Ural (Урал) - Dnepr (Днепр)
Russian Motorcycle
Part XIX: Steering Damper Evolution

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Sorting Out the Steering Damper

• Order of Presentation
  – Function of the Steering Damper
  – Sort by Manufacturer: Урал (Урал) or Днепр (Днепр)
  – Evolution of the Steering Damper
    • Little Change, Except for Tapered Steering Head Bearings
      – Last Longer with Less Need for Adjustment and/or Replacement
      – Tapered Roller Bearing Set for Steering Head up to 07: 'Sch775-01
      – Tapered Roller Bearing for Steering Head from 2008: 32006X/Q
  – Order-of-Assembly Is Important
    • Need to Know How to Re-Assemble the Steering Damper
    • Need to Order Replacement Parts
  – Adjustment of the Steering Damper
  – Alternatives to the Friction Steering Damper

The steering damper on the Ural / Dnepr motorcycle has remained relatively unchanged over the last 60 years.
Function of Steering Damper (Wikipedia)

- Damping Device Designed to Inhibit an Undesirable, Uncontrolled Movement or Oscillation of Motorcycle Steering Mechanism, known as Wobble or in Extreme Cases, a Tank-Slapper
- For Motorcycles with Sidecars, where the Front Wheel Geometry, or “Trail”, Steering Damper Prevents Low-Speed Wobble at 10 to 20 mph
- Ural and Dnepr Use Adjustable-Friction Dampers
  - Composed of Two Steel Washers, Moving and Fixed, Two Fiber Washers and Tightening Bolt with Knob
  - Friction between Steel and Fiber Washers Makes Turning of Front Fork More Difficult
  - One End of Damper Mounted to Steering Yoke or Triple Tree
  - Other End Connected to Frame
- Hydraulically-Operated Steering Dampers May Be Retro-Fitted
- Scientific Background
  - When driving on rough road, side impacts deflect the fork from a straight position
  - Due to stabilizing moment, the fork tends to revert to its original position, but because it and the wheel are of considerable weight, the force of inertia is the neutral position and rotated in the opposite direction.
  - Torsional oscillations occur around the axis of rotation of the fork. At high speed, the nature of the alternation of these forces can match the natural frequency of the fork from the resonance amplitude begins to increase and the bike becomes unstable and breaks. Moreover, efforts are increasing to such an extent that it is impossible to hold the wheel with his hands.
  - To reduce the likelihood of torsional vibration damper mounted on the fork. The damper has a set of friction washers, one of which is connected to the fork, the other - with the frame. Washers are pressed together under the Belleville spring force which is regulated by the draw bolt. When you rotate the fork between the motorcycle washers, frictional forces prevent the buildup of oscillations.

Urals and Dneprs have the old-school, friction-type steering damper that twists to increase or decrease pressure on the steering column.
2003 Ural Patrol Steering Damper

- **Washer Fixed to Steering Column**
- **Damper Adjustment Knob**
- **Tongue Fixed to Frame**
- **Spring**
- **Fixed Damper with Friction Discs**

**Sliding Damper Washer**

**Bottom of Steering Column**
Steering Damper Adjustment

• If Steering Is So Stiff that When You Turn Left or Right, It Stays That Way, Rather than Self-Centering, You Need to Slack Off on the Damper
  – On rough surfaces you can screw down (clockwise) the big steering damper knob to take out the worst of the feedback, as long as you remember to unscrew it a bit to lighten the steering when the going gets smooth again.

• WARNING: DO NOT OVER TIGHTEN THE STEERING DAMPER SINCE THE MOTORCYCLE WILL BECOME VERY DIFFICULT TO HANDLE.

• Before Adjusting the Steering Damper, Check:
  – Steering Head Bearings (snugged down too tight?)
    • Check to see how freely the steering turns with the front wheel off the ground
    • Use the Center-Stand; else a jack would be needed
  – Tire Pressure
  – Spokes
  – Loose Mounts
  – Wheel Bearings
  – Excessive Toe-In / Toe-Out
  – Rear Suspension Bushings

• Lubrication Service from Maintenance Manuals
  – Ural M-72 (1954)
    • Grease Thrust Bearing of Steering Column (2 points) every 1,000 km
    • Remove Yearly or Every 8,000 km; Wash and Grease (re-pack)
  – 2000 650 Ural Shop Manual Elect Start
    • Steering Column Bearings: Grease Every 20,000 km

Some folks don’t understand the function of that big knob in the center of the handlebars.
Steering Damper Adjustment Knob
(sovietsteeds.com/forums/viewtopic.php?p=31299)

- Primary purpose of damper is for rough roads...tighten it down to dampen the swing of the bars whilst sailing down wash-board roads.
- How you adjust it for daily driving will depend on your personal preference and how your rig handles.
- If I give my handlebars a quick left than quick right when going in a straight line the steering feels loose. The bike responds very quick to this. Is that loose or is that the way it should be?
- If you do a quick left then quick right then back to center and the handlebars aren't wobbling away then you're in good shape. If you go over small potholes or grooved sections in the road and the bars want to twist out of your hands you should give it a tighten.
- If your handlebars shake at low speed, i.e. less than 30 mph, you can tighten up on the damper a bit until the shaking stops.
- If the handlebars don't shake, don't do anything with the damper. Some sidecar rigs do it, some don't, the damper allows for a little fine tuning.
- If the rig is hard to turn and wants to go its own way the damper is probably too tight. So wants to be between that and the wobble at low speeds.
- Probably varies from bike to bike. you may need to just play with it in a parking lot and feel how it drives as you change it. Best answer.....BTW, careful on the too loose side...things will fall off from under the steering head if you turn it too far out. No biggie, but you have to put it back together.
- So if I turn down where it’s pretty snug, how many turns back would anyone guess would be enough with out, making it too loose. When I made it loose I could wiggle the handle forward and backward real easy.
- I believe you are looking at it backwards. Start with is very loose and then just barely tighten it up. If you still get a head shake then tighten it another quarter turn. Don’t over tighten or you will pay for it at highway speeds. I loosened mine two turns and noticed an improvement. After another ride, I loosened it one more turn, and now it rides great (on paved roads at 50mph or so). I have no idea how much it was cranked up to begin with though.
- If mine’s too loose, It'll shake it's head even coming to a stop. Mine's tighted up so as to not have this. Too tight and when you move the bars the steering head will not want come back to center, and the rig will drift and become REALLY squirrelly.
Evolution of the Steering Damper

- Steering Damper Adjustment Knob
  - Wing-Nut
  - Aluminum or Stainless Steel Knob
  - Bakelite Knob
  - Triangular Knob
  - Decorative Wooden
- Steering Head (Thrust) Bearings
  - Original Thrust Ball bearings:
  - Tapered Steering Head Bearings
    - Last Longer with Less Need for Adjustment
    - Tapered Roller Bearing Set for Steering Head up to 2007: 'Sch775-01
    - Tapered Roller Bearing for Steering Head from 2008: 32006X/Q

The steering damper on the Ural / Dnepr motorcycle has remained relatively unchanged over the last 60 years.
Ural Steering Dampers

2009 Ural T's Steering 750cc

Spring

Stiffening Ural steering damper makes it easier to ride over uneven surfaces.
More Steering Dampers

Even the latest Ural off the line, the M-70, has a frictional steering damper.
Part Numbering

- Parts Catalog Number
  - Consists of 7 or 8 Figures
  - First Two Figures of a 7-Digit Number, or First Three Figures of 8-Digit Number, Show the Type of Motorcycle
  - Example: 7208313 (Bearing Nut)
    - 72 (first two digits) Give the Type of Motorcycle (Type M-72)
    - Next Two Figures (08) Indicate the Number of the Group (Front Fork on K-750)
    - Last Three Figures (313) Indicate the Number of the Part in the Group
  - Another Example: 65020201 (Axle for Sidecar Wheel)
    - 650 (first three digits) Give the Type of Motorcycle (Type K-650)
    - Next Two Figures (20) Indicate the Number of the Group (Sidecar Chassis Group)
    - Last Three Figures (201) Indicate the Number of the Part in the Group (Axle for Sidecar Wheel)
Later M-72 Steering Damper

- **72083-1**: Shock absorber wing nut M8x1.25x225
- **72083-1-01**: Front fork damper assembly
- **7208305**: Washer with bushing
- **7208312**: Protective washer
- **7208313**: Bearing nut
- **7208314**: Nut M27x1.25
- **7208315**: Lock washer
- **7208316**: Protective washer
- **7208317**: Special washer

**Part #** | **Description**
--- | ---
72083-1 | Shock absorber wing nut M8x1.25x225
72083-1-01 | Front fork damper assembly
7208305 | Washer with bushing
7208312 | Protective washer
7208313 | Bearing nut
7208314 | Nut M27x1.25
7208315 | Lock washer
7208316 | Protective washer
7208317 | Special washer

Steering Blocker
**Dnepr K-750M, MT-9, MT-10.36, MT-11/16**

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<td>75008300-01</td>
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**Front fork damper assembly**
**K-650 Steering Damper**

- Steering Damper Absorbs Lateral Jolts while Riding on Rough Roads
- Damper Consists of Two Movable Washers (16, 27), Stationary Washer (18) and Nut (1) with Baklite Head
- Upper Movable Washer (16) Pressed to Lower Part of Fork Bridge Tube Butt End
- Stationary Washer (18) End Attached to the Frame
- Spring Washer (19) Located between Butt End of the Nut of Damper and Movable Washer (27)
- When Clamp Nut (1) of Damper Rod Is Screwed In, Spring Washer (19) Builds Up Pressure, Yielding Friction to Turning, Vibrations Are Damped

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<thead>
<tr>
<th>#</th>
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<td>Protective Washer for Bearing</td>
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<td>Upper Movable Washer</td>
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<td>Lower Movable Washer</td>
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<td>Барашек амортизатора руля: Damper Rod</td>
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<td>Траверса: Crossmember</td>
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<td>гайка подшипников: Bearing Nut</td>
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<td>Шарикоподшипник: Ball Bearing</td>
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<td>направляющая Муфта: Guide Coupling</td>
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<td>шайба с хвостовиком: Washer with Stem</td>
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<td>Нижняя шайба: Bottom Washer</td>
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<td>25</td>
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<td>26</td>
<td>Специальные гайка: Special Nut</td>
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</table>
Ural Steering Damper

**Part #** | **Description**
--- | ---
IMZ-8.101-08031 | Shock absorber wing nut M8x1.25x225
IMZ-8.101-08159 | Sealing ring
IMZ-8.101-08312 | Protective washer
IMZ-8.101-08317 | Special washer
6208039 | Washer with bushing
7208313 | Bearing nut
7208314 | Nut M27x1.25
7208315 | Lock washer
7208316 | Protective washer
IMZ-8.101-08159 | Sealing ring
IMZ-8.101-08312 | Protective washer
IMZ-8.101-08317 | Special washer
IMZ-8.101-08313 | Protective washer
IMZ-8.101-08314 | Bearing nut
IMZ-8.101-08315 | Lock washer
IMZ-8.101-08316 | Protective washer
7208305 | Washer with bushing
7208314 | Nut M27x1.25
7208315 | Lock washer
7208313 | Bearing nut
### Ural (Урал) / Dnepr (Днепр) Steering Damper Parts

<table>
<thead>
<tr>
<th>Ural (Урал) Model</th>
<th>Tightening Rod</th>
<th>Damper Arm</th>
<th>Fixed Plate</th>
<th>Spring Plate</th>
<th>Steering Head Thrust Bearing</th>
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<td>7208306</td>
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<td>2X 778707 (34/35x51x12.1mm)</td>
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Steering Damper Rod with Aluminum Knob (N.O.S.)
List Price: €23.60
Product ID: 1146

Steering Damper Rod with Bakelite
List Price: €21.24
Product ID: 1150

Steering Head Bearing Dust Washer, Rubber Seal
List Price: €1.00
Product ID: 839

Steering Head Bearing Dust Washer with Rubber Seal
List Price: €2.36
Product ID: 1157

Friction Plate Facing for M-72, M-61 and M-62
List Price: €11.80
Product ID: 1857

Set of Two Steering Head Bearing Dust Washers (N.O.S.)
List Price: €5.90
Product ID: 1471

Friction Plate Facings
List Price: €18.88
Product ID: 1760

N.O.S = New old stock, referring to obsolete equipment, or original parts for obsolete equipment, that have never been sold. Merchandise being offered for sale which was manufactured long ago but that has never been used.
More Damper Steering Components (moto-boxer.com)

Steering Damper Rod for M-72 (Replica)
List Price: €16.52
Product ID: 1149

Steering Damper Rod with Aluminum Knob (N.O.S.)
List Price: €16.52
Product ID: 1147

Steering Damper Rod with Bakelite Knob
List Price: €14.16
Product ID: 1151

Steering Damper Rod for M-72 (Replica)
List Price: €16.52
Product ID: 1149

Steering Head Bearing Dust Washer with Rubber Seal (N.O.S.)
List Price: €3.54
Product ID: 1158

Set of Two Steering Head Bearing Dust Washers for M-72 (N.O.S.)
List Price: €5.90
Product ID: 1909

Set of Two Steering Head Bearings (51mm OD, 34/35mm ID, 12.1mm HT)
Part #: 778707
List Price: €12.98
Product ID: 974

N.O.S = New old stock, referring to obsolete equipment, or original parts for obsolete equipment, that have never been sold. Merchandise being offered for sale which was manufactured long ago but that has never been used.
Computer Modelling of M-72 Front Fork, including Steering Damper
More Damper Steering Components (moto-boxer.com)

- **Upper Plate for Ural Steering Damper**
  - with Spring Plate
  - List Price: €7.08
  - Product ID: 1678
- **Steering Column Nut**
  - for K-750 and MB-750
  - List Price: €7.08
  - Product ID: 1189
- **Steering Column Nut Tab Washer**
  - List Price: €2.01
  - Product ID: 1190
- **Steering Damper Adjuster Nut**
  - for M-72 and Ural
  - List Price: €7.08
  - Product ID: 1169
- **Steering Damper Plate**
  - for M-72 (Replica)
  - List Price: €20.06
  - Product ID: 1743
- **Steering Column Nut**
  - List Price: €7.08
  - Product ID: 1191

(moto-boxer.com)
Steering Damper Screw
for K-750/MB-750
Part #: 75008300
Product ID: 000.471
List Price: €22.18

Steering Damper Friction Plate
for M-72
d=31, D=60mm, pair
Product ID: 003.039
List Price: €8.07

Complete Steering Damper
Part #: IMZ101-08031 Ural
Product ID: 000.472
List Price: €48.39

Steering Damper Arm
for M-72
Product ID: 002.329
List Price: €30.25

Steering Damper Friction Plate
for M-72
Product ID: 002.301
List Price: €2.52

Steering Damper Friction Plate
Product ID: 002.302
List Price: €12.10

Steering Damper Washer and Spring
for M-72, Ural, MB-750, K-750
Product ID: 002.301
List Price: €2.52

Steering Damper Arm
for M-72
Product ID: 002.329
List Price: €30.25
More Damper Steering Components (oldtimergarage.eu)

Steering Damper Bearing Nut
M-72 #: 72-08313
Product ID: 000.201
List Price: €4.54

Steering Damper Spring Washer
Dnepr #: 5308328-A
Product ID: 000.177
List Price: €3.02

Steering Damper Nut (Cr)
M-72 #: 75008175
Product ID: 000.181
List Price: €8.07

Steering Damper Nut (Zn)
M-72 #: 72-08314
Product ID: 000.203
List Price: €4.03

Steering Damper Washer, Fixed
M-72 #: 72-08301
Product ID: 000.176
List Price: €6.05

Blocker Steering Wheel M-72
List Price: 1150 rubles
(oldtimerparts.ru)
Steering Head Bearing Cover
Steel, zinc-plated for steering head bearing S878 and S4017
To fit together with part S878-G
Product ID: S878-A
List Price: €2.49

Steering Head Bearing Nut
Product ID: S2111
List Price: €2.99

Steering Stem Cap Nut, zinc-coated
Product ID: S2112
List Price: €2.99

Steering Head Bearing
for Dnepr /Ural / K-750 / M-72, etc.
original design, 1 bearing complete with lower and upper shell and balls
Product ID: S878
List Price: €8.49

Steering Stem Cap Nut, chrome-plated, for all models
Product ID: S2094
List Price: €6.99

Nut Steering Head Nut
for M-72
Product ID: S2248
List Price: €2.99
More Damper Steering Components (ural-zentrale.de)

Top Spring Plate for M-72
Product ID: S880-FO
List Price: €4.90

Spring Holder Top
(fits under steering damper handle)
Product ID: S880-FT
List Price: €4.50

Wing Nut Steering Damper Rod for M-72
Product ID: S2008
List Price: €9.99

Stainless Steel Knob for Steering Damper
Copy of the original alloy knob in heavy duty stainless steel finish (250 g)
With 8 mm fine pitch thread.
Diameter knob: 63 mm, overall height: 65 mm
Surface brightly polished
Product ID: S880-VA
List Price: €17.99

Rubber Sealing Ring of Steering Head Bearings S878 and S4017
Product ID: S878-G
List Price: €1.99

Stainless Steel Knob for Steering Damper
Copy of the original alloy knob in heavy duty stainless steel finish (250 g)
With 8 mm fine pitch thread.
Diameter knob: 63 mm, overall height: 65 mm
Surface brightly polished
Product ID: S880-VA
List Price: €17.99

Sealing Set for Teleskopic Forks K-750, Ural and Dnepr
Not for M-72!
Product ID: S2007
List Price: €8.99

Steering Damper including bolts and washers (Dnepr)
Knob black (not Aluminum)
Notice also our polished Inox-steel steering-damper knob
Product ID: S880
List Price: €24.55

Notice also our polished Inox-steel steering-damper knob
Product ID: S880
List Price: €24.55

List Price: €4.50
More Damper Steering Components (ural-zentrale.de)

Counter Nut
Product ID: S880-Mu
List Price: €1.99

Steering Damper Slide Plate
Product ID: S880-Gb
List Price: €2.99

Retaining Plate Steering Damper
Product ID: S880-Hb
List Price: €3.99

Lock Washer for Steering
Head Bearing Nut
Product ID: S2111-Si
List Price: €2.99

Steering Damper Shim Washer
Product ID: S880-ZS
List Price: €3.99

Bottom Spring Plate
Product ID: S880-Fb
List Price: €2.99

Steering Damper Friction Pad
Bond or Rivet to Original
damper S8080
Product ID: S3838
List Price: €1.99

Improved Headset Bearing:
Cone / Taper Bearing for all
Ural, Dnepr, Chang Jiang
Bikes. Fits M-72, Simply
exchange with original
bearing!
Gauge: 34-51-12 mm
Needed quantity for one
motorcycle: Two pieces
Product ID: S4017
List Price: €15.99

Lock Washer for Steering
Head Bearing Nut
Product ID: S2111-Si
List Price: €1.79
**Set of Two Bearings**  
Part #: 72081-2 / 778707  
List Price: 210 kr new

**Friction Washer**  
Part #: 5308316  
List Price: 24 kr new

**Steering Stem Cap, chrome**  
Part #: 7508175/ 5308174  
List Price: 69 kr new

**Complete Steering Damper**  
for K-750M  
List Price: 295 kr new

**Steering Head Bearing Nut**  
Part #: 7208313  
List Price: 63 kr new
**Damper Steering Components**  (shop.ural.cz)

**Rubber Seal**
for M-72/K-750/Dněpr/Ural
Part #: IMZ-8101-08159
List Price: 67 Kč (CZK)
(shop.ural.cz)

**Steering Column Bearing**
Replacement of the Russian Thrust Bearing
(tapered roller, replacement, set of 2)
Part #: 778707/NEW/SET
List Price: 1,620 Kč (CZK)
(shop.ural.cz)

Steering Damper for Dnepr K-750, MB-650\750 List Price: €12.00 (new) (www.ebay.at)


Steering Damper for Dnepr / Ural K-750 List Price: €14.0 (www.ebay.co.uk)

Steering Damper for Dneper Part #: 75008300 Product ID: 75008300 List Price: 515 Kč (shop.ural.cz)
More Complete Steering Dampers

Steering damper including bolts and washers (Dnepr) Knob black (not Aluminum)
Product ID: S880
List Price: €24.55
(ural-zentrale.de)

Complete Steering Damper
Part #: IMZ-8.101-08031 URAL
Product ID: 000.472
List Price: €48.39
(oldtimergarage.eu)

Steering Damper for Dnepr K-750, MB-650/750
List Price: €12.0
(www.ebay.at)

Steering Damper for Dnepr
List Price: $17.99
(www.ebay.com)
778707 K Thrust Bearings

- Ural / Dnepr Maintenance / Repair Manuals States $778707 = 72081-2$
  - $778707$ is the Number from the Bearing Factory
  - $72081-2$ is the Same IMZ Bearing from the IMZ Motorcycle Works
- Height or Thickness of Bearing
  - $778707$: 12.1 mm thick
  - $72081-2$: 14 mm thick
- Thrust Ball Bearing
  - Single Thrust with Seating Rings
  - Main dimensions:
    - $d = 34 / 35$ mm
    - $D = 51$ mm
    - $H = 12.1$ mm
    - Weight = 0.085 kg

Set of Two Steering Head Bearings
(51mm OD 34/35mm ID 12.1mm HT)
Part #: 778707
List Price: €12.98
Product ID: 974

A set includes two steering bearings.

Steering column bearing (axial, ball, 1 pc)
Part #: 778707
List Price: 185 Kč (CZK)
(shop.ural.cz)
Ural Steering Head Bearings

- Steering Bearing Set up to 2007 (Russian) ‘72081-2 (650 / 750cc)
- Tapered roller bearing set for steering head up to 2007 (650 / 750cc) 'Sch775-01 (Japan)
- Steering bearing from 2008 (Russian) per unit (750cc) '2007106
- Tapered roller bearing for steering head from 2008 (FAG) per unit 750cc '32006X.

Part #: 778707 (shop.ural.cz)

Sch775-01 (www.ural.cc)

SKF 32006X/Q (www.shkdbearings.com)
SKF 32006X/Q Tapered Roller Bearing (www.shkdbearings.com)

- Tapered Roller Bearings (Single-Row, Metric)
  - Principal Dimensions
    - $d$: 30 mm
    - $D$: 55 mm
    - $t$: 17 mm
  - Basic Load Ratings
    - $C$: 35.8 kN
    - $C_o$: 44 kN
  - Fatigue Load Limit
    - $P_u = 4.55$ kN
  - Speed Ratings
    - Reference Speed: 9,000 rpm
    - Limiting Speed: 12,000 rpm
  - Mass: 0.17 kg

Modern Urals use improved, tapered roller bearings.
A part prefix of 7208 indicates Передней Вилка (front fork components).
It all started with the M-72 Wing-Nut Adjustment Damper Bolt.
### Ural (Урал) Steering Dampers for M-62, -63, -66 and -67

Listed in “Order of Assembly”

<table>
<thead>
<tr>
<th>Part #</th>
<th>Description</th>
<th>Quantity per Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMZ-8.101-08031</td>
<td>Steering Damper Clamping Rod</td>
<td>1 1 1 1</td>
</tr>
<tr>
<td>IMZ-8.101-08317</td>
<td>Spring Washer</td>
<td>1 1 1 1</td>
</tr>
<tr>
<td>72-08316-5</td>
<td>Supporting Washer</td>
<td>1 1 1 1</td>
</tr>
<tr>
<td>72-08314</td>
<td>Steering Column Stem Nut</td>
<td>1 1 1 1</td>
</tr>
<tr>
<td>72-08315</td>
<td>Steering Column Lock Washer</td>
<td>1 1 1 1</td>
</tr>
<tr>
<td>72-08313</td>
<td>Bearing Nut</td>
<td>1 1 1 1</td>
</tr>
<tr>
<td>IMZ-8.101-08312</td>
<td>Top Ball Bearing Shield</td>
<td>1 1 1 2</td>
</tr>
<tr>
<td>IMZ-8.101-08159</td>
<td>Steering Column Packing Ring</td>
<td>- - - 2</td>
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<tr>
<td>6208306</td>
<td>Friction Plate</td>
<td>2 2 2 2</td>
</tr>
<tr>
<td>6308304</td>
<td>Steering Damper Fixed Plate</td>
<td>1 1 1 1</td>
</tr>
<tr>
<td>6208039</td>
<td>Damper Plate with Bushing</td>
<td>1 1 1 1</td>
</tr>
</tbody>
</table>

Ural’s M-67 added two extra steering column packing rings to the stack.
• Front Fork
  – Two different types of front suspension are available. The telescopic fork and the leading link type ("lever type"). Both types are carried in the steering head on ball bearings.
  – Leading Link: Tourist/Sportsman/Patrol/Gear-Up
  – Telescopic Spring: Solo/Retro

• Steering Damper
  – Friction Type Steering Damper Made of Two Steel Washers, Moving (#37 / #21) and Fixed (#39), Two Fiber Washers (#17) and Tightening Bolt (#7) with Handle. Friction between Steel and Fiber Washers Makes Turning of Front Fork More Difficult.
  – WARNING: Over tightening the steering damper can make it very difficult to steer. Over tightening the damper on the sidecar motorcycle may cause the operator to initiate sudden weaving at highway speeds.

Telescoping Front Fork

1 - Safety washer
2 - Seal
3 - Fork cross piece
4 - Steering column stem nut
5 - Supporting washer
6 - Spring washer
7 - Tightening bolt
8 - Steering column stem
9 - Bearing nut
10 - Top angular ball
11 - Tightening nut
12 - Top end of spring
13 - Packing ring of cover
14 - Fork leg cover with headlight bracket
15 - Union bolt
16 - Steering column bridge
17 - Friction bolt
18 - Moving washer
19 - Bottom angular ball bearing
20 - Fixed washer of steering damper
21 - Head tube of frame

Leading Lever Front Fork

1 - Protective Washer
2 - Seal
3 - Fork Crosspiece
4 - Steering Column Stem Nut
5 - Supporting Washer
6 - Spring Washer Bracket
7 - Clamping Bolt
8 - Steering Column Stem
9 - Bearing Nut
10 - Upper Radial-Thrust Ball Bearing
11 - Tightening Nut
12 - Washer
13 - Steering Column Bridge
14 - Moving Washer
15 - Steering Column Bridge
16 - Lower Radial-Thrust Ball

The leading link fork is used on Patrol, Tourist and Gear-Up models.
(Ural-2) M-63

The steering damper on the Ural-3 (M-66) is similar to that of the Ural-2 (M-63)

Listed in “Order of Assembly”

<table>
<thead>
<tr>
<th>Item #</th>
<th>Description</th>
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<tbody>
<tr>
<td>23</td>
<td>Steering Damper bolt</td>
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<tr>
<td>22</td>
<td>Spring Washer</td>
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<tr>
<td>21</td>
<td>Supporting Washer</td>
</tr>
<tr>
<td>20</td>
<td>Steering Column Stem Nut</td>
</tr>
<tr>
<td>19</td>
<td>Cross-Piece</td>
</tr>
<tr>
<td>18</td>
<td>Bearing Nut</td>
</tr>
<tr>
<td>17</td>
<td>Upper Radial-Thrust Ball Bearing</td>
</tr>
<tr>
<td>16</td>
<td>Steering Column Stem</td>
</tr>
<tr>
<td>25</td>
<td>Frame Head</td>
</tr>
<tr>
<td>26</td>
<td>Lower Bearing</td>
</tr>
<tr>
<td>27</td>
<td>Fixed Plate</td>
</tr>
<tr>
<td>28</td>
<td>Movable Plate</td>
</tr>
<tr>
<td>29</td>
<td>Friction Washers</td>
</tr>
<tr>
<td>30</td>
<td>Steering Column Bridge</td>
</tr>
</tbody>
</table>
The steering damper on the Ural-3 (M-66) is similar to that of the Ural-2 (M-63)

Listed in “Order of Assembly”

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>Steering column stem</td>
</tr>
<tr>
<td>18</td>
<td>Radial-thrust ball bearing, upper</td>
</tr>
<tr>
<td>19</td>
<td>Bearing nut</td>
</tr>
<tr>
<td>20</td>
<td>Cross-piece</td>
</tr>
<tr>
<td>21</td>
<td>Steering column stem nut</td>
</tr>
<tr>
<td>22</td>
<td>Supporting washer</td>
</tr>
<tr>
<td>23</td>
<td>Spring washer</td>
</tr>
<tr>
<td>24</td>
<td>Damper bolt</td>
</tr>
<tr>
<td>26</td>
<td>Frame head</td>
</tr>
<tr>
<td>27</td>
<td>Lower bearing</td>
</tr>
<tr>
<td>28</td>
<td>Fixed plate</td>
</tr>
<tr>
<td>29</td>
<td>Movable plate</td>
</tr>
<tr>
<td>30</td>
<td>Friction washers</td>
</tr>
<tr>
<td>31</td>
<td>Steering column bridge</td>
</tr>
</tbody>
</table>
**Ural M-62, M-63, M-66, M-67 Steering Damper**

<table>
<thead>
<tr>
<th>Ural Part #</th>
<th>Description</th>
<th>M-62</th>
<th>M-63</th>
<th>M-66</th>
<th>M-67</th>
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<tbody>
<tr>
<td>IMZ-8.101-08031</td>
<td>Steering Damper Clamping Bolt</td>
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<tr>
<td>IMZ-8.101-08317</td>
<td>Spring Washer</td>
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<tr>
<td>7208316-5</td>
<td>Supporting Washer</td>
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<tr>
<td>7208314</td>
<td>Steering Column Stem Nut</td>
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<td>1</td>
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<tr>
<td>7208315</td>
<td>Steering Column Lock Washer</td>
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<tr>
<td>7208313</td>
<td>Bearing Nut</td>
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</tr>
<tr>
<td>IMZ-8.101-08312</td>
<td>Top Ball Bearing Shield</td>
<td>1</td>
<td>1</td>
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<td>2</td>
</tr>
<tr>
<td>IMZ-8.101-08159</td>
<td>Steering Column Packing Ring</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>6208306</td>
<td>Friction Washer</td>
<td>2</td>
<td>2</td>
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<tr>
<td>6308304</td>
<td>Steering Damper Fixed Plate</td>
<td>1</td>
<td>1</td>
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<tr>
<td>6208039</td>
<td>Steering Damper Plate with Bushing</td>
<td>1</td>
<td>1</td>
<td>1</td>
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</tr>
</tbody>
</table>

- Listed in “Order of Assembly”

**M-67 Steering Damper**

**M-62, M-63, M-66 Steering Dampers**
# Ural (Урал) Steering Damper 650 / 750сс to 2008

**Listed in “Order of Assembly”**

<table>
<thead>
<tr>
<th>Item #</th>
<th>Part #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IMZ-8.101-08031</td>
<td>Tightening Bolt</td>
</tr>
<tr>
<td>3</td>
<td>IMZ-8.101-08317</td>
<td>Spring Washer</td>
</tr>
<tr>
<td>4</td>
<td>72-08316-B</td>
<td>Thrust-Bearing Washer</td>
</tr>
<tr>
<td>5</td>
<td>72-08314</td>
<td>Steering Column Stem (Rod) Nut</td>
</tr>
<tr>
<td>6</td>
<td>72-08315</td>
<td>Steering Column Stem (Rod) Washer</td>
</tr>
<tr>
<td>7</td>
<td>72-08313</td>
<td>Bearing Nut (up to 2007)</td>
</tr>
<tr>
<td>7</td>
<td>IMZ-8.1236-08313</td>
<td>Bearing Nut (from 2008)</td>
</tr>
<tr>
<td>9</td>
<td>IMZ-8.101-08312</td>
<td>Dust Cap (Puck Protection) up to 2007</td>
</tr>
<tr>
<td>9</td>
<td>IMZ-8.125-08312</td>
<td>Dust Cap (Puck Protection) from 2008</td>
</tr>
<tr>
<td>8</td>
<td>IMZ-8.101-08159</td>
<td>Steering Column Seal (Gland)</td>
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<tr>
<td>Not Shown</td>
<td>72081-2</td>
<td>Bearing</td>
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<tr>
<td>Not Shown</td>
<td>72081-2</td>
<td>Steering Column Seal (Gland)</td>
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<tr>
<td>8</td>
<td>IMZ-8.101-08159</td>
<td>Steering Damper Washer, Fixed</td>
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<tr>
<td>9</td>
<td>IMZ-8.101-08312</td>
<td>Dust Cap (Puck Protection) up to 2007</td>
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<tr>
<td>9</td>
<td>IMZ-8.125-08312</td>
<td>Dust Cap (Puck Protection) from 2008</td>
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<tr>
<td>2</td>
<td>IMZ-8.103-08032</td>
<td>Steering Damper Washer with Bushing</td>
</tr>
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*If first two figures of part # is “72,” the parts come from Ural M-72.*
<table>
<thead>
<tr>
<th>Part #</th>
<th>Description</th>
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<tbody>
<tr>
<td>IMZ-8.101-08031</td>
<td>Tightening Bolt</td>
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<tr>
<td>IMZ-8.101-08317</td>
<td>Spring Washer</td>
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<tr>
<td>72-08316-B</td>
<td>Thrust-Bearing Washer</td>
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<tr>
<td>72-08314</td>
<td>Steering Column Stem (Rod) Nut</td>
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<tr>
<td>72-08315</td>
<td>Steering Column Stem (Rod) Washer</td>
</tr>
<tr>
<td>72-08313</td>
<td>Bearing Nut (up to 2007)</td>
</tr>
<tr>
<td>IMZ-8.1236-08313</td>
<td>Bearing Nut (from 2008)</td>
</tr>
<tr>
<td>IMZ-8.101-08312</td>
<td>Dust Cap (Puck Protection)</td>
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<td>Steering Column Seal (Gland)</td>
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<td>Dust Cap (Puck Protection) up to 2007</td>
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<td>IMZ-8.125-08312</td>
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<tr>
<td>6208306</td>
<td>Friction Washer</td>
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<td>Steering Damper Washer, Fixed</td>
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<td>Friction Washer</td>
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<tr>
<td>6208039</td>
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## 2006 - 2007 Ural (Урал)

### '06 Ural Steering (www.advrider.com)

<table>
<thead>
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<th>Item #</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>Tightening Bolt</td>
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<tr>
<td>3</td>
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<td>4</td>
<td>Thrust Washer</td>
<td>72-08316-B</td>
</tr>
<tr>
<td>5</td>
<td>Steering Column Stem Nut</td>
<td>72-08314</td>
</tr>
<tr>
<td>6</td>
<td>Bearing Nut</td>
<td>72-08313</td>
</tr>
<tr>
<td>7</td>
<td>Two Handlebar Bearing</td>
<td>72-0812-08 (from 2008)</td>
</tr>
<tr>
<td>2</td>
<td>Steering Damper Washer, Fixed</td>
<td>IMZ-8.1037-08032</td>
</tr>
<tr>
<td>8</td>
<td>Steering Damper Washer with Bushing</td>
<td>6208039</td>
</tr>
<tr>
<td>9</td>
<td>Two Quad Seal (not pictured)</td>
<td>IMZ-8.101-08159</td>
</tr>
<tr>
<td>10</td>
<td>Two Dust Caps (not pictured)</td>
<td>IMZ-8.101-08312</td>
</tr>
</tbody>
</table>
Modern Urals retain the old-school friction steering damper with improved, tapered roller bearings.
If first two figures of part # is “72,” the parts come from Ural M-72.
The first four digits of the part number “5308” or “7208” indicate that the parts are for the front fork.
Order of Assembly: from bottom to top; D, C, B, FIBER WASHER, A, FIBER WASHER, YOU ARE MISSING 7208301.

Fingers on A go around a protrusion on the frame (center behind neck)
7208301 has a hole that corresponds to a protrusion on the lower fork clamp on left side
"D washer" in picture is homemade - does not belong
There should be a dustcover at top and bottom of neck protecting bearings - I only see one in your picture

Also, there is a fold-over-washer that goes on top of the upper fork clap between the clamp and the large top nut
IIRC, it has a small tab that inserts into a slot on top of clamp so it will not move. Then you fold against the top nut to secure.
### Dnepr (Днепр) MT-9 / MT-10 / MT-11 / MT-16 Steering Damper

**Front Fork Damper**
(Демпфер Передней Вилка)

Listed in “Order of Assembly”

<table>
<thead>
<tr>
<th>Part #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>75008300</td>
<td>Rod with Round Knob</td>
</tr>
<tr>
<td>75008175</td>
<td>Nut</td>
</tr>
<tr>
<td>7208315</td>
<td>Lock Washer</td>
</tr>
<tr>
<td>7208313</td>
<td>Bearing Nut</td>
</tr>
<tr>
<td>75008158</td>
<td>Protective Washer</td>
</tr>
<tr>
<td>75008159</td>
<td>Seal (Gland)</td>
</tr>
<tr>
<td>778707</td>
<td>Ball Bearing</td>
</tr>
<tr>
<td>778707</td>
<td>Ball Bearing</td>
</tr>
<tr>
<td>75008159</td>
<td>Seal (Gland)</td>
</tr>
<tr>
<td>75008158</td>
<td>Protective Washer</td>
</tr>
<tr>
<td>72-08301</td>
<td>Steering Damper Washer</td>
</tr>
<tr>
<td>5308316</td>
<td>Friction washer</td>
</tr>
<tr>
<td>72-08315 / 65008323</td>
<td>Keyhole Washer</td>
</tr>
<tr>
<td>5308316</td>
<td>Friction washer</td>
</tr>
<tr>
<td>5308312</td>
<td>Lower Washer</td>
</tr>
<tr>
<td>5308328-A</td>
<td>Spring</td>
</tr>
<tr>
<td>5308311</td>
<td>Damper Special Nut</td>
</tr>
</tbody>
</table>
### Dnepr (Днепр) MT-10.36

**Listed in “Order of Assembly”**

<table>
<thead>
<tr>
<th>Part #</th>
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<td>Bearing Nut</td>
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<tr>
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</tr>
<tr>
<td>778707</td>
<td>Ball Bearing</td>
</tr>
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<tr>
<td>72-08301</td>
<td>Steering Damper Washer</td>
</tr>
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<td>5308316</td>
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</tr>
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</tr>
<tr>
<td>5308328-A</td>
<td>Spring</td>
</tr>
<tr>
<td>5308311</td>
<td>Damper Special Nut</td>
</tr>
<tr>
<td>2580013-A</td>
<td>Cotter Pin</td>
</tr>
</tbody>
</table>

**Front Fork Damper**

Dnepr MT-10.36

List Price: 25.80€

(easthighway.com)
Ural’s steering damper remained unchanged until its replacement in 2014.

<table>
<thead>
<tr>
<th>Position</th>
<th>Description</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Steering dampener bolt</td>
<td>IMZ-8.101-08031</td>
</tr>
<tr>
<td>2</td>
<td>Spring washer</td>
<td>IMZ-8.101-08317</td>
</tr>
<tr>
<td>3</td>
<td>Thrust washer</td>
<td>72-08316-B</td>
</tr>
<tr>
<td>4</td>
<td>Steering stem nut</td>
<td>72-08314</td>
</tr>
<tr>
<td>5</td>
<td>Lock washer</td>
<td>72-08315</td>
</tr>
<tr>
<td>6</td>
<td>Bearing nut</td>
<td>IMZ-8.1037-08313</td>
</tr>
<tr>
<td>7</td>
<td>Protective washer</td>
<td>IMZ-8.125-08312</td>
</tr>
<tr>
<td>8</td>
<td>Bearing 32006 X/Q</td>
<td>SKF 32006 X/Q</td>
</tr>
<tr>
<td>9</td>
<td>Friction washer</td>
<td>IMZ-8.1037-08032</td>
</tr>
<tr>
<td>10</td>
<td>Handlebar damper washer</td>
<td>62-08039</td>
</tr>
<tr>
<td>11</td>
<td>Screw M8x55 10.9 ZN</td>
<td>ISO 7380 M8x55</td>
</tr>
<tr>
<td>12</td>
<td>Washer M8 ZN</td>
<td>DIN 125 M8</td>
</tr>
<tr>
<td>13</td>
<td>Nut M8-6H</td>
<td>DIN 985 M8</td>
</tr>
</tbody>
</table>
Steering Head Bearings Adjustment

- Adjust Periodically to Avoid Excessive play which might cause steering instability
- When properly adjusted the front fork should turn with just a hint of bearing drag, but not free play or obvious resistance to turning.
- WARNING: Improper adjustment of the steering head (e.g. too tight) will make the motorcycle very difficult to steer. This adjustment is critical for proper handling of all models. Loose steering head bearings can contribute to sudden front end oscillations. Tight bearing adjustment makes it difficult to control the motorcycle.

Adjust Bearings:
- Jack up the motorcycle front so that the front wheel does not contact the ground.
- Undo Tightening Bolt of Steering damper, remove the spring and the supporting washers, holding the damper washers by hand.
- Rotate the front end, determine if there is excessive resistance at any point of rotation, or notching of bearings.
- While rocking the front fork up and down with the handle bar or with the fork leg tips, determine if there is any play.
- If play in bearings is evident, remove the handlebars and lay towel on gas tank to protect paint; lay bars on tank.
- Unlock and slacken off nut (#4) of the steering column stem, remove tightening nuts (11) of the fork legs.
- move up cross-piece (#3) with the nut, having first released tightening nuts (#11) of the fork legs.
- Tighten bearing nut (#9) and release it 1/8 - 1/6 of revolution.
- Check the play in the bearings once again. The front fork must freely turn.
- Reinstall the cross piece, tighten the nuts including lock nut (#4) and reinstall all other parts of the steering damper and check once again that bearing clearance is now acceptable.
- Tighten bearing nut (9) until snug, release it 1/8 - 1/6 of revolution, and check bearing clearance. The front fork should rotate freely with no perceptible play. Reinstall the cross-piece in place, tighten up the nuts including lock nut (4), and recheck clearance again. When clearance is acceptable, reinstall the steering damper.
- Note: If the front end tends to "stick" in several positions, that indicates notched bearing races which should be replaced. Replacement of steering head bearings and races requires removal of the front fork.
"The Big Wobble" the Cause, Cure and Mounting Instructions by Bob Loberg (sidestrider.com/steering.htm)

• Cause:
  – Let's assume that your bike is properly maintained; good tires, straight and true wheels, suspension and steering head bearings are snug
  – Chances are your bike will travel down the highway straight and true, hands off!!!
  – Let's add the sidecar. Now the bike has changed its habits. Especially on deceleration at 30-35 mph. It never shook its head before, why now?
  – Adding a sidecar is adding a non-powered, off-centered mass of weight. The weight very simply is trying to pass you on deceleration and drip behind when you accelerate. These actions also will try to turn you right (on takeoff) or left (on breaking). Both of these actions are directly transmitted to your front wheel and its TRAIL. Think of trail as a caster or the ability to center the steering when rolling. The more trail, the more self-centering action. Road bikes generally have more trail because they don't have to be maneuvered quickly between trees or on a wood trail.

• “Trail” on a Motorcycle
  – Increased Trail Makes Motorcycle Less Sensitive to Cross Winds and Turbulence from Passing Trucks
    • Dirt Bikes Usually Have Less Trail for Quicker Woodsy Type steering
  – If You Sit on Your Bike and Turn the Handlebars Full Lock (left-to-right), You Will Find that the Front Rises and Falls Very Slightly
    • Witness Some Guy on a Long-Forked Chopper
    • Highest When Bars Are Straight and Low on Either Side
    • This Action, Although Very Slight, with the Mass Offset Weight of the Sidecar, Will Produce an Oscillation from Side-to-Side: the “Wobble”.... (combined with the weight transfer to the front wheel) on deceleration.
  – Very Few Bike/Sidecar Combinations Are without a Low-Speed Oscillation and Usually Can Be Overridden by a Reasonably Tight Grip on the Handlebars

A steering damper can help a non-strong type person hanging there helplessly flopping from side-to-side.
Some Alternate Methods of Mounting Steering Dampers
(sidestrider.com/steering.htm)

- After Ensuring All Bearings Are Snug, Add a Steering Damper
- Best Combination Is a Standard Volkswagen Shimmy Damper
  - Readily Available from Local Auto Parts Store
  - Have a Long Enough Stroke and Made in Several Mounting Designs
- Many Ways to Mount a Steering Damper
  - Most Ideal Anchors the Base End on Bike Frame and Rod End on Lower Triple Tree
- In about 99% reality, this cannot happen. Somewhere down the road we have acquired a frame-mounted fairing, crashbars, driving lights, air horns, etc., all of which try to occupy the same spot.
Alternate Hydraulic Damper (sidestrider.com/steering.htm)

The bottom of damper could be mounted in any of these places.

If you mount the damper anywhere on the fork leg, it MUST move freely up and down and let you turn full lock side to side.

Bob Loberg shows a hydraulic damper for his Honda sidecar.
www.cj750.net offers a hydraulic damper for a Russian sidecar.
Before Disassembling the Steering Column, Remove the Front Wheel and Steering Handlebars. Also Remove the Fastening Dashboard. Install Motorcycle on a Central Stand.

1. Turn the handle of the steering column damper.
2. Remove the damper mounting plate, located under the lower traverse.
3. With the help of a knockout, with light blows of the hammer, we straighten the safety washer.
4. With 36 mm Wrench, Loosen the Two Upper Nuts of Front Fork

5. With 17 mm Wrench, Loosen Nuts of Fixing the Forks in Lower Traverse (Bridge)

6. Remove Fork Sides from Traverse, Sliding Them Down, and Then Turn the Nut of the Upper Cross Arm
7. Remove Upper Traverse, Then Use 41 mm Wrench to Loosen steering Column Nut
To Remove and Re-install Steering Column on Motorcycle, an Assistant May Be Required.
Move Traverse with Steering Column Axis Down
Also Advisable to Collect the Ball Bearings of Lower Support Bearing with Powerful Magnet to Avoid Their Loss

8. Before Final Removal of Lower Traverse Assembly with Steering Column Axle, Place a Container under Steering Column to Collect the Balls from the Bulk Bearings.
Remove Lower Traverse, Along with Steering Column Axle, Shifting It Downwards.
9. Remove Top Bearing Holder of Steering Column Bearing Maintenance

After Disassembling the Steering Column, it’s Necessary to Collect All the Balls (22 in each bearing), Rinse Them Thoroughly in Kerosene, to Remove Remnants of Old grease.

Also Necessary to Remove Old Grease from the Clips and Steering Column Tube.

If Signs of Wear on Balls or Clips, They Must Be Replaced. Before Assembling, Fill Clips with Plastic Grease, Then Install Bearings.

Assembly

Assembly Carried Out in the Reverse Order, Making Sure the Ball Bearings Are Not Displaced from the Clips.

Tighten Steering Column Nut So That the Telescopic Fork, with Wheel Removed, Rotates Without Jamming and Noticeable Backlash (Tighten Nut All the Way and Then Release It by 1/6- 1/8 turn), the Tightening Torque of Lock Nut is 49-61 N-m.
Latest Ural Steering Damper

- Designed in Conjunction with Ural’s 2014 EFI (Electronic Fuel Injection)
- Kit Allows Retrofit of a Hydraulic Steering Damper onto 2013 and Earlier Motorcycles
- Hydraulic Steering Damper Is Superior for Allowing Smooth Steering While Taking the Shock Out of the Feedback Produced Naturally from Having a Sidecar
- Gives the Rider the Sensation of Being More “Planted” to the Road, Inspiring Confidence and Allowing a More Enjoyable Ride

Pre-2013 Retro Fit – $209.00
Post-2013 Replacement – $167.00
Part #: 30086
(uralportland.com)
Ural upgraded the steering damper to a hydraulic unit in 2014.
Hydraulic Steering Damper, Updated Version by UralNE

Fitment: Fits on all 2014 and newer models, and on 2013 and older models equipped with hydraulic steering damper kit.

Hydraulic Steering Damper, Updated Version by UralNE
List Price: $74.99
(www.uralne.com)
Ural upgraded the steering damper in 2014.
Installation of Ural’s Hydraulic Steering Damper Retrofit Kit for 2013 and Older Rigs (advrider.com)

1. Remove the Friction Damper
2. Punch Out the Friction Disc Pin
3. Install Right Mount on Front Strut
4. Install Left Mount Using Friction Damper Knob, and Bolt thru the Hole Where Pin Was, With Washer between Triple Tree and Damper Bracket.

5. Secure Damper to Brackets with Supplied Hardware and Spacers, Center Damper on Rod, Making Sure It Doesn’t Bottom Out at Either Lock, and Tighten All Hardware.

6. Kit Retains the Friction Damper Knob, But Can Be Replaced with a Piece of All Thread with Nut and Washer on Top.

Knob on End of the Rod Adjusts the Dampening Rate; 15 Steps, Increasing the Rate When Turned Clockwise.