up

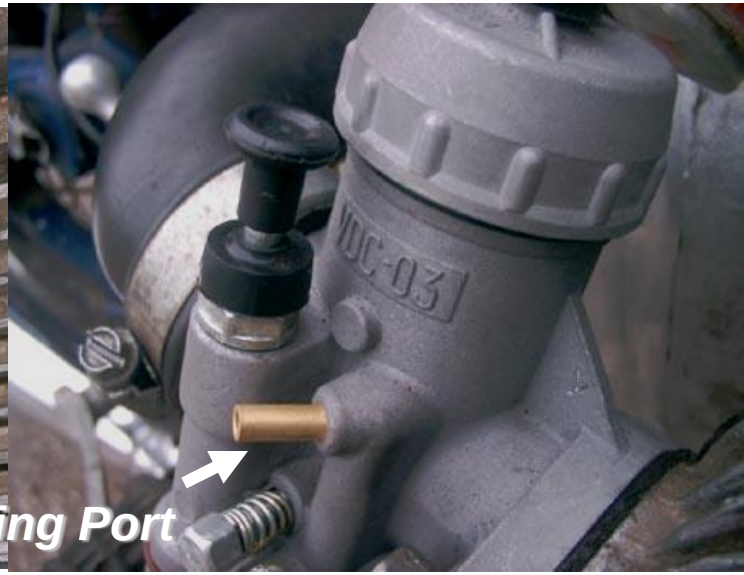
(Russian Iron Board Forum, Antoni Font, picasaweb.google.es)

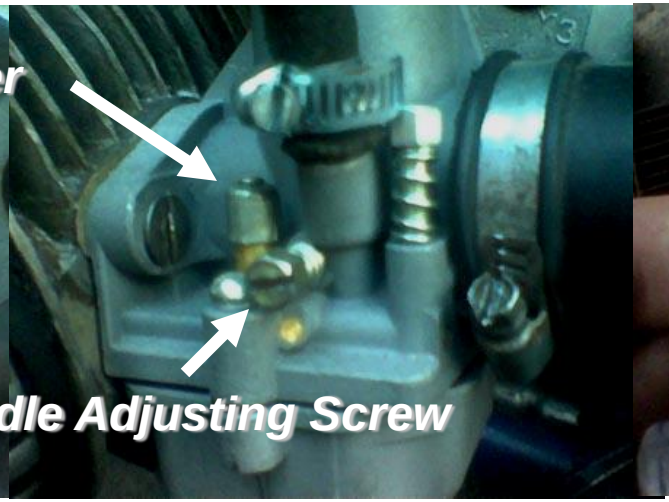
Kaptex has the metal top/cover, while the Pekar K-68 has a plastic top/cover.

Kaptex VDC-RAM Carburetor Close-Up
(www.oppozit.ru)



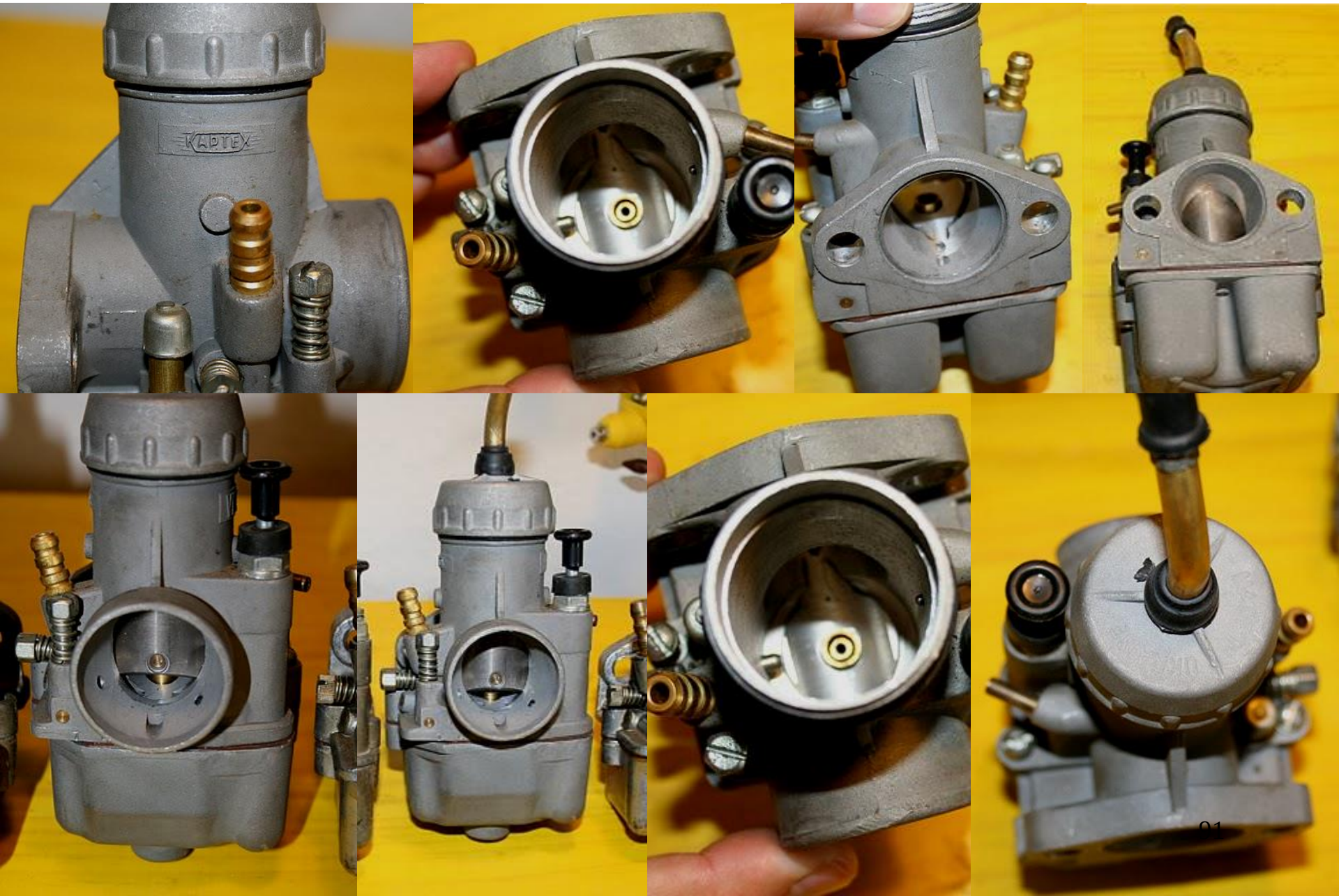






Close-Up of Kaptex VDC-RAM

(Russian Iron Board Forum, Antoni Font, picasaweb.google.es)



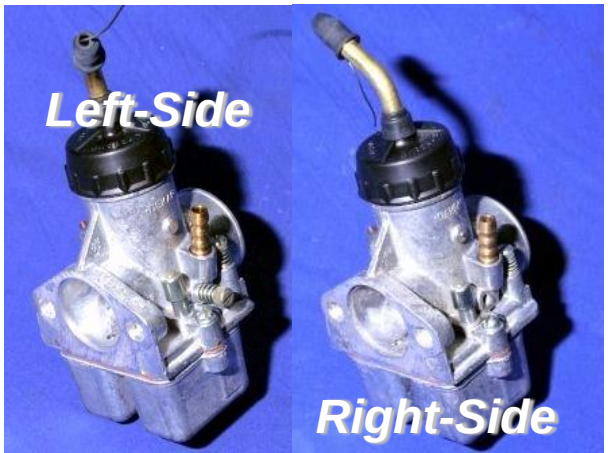
Break-Down of Kaptex VDC-RAM Carburetor

(Russian Iron Board Forum, Antoni Font, picasaweb.google.es)

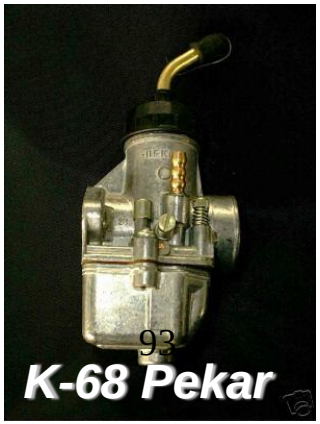
We will see that the components of the Kaptex VDC-RAM are very similar to those of the Pekar K-68.

K-68 Carburetors *(www.cossackmotorcycles.com/ural750.html)*

- *Common Carburetors Found on 750cc and Late 650cc Urals*
  - *1994 to 2000's*
- *K-68 Fits Any 650 cc Head*
  - *Except M-61 and M-62, where Two Bolts are Mounted Vertically*
  - *Need Simple Vertical -to- Horizontal Adapter Plate*
- *K-68U (K-68У in Russian) for 650cc, K-68T for 750cc*
  - *K-68U's Main Jet: 190, K-68T's Main Jet: 220*
- *K-68's Are Side-Specific (Left or Right)*
  - *Puts Adjustments on the Outside*
  - *Can Bolt Them Backwards and Won't Affect Performance*
- *Operation*
  - *Gives Better Results than Standard K-63 / K-65 / K-301 / K-302 Carbs*
  - *Similar to K-63 / K-65, with More-Robust Round-Slide Replacing Earlier Flat-Slide Throttle*
  - *Runs a Little Rich Most of the Time, So Economy Is Not Best*
  - *Requires Frequent Adjustment to Stay Perfectly Tuned*
- *Still in Production in Russia, so Repair Kits Are Available*

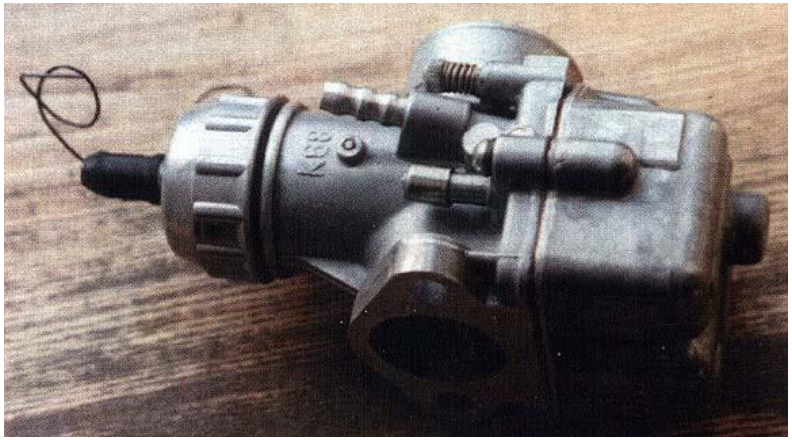


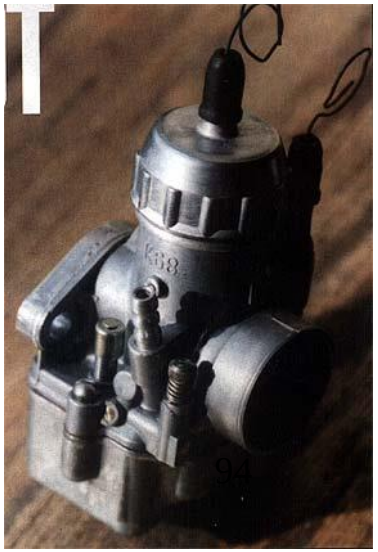
K-68U



K-68 Carburetors

- *Basic Systems and Devices:*
  - *System for Supplying and Maintaining Constant Level of Fuel in Float Chamber*
  - *Idle System with Adjustable Composition and Quantity of Combustible Mixture*
  - *Main Dosing System with Adjustable Air-Fuel Mixture*
  - *Start-up and Warming System*
  - *Devices for Correcting Position of Throttle Needle in Axial and Radial Directions*
  - *Device for Fastening the Throttle Cable Coaxially with the Throttle*
  - *Fitting and Channels of Ventilation System of Float Chamber*
- *Specifications:*
  - *Diameter of Mixing Chamber: 31.5 mm*
  - *Diameter of Diffuser (Bore at Flange): 28 mm*
  - *Fuel Jet Capacity: 190 ml/min (K-68U) for 650cc, 220 ml/min (K-68T) for 750cc*
  - *Dimension: 77.5 X 81 X 189 mm*
  - *Weight: 0.55 kg*





K-301 to K-63 thru K-68 Carburetor Transition

(www.cossackmotorcycles.com/dnepr.html)

- *Famously Awful K-301 Carburetor*
- *Standard on MT-9 and MT-10.36 Dneprs*
- *Standard on M-63 and M-66 Urals*
- *If They Work, You're One of the Few Lucky People*
- *Main Problem: Worn-Out in a Surprising Short Time*
- *One Solution: Replacement Pair of Re-conditioned K-301's*
- *Better Solution: Fit Just about Any Other Carb*

K-301

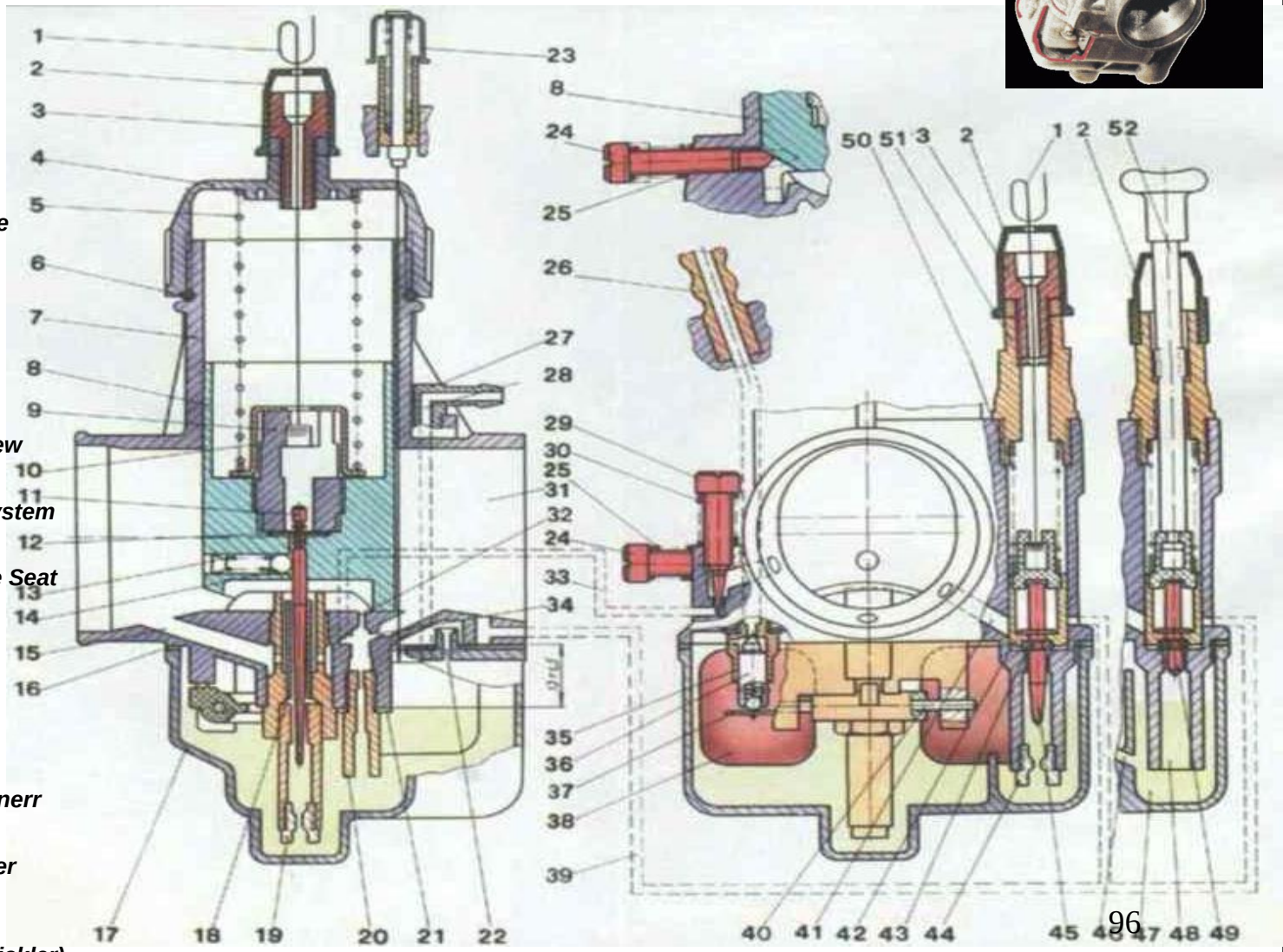
K63/K65

- *K-63 / K-65 Series*
- *Ok, If You Don't Mind Setting and Adjusting Carbs Every Other Week*
- *K-65 Will <u>Not</u> Fit Directly on a Bike Which Originally Had K-301's. Needs Adapter Plate (vert.-to-horiz. mtg)*

The common carburetors found on 650cc Russian motorbikes were the K-301's and K-302's. The K-301 went through several iterations before the K-302 came along. Then MT-11/MT-16's were fitted with K-63T's.

K-68 Assembly Diagram

1. Throttle Cable
2. Protective Cap
3. Cable Guide
4. Throttle Cover
5. Throttle Spring
6. O-Ring Seal
7. Housing
8. Slide Throttle
9. Cable Catch
10. Cable Stop
11. Throttle Needle
12. Needle Lock
13. Spring Pre-load Needle
14. Slide Ball
15. Air Channel Main System
16. Chamber Cover Gasket
17. Cover of Float Chamber
18. Sprayer
19. Main Fuel Jet
20. Idle Atomizing (Dosing) Tube
21. Lock Washer
22. Drain Hole
23. Float Activator (Tickler)
24. Idle Adjusting Screw
25. Screw Spring
26. Fuel Inlet Fitting
27. Balancing Port
28. Balance Channel of Float Chamber
29. Idle Mixture Adjustment screw
30. Screw Spring
31. Mixing Chamber
32. Transient Opening of Idle System
33. Air channel of Idle System
34. Idling Hole
35. Removable Brass Fuel Valve Seat
36. Fuel Valve Assembly
37. Float Element Adjust
38. Float
39. Channel of Starter
40. Float Axle
41. Air Channel (Duct)
42. Starter Plunger Assembly
43. O-Ring Seal
44. Jet (Nozzle)
45. Needle of Corrector-Enrichenerr
46. Dosing Hole
47. Fuel Well (Pit)
48. Fuel Channel (Duct) of Starter
49. Starter Needle
50. Plunger Spring
51. Spring Guide
52. Enrichener (a.k.a. choke or tickler)



Features of K-68 Compared to Previous Versions (K-63 / K-65)

(oppozit.ru and afto.chat.ru/k68/k68.htm)

- Basic Components (Housing, Throttle, Cover, Bowl) Made of Cast Aluminum Alloy
  - Carburetor Weighs Only 0.55 kg (Half the Weight of Previous Carbs)
- Surface Contacts and Throttle Shaft Carefully Processed and Wear-Resistant Coating Applied
- Throttle Spring (5): Rests on Lower Wall of Throttle with Increased Length and Number of Turns
- Increased Air Velocity and Smoother Speed Control in Diffuser
  - Adopted Oval Shape, Elongated in Direction of Movement of Throttle
- Dispensing (Throttle) Needle (11): Half Shorter and Attached to Lower Wall of Throttle Valve and Further Tightened in Direction of the Engine
- Special Spring (13) with Slide Ball (14): Provides for Correction of Its Position in Increments of 0.8 mm.
- Upgraded Fuel Valve Assembly (36) and Removable Brass Seat (35): Increased Reliability and Improved Maintainability
- Idle Adjusting Screw (24): Positioned Horizontally and Rests on Inclined Plane (8) at Bottom of Throttle
  - Allows More Precise and Smooth Adjustment of Idling Speed
- Carburetor Equipped with Balancing System: Consisting of Set of Channels (ducts) Connecting Float Chamber with the Atmosphere
  - Ensures the Chamber (at the entrance to the metering system) Constant, which Is Close to Atmospheric Pressure
- Balancer System: Equipped with Fitting that Allows Drainage Hose of Surplus Fuel (for example when using quencher) to a Backup Capacity, and Not on the Ground
- Float Chamber with All the “filling", Except for Fuel Valve, Remained Unchanged
- Unchanged dresser (start) device, which comes in four versions - with cable or self-propelled, with a separate fuel pit 47 or without it. In the second case the fuel nozzle is limited to 44. There is also a version of the carburetor Without any additional trigger device.
- Adjusting Carburetor on an engine similar to the regulation of K-65, except, perhaps? Another location screw lift the throttle
- Tests Showed K-68 Is More Economical by 15-20% and Durable than Predecessors

The model K-68 has an advanced design and give better result than the K-65 or K301-302. It has a ellipse-shape throat, cylindrical throttle, central float chamber, and protective electro-plating of parts. All the main parts of the carburetor (body, throttle, float chamber) are aluminum alloy.

К-68(Х)-1107010 Characteristics

Carburetor (Карбюратор)	К-68А (А)	К-68Д (D)	К-68И (I)	К-68М (М)	К-68Р (Р)	К-68Т (Т)	К-68У (U)	К-68Ч (Н)
Motorcycle	IZH-6.113-03	IZH-Jupiter	IZH-Planeta	IZH 6.902	Snowmobile "Lynx"	"Ural"	"Ural"	"IL-Chopper"
Air Intake Cone Diameter	28 mm	28 mm	32 mm	32 mm	32 mm	28 mm	28 mm	28 mm
Mixing Chamber Diameter	31.5 mm	31.5 mm	35 mm	35 mm	35 mm	31.5 mm	31.5 mm	31.5 mm
Capacity of Fuel Nozzle	250 ml/min	250 ml/min	280 ml/min	320 ml/min	370 ml/min	220 ml/min	190 ml/min	240 ml/min
Weight	0.55 kg	0.55 kg	0.55 kg	0.55 kg	0.55 kg	0.55 kg	0.55 kg	0.55 kg
Size (mm)	77.5X81X155	77.5X81X155	77.5X81X157	77.5X81X157	77.5X81X144	77.5X81X189	77.5X81X189	77.5X81X155
Enrichener (Corrector) Control	Remote	Remote	Remote	Remote	Remote	Auto	Auto	Remote

Notes: 1. Kaptex VDC-RAM Carburetor is a Ukrainian copy of the Pekar K-68.

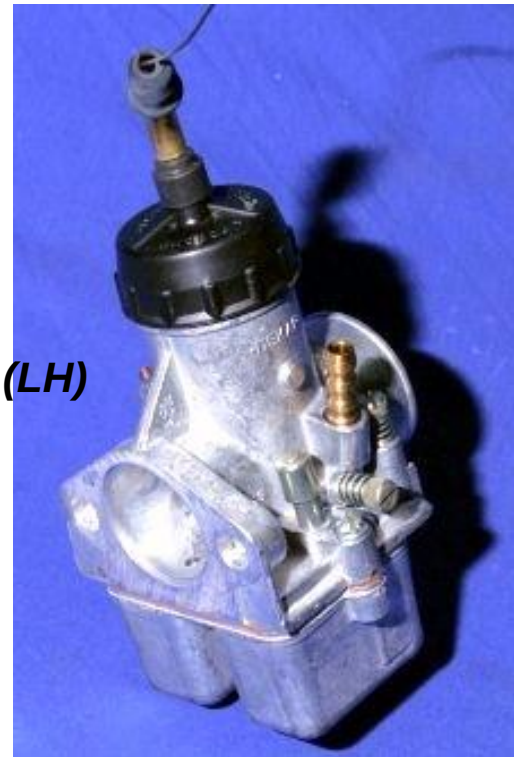
Engine	IMZ Part #	Carburetor
650cc	IMZ-8.103-15001	K-68Y RH
650cc	IMZ-8.103-15002	K-68Y LH
750cc	IMZ-8.108-15001	K-68T, RH
750cc	IMZ-8.108-15002	K-68T, LH

Of all the versions of the K-68 carburetor, The K-68У (U) was designed for the 650cc engine, whereas the K-68T (T) was installed on the 750cc engines. They are the only two versions with the "local" control of the "starter" enrichener (corrector) lever.

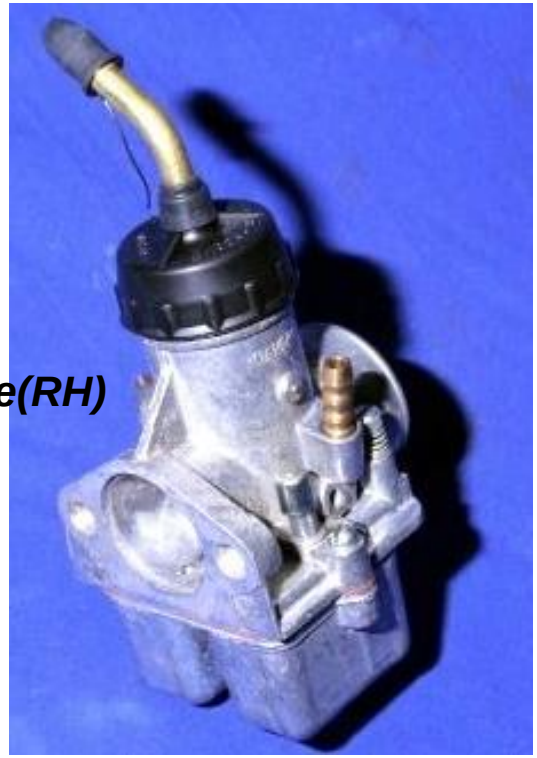
K-68Y vs. K-68T Carburetors

Engine	IMZ Part #	Carburetor
650cc	IMZ-8.103-15001	K-68Y RH
650cc	IMZ-8.103-15002	K-68Y LH
750cc	IMZ-8.108-15001	K-68T, RH
750cc	IMZ-8.108-15002	K-68T, LH

Left-Side (LH)

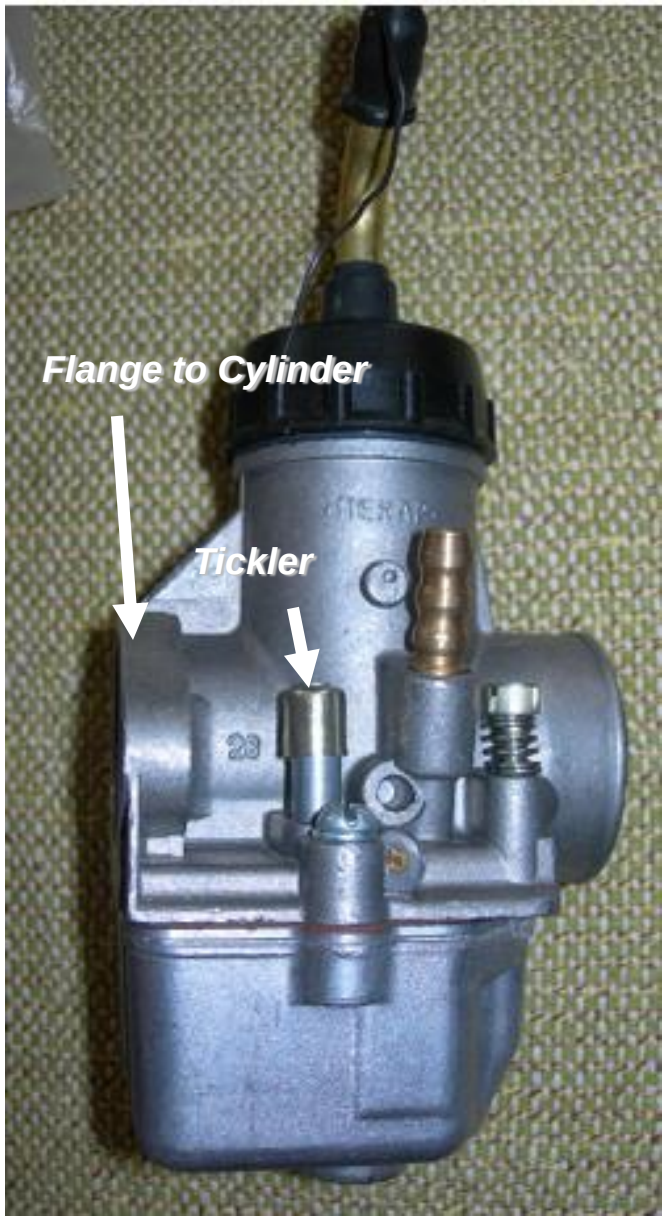


Right-Side(RH)

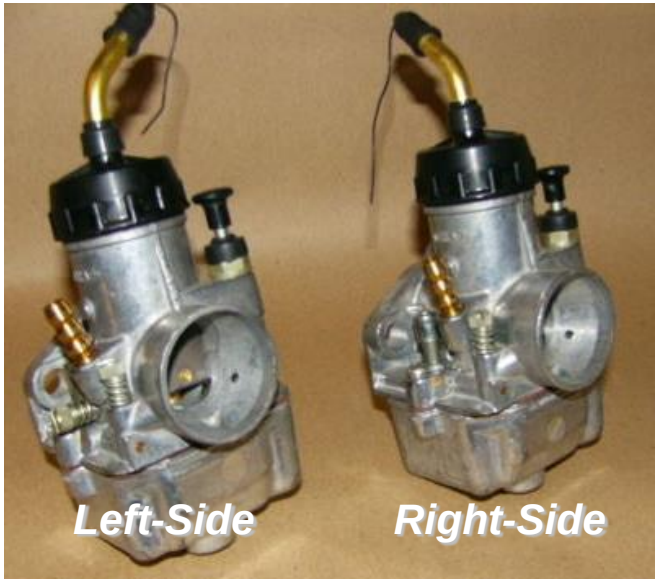


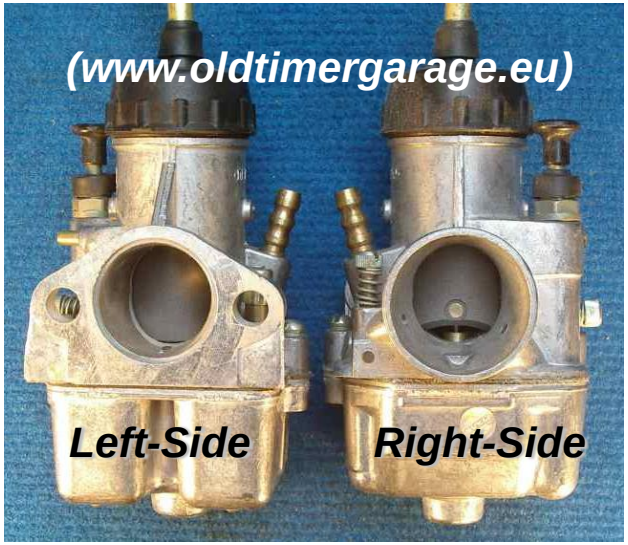
The K-68Y was designed for the 650cc engine, whereas the K-68T was installed on the 750cc engines,and is still available at Ural stores for the Dnepr MT-11 and MT-16.

K-68 Pekar Carburetors



K-68 Carbs

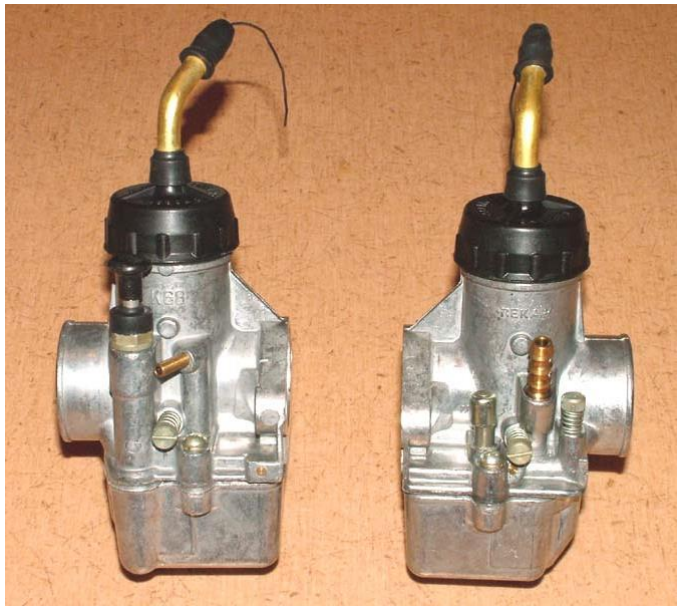




K-68s are side-specific (left or right), always putting the adjustments on the outside.

Typical Pair Carbs K-68Y L/R (www.russiangarage.com)

- *One-Barrel Carburetor with Horizontal Stream of air-fuel mixture*
- *Ellipse-Shaped Throat*
- *Cylindrical Throttle Valve*
- *Central Float Chamber*
- *Protective Electro-Plating of Parts*
- *All Main Parts of Carb (body, throttle, float chamber) Made of Aluminum Alloy*
- *100% Brand NEW*
- *Made by PEKAR (Russia)*



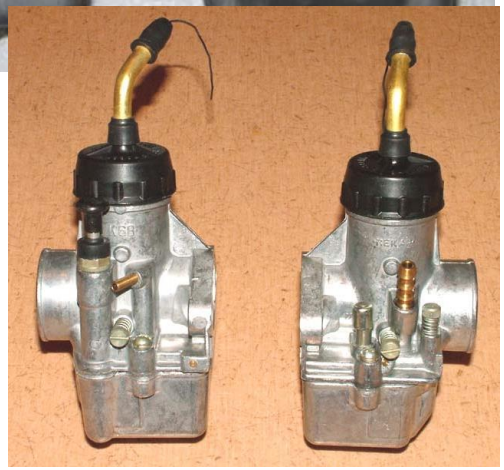
K-68U (K-68Y in Russian) Carburetors for 650cc vs. K-68T for 750cc Engines

K-68 Carburetors

Pekar

Mixture Control Screw

Mixture Control Screw



The body of K-68's are right and left-hand specific, which allows the mixture control screw to be on the outside in each case.

Pekar K-68У (1107010) for 650cc

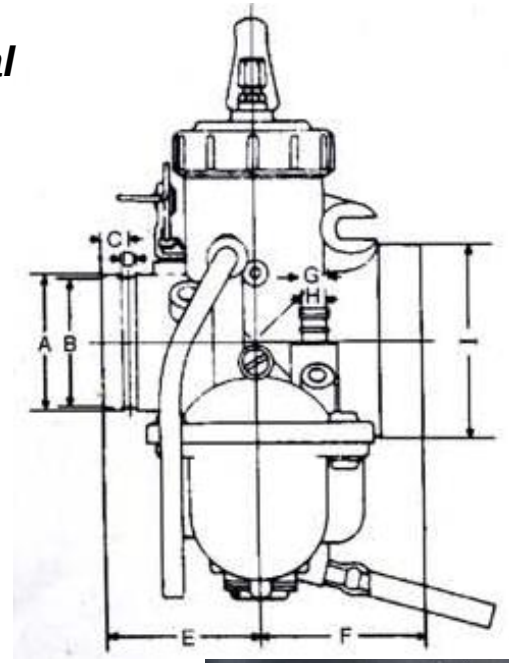
Mikuni VM-28 Round-Slide Spigot

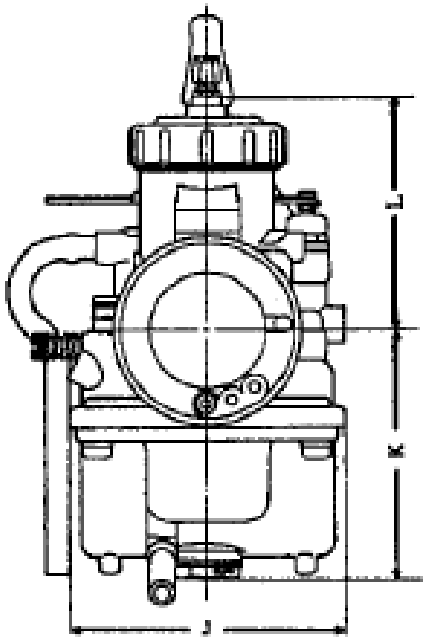
- *28 mm Mikuni VM Was Standard Issue for 650cc '98 US Import Versions for Ural*
- *Added to Satisfy US EPA Requirements*
- *Every Ural Is Shipped Lean from the Factory*
  - *–Re-Jet with 120 to 125 Main and 40 to 42.5 Pilot Jet*
- *Product Information*
  - *–Left-Side Idle Screw*
  - *–Right-Side Air Screw*
  - *–Left-Side Lever Choke (can be converted to right side)*
  - *–35 mm OD Intake Spigot Fitting*
  - *–44 mm Filter Fitting*
- *VM-28 Round-Slide No Longer Manufactured by Mikuni*
- *Ural Changed to Keihin Seiki L22AA for US Imports in 2000*

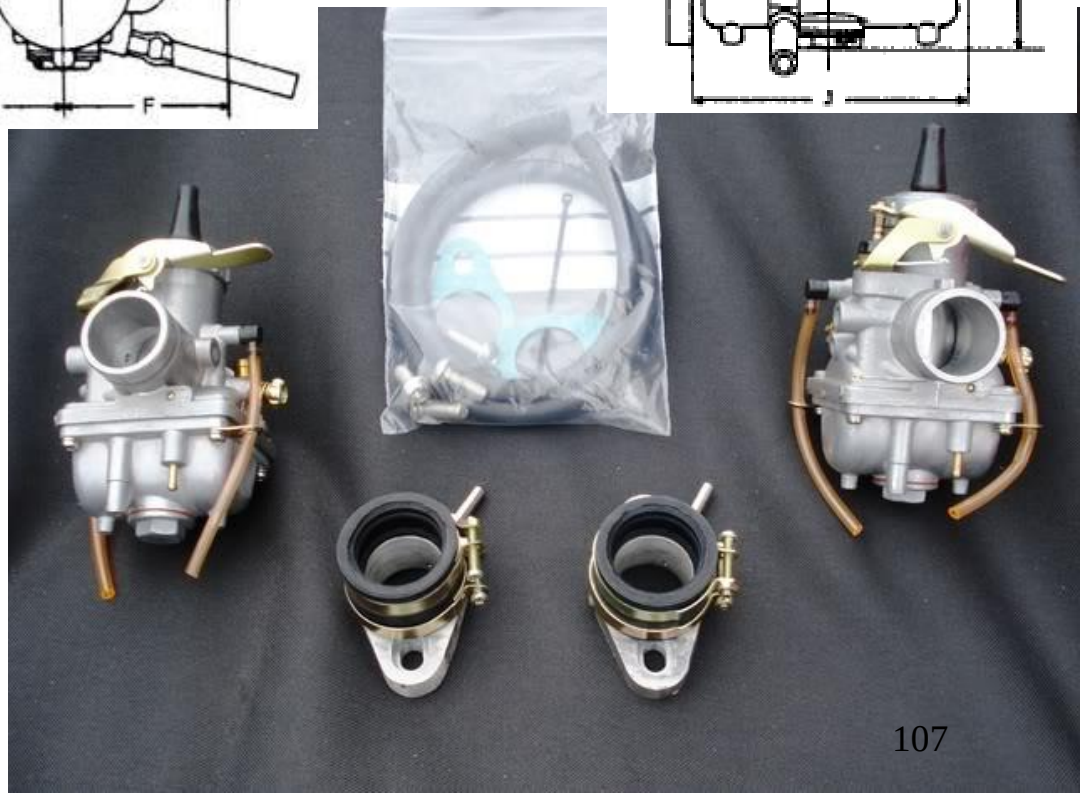
The 28 mm Mikuni VM was standard-issue for 650cc '98 US import versions for Ural until 2000, when Keihin took over.

VM-28-49 28 mm Round-Slide Carburetor

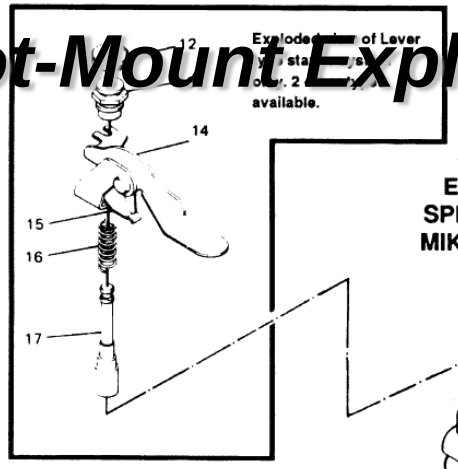
- *VM28-49 in 1998 Ural Manual*
- *Main Jet: 4/042 #200*
- *Pilot Jet: VM22/210 #60*
- *Needle Jet: N-8 #169*
- *Jet Needle: 5F21*
- *Throttle Valve: VM28-56 2.5*
- *Main Air Jet: BS30/97 0.5*
- *Needle Valve: VM26/26 2.5*
- *Dimensions:*
  - *–A: 35 mm*
  - *–B: 33 mm*
  - *–C: 10 mm*
  - *–D: 4 mm*
  - *–E: 49 mm*
  - *–F:44 mm*
  - *–G: 7 mm*
  - *–H: 6 mm*
  - *–I: 44 mm*
  - *–J: 72 mm*
  - *–K: 66 mm*
  - *–L: 54 mm*
  - *–Total Width: 72 mm*
  - *–Throttle Adjuster: Left*
  - *–Air Screw: Right*
  - *–Weight: 0.55 kg*
  - *–Material: Aluminum*
  - *–Float Height: 15-17 mm (0.59-0.66”)*
- *VM28-49 Manufacture Discontinued*





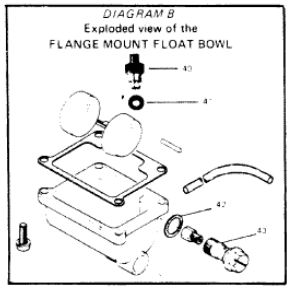


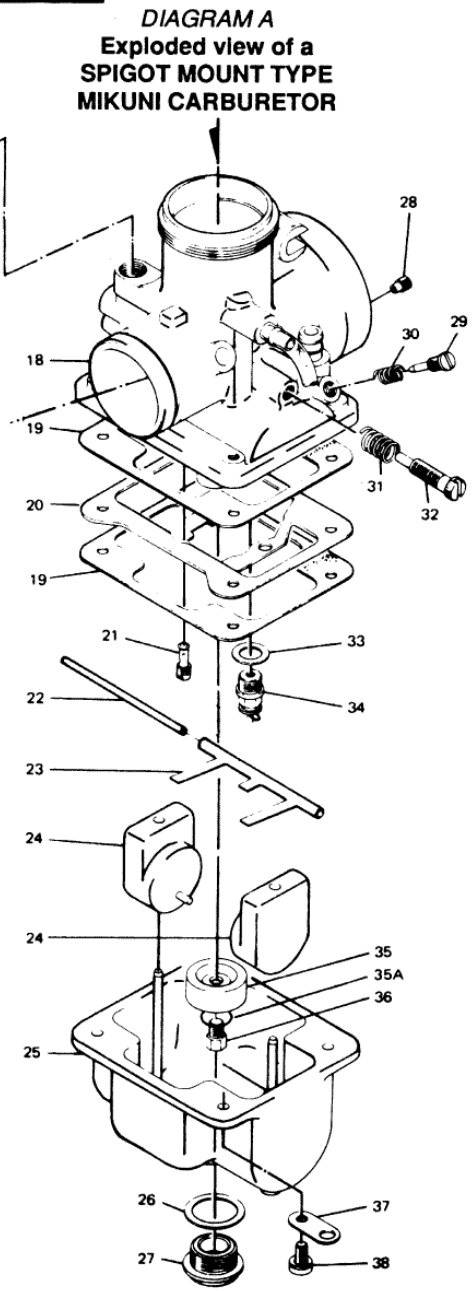
VM Spigot-Mount Exploded View *(1998 Manual)*

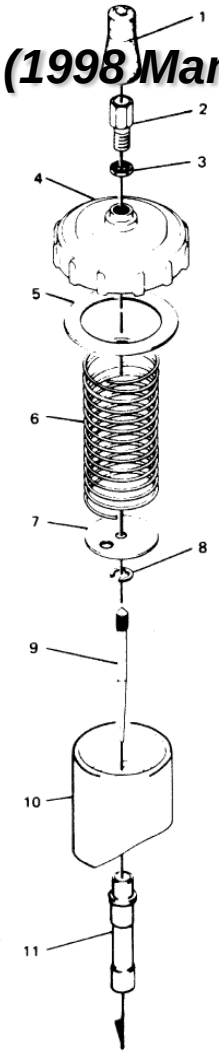


Exploded View

(not all parts listed are available)



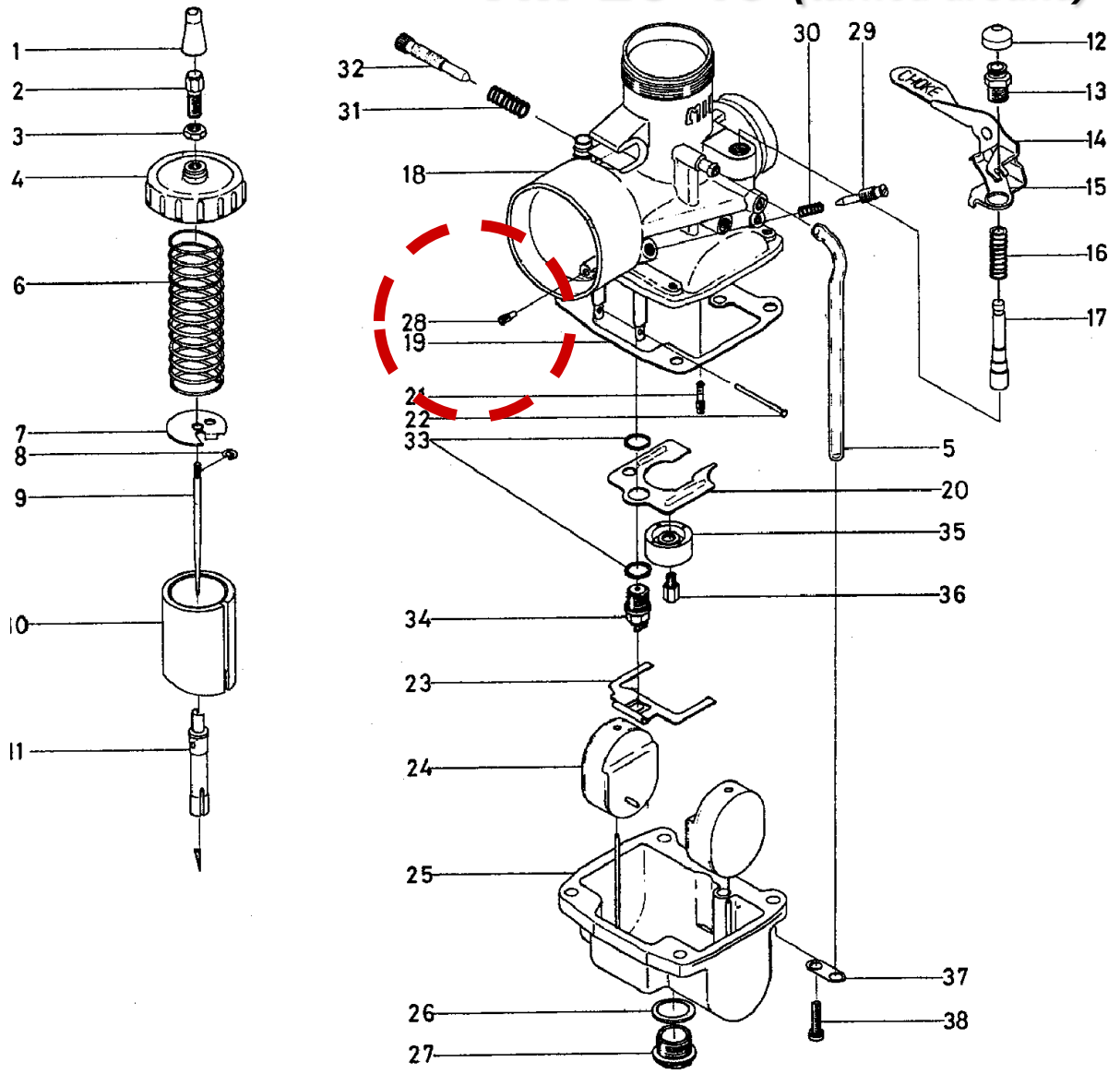




VM28 Spigot (http://www.sudco.com/Carburetor/SudcoMikuniCatalog.pdf)

Description	*Mikuni Part #*
1. Rubber Cap, Throttle Cable	VM26/46
2. "A" Cable Adjuster (7mm)	VM28/256
3. Locknut, Cable Adjuster	B30/247
4. Top, Mixing Chamber	VM26/56
5. Gasket, Mixing Top	Gasket comes with each VM Mixing Chamber Top
***6.* Spring, Throttle Valve**	VM28/58
7. Plate, Spring Seat	VM28/132
8. Needle Positioning Clip	***VM20/369***
9. Jet Needle	#5 Series (5DP7, 5F21, 5F3, 5L1)
10. Throttle Valve (Slide) Pg.131-132	**VM28/56**
***11.* Needle Jet**	#169 Series
***12.* Rubber, Starter Plunger**	VM20/455
13. Fitting, Starter Plunger	***VM26/116***
14. Lever, Starter	***VM28/124***
15. Spring Plate, Starter Lever	VM32/17
16. Starter Plunger Spring	***VM16/42***
17. Starter Plunger	Not Used
18. Mixing Chamber Body	Not Available Separately
19. Float Bowl Gasket	VM28/129
20. Float Bowl Baffle Plate	VM34/72
21. Pilot Jet	VM22/210
22. Float Arm Hinge Pin	BV26/22
23. Float Arm	VM28/166
24. Float (Independent, Type A)	VM28/164
25. Float Bowl	Not Available Separately
26. Main Jet Plug Washer	VM28/134
27. Main Jet Plug (Drain Plug)	VM28/133
28. Air Jet	BS30/97
29. Air Adjusting Screw	VM20/214
30. Air Adjusting Screw Spring	M12F/46A
31. Idle Adjusting Screw Spring	M20/221
32. Idle Adjusting Screw	VM24/224
33. Needle Valve Washer	VM26/25
34. Needle Valve Set (Needle Valve & Seat Assembly)	**VM26/26 All Needle Valve seats for VM series are thread-in type. See Chart**
35. Main Jet Ring	VM28/228
35A. Main Jet Washer	VM15/80A
36. Main Jet	4/042 Series
37. Vent Tube Anchor Plate	VM15/164
38. Float Bowl Screw (4x16mm)	VM20/416
39. Main Jet Extender	***Not Used***
40. Needle Jet Setter	***VM32/04***

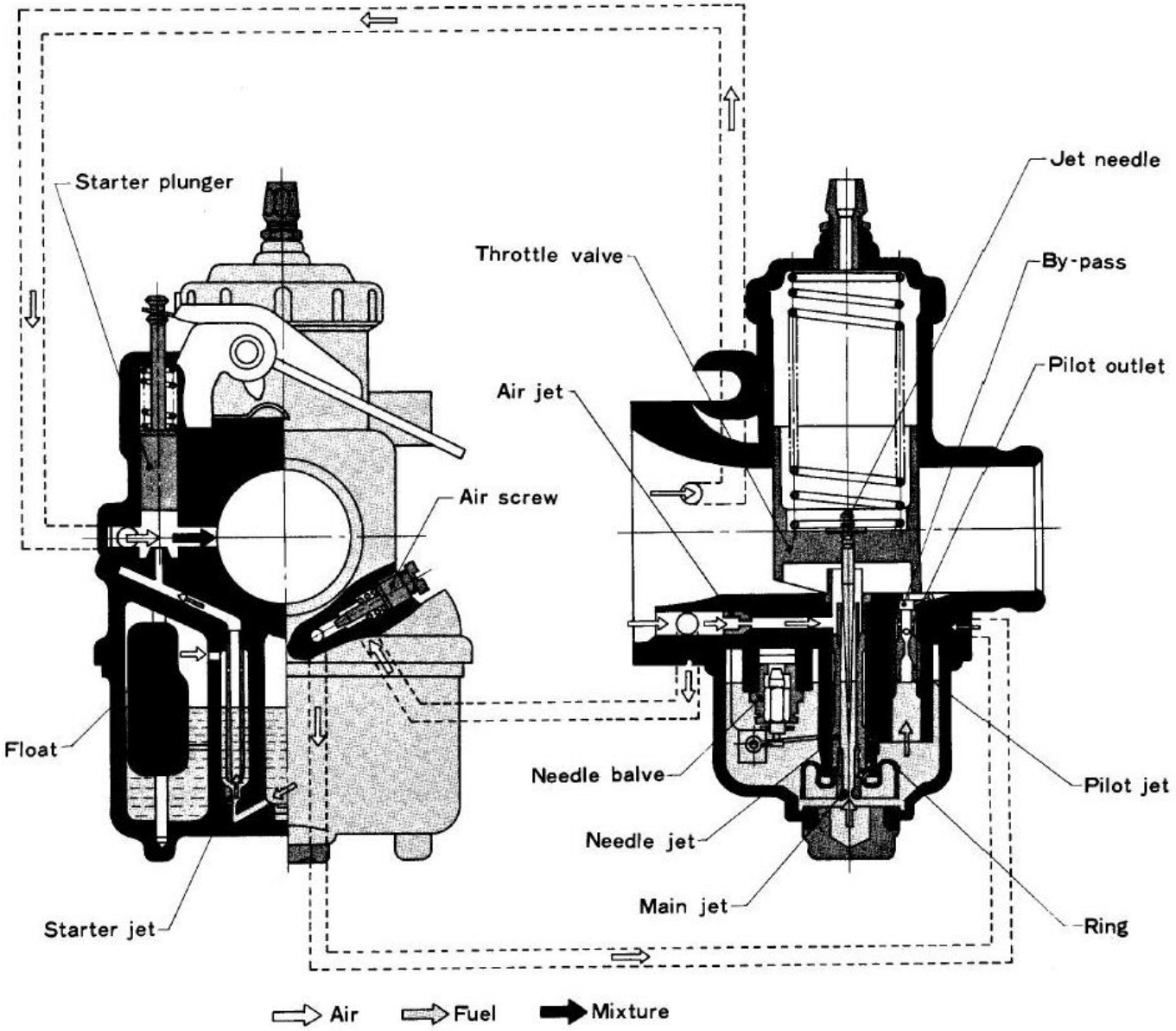
VM-28-49 *(turned-around)*



1. Rubber Cap, Throttle Cable
2. Cable Adjuster
3. Locknut, Cable Adjuster
4. Top, Mixing Chamber
5. Tube, Air Vent
6. Spring, Piston Valve
7. Plate, Needle Retainer
8. "E" Ring
9. Jet Needle
10. Piston Valve
11. Needle Jet
12. Rubber Cap, Starting System
13. Cap, Starter Plunger
14. Lever Assy, Starting System
15. Leaf Spring, Lever Positioning
16. Spring, Starter Plunger
17. Plunger, Starting System
18. Body, Mixing Chamber
19. Gasket, Float Chamber
20. Baffle Plate, Float Chamber
21. Pilot Jet
22. Pin, Float Arm Hinge
23. Float Arm
24. Float
25. Float Chamber
26. Washer, Float Chamber Plug
27. Plug, Float Chamber
28. Air Jet
29. Air Screw
30. Spring, Air Adjusting Screw
31. Spring, Idle Adjusting Screw
32. Screw, Idle Adjusting
33. Washer, Needle & Seat Assy
34. Needle & Seat Assy
35. Cup, Fuel Retaining
36. Main Jet
37. Plate, Vent Tube Retaining
38. Screw, Float Chamber

Vance Blosser reported finding "one last shiney brass piece," which is often missed. It is listed as an "air jet" part # 28 on the above diagram. It is hidden down a small hole on the very bottom of the inlet side of the carb, and takes a very narrow screwdriver to remove.

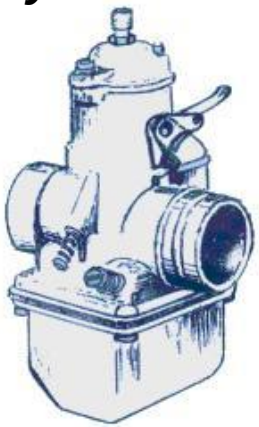
1998 Ural Manual *(650cc, 28 mm Mikuni)*



The arrows show the direction in which air, fuel, or air/fuel mixture flow.

Jikov 2928CE Carburetor (www.cossackmotorcycles.com/ural650.html)

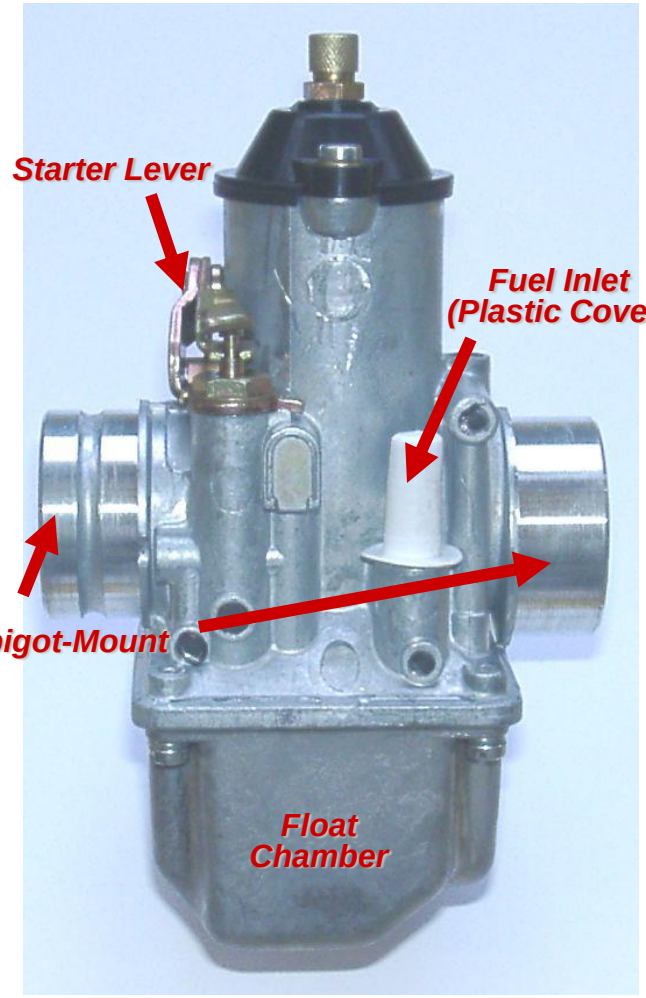
- Jikov 2928CE Replaced Dreadful Russian K-301 / K-302 Carburetors
  - –Fitted on 1998-to-2000 Urals (650cc) Exported to United Kingdom
  - –Used on Ural IMZ-8.1030 / IMZ-8.1230 / IMZ-8.401
  - –Central Float Chamber to Reduce Foaming and Sloshing of Fuel
- Used on Java-638, 639, 640 and 688; Voskhod-SM and IZH-Jupiter-5-01
- Nice Carb, Mixes Fuel Well, Even Power-Delivery and Good Economy
- Few Spares Available Today
- Manufactured in Czechoslovakia
- Properties
  - –Bore: 24 mm diameter
  - –Main Fuel Jet (Nozzle):
    - Jawa 638 and 639: 92 (0.92 mm)
    - Jawa 640: 100 (1.0 mm)
    - Jawa 688: 90 (0.9 mm)
    - Voskhod-ZM (“Sunrise”): 88 (0.88 mm)
  - –Enrichener (Choke) Starting Jet (Nozzle) (a.k.a. auxiliary system)
    - Originally (1972): 65 (0.65 mm) “Sunrise” to 72 (0.72 mm) Jawa
    - Later (Post 1985) Replaced with 85 (0.85 mm) Jet
    - Air Intake (duct) System for Starting Jet (Nozzle): 120 to 140 (1.2 to 1.4 mm)
  - –Idle Jet (Nozzle): 40 (0.4 mm)
  - –Channel Idle Mixture: 80 (0.8 mm)
  - –Idle Mixture Screw Position: 1-1/2 turns
  - –Location of Needle Jet: 2nd groove from the top
  - –Ekonostat Jet (Nozzle): 50 (0.50 mm)



Float Chamber in Vertical Axis, Not Mounted on the Side, as in K-37 and K-301 Carbs

The Jikov 2928 carburetor (карбюратор) is Czechoslovakia.

Carburetor for Jawa 638 / 639 / 640 / 688



Item #: 320824964612
List Price: $75.60
www.ebay.com

www.support.mz-b.info

Jawa used the Jikov 2928CE on its 638 / 639 / 640 / 688 motorcycles.
Ural used it on its 650 cc exported to the U.K., 1998 to 2000.

Jikov Carburetor for Ural or Dnepr

The Jikov 2928CE is easily cleaned without dismantling the carburetor or removing the control cable, by removing the rubber hose clamps and rotating the carb upward.

Jikov 2928CE (Jawa 350/640 Manual)

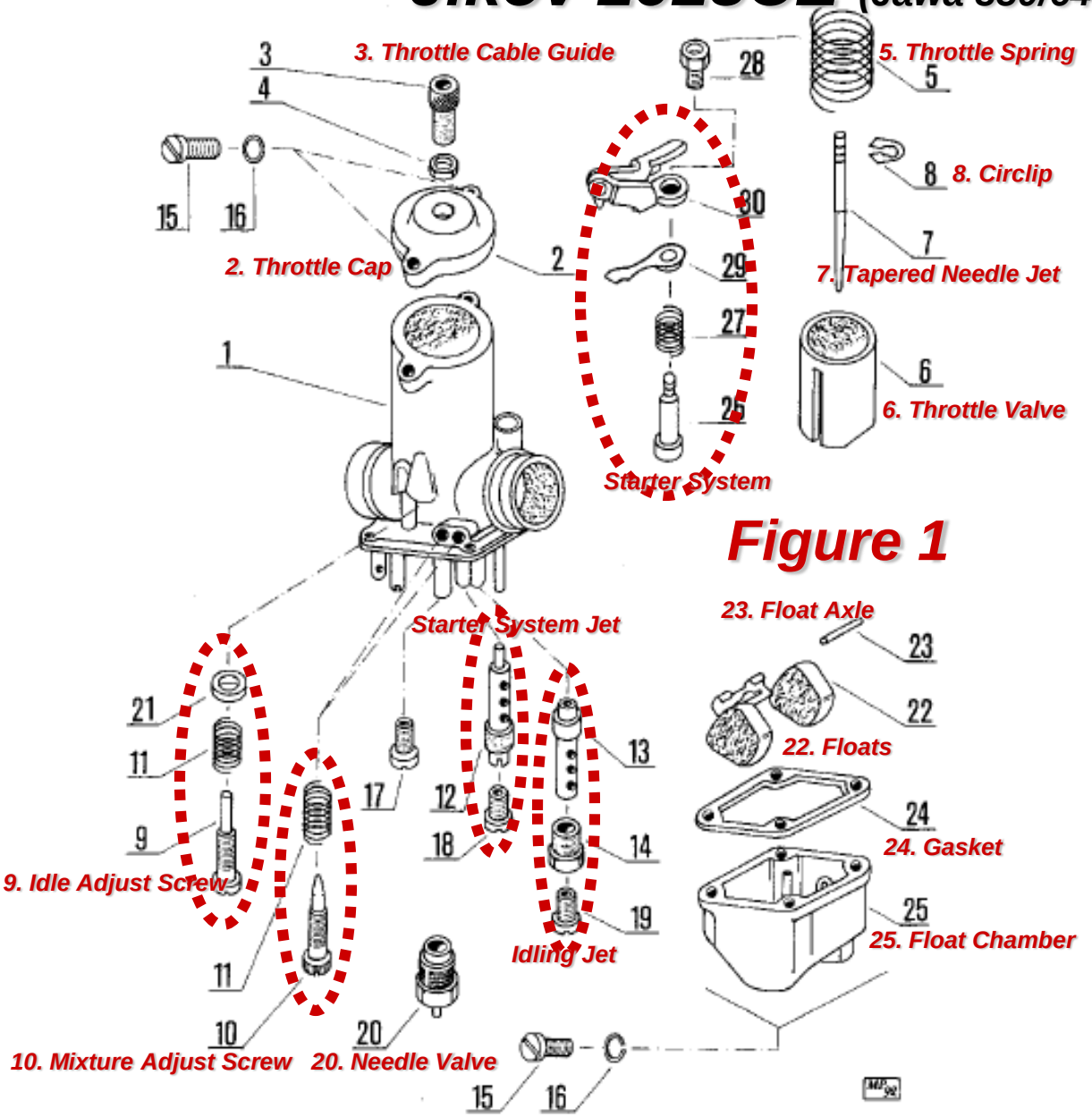


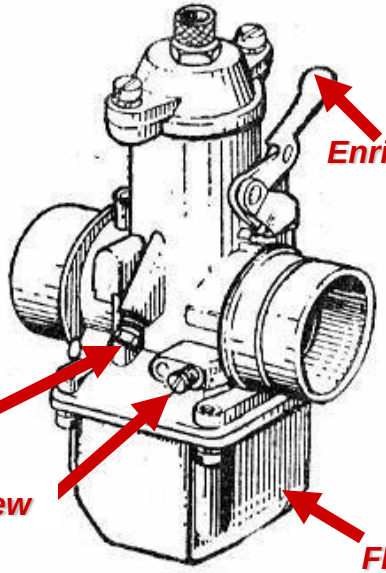
Figure 1

Item #	Jawa Part #	Description
1	443919741719	Carburetor Body
2	443915560938	Throttle Cover (Lid)
3	443911033604	Control Cable Guide
4	443911300115	Nut
5	315116097570	Throttle Spring
6	443919374304	Throttle Valve
7	443912091704	Tapered Needle Jet
8	443916013704	Securing Clip (Circlip)
9	443911013503	Idle Adjust Screw
10	443911014902	Mixture Adjust Screw
11	315116095070	Spring
12	443913062302	Tube of Starter System
13	443913060702	Idling Tube
14	443911036002	Jet Holder
15	309231140411	Screw M4X12
16	311214010041	Washer
17	443911124100	Main Jet
18	443911124072	Starter System Jet
19	443911122040	Idling Jet
20	443919300308	Needle Valve
21	722923110101	Sealing Joint
22	443919460150	Float
23	443912034903	Float Spindle
24	443916256401	Float Chamber Gasket
25	443919370930	Float Chamber
26	443919300314	Starter Valve
27	315116169090	Starter Valve Spring
28	443911031112	Screw
29	443916449615	Lever Spring
30	443919344703	Starter (Choke) Lever

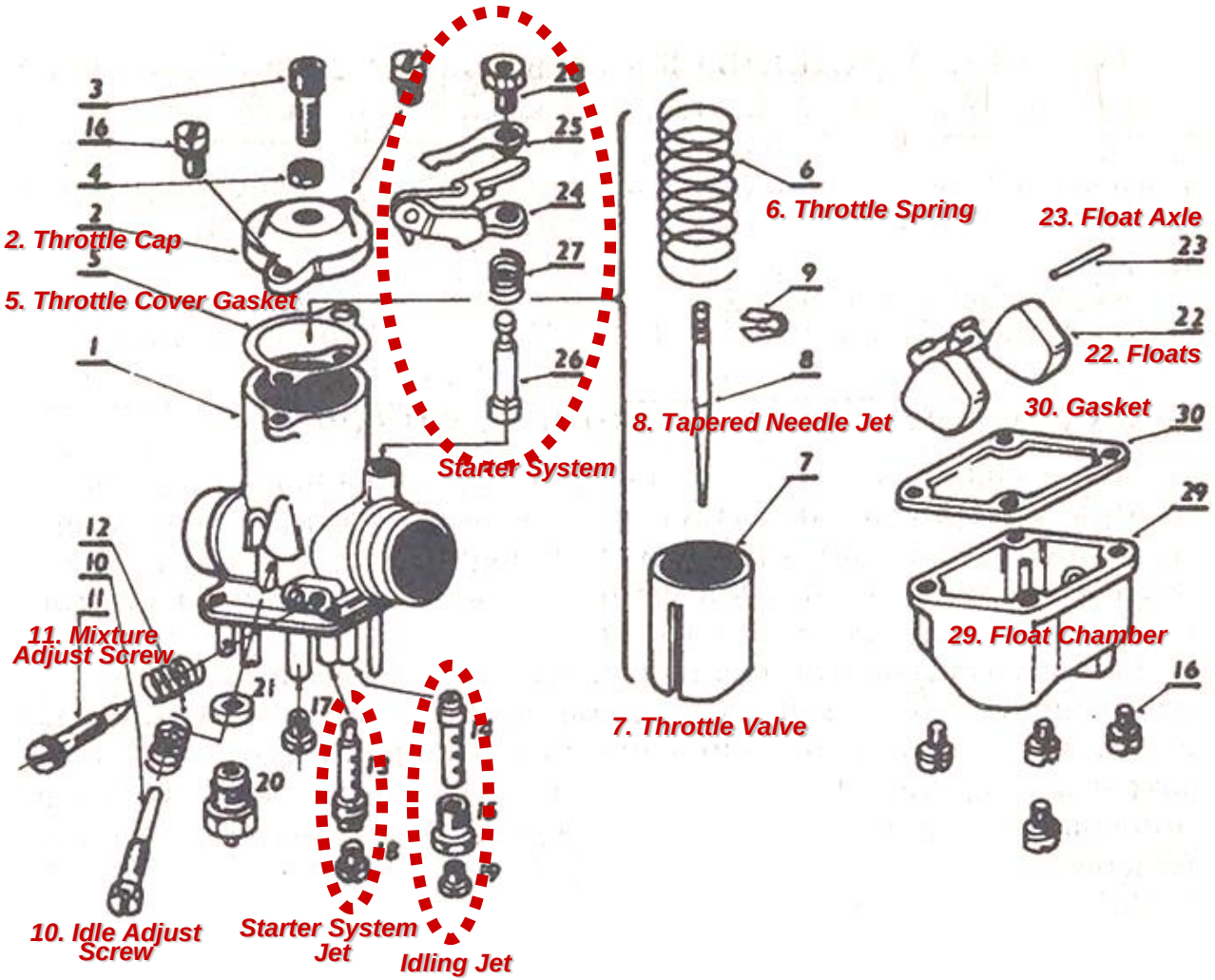
Carburetor maintenance begins with recognition of the basic components.

Jikov 2928CE Carburetor Action

- *Throttle Valve (6) Controlled by Wire Control Cable*
  - *–Opens or Closes Flow of Air/Fuel Mixture to Cylinder*
- *Main Nozzle (17) Affects Composition of Mixture at Higher Throttle Setting*
  - *–Access Possible After Removing Carburetor*
  - *–If Nozzle Is Dirty, Difficulties in Starting*
- *Tapered Throttle Needle Jet (7) Placed in Round-Slide Throttle Valve (6)*
  - *–Cone Reaches the Hole and Main Nozzle*
  - *–Lifting Throttle Increases Fuel Flow to Channel Inlet*
  - *–Needle Location Changeable, Fixed with Fastener Clips (8) and Grooves*
  - *–If Clip Is In Bottom Groove, Mixture Is Richer; If In Top Groove, Mixture Is Leaner*
- *Idling Nozzle (18) Affects Composition of Mixture at Idling Speed and Low Throttle*
  - *–Idle Adjust Screw (9) Regulates Idling Speed of Cross-Section Air Duct*
  - *–Flows Additional Air to Idling Engine*
  - *–Tightening Screw: Mixture is Richer; Loosening Screw: Mixture Is Leaner*
- *Choke (30) Enabled Only for Starting, to Enrich Mixture into Cylinders*
  - *–Lever (30) Activates Enichener (Starter), which Increases Opening of Starter Valve (26), Allowing Fuel Flow thru Main Jet (17)*
  - *–After Engine Warms, Lower Starter Lever (30)*



Illustrated Jikov 2928CE Parts Breakdown (motovelosport.ru)

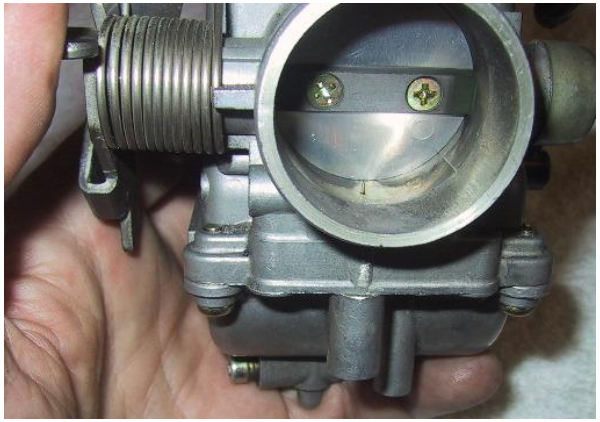


Item #	Part #	Description
-	662-943090	2928CE Carburetor
1	662-943100	Carburetor Body
2	662-942190	Throttle Cover (Lid)
3	699-943580	Control Cable Guide
4	699-943711	Nut
5	-	Throttle Cover Gasket
6	650-943470	Throttle Spring
7	622-943230	Throttle Valve
8	662-943290	Tapered Needle Jet
9	630-943550	Securing Clip for Jet
10	699-943642	Idle Adjust Screw
11	699-943614	Mixture Adjust Screw
12	193-940472	Spring
13	662-943431	Tube of Starter System
14	662-943430	Idling Tube
15	662-943370	Jet Holder
16	-	Screw M4X12
17	193-951092	Main Jet (Nozzle)
18	193-951072	Starter System Jet
19	193-95340	Idling Jet
20	133-940450	Needle Valve
21	113-940720	Sealing Joint
22	662-943200	Float
23	662-943220	Float Spindle
24	662-943300	Starter (Choke) Lever
25	662-943480	Lever Spring
26	662-943450	Starter Valve (Plunger)
27	662-943470	Starter Valve Spring
28	662-943630	Screw
29	662-943110	Float Chamber

The carburetor consists of a body (1), float chamber (9), cylindrical, spring-loaded, round-slide throttle valve (7), tapered throttle needle jet (8) and fuel injectors (17-19).

CVK32 Keihin Carburetor

- *Bleed Type Carburetor*
- *Variable Venturi Controlled by Constant Velocity (CV)*
  - *Also Known as Constant Depression or Constant Vacuum*
- *CV is Next Best Thing to Electronic Fuel Injection*
  - *Feeds Precise Amount of Mixture to Smooth-Out Throttle Response*
  - *Reduces Pollution and Stretch Fuel Budget and Gas-Tank Range*
- *"32" Represents 32 mm Venturi Exit Diameter*
- *Butterfly Valve Instead of Round-Slide or Flat-Slide Throttle Valve*
  - *Evidenced by the Rotary Movement on the Side*
  - *Throttle Cable Connected to Butterfly Valve*
  - *Varies Volume thru Venturi*
- *Nominal Jets for 650cc*
  - *Main Jet: 118*
  - *Nozzle Idling: 38*
  - *Concentrator Nozzle (start): 65*
- *Please See Part 13C for Re-Jetting of Carb*
  - *2002 CMSI 750cc: 38 (some had 40) and 125*
  - *2003 and early 2004 IMWA 750cc: 38 and 118*
  - *Late 2004 bikes: 38 and 125*
  - *2005 thru 2007: 38 and 125 (Ducati Ignition starting with 2007 bikes)*



The Keihin has a butterfly valve, much like is commonly found in automobiles.

K-68 to CVK32 Keihin Carburetor Transition

(http://www.cossackmotorcycles.com/dnepr.html)

- K-68 Runs a Little Rich Most of the Time
- Requires Frequent Adjustment to Stay Perfectly in Tune
- Looks Similar to the K-68 Fitted to Late 650cc Urals
  - They're Not the Same
  - Don't go Swapping Them from One to Another

K-68

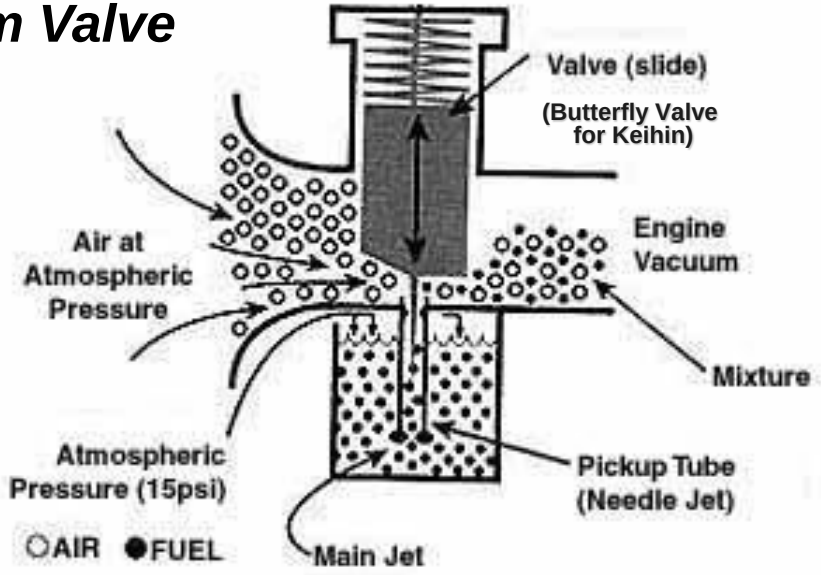
Keihin

- Ural Changed to Dual Keihin Seiki for US Import Models
- Fitted to Pass Stringent Emission Regulations (EPA)
- Current Carburetors for 650/750cc Motorcycles
- Generally a Good Carb, but Needs Re-Jetting to Avoid Overheating at High Engine Loads
- Must Be Kept Clean and Jets Need Regular Blowing Out, Especially the Ones that Can Be Seen in the Carb Throat when Air Filter Pipes Are Removed

The common carburetors found on 750cc Ural motorbikes were the K-68's. Prompted by the need to meet the stringent EPA requirements for imports to the US, Ural chose the Mikuni, which was later replaced by the CVK32 Keihin, which appeared in 2000, and has remained steady today.

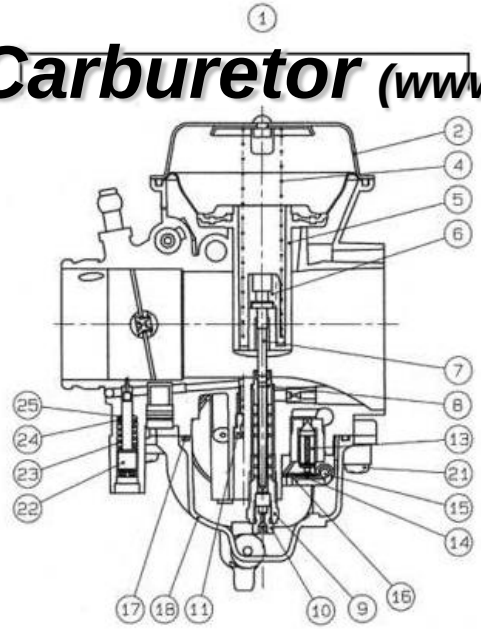
Variable Venturi - Getting Sucked In (Redondo Ron, 1998, www.gadgetjq.com)

- *Venturi Is a Tube with Convex Taper (one end wider than the other)*
- *As Air Enters Wider End, It's Squeezed into Narrower Section of Tube, Lowering Air's Pressure*
- *Area of Lowest Pressure Is Just Past the Narrowest Point*
  - *Lowest Pressure Point Called the Depression*
- *Bernoulli's Principle States That This Lowered Pressure, or Comparative Vacuum Is Separate from Engine Vacuum*
- *Variable Venturi Varies the Venturi Diameter at the Depression by Raising or Lowering an Obstruction*
- *This obstruction is Called a Slide*
- *On a CV the Slide is Called a Diaphragm Valve*



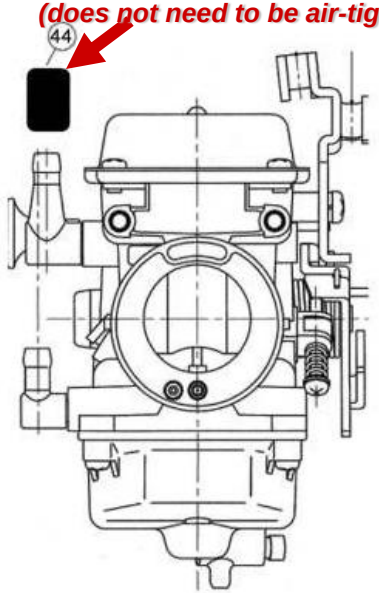
CVK32 Keihin Carburetor (www.jebike.com)

1	Carburetor Keihin	'IMZ-8.128-15001
3	Pan Screw	'93500040081H
4	Coil Spring	'12908802000
5	Vacuum Piston Comp.	'14028462200
6	Spring Seat	'12298007000
7	Jet Needle	'N4256NE00
8	Needle Jet	'N42601D34
9	Needle Jet Holder	'N41303C00
10	Main Jet 118	'991013931180
10	Main Jet 122	'991013931220
10	Main Jet 125	'991013931250
11	Slow Jet 0.38	'N42425B38
11	Slow Jet 0.40	'N42425B40
13	Float Valve Comp.	'16155ZG8L100
14	Starter Jet 65	'N42431065
16	Float Valve	'10528292100
17	Float Body Gasket	'09018146000
19	Drain Screw	'11988102002
21	Pan Screw	'93500040141H
22	CO2 Adjust Screw	'N44602C00
23	Coil Spring	'W945103212
24	Washer	'03018032000
25	O-Ring	'16075KG89010M1
26	Starter Valve Comp.	'11668292100
42	Vacuum Port Cap	-
44	Breather Cap	'IMZ-8.1037-15157
45	Carburetor Protection RH	'IMZ-8.1037-15194

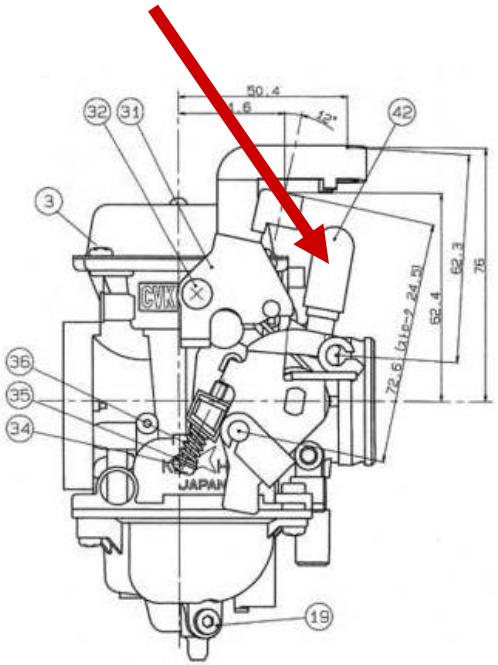


IMZ Part #: 'IMZ-8.128-15001 for 750 cc Urals

44. Breather Port Cap
(does not need to be air-tight)

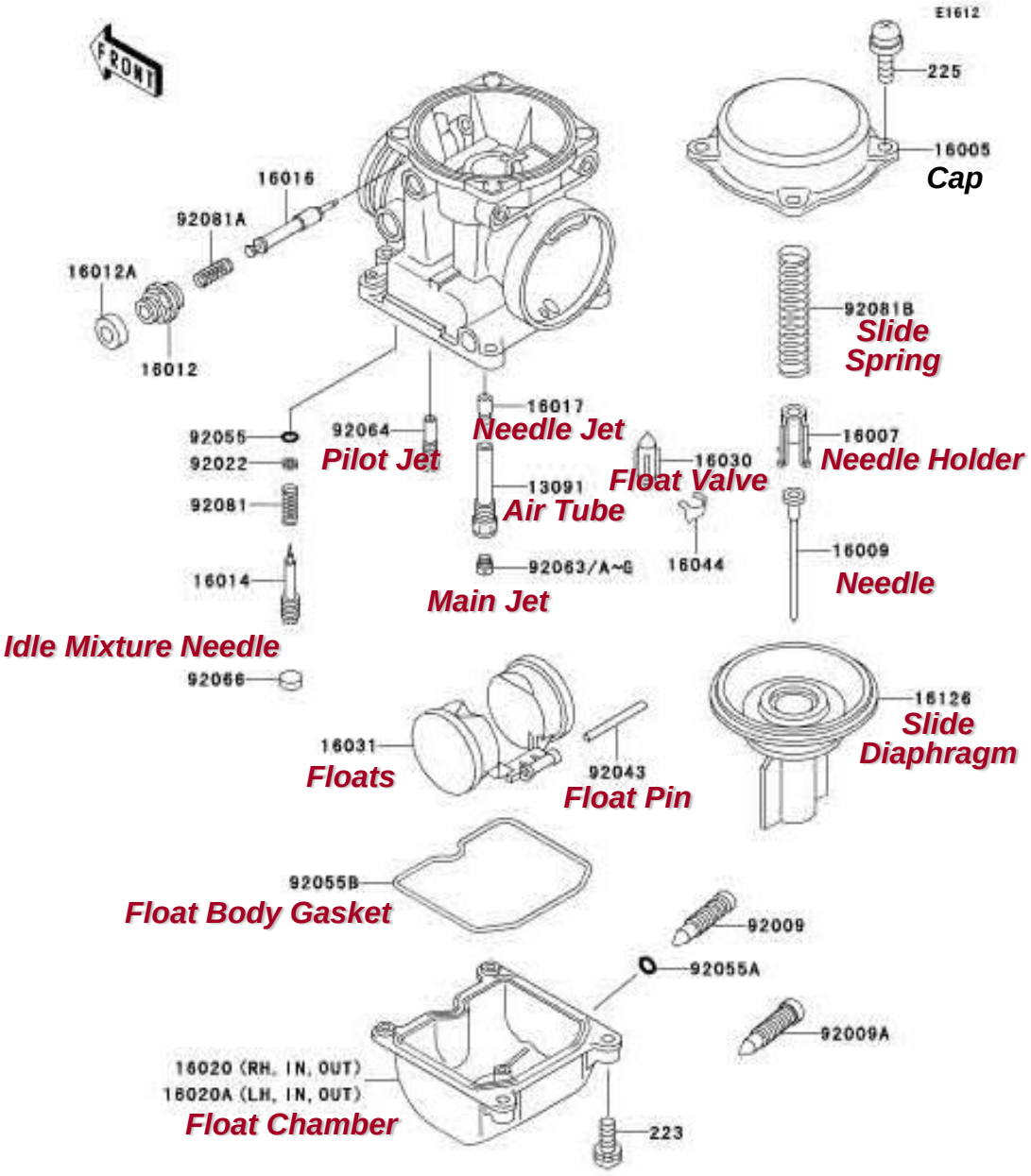


42. Vacuum Port Cap
(needs to be air-tight)



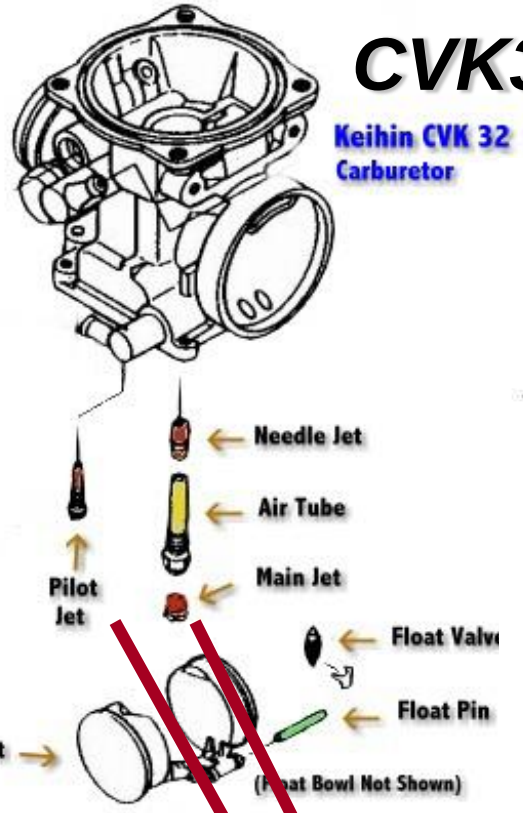
Parts are still readily available for the Keihin L22A.

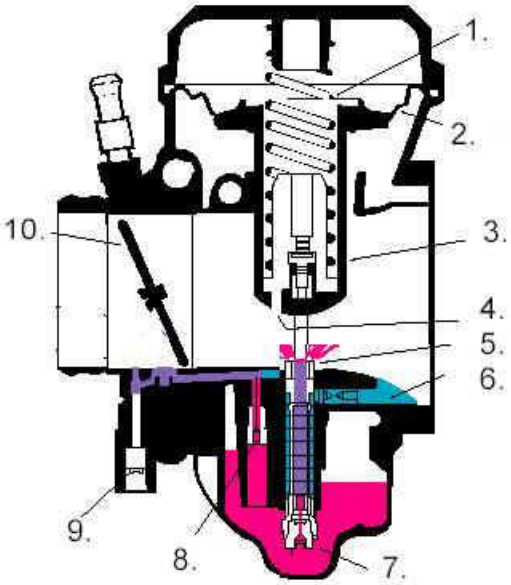
CVK32 Keihin Carburetor

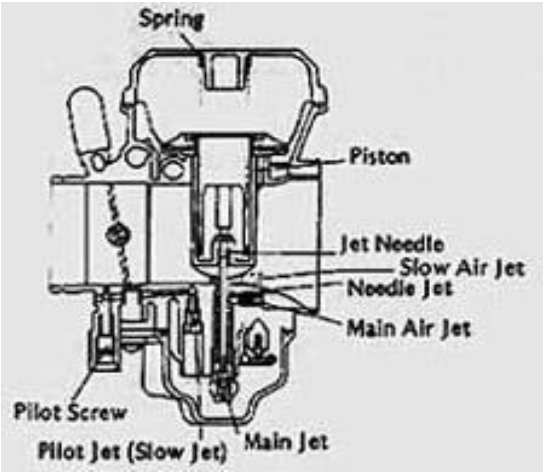


'IMZ-8.128-15001	Carburetor Keihin
'93500040081H	Pan Screw
'12908802000	Coil spring
'14028462200	Vacuum Piston Comp.
'12298007000	Spring Seat
'N425-6NE00	Jet Needle
'N41303C00	Needle Jet Holder
'991013931220	Main Jet 122
'991013931250	Main Jet 125
'N42425B38	Slow Jet 38
'N42425B40	Slow Jet 40
'16155ZG8L100	Float Valve Comp.
'N42431065	Starter Jet 65
'10528292100	Float Valve
'09018146000	Float Body Gasket
'11988102002	Drain Screw
'93500040141H	Pan Screw
'N44602C00	CO2 Adjust Screw
'IMZ-8.1037-15157	Cap for Carburetor Breather

CVK32 Keihin Components

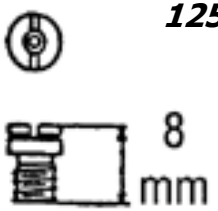






38 jet = 0.38mm or 0.0149 in.
45 jet = 0.45mm or 0.0177 in.
125 jet = 1.25mm or 0.0492 in.

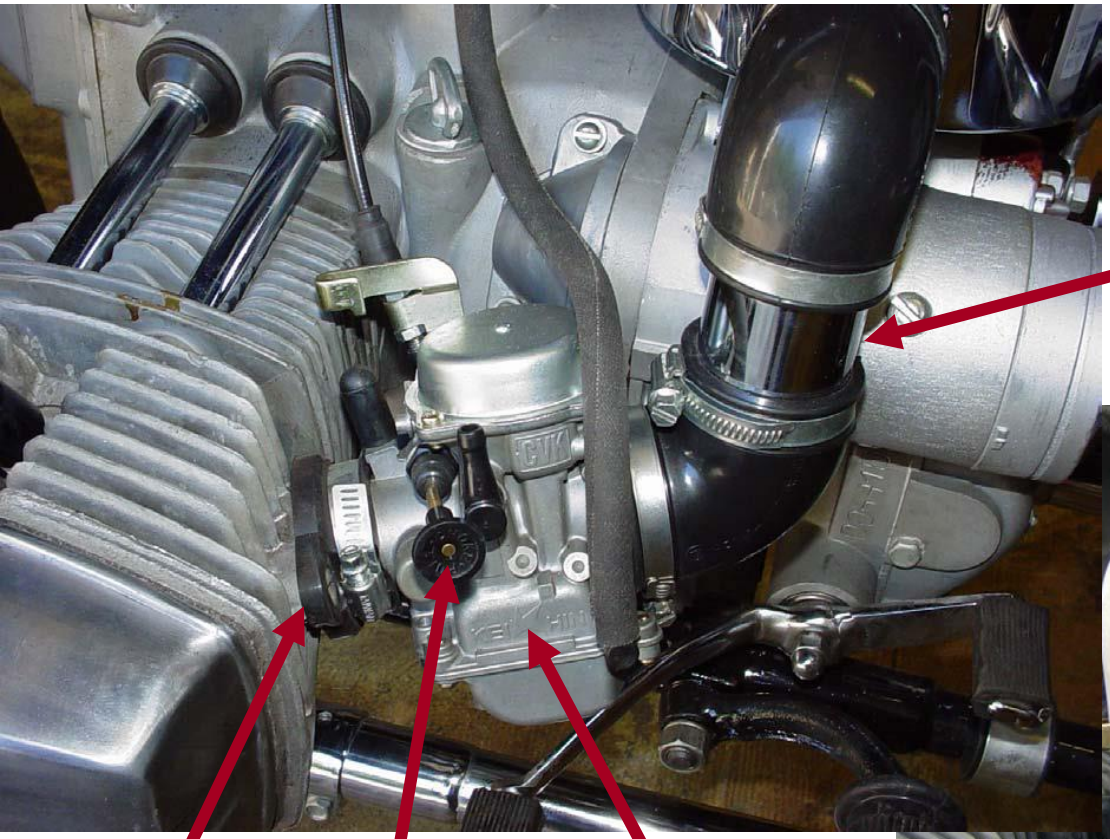
1. *Slide Spring*
2. *Slide Diaphragm*
3. *Vacuum Slide*
4. *Vacuum Port*
5. *Needle Jet*
6. *Main Air Jet*
7. *Main Jet*
8. *Pilot (Slow) Jet*
9. *Idle Mixture Adjustment Screw*
10. *Throttle Plate*

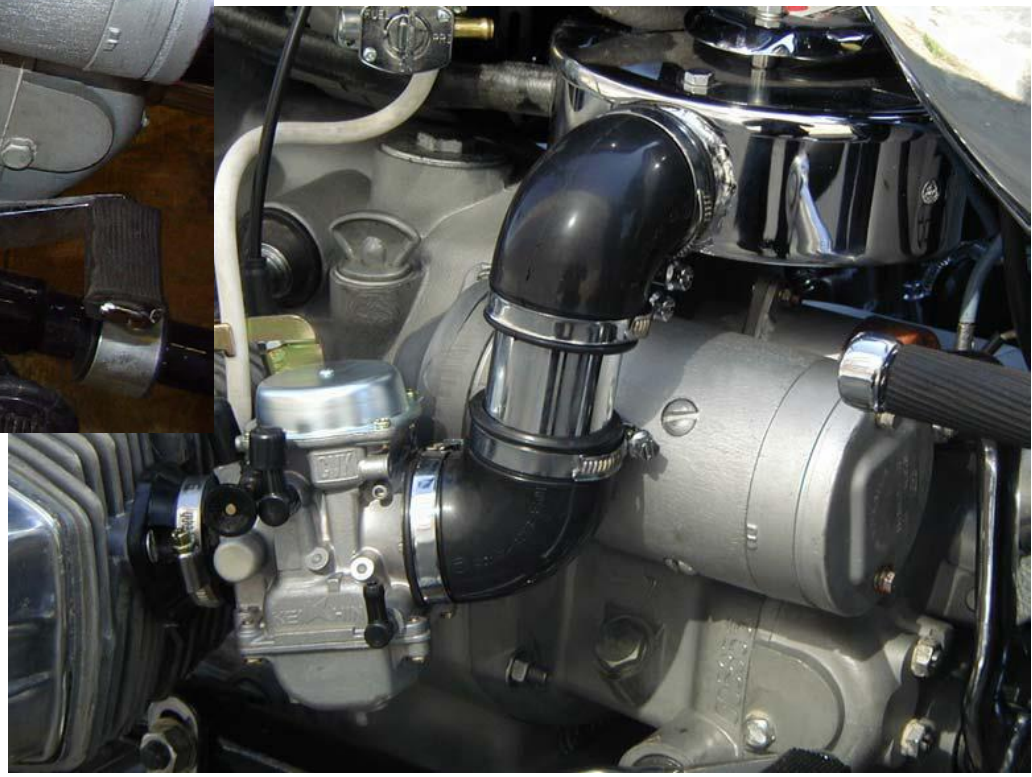


Main Jet

Pilot (Slow) Jet

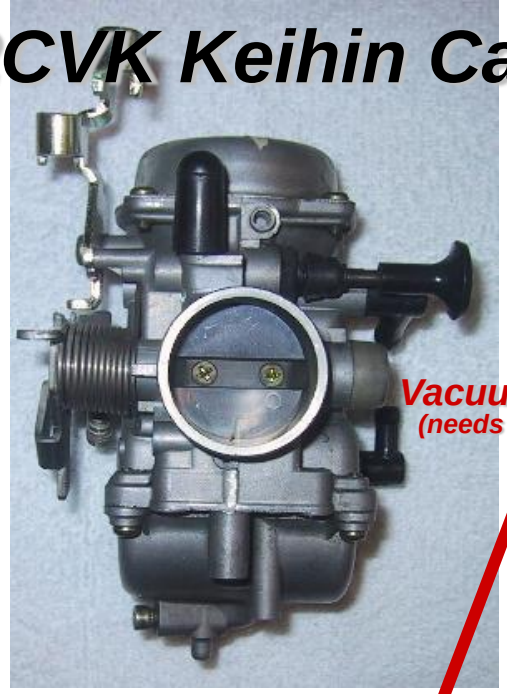
2003 Patrol (32mm CVK Keihin Seike Carburetors)



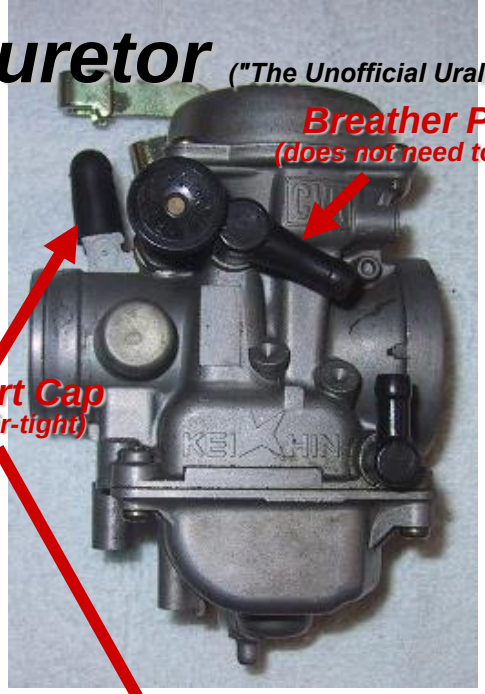


Never use a metal adapter between the carburetor and cylinder head.

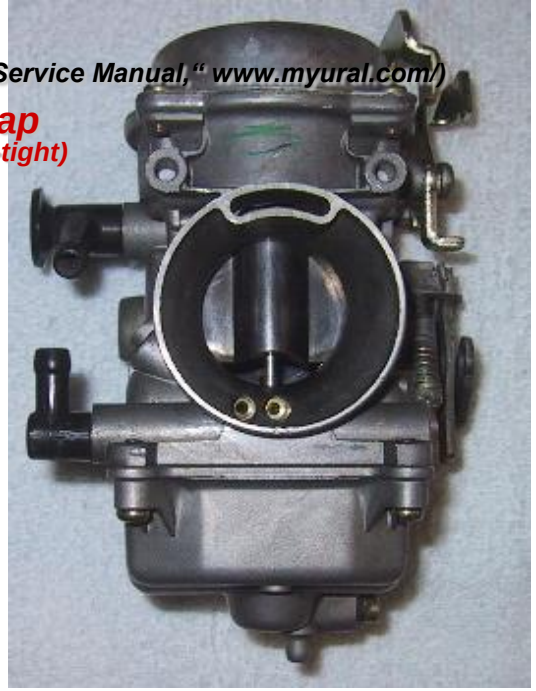
32CVK Keihin Carburetor ("The Unofficial Ural 750cc Service Manual," www.myural.com/)



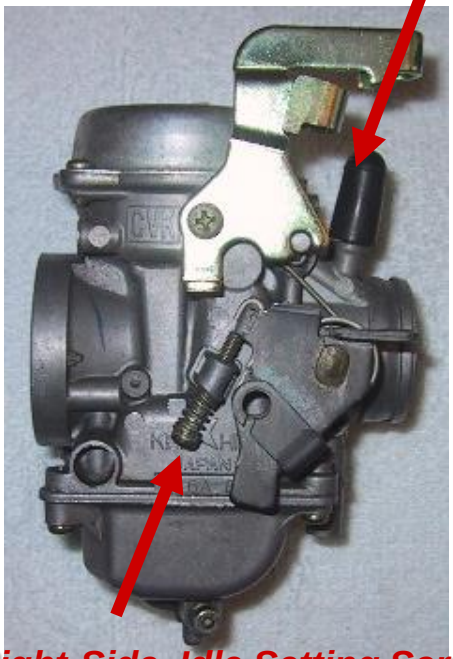
Front-View, Compliance Fitting Side



Left-Side View



Branch Tubing or Intake Side



Top-View Diaphragm Cap

Bottom-View, Bowl Drain