Russian Motorcycle Brake Lights and Switches

(front and rear)

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Simplified Evolution of Brakes and Brake-Lights

- No Brake Lights on Early Russian Bikes
  - Original M-72's and early K-750's
- Rear Foot-Pedal Brake-Switch
  - Started in Late 1950's with M-72M's and later K-750's
- Dual Front Handlebar and Rear Foot-Pedal Brake-Switches
  - Started in Late 1960's with later M-63's (Ural-2)
- Ural and Dnepr Used Front and Rear Drum Brakes
  - Ural Added Brembo Front Disc Brakes in 2003
  - Rear and Sidecar Still Use Drum Brakes

to Brake Lights

Ignition Switch

Fuse

Pos +

Neg -

Battery

No Brake-Switch

(Late 1940's)

Rear Foot Brake-Switch

(Late 1950's)

Rear Foot Brake-Switch

(1974)

Front Hand Brake-Switch

Sidecar Rear Light Assembly

Stop

Bike Rear Light Assembly

Stop Run

Chassis Ground

Screw Terminal

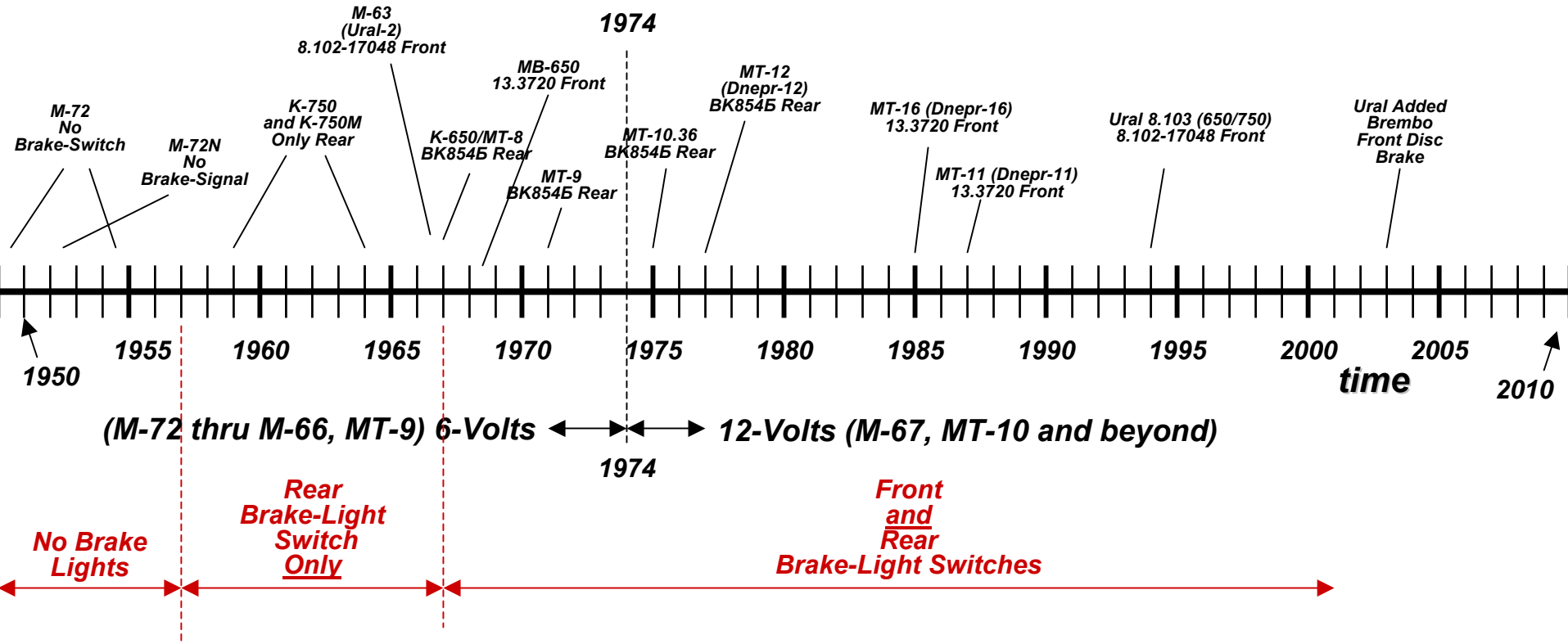
The handlebar brake light-switch is electrically in parallel with the foot-pedal brake light-switch.

Table I: IMZ (ИМЗ) - Ural (Урал) and KMZ (КМЗ) - Dnepr (Днепр) Brake Switches

Mfgr	Model	Year	Engine Size (cm^3 / $inch^3$)	Hand (Front) Brake-Switch	Foot (Rear) Brake-Switch	Voltage	Brake Lamp
Ural	M-72	1941-56	746 / 45.3 SV	-	- Later: ВК854Б	6-Volt	A6-15
	M-72K	1954-60	746 / 45.3 SV	-	- Later: ВК854Б	6-Volt	A6-15
	M-72M	1956-60	746 / 45.3 SV	-	- Later: ВК854Б	6-Volt	A6-15
	M-61	1958-60	649 / 39.4 OHV	-	ВК854Б	6-Volt	A6-15
	M-62	1960-65	649 / 39.4 OHV	-	ВК854Б	6-Volt	A6-15
	M-63 (Ural-2)	1965-68	649 / 39.4 OHV	- Later: 8.102-17048	ВК854Б	6-Volt	A6-15
	M-66 (Ural-3)	1968-72	649 / 39.4 OHV	-	IMZ-8.102-17048	6-Volt	A6-15
	M-67	1973-75	649 / 39.4 OHV	Later: IMZ-8.102-17048	ВК854Б	12-Volt	A-12-21
	M-67.36	1976-95	649 / 39.4 OHV	Later: IMZ-8.102-17048	ВК854Б	12-Volt	A-12-21
	8.103, 8.107 Series “650”	1994-2002	649 / 39.4 OHV	IMZ-8.102-17048	IMZ-8.102-17048	12-Volt	A-12-21
	8.103 “750”Series	2003-present	745 / 45.2 OHV	IMZ-8.102-17048	IMZ-8.102-17048	12-Volt	A-12-21
Dnepr	M-72	1952-56	746 / 45.3 SV	-	- Later: ВК854Б	6-Volt	A6-15
	M-72N	1956-58	746 / 45.3 SV	-	- Later: ВК854Б	6-Volt	A6-15
	K-750	1959-63	746 / 45.3 SV	-	ВК854Б, Later: 65018950	6-Volt	A6-15
	K-750M	1964-77	746 / 45.3 SV	-	ВК854Б, Later: 65018950	6-Volt	A6-15
	MB-750	1964-73	746 / 45.3 SV		ВК854Б, Later: 65018950	6-Volt	A6-15
	K-650/MT-8	1967-70	649 / 39.4 OHV	-	ВК854Б	6-Volt	A6-15
	MB-650	1968-91	649 / 39.4 OHV	13.3720	ВК854Б	12-Volt	A-12-21
	K-650/MT-9	1971-74	649 / 39.4 OHV	-	ВК854Б	6-Volt	A-6-21
	MB-750M	1973-77	746 / 45.9 SV	-	ВК854Б	6-Volt	A6-15
	MT-10	1973-76	649 / 39.4 OHV	-	ВК854Б	12-Volt	A-12-21
	MB-650M	1968-91	649 / 39.4 OHV	-	ВК854Б	12-Volt	A-12-21
	MT-10.36	1976-87	649 / 39.4 OHV	-	ВК854Б	12-Volt	A-12-21
	MT-12 (Dnepr-16)	1977-85	746 / 45.3 SV	-	ВК854Б, Later: 65018950	6-Volt	A6-15
	MT-16 (Dnepr-16)	1985-2005	649 / 39.4 OHV	13.3720	ВК854Б	12-Volt	A-12-21
	MT-11(Dnepr-11)	1987-2005	649 / 39.4 OHV	13.3720	ВК854Б	12-Volt	A-12-21

Ural (Урал) - Dnepr (Днепр) Brake-Switch Time-Line (01/11)

(eafranke@tampabay.rr.com)



It appears that brake-lights were added to Russian heavy motorcycles in the late 1950's, based on the schematics and manuals for Ural's M-61, M-62, M-63 and Dnepr's K-750.

Brake Lights and Switches

- Brake-Light Activated by either Front Handlebar Lever or Rear Foot Pedal
- Intermittent Sticky Hand-Brake and Foot-Brake Switches
  - Brake Light Stays On When Brake Is Released
    - Silicone Spray Lubricant: Thin, Penetrates and Lasts
    - WD-40 Works, but Evaporates and Has To Be Re-Applied
    - Tri-Flow Gun Cleaning and Oiling: Cleans the Junk Out
- Use Clip Lead with Two Alligator Clips to Test Switch
  - When Switch Is Energized: Short Circuit / Light On
  - When Switch Is Un-energized: Open Circuit / Light Out
- Replacement Lamps
  - Bike Brake Light:
    - Older Bikes (6-Volt): Replace A6-15 with 1129 (2.63-A/16.8-Watt, rated @ 21 Candle-Power)
    - Newer Bikes (12-Volt): Replace A 12-21-3 with 1156 (2.1-A/27-Watt, rated @ 32 Candle-Power)
  - Rear Sidecar Running/Brake: 1157 (double-contact)

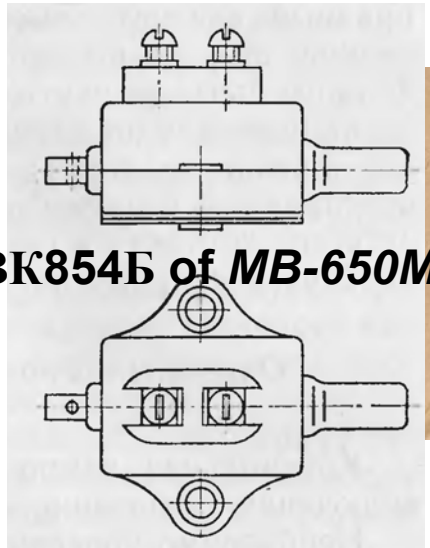
On modern Russian motorcycles (>1970), the hand-brake light-switch is electrically in parallel with the foot-brake light switch.

Trouble-Shooting the Brake-Light Switch

(VANCE BLOSSER http://www.crawfordsales.info/ural/articles/brakeLightSwitch/)

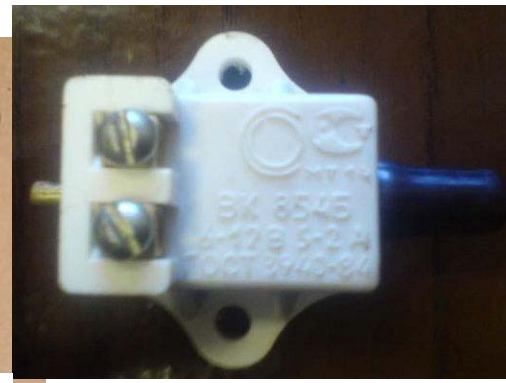
- *Stuck Brake Light Switch: The problem is, there are 2 switches so you have to figure out which one. It turns out this isn't too hard, if you are logical about it.*
- *Down by the foot brake, close to the transmission, you'll see a rubber 'bulb' with 2 wires going into it. This is the rear brake-light switch. Tug the rubber cover off, you'll see 2 wires plugged onto the switch. Pull one of them off, and keep it from touching the bike anywhere (tape it up if you have to, or get a helper). Now, turn on the key. If the brake lights still come on, it's NOT this switch, go to the front switch routine.*
- *BACK SWITCH BAD or STUCK (light went out when you pulled the wire off): First, go ahead and remove the other wire (it doesn't matter which goes where when you put it back together). Unscrew the switch (you may have to loosen the lock nut that holds it in place). After it's out, reconnect the wires, turn on the key, and press the button in - the brake lights should go out. If they do, it's an adjustment issue - if they don't, you need a new switch. (Sometimes you can spray some WD40 in the pushbutton area and get a bit more life, but it's gonna fail again so go ahead and get a new one).*
- *ADJUSTING REAR BRAKELIGHT SWITCH (you got a new one or are re-installing the working one you have). Run the adjustment nut pretty far up the shaft, close to the switch housing. The idea here is that you want the switch to stick out JUST ENOUGH to push the button and kill the light, so the light will come on as soon as you press the brake pedal. A small mirror can come in handy so you can see when the button touches the brake rod tab. Use a test light, a meter, or put the wires back on and test to make sure the switch turns off when the pedal is up and turns on when down. Once you find this position, tighten the lock nut. If you turn the switch too far down the brake tab will beat on the end of it and can cause early failure. Replace the wires and the cover and drive! You may have to re-tweak the adjustment if the switch wears in a bit.*
- *FRONT BRAKE LIGHT SWITCH TEST - same procedure as the rear, except the switch is mounted on the handlebars. Again, remove one wire and test to see if the brake lights go out - if so, this switch is bad or misadjusted. The procedure and goal is the same as the rear switch, except the switch hits the brake lever instead of the rear brake rod.*
- *When working, make sure the terminals do not touch the frame of the bike or you will blow the brake light fuse.*

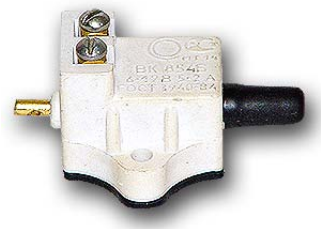
Выключатель Сигнала Торможения
ВК854Б : *Rear-Brake Light-Switch*



ВК854Б of *MB-650M*

IMZ-8.101-17021-01
(www.russiangarage.com)



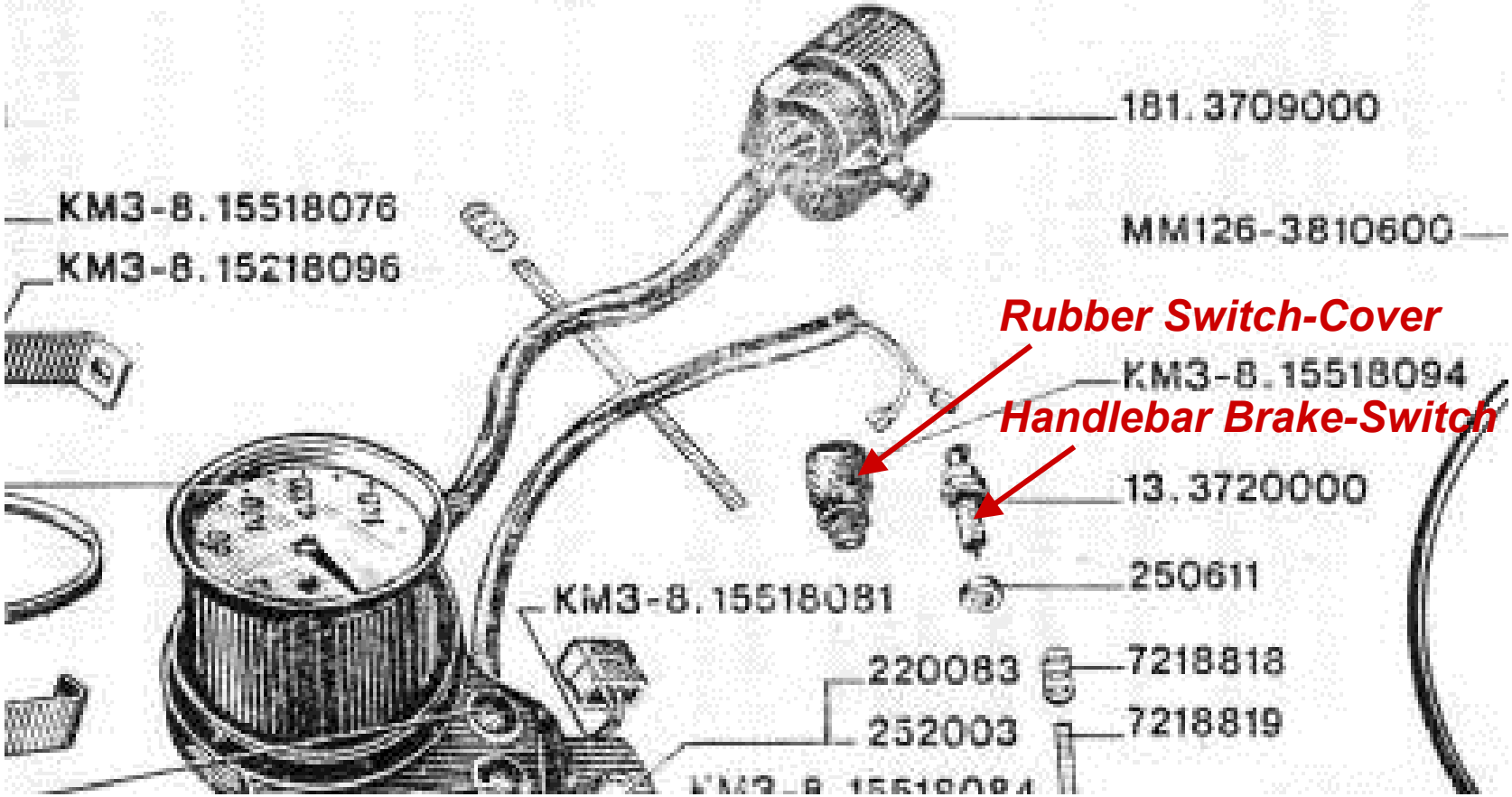


www.ural-hamburg.de

ВК854Б
5-A @ 6-V. or
2-A. @ 12-V.

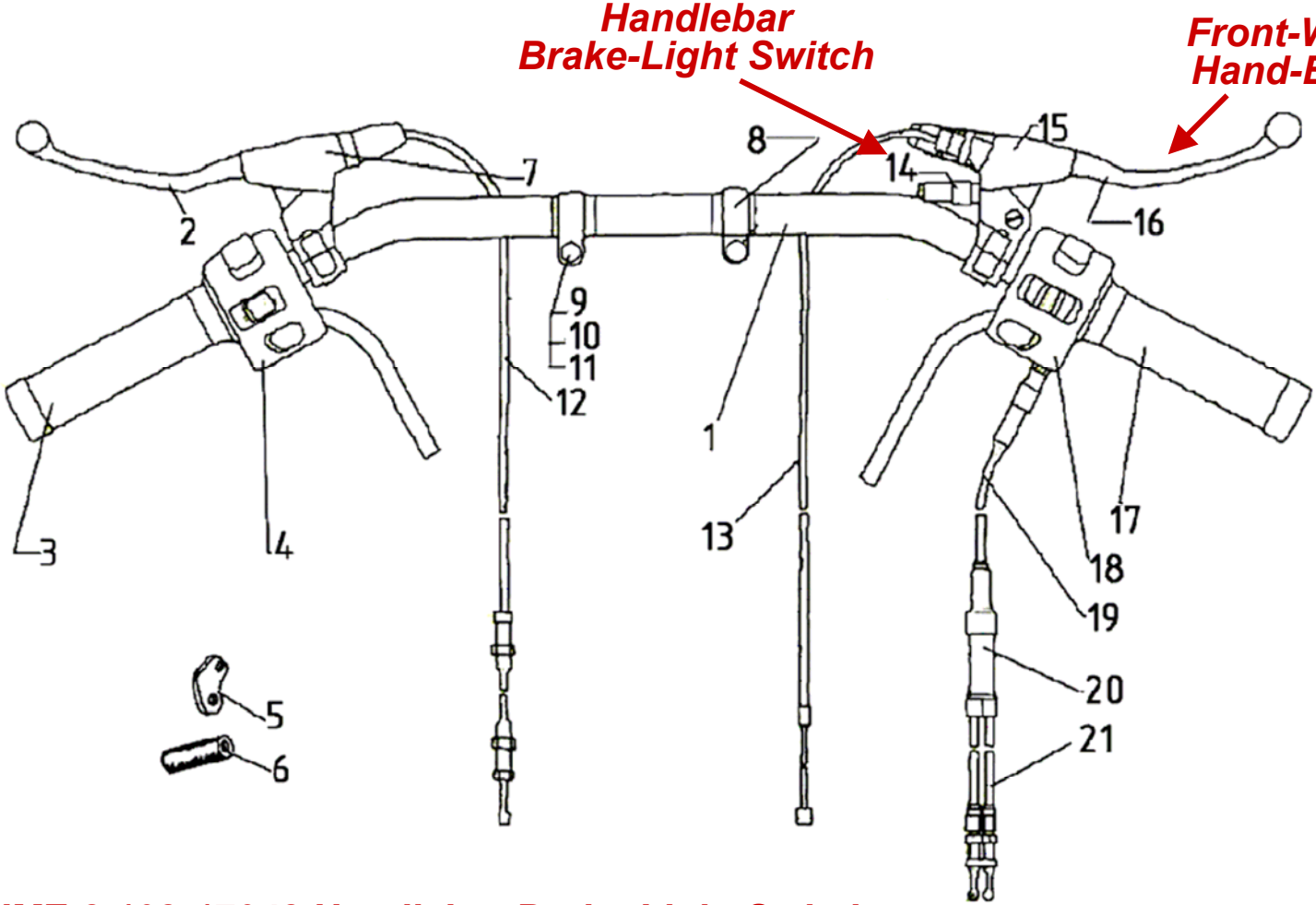
The classic ВК854Б brake-light switch is found on most Urals and Dneprs. It is connected to the foot-pedal by a spring.

Dnepr MB-650, MT-11 and MT-16 Handlebar Brake-Light Switch 13.3720000



The Dnepr MB-650, MT-11 and MT-16 introduced the handlebar brake-light switch, electrically in parallel with the foot-brake light switch.

2003 Ural Hand Brake



14. Part# IMZ-8.102-17048 Handlebar Brake-Light Switch
14A. Part# 250511-P29 Nut M8x1
15. Part# IMZ-8.103-18834 Rubber jacket
16. Part# 3040.04.00 Lever, RH

On newer bikes, the handlebar light-switch is screwed into the brake lever assembly, replacing the 13.37200.

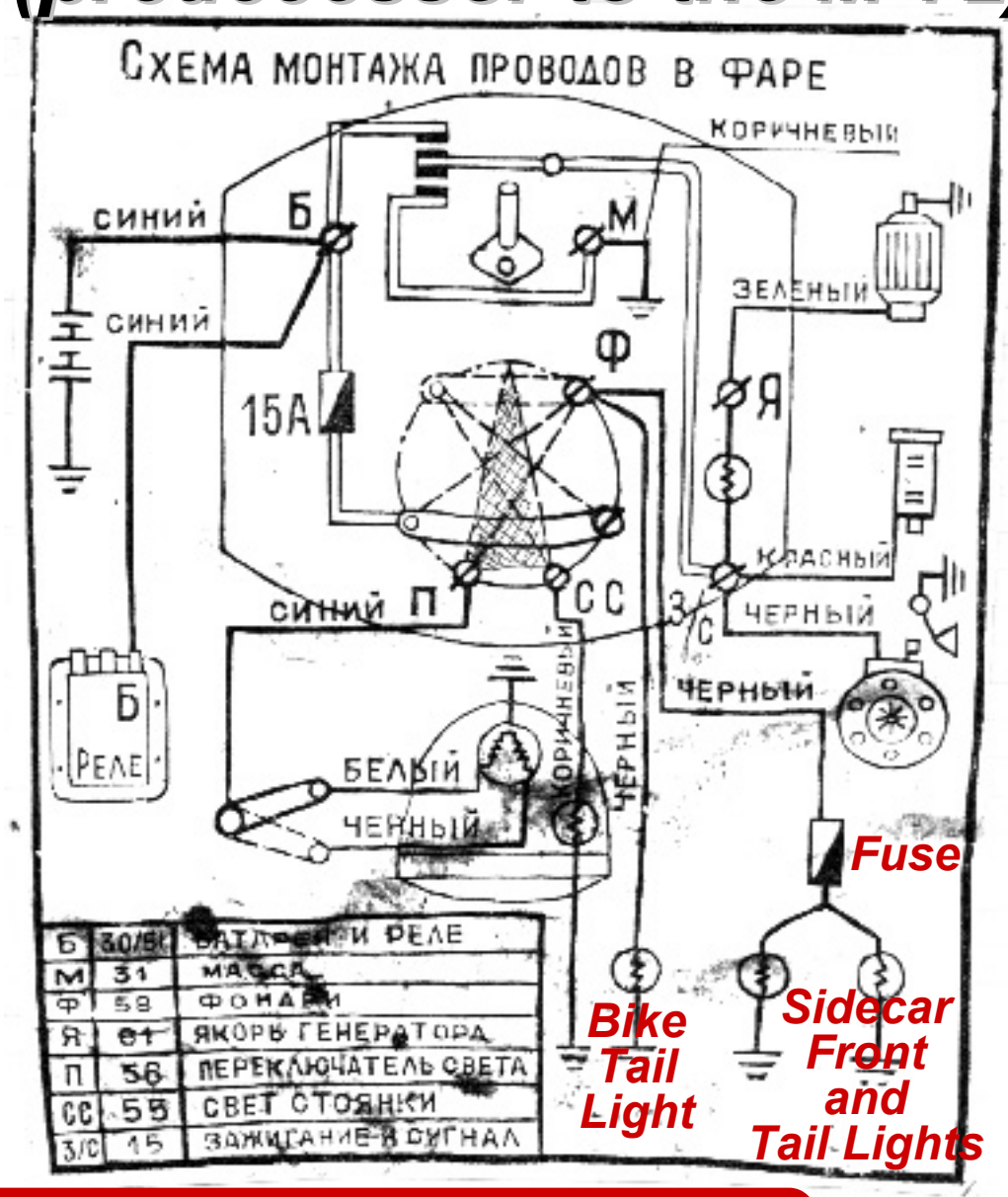
Handlebar-Brake Light-Switch

Ural: IMZ-8.102-17048
Dnepr: 13.3720000

The handlebar-brake light-switch is electrically in parallel with the foot-pedal brake light-switch.

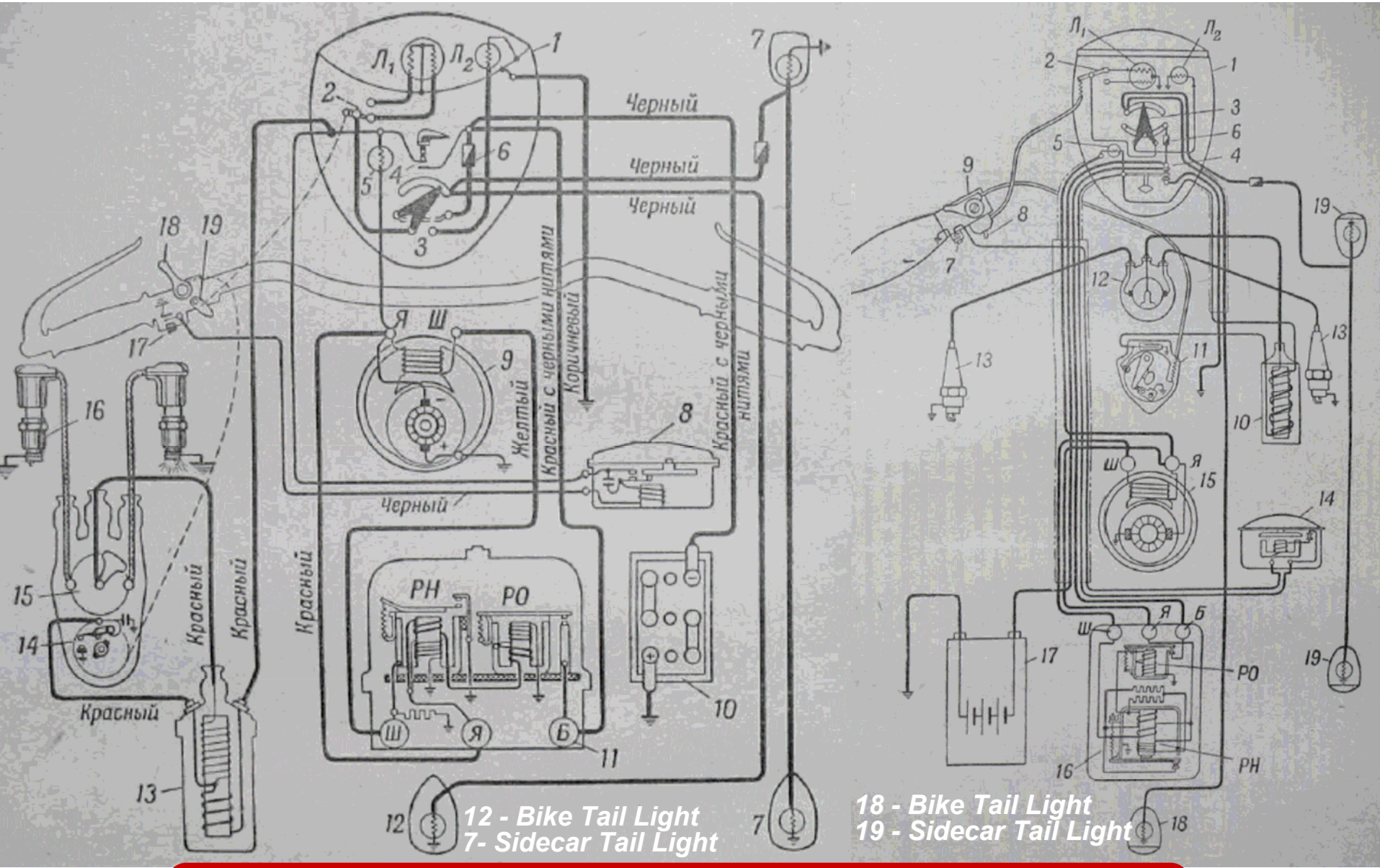
German BMW R-71 (predecessor to the M-72)

- *R-71 Production: 1938-1941*



The Russian M-72, a copy of the German R-71, did <u>not</u> have any brake-light switches.

Original Ural M-72 with PP-1 Regulator **Later Ural M-72 with PP-31 Regulator**



Both the original (1941) and later (1949) Ural M-72's didn't have any brake-light switches.

Front and Rear Drum Brakes on M-72

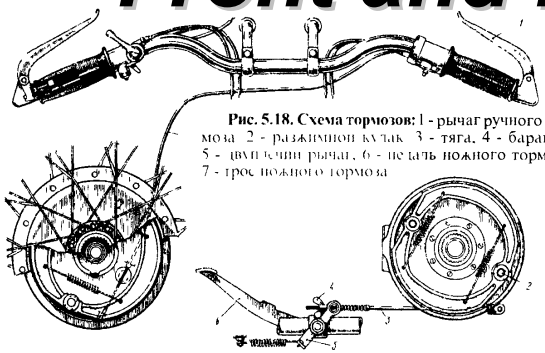
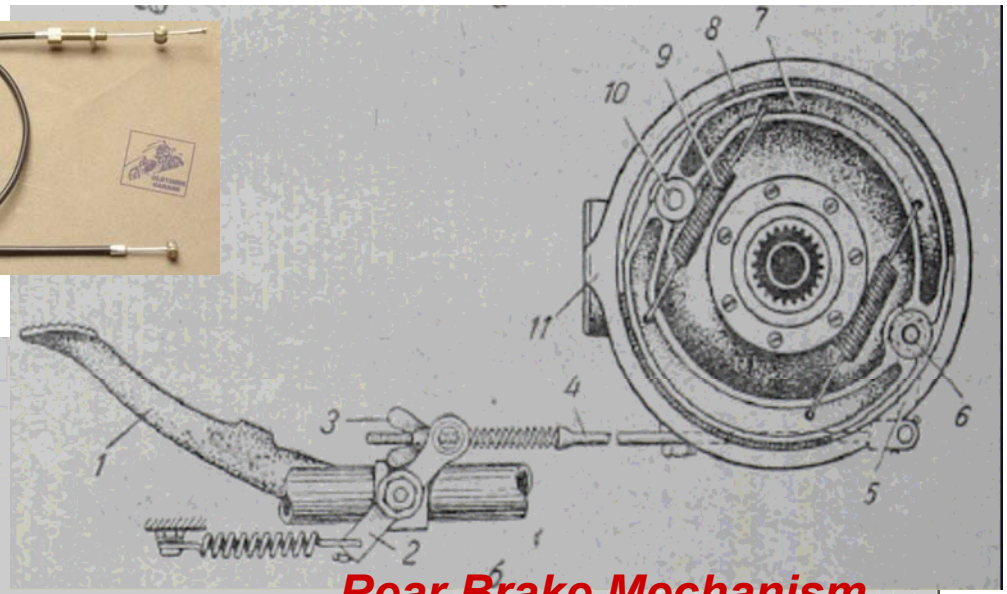
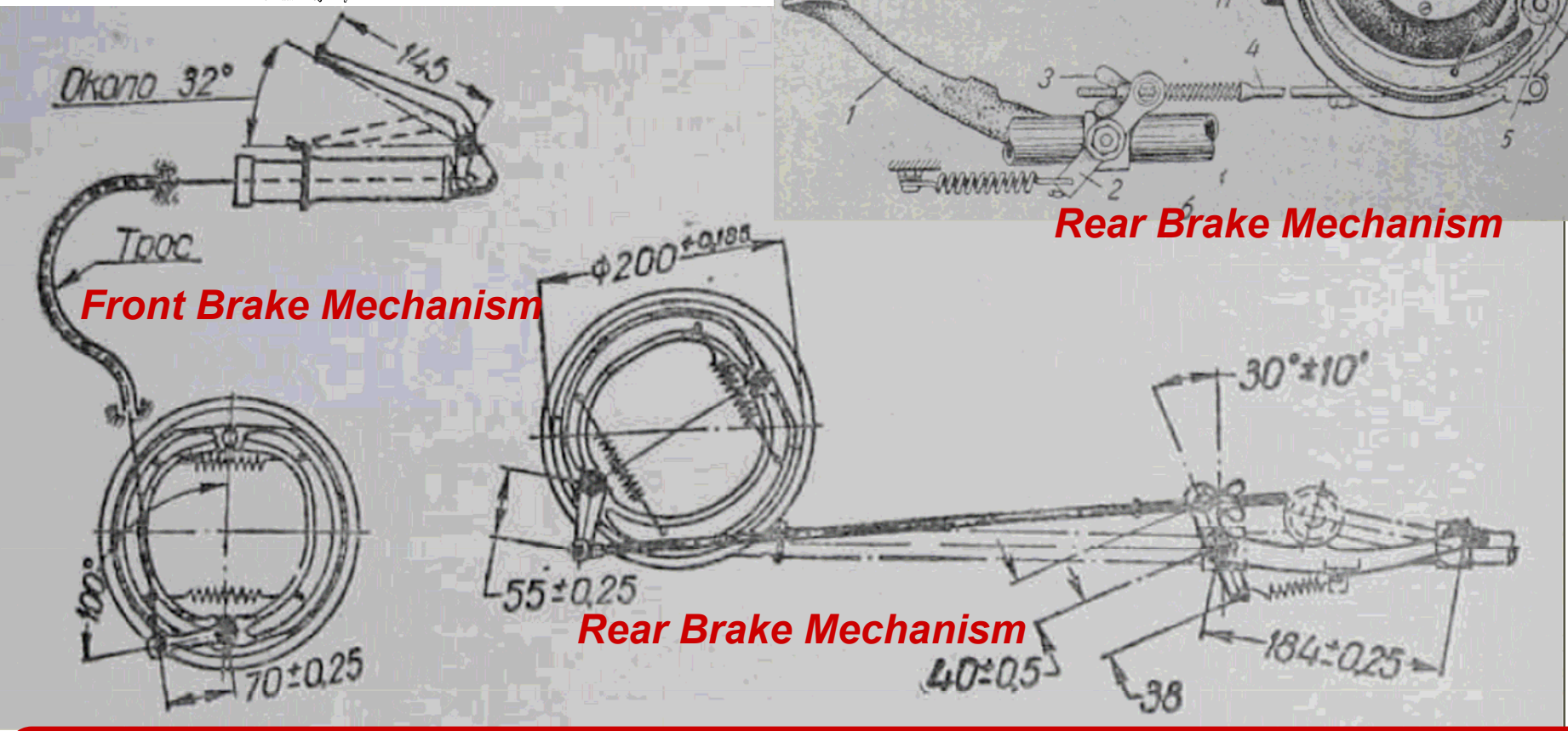


Рис. 5.18. Схема тормозов: 1 - рычаг ручного тормоза; 2 - разжимной кулак; 3 - тяга; 4 - барашек; 5 - двуплечий рычаг; 6 - педаль ножного тормоза; 7 - трос ножного тормоза



Rear Brake Mechanism

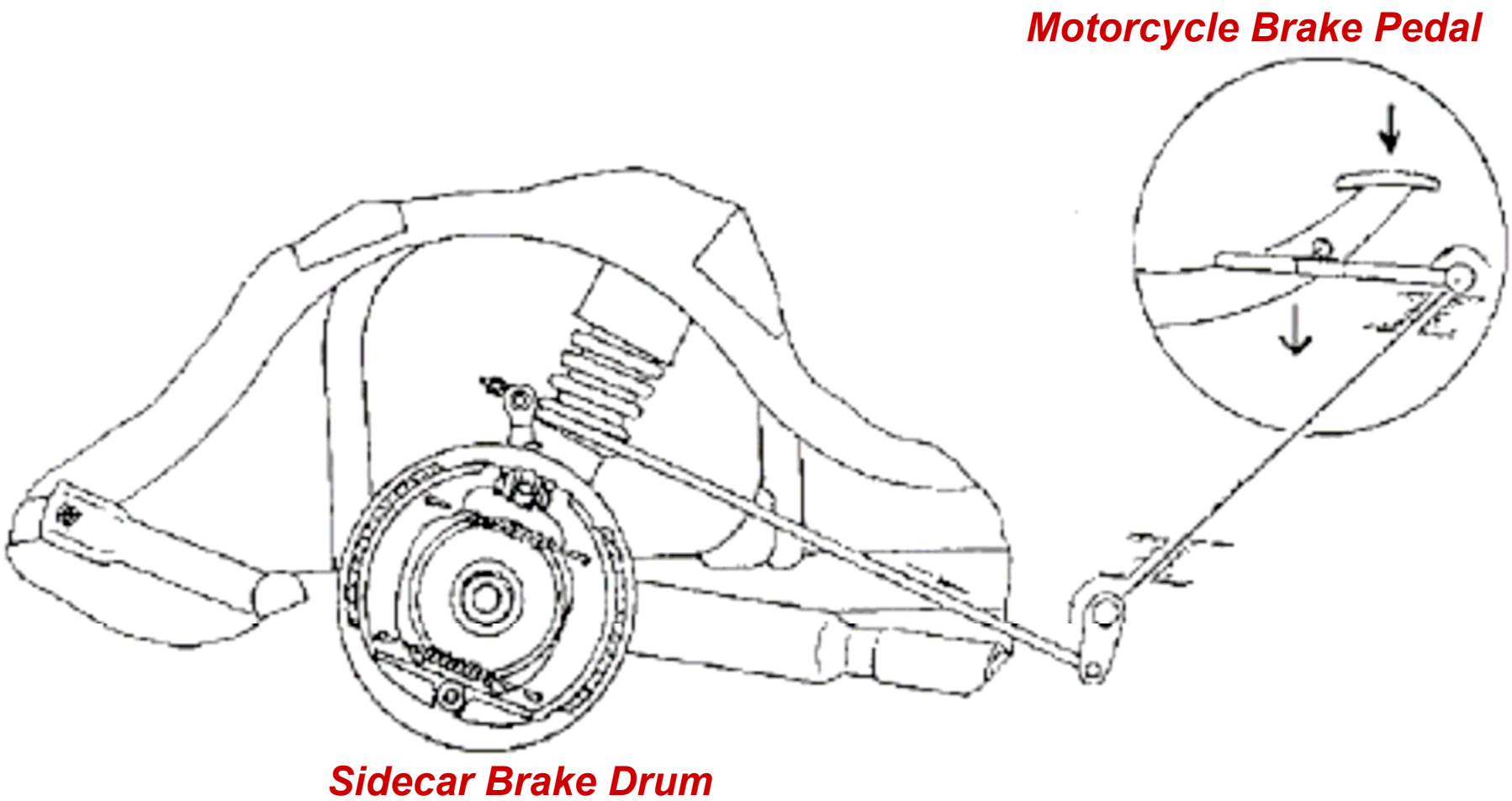


Front Brake Mechanism

Rear Brake Mechanism

The front wheel brake, prior to disc brakes, was driven with a wire cable, while the rear brake was driven by a rigid linkage system.

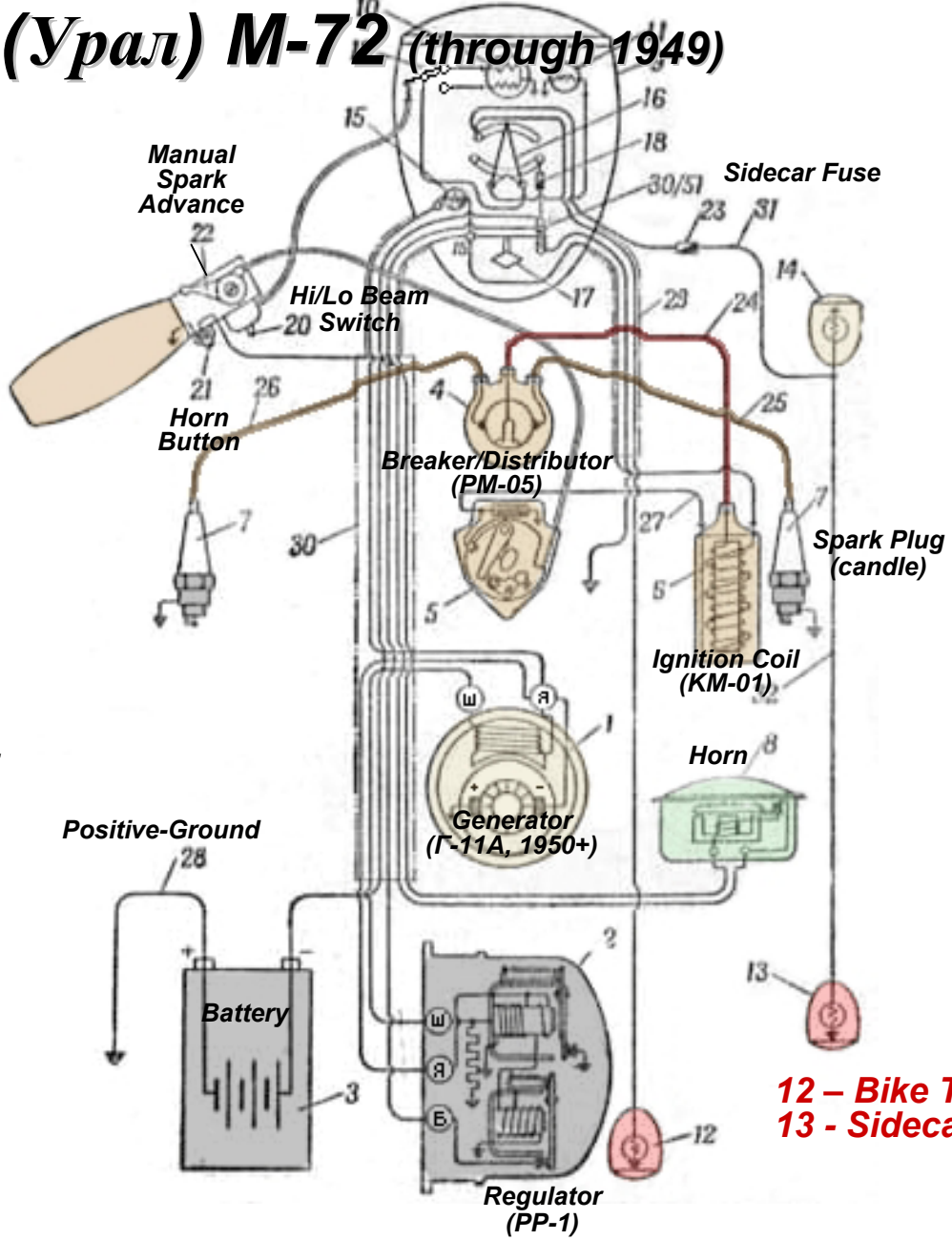
Sidecar Wheel Brake (Ural-2 Manual)



The foot lever links to rear and sidecar drum brakes by a rigid linkage system.

Ural (Урал) M-72 (through 1949)

1 - Generator: Г-11
2 - Relay-Regulator: PP-1
3 - Battery
4 – Distributor: PM-05
5 - Breaker: PM-05
6 - Ignition Coil: KM-01
7 - Spark Plugs (candles)
8 - Signal
9 - Lamp
10 - Driving Lamp and Low Light
11 - Parking Light Bulb
12 - Tail Light
13 - Tail Light Sidecar
14 - Front Light Sidecar
15 - Control Lamp
16 - Ignition Switch
17 - key
18 - Fuse
19 - Switch Beam and Dipped Beam
20 - Lever Switch Near and Far Light
21 - Horn Button
22 - Ignition control stick
23 - Fuse Lamps
24-26 - High Voltage Wires
27-30 - Bundle of Low Voltage Wires
31-32 - Wire for Lanterns Sidecar



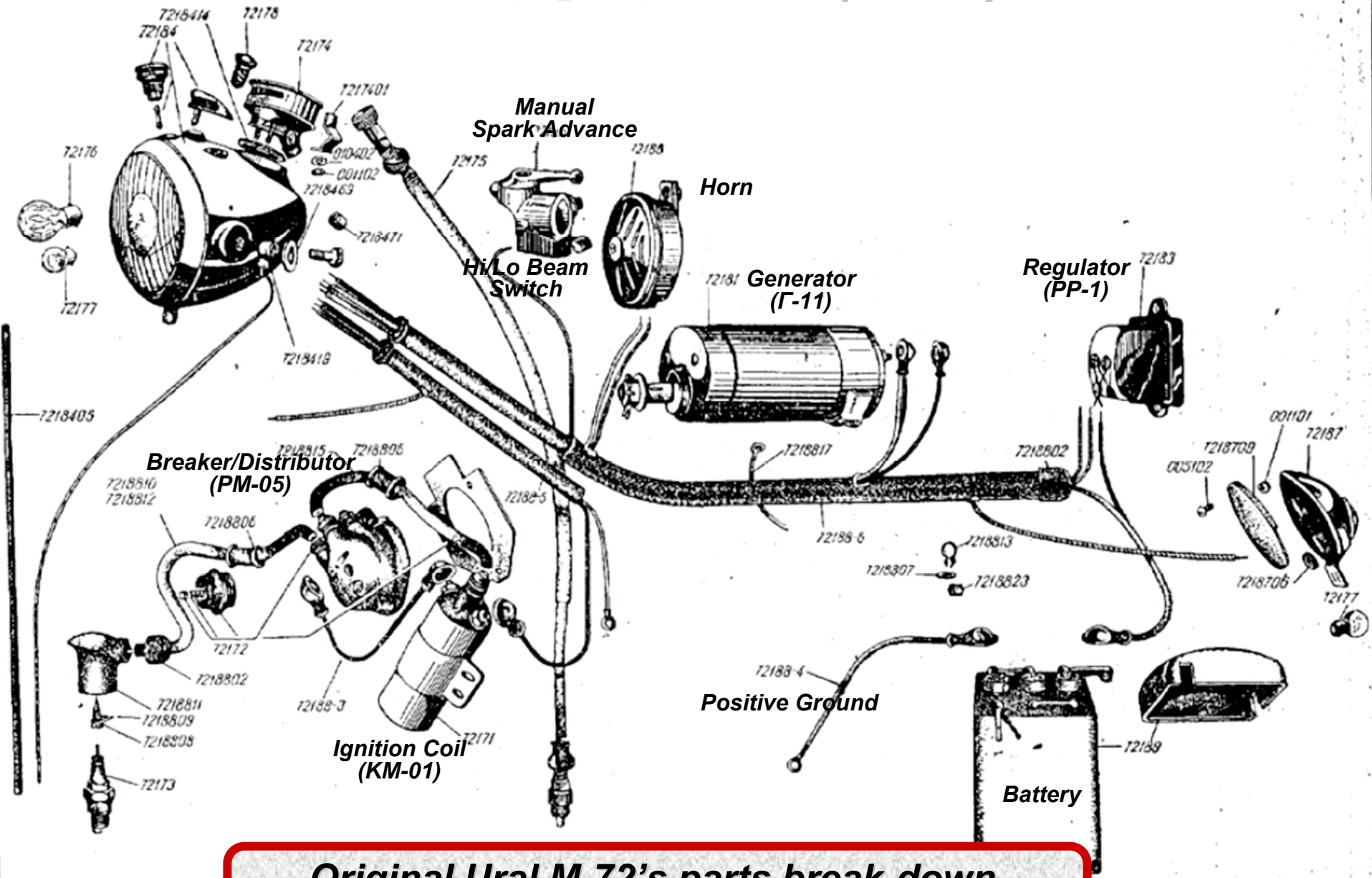
12 – Bike Tail Light
13 - Sidecar Tail Light

Original Ural M-72's didn't have any brake-light switches.

7217/18

Ural (Урал) M-72 (1942)

Таблица 14



Original Ural M-72's parts break-down doesn't show any brake-light switches.

M-72 Tail-Light (www.ural-zentrale.de)

***without* brake light and license number illumination**

***with* brake light and license number illumination**

The M-72 tail-light assembly has evolved from the simple tail-light to an assembly with a brake-light.

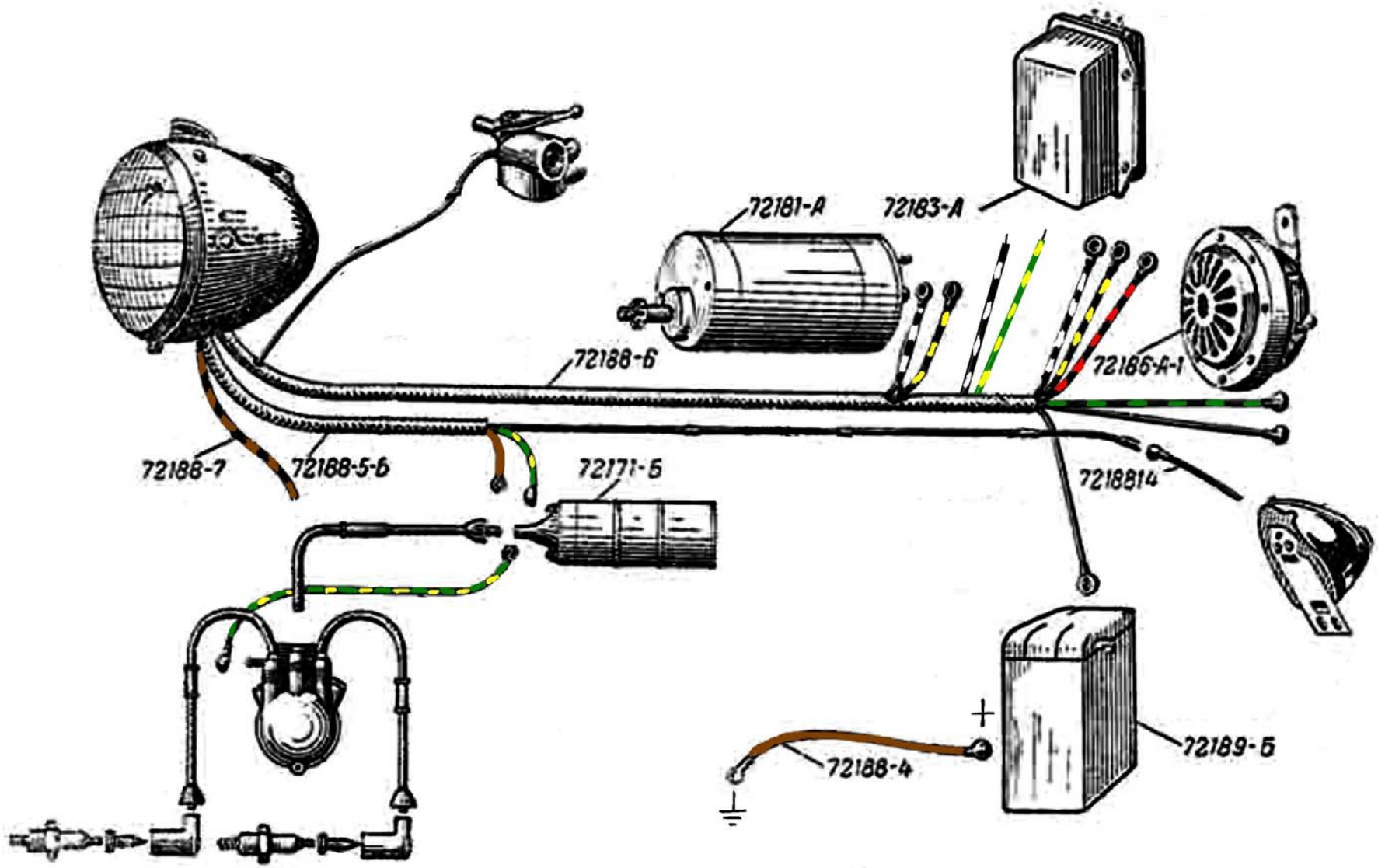
Tail Light for MT-12 and K-750 (www.ural-zentrale.de)

without brake light

with brake light

Early models did not have brake lights, but were added later with brake switches and wiring harness changes.

M-72 after 1950 , with rear horn (www.oldtimergarage.eu)

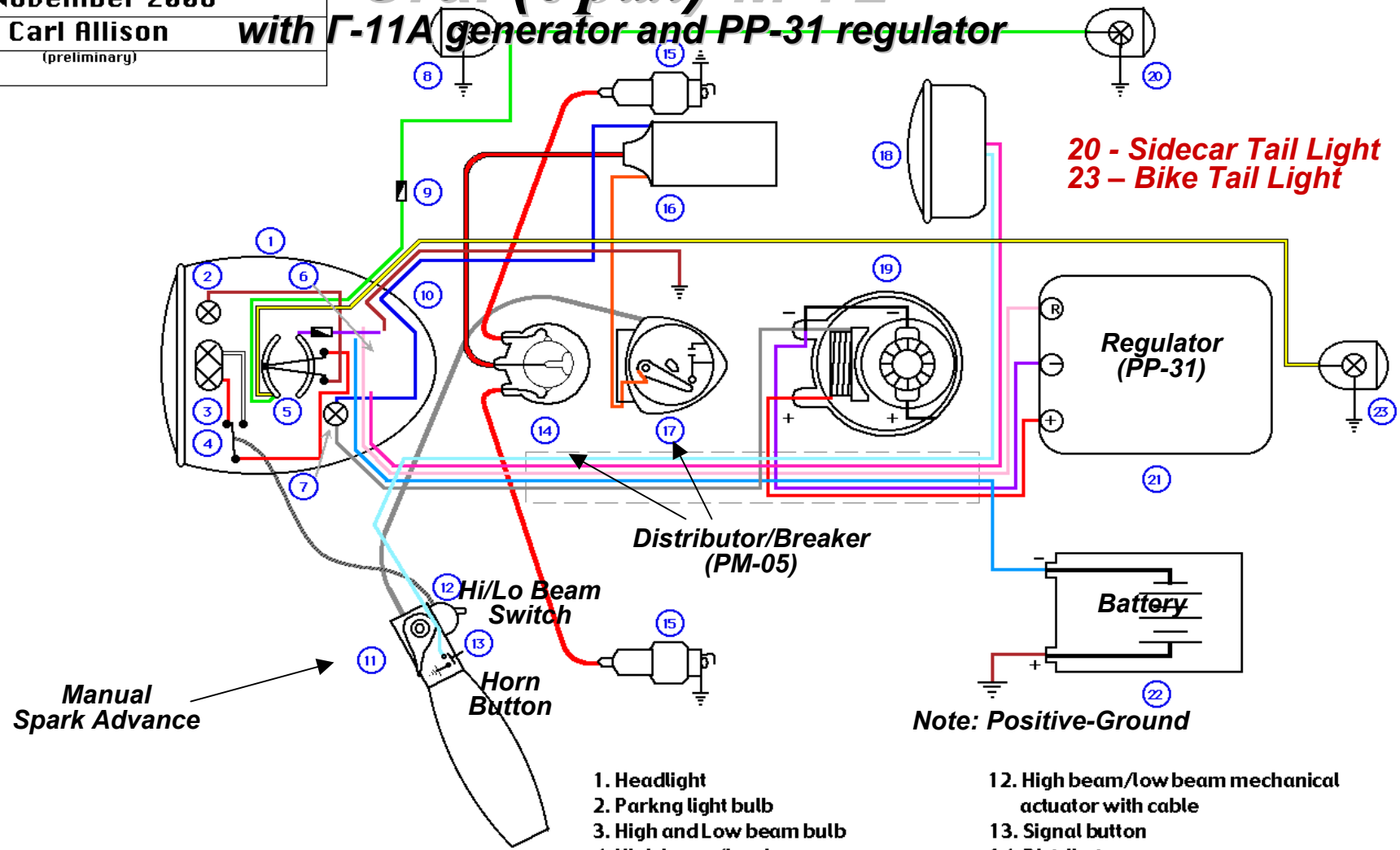


Original Ural M-72's parts break-down didn't show any brake-light switch.

Ural M72
7 November 2006
Carl Allison
(preliminary)

Ural (Урал) M-72

with Г-11А generator and PP-31 regulator

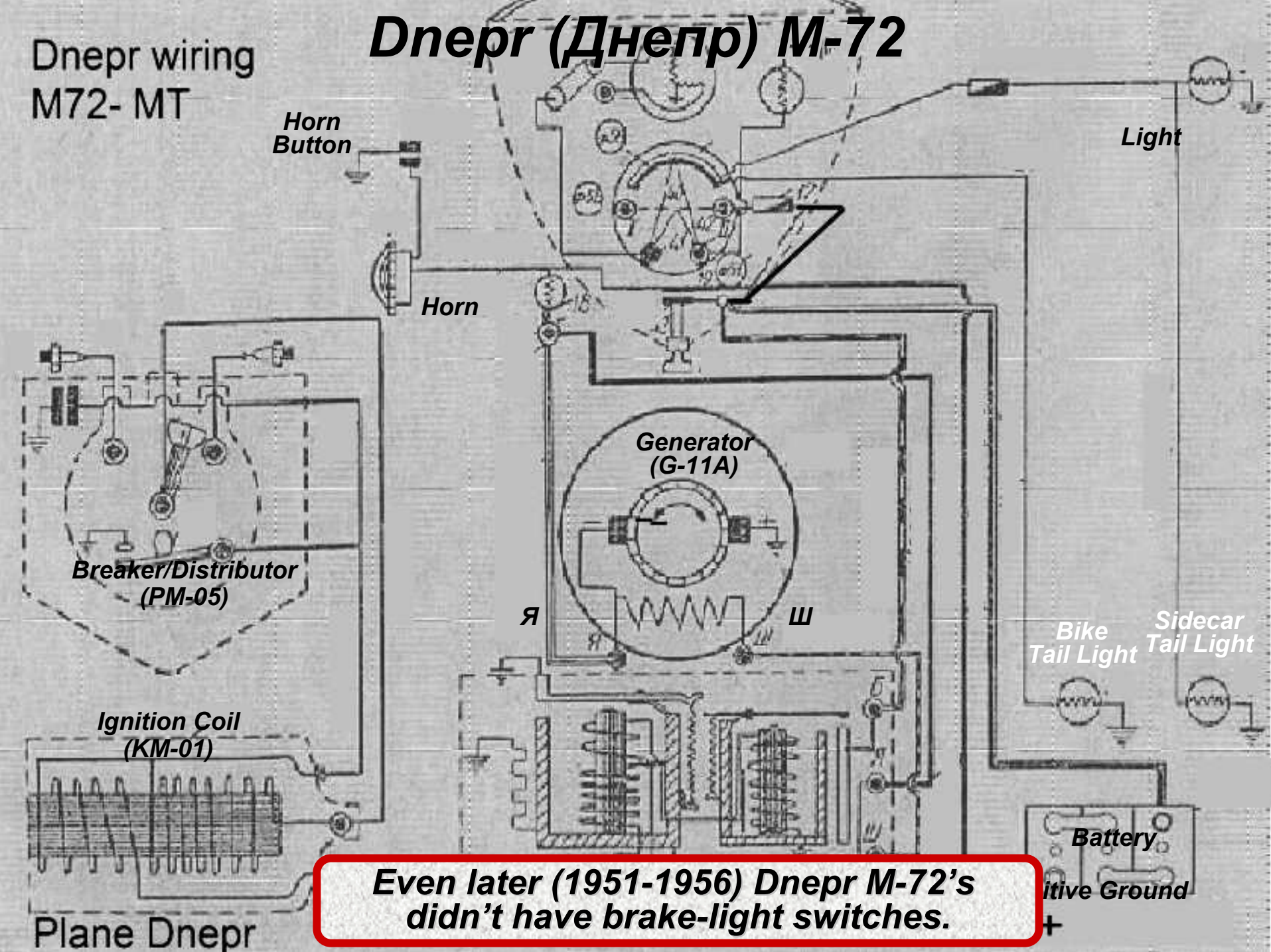


1. Headlight
2. Parkng light bulb
3. High and Low beam bulb
4. High beam/low beam electrical switch
5. Central switch
6. Fuse
7. Indicator light
8. front light of the sidecar
9. Sidecar lights fuse
12. High beam/low beam mechanical actuator with cable
13. Signal button
14. Distributor
15. Spark plugs
16. Ignition coil
17. Points
18. Horn
19. Generator
20. Sidecar taillight

R-1

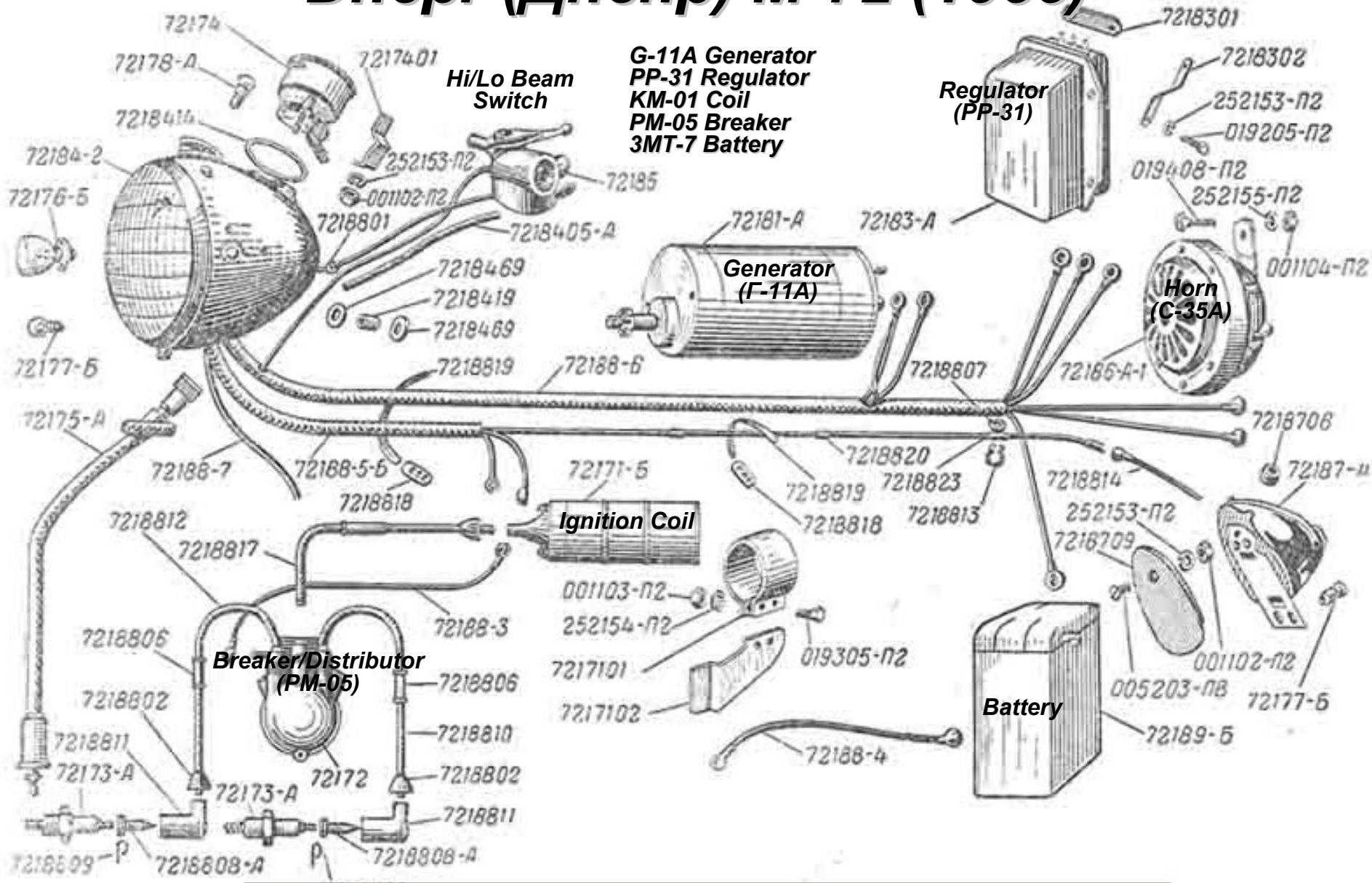
Original Ural M-72's didn't have any brake-light switch.

Dnepr (Днепр) M-72



Even later (1951-1956) Dnepr M-72's didn't have brake-light switches.

Dnepr (Днепр) M-72 (1955)

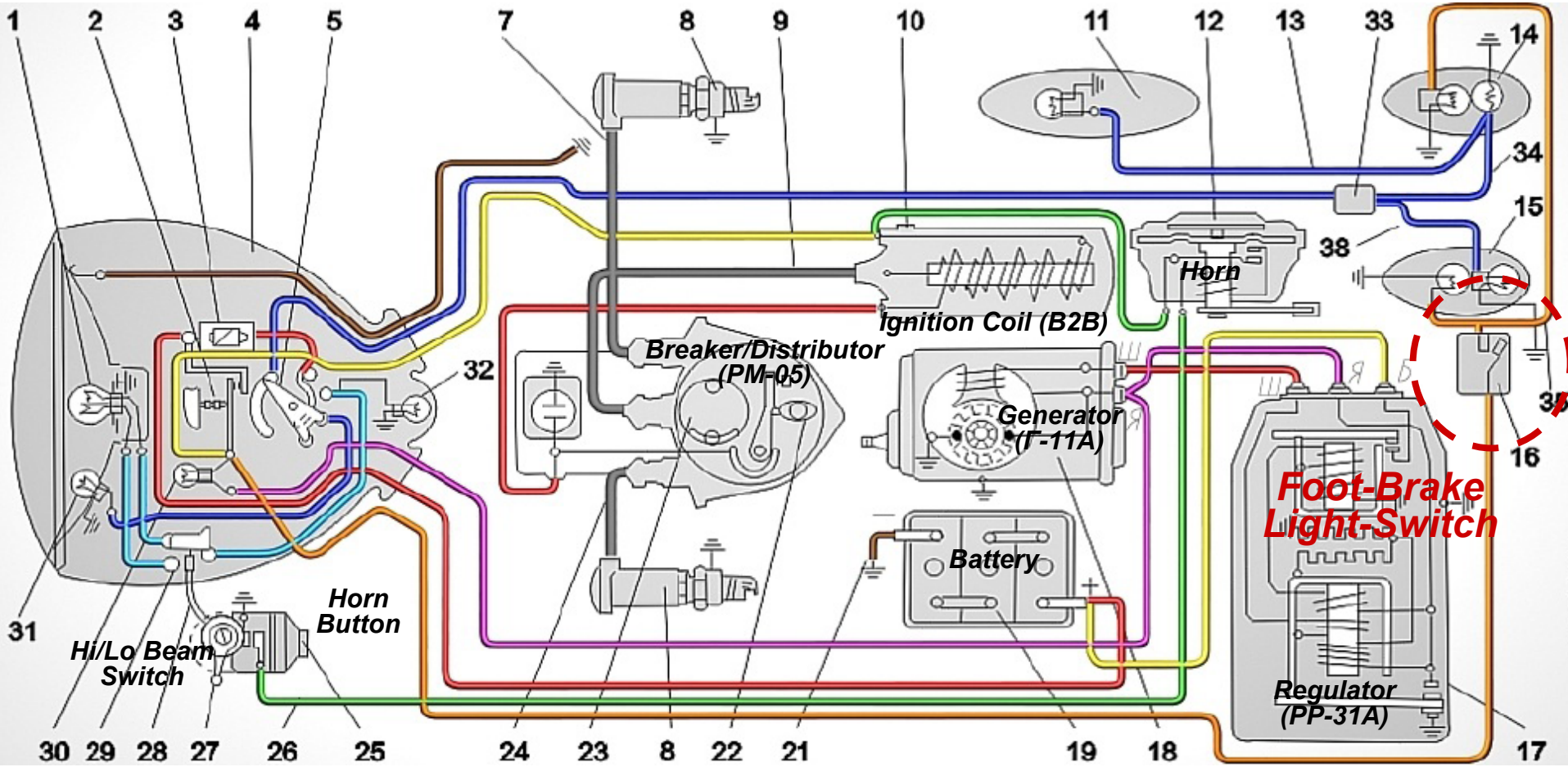


Even later M-72's (1951-1956), made by Dnepr, didn't have any brake-light switches.

M-72 Brake System with Pedal, Lever and Brake Light-Switch (www.ural-hamburg.de)

Kits are available to add a brake-light to the M-72.
The brake-light switch operates off a cam on the axle of the brake-pedal lever.

Dnepr (Днепр) Early K-750



Early K-75, K-750M and MT-12 used only the foot-pedal brake-switch to activate the rear brake-light.

Spring (*пружины*) for ВК854Б Rear Brake Switch

Рис. 5.26. Привод тормозов заднего колеса и колеса коляски: 1 - гайка, 2 - ось рычага, 3 - рычаг кулачка тормоза, 4 - задняя тяга, 5 - внутренний рычаг, 6 - внешний рычаг, 7 - промежуточный шарнир, 8 - передняя тяга в сборе, 9, 11, 32 - пружины, 10 - выключатель сигнала торможения, 12 - стержень фиксатора стояночного тормоза, 13, 16 - упорный болт фиксатора, 14 - упор педали, 15 - уравниватель; 17 - педаль тормоза, 18 - валик подножки, 19 - поворотная пружина, 20 - втулка, 21, 27 - защитные муфты, 22 - регулирующая гайка, 23 - кронштейн (упор), 24 - гайка, вил… кол… ват… ходник, 30 - ось рычага кулачка, 31 - наконечник троса, 33 - пластина для зацепления пружины

10. ВК854Б Rear Brake Switch

9. Brake Switch Spring

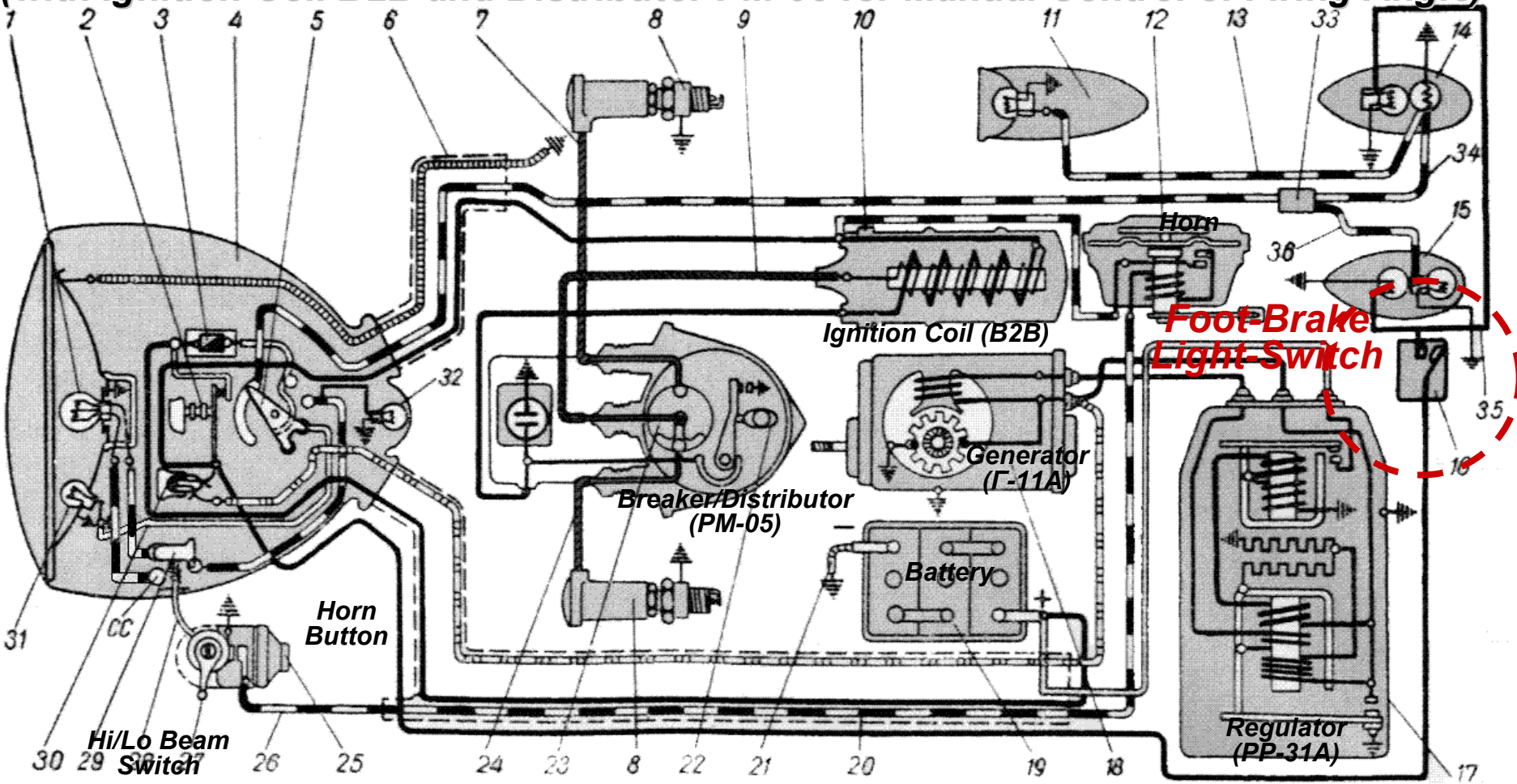
Small Hole in Center of Rod for Spring

17. Brake Pedal

The ВК854Б foot-brake light switch is operated by a small pull-spring connected to the foot pedal.

Dnepr (Днепр) Early K-750 and K-750M

(with Ignition Coil B2B and Distributor PM-05 for Manual Control of Firing Angle)

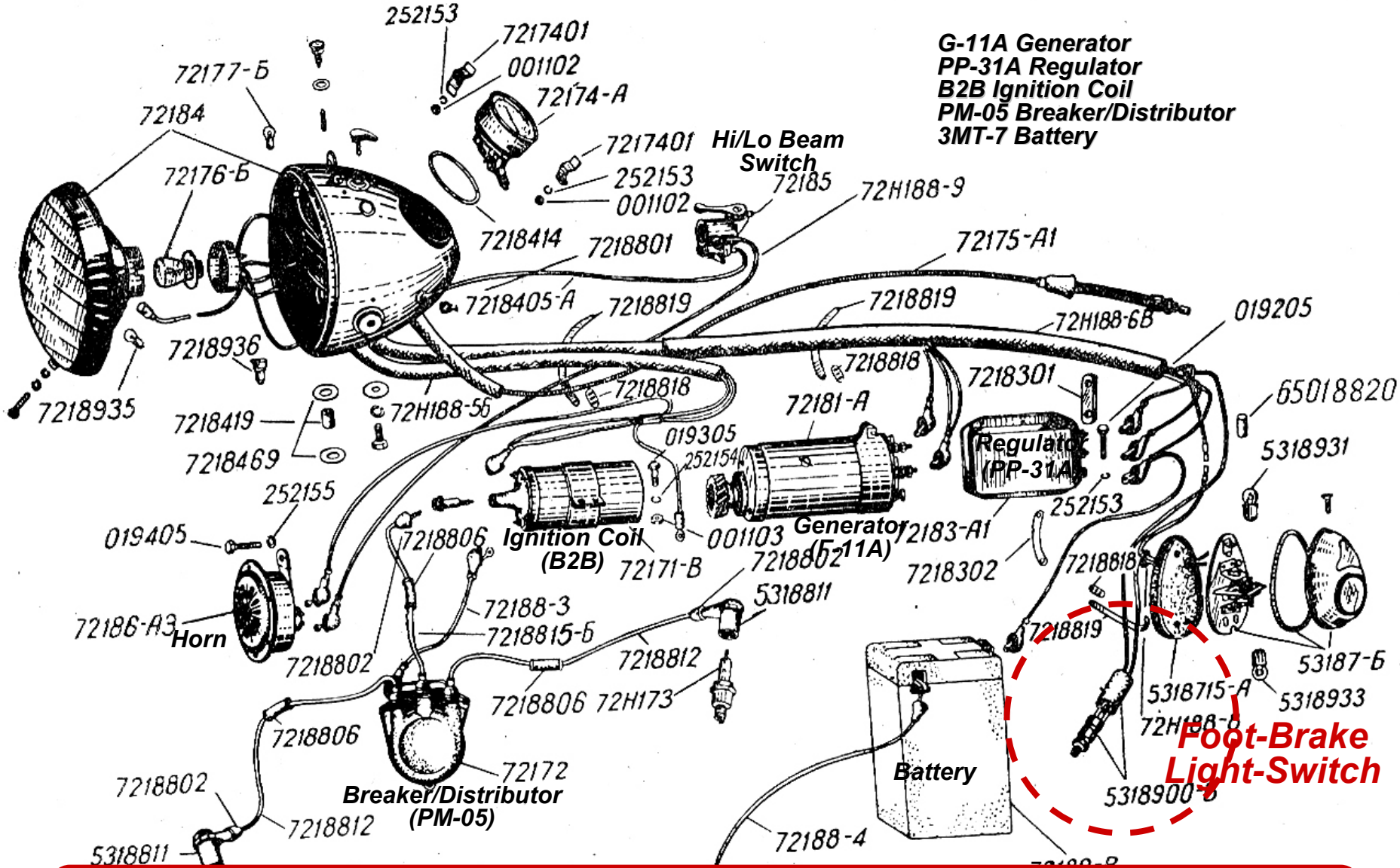


1 - lamp beam and dipped beam, 2 - key 3 - fuse 4 - lamp, 5 - central switch, 6 - wire “ground", 7 - high voltage wire, 8 – spark plugs, 9 - high voltage 10 - ignition coil, 11 - front light stroller, 12 – horn, 13 - wire front canopy sidecar, 14 - tail light sidecar, 15 - tail lamp of motorcycle, 16 - gauge stoplight, 17 - Relay-regulator, 18 – generator, 19 – battery, 20 - Low voltage wiring loom, 21 - the wire "battery – ground, 22 - breaker, 23 - valve, 24 - high voltage wire and 25 - button signal 26 - wire sign
lam
the

Early K-750, K-750M and MT-12 only used the foot-pedal brake-switch to activate the rear brake-light.

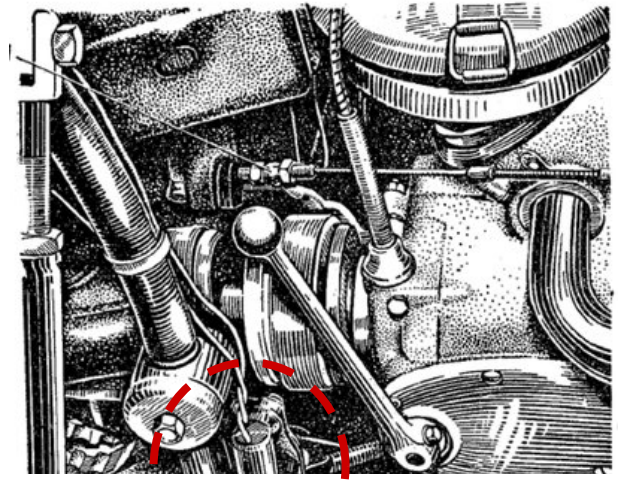
Dnepr (Днепр) Later K-750's and K-750M's

with PP-31 Voltage Regulator, PM-05 Breaker/Distributor and B2B Ignition Coil



Later K-750's and K-750M's used only the foot-pedal brake-switch, (ВК854Б) to activate the rear brake-light.

Brake-Switch for Later K-750M's and MB-750's



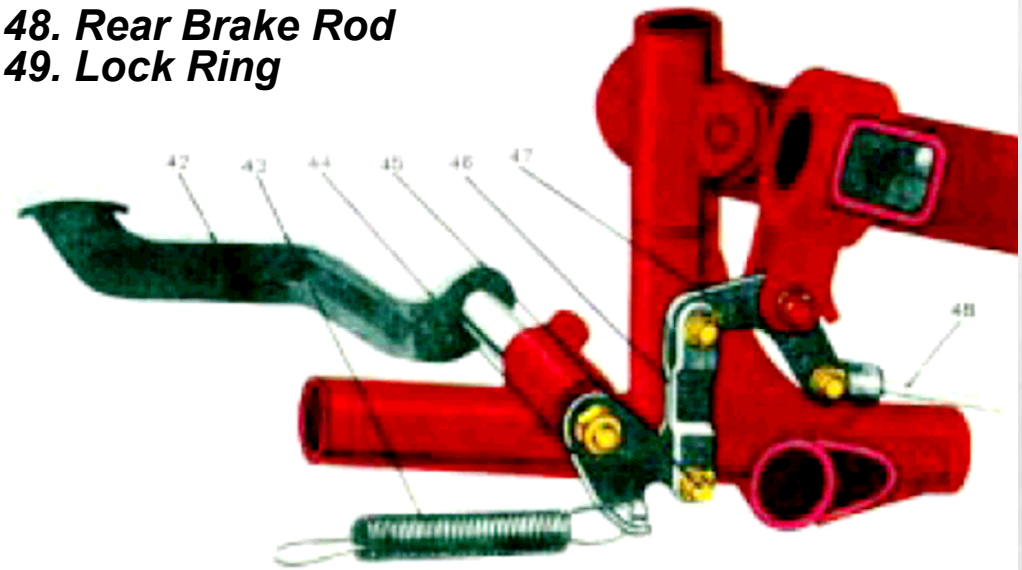
The Center-Pin of the Brake-Switch Is Activated by the Detent in the Brake-Lever Axle

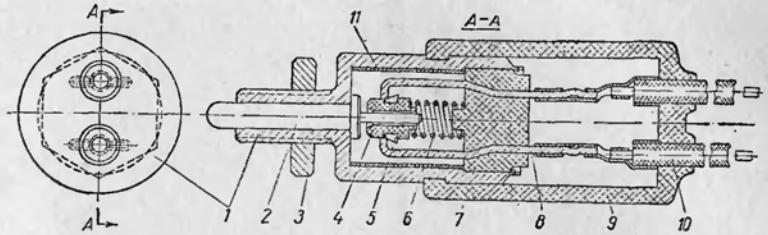
The K-750M catalog shows the cam-detent in the brake-lever, on which the brake-switch rides.

Brake Switch for Ural M-66 (Ural-3)

- *Operated by Cam on Brake Lever Shaft*
- *Switch Screws into Hole (looks like a grease nipple)*
- *Operated by Cam on Pedal Shaft*
- *Brake Switch Mount between 45 and 46 on Diagram*

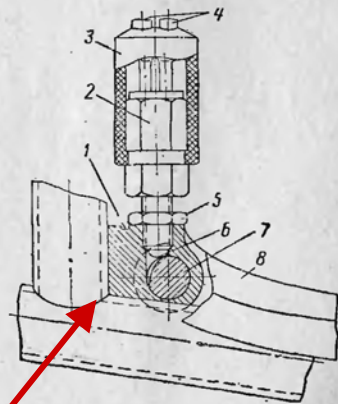
42. Brake Pedal
43. Return Spring
44. Rear Brake Arm
45. Pin
46. Intermediate Link
47. Rear Brake Rod Lever
48. Rear Brake Rod
49. Lock Ring





Фиг. 92. Датчик (включатель) стоп-сигнала:
1 — корпус датчика (включателя) стоп-сигнала; *2* — толкатель; *3* — контргайка; *4* — блок-муфта; *5* — кольцевой контакт блок-муфты; *6* — пружина замыкания контактов; *7* — карболитовая крышка; *8* — вильчатые клеммы; *9* — защитный колпачок; *10* — провода клемм; *11* — изоляционная втулка.

Собранный датчик устанавливается в кронштейне рамы мотоцикла, как показано на фиг. 93 и регулируется по высоте положения в резьбовом гнезде так, чтобы толкатель *2* удерживал блок-муфту над вильчатыми контактами с зазором по кольцевому контакту в пределах 0,5—0,7 *мм* при крайнем верхнем положении педали заднего тормоза. В окончательно установленном положении корпус фиксируется контргайкой *5*. При этом контакты датчика, включенные в цепь по схеме электрооборудования, должны замыкаться при легком нажиме на тормозную педаль, так как вместе с педалью поворачивается и ее ось *7* (фиг. 93), имеющая кулачок, на вершине которого в этот момент должен стоять сферический торец толкателя. Правильность регулировки датчика контролируется включением ламп стоп-сигналов вследствие



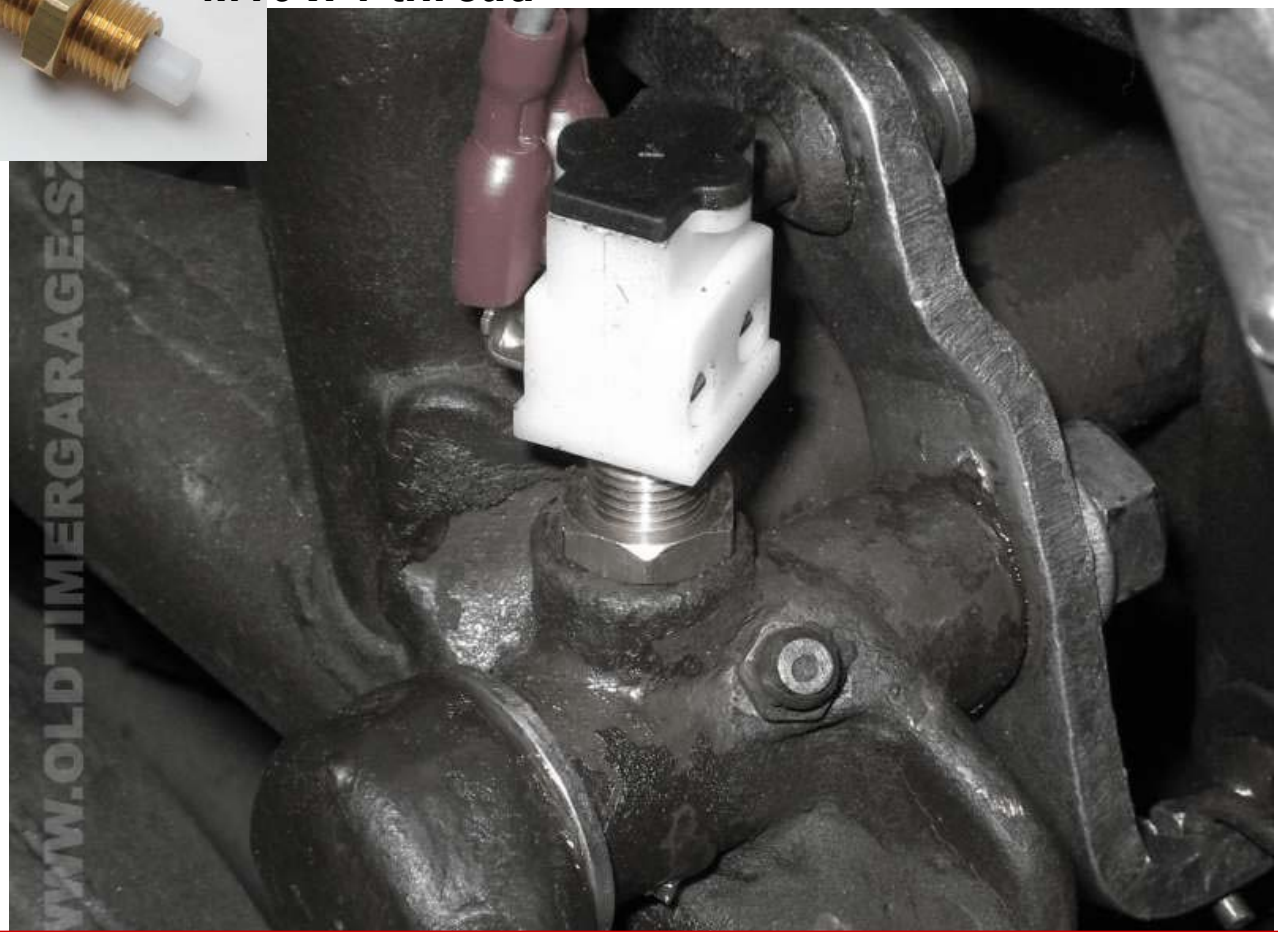
Фиг. 93. Схема установки датчика (включателя) стоп-сигнала на раме мотоцикла:
1 — кронштейн рамы; *2* — корпус датчика; *3* — резиновый защитный кожух; *4* — провода контактов; *5* — контргайка; *6* — толкатель; *7* — ось рычага заднего тормоза с кулачком включения контактов датчика; *8* — педаль тормоза заднего колеса.

The Center-Pin of the Brake-Switch Is Activated by the Detent in the Brake-Lever Axle

Foot-Pedal Brake-Light Switch for K-750 and MB-750

001.680
oldtimergarage

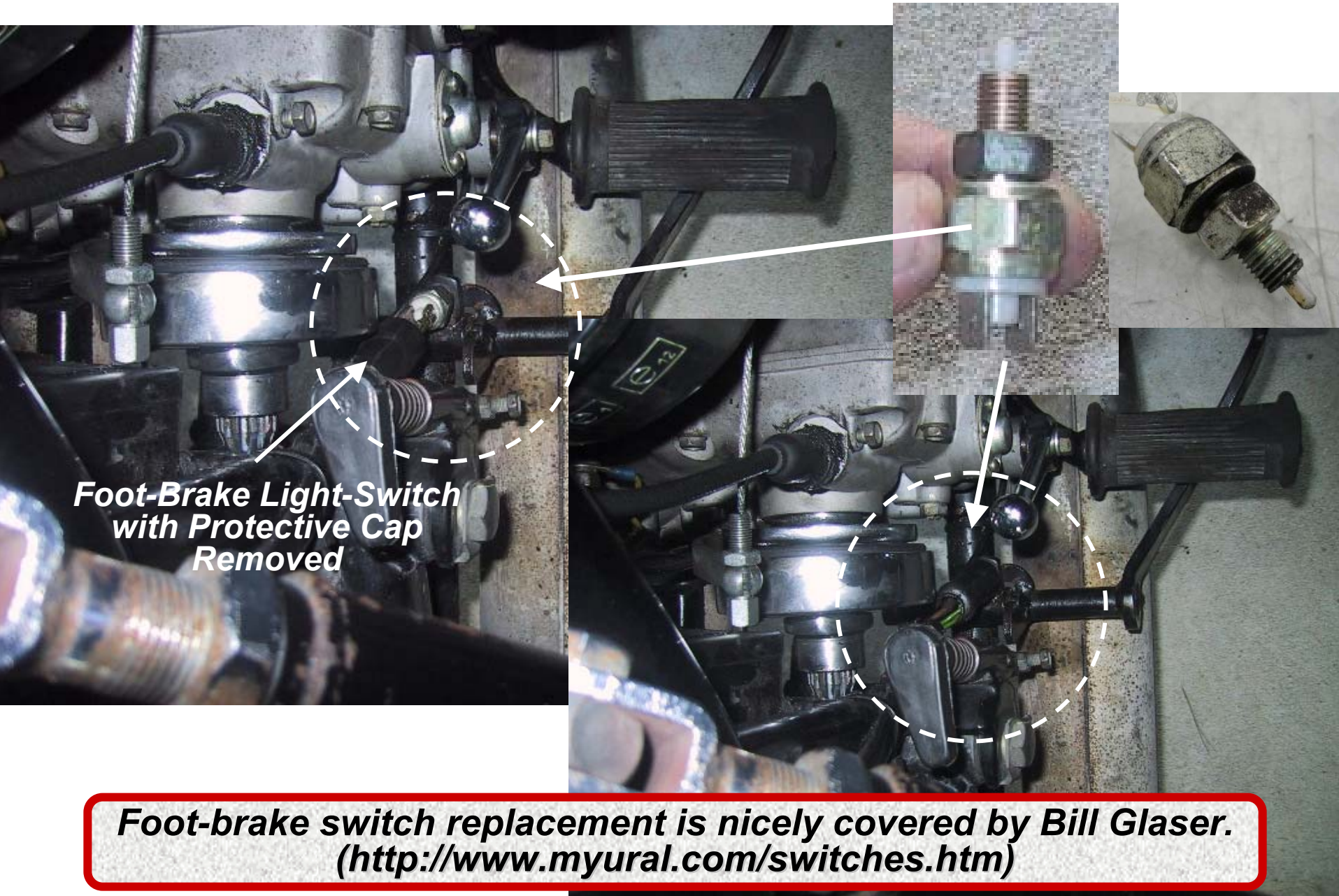
M10 x 1 thread



The foot-pedal light-switch is electrically operates off a cam on the axle of the brake pedal lever.

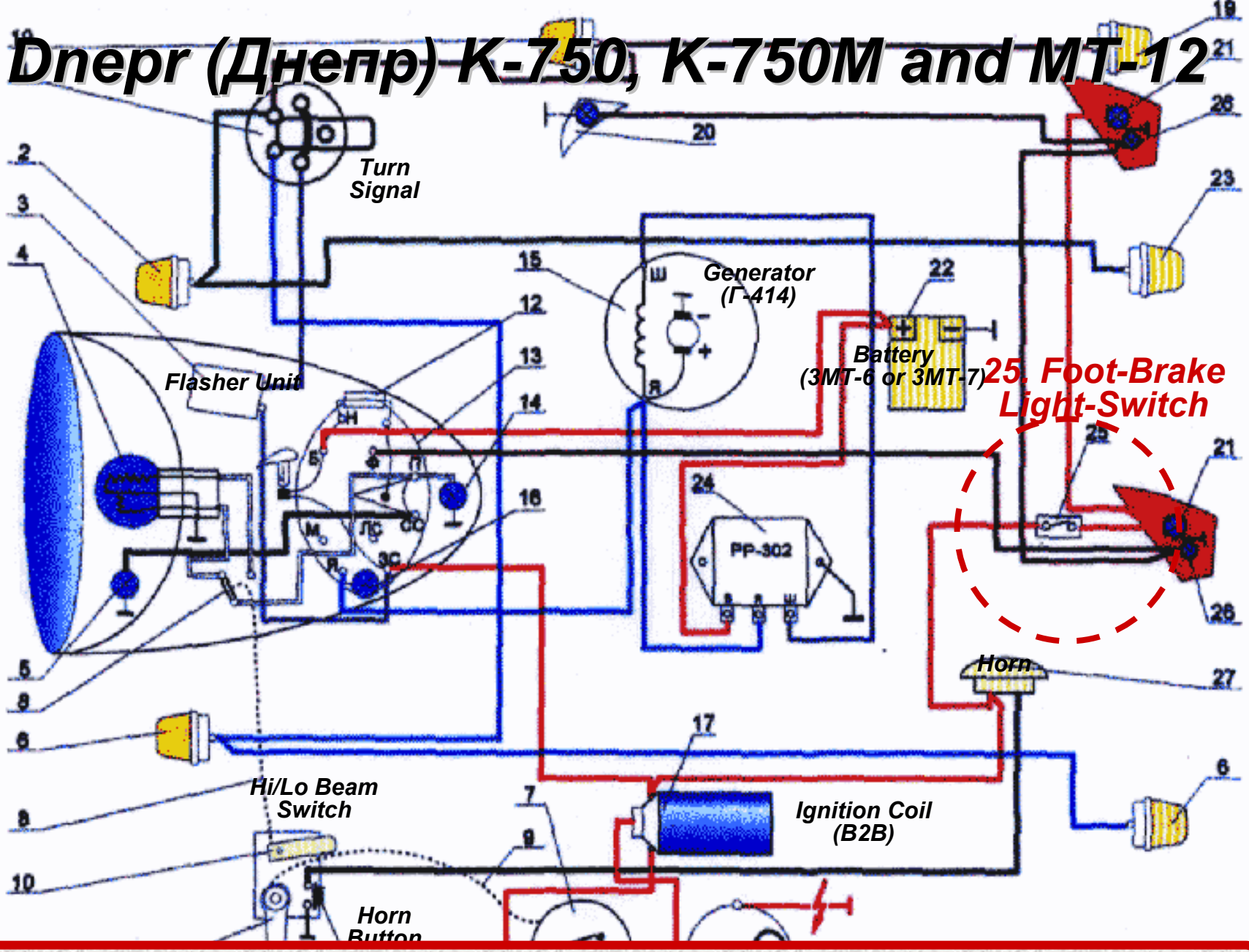
Bird's-Eye View of Foot-Brake Light-Switch on Ural 750 cm³

(" The Unofficial Ural 750cc Service Manual")



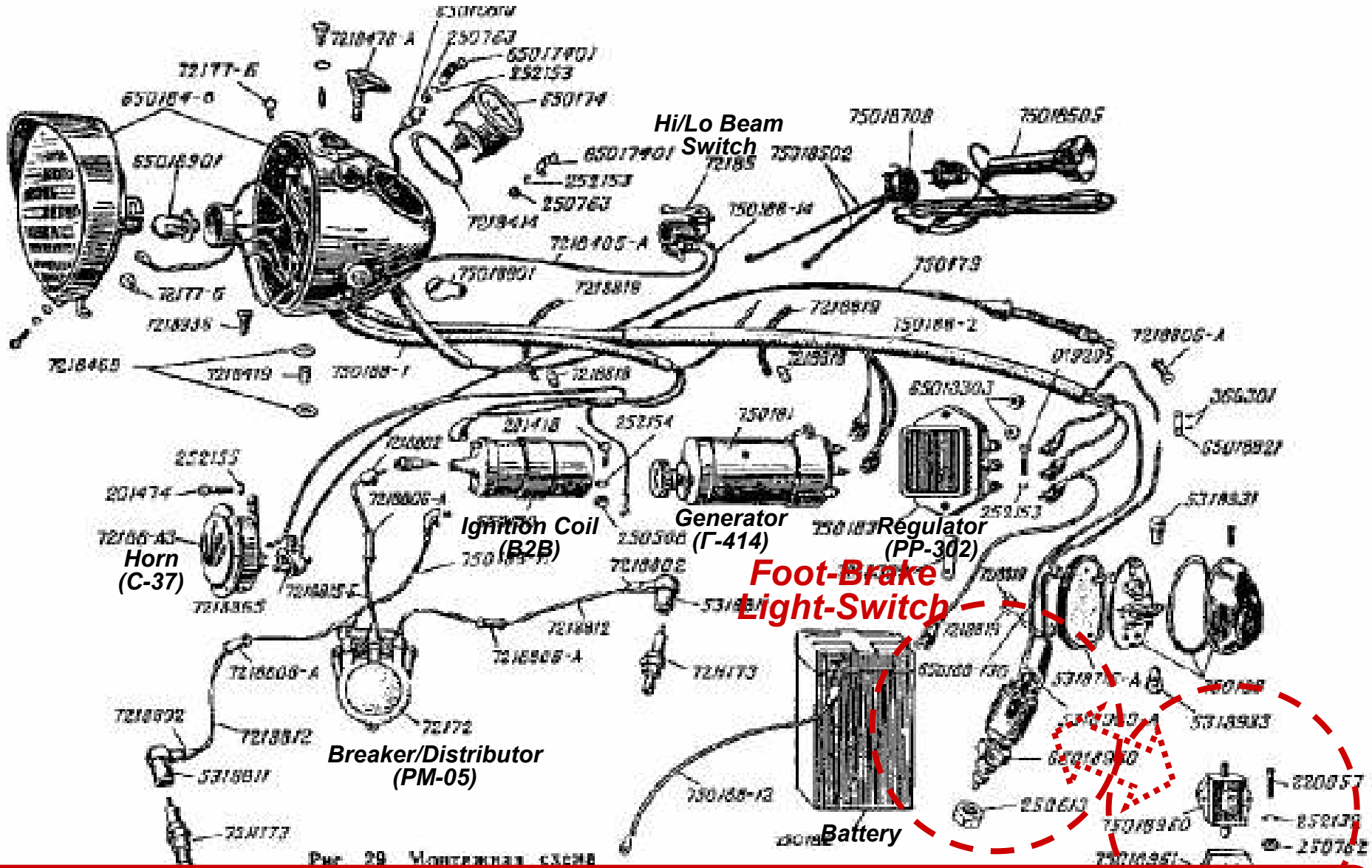
Foot-brake switch replacement is nicely covered by Bill Glaser.
(http://www.myural.com/switches.htm)

Dnepr (Днепр) K-750, K-750M and MT-12



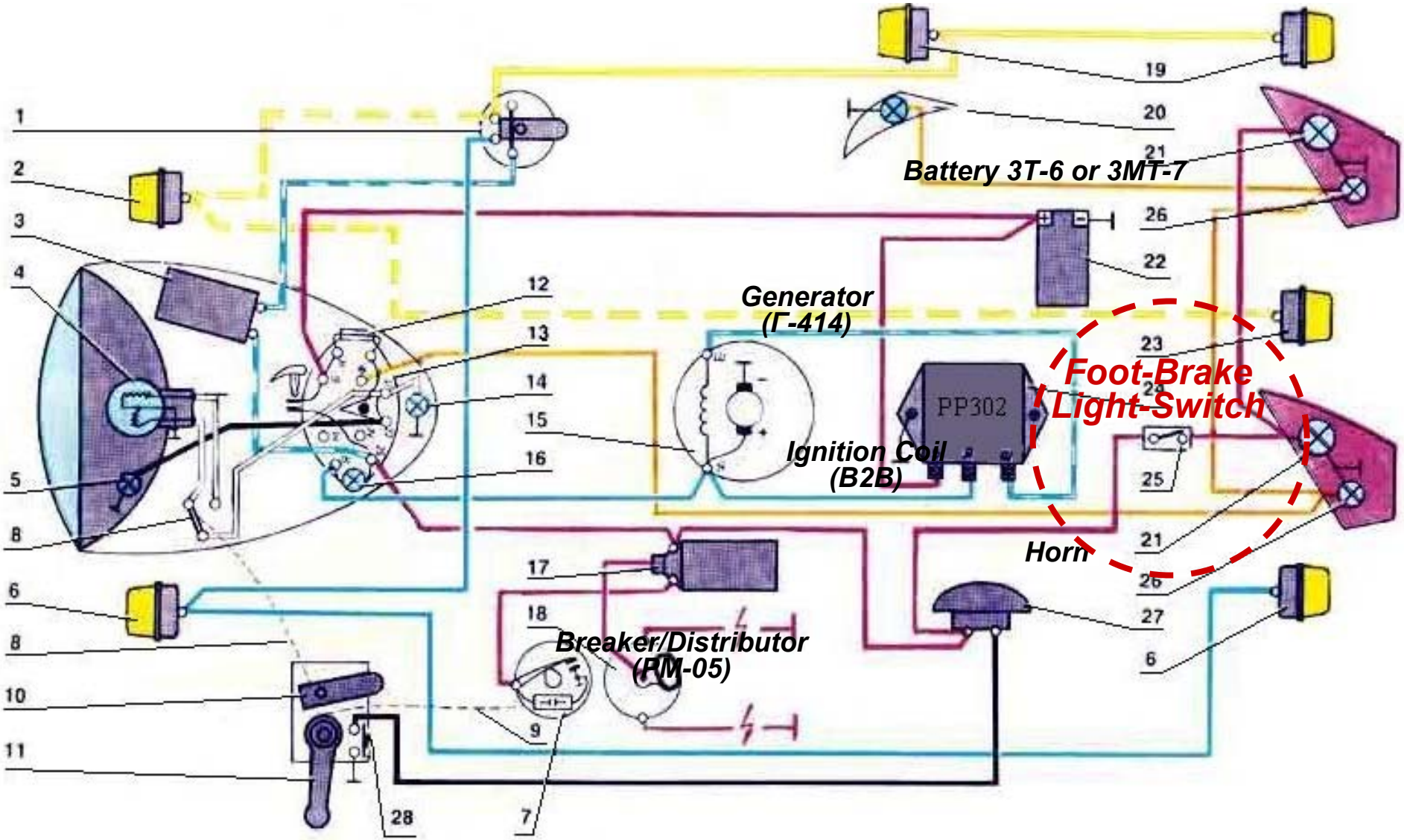
K-750, K-750M and MT-12 used only the foot-pedal brake-switch (ВК854Б) to activate the rear brake-light.

Dnepr (Днепр) Later K-750, MB-750 and MT-12 (1961)



Later K-750's, MB-750's and MT-12's showed a newer switch (65018950) replacing the classic ВК854Б foot-pedal brake-switch.

Dnepr (Днепр) Early K-750, K-750M and MT-12



Early K-750, K-750M and MT-12 only used the foot-pedal brake-switch (ВК854Б) to activate the rear brake-light.

Rear Brakes (K-650 and MB-650M Manuals)

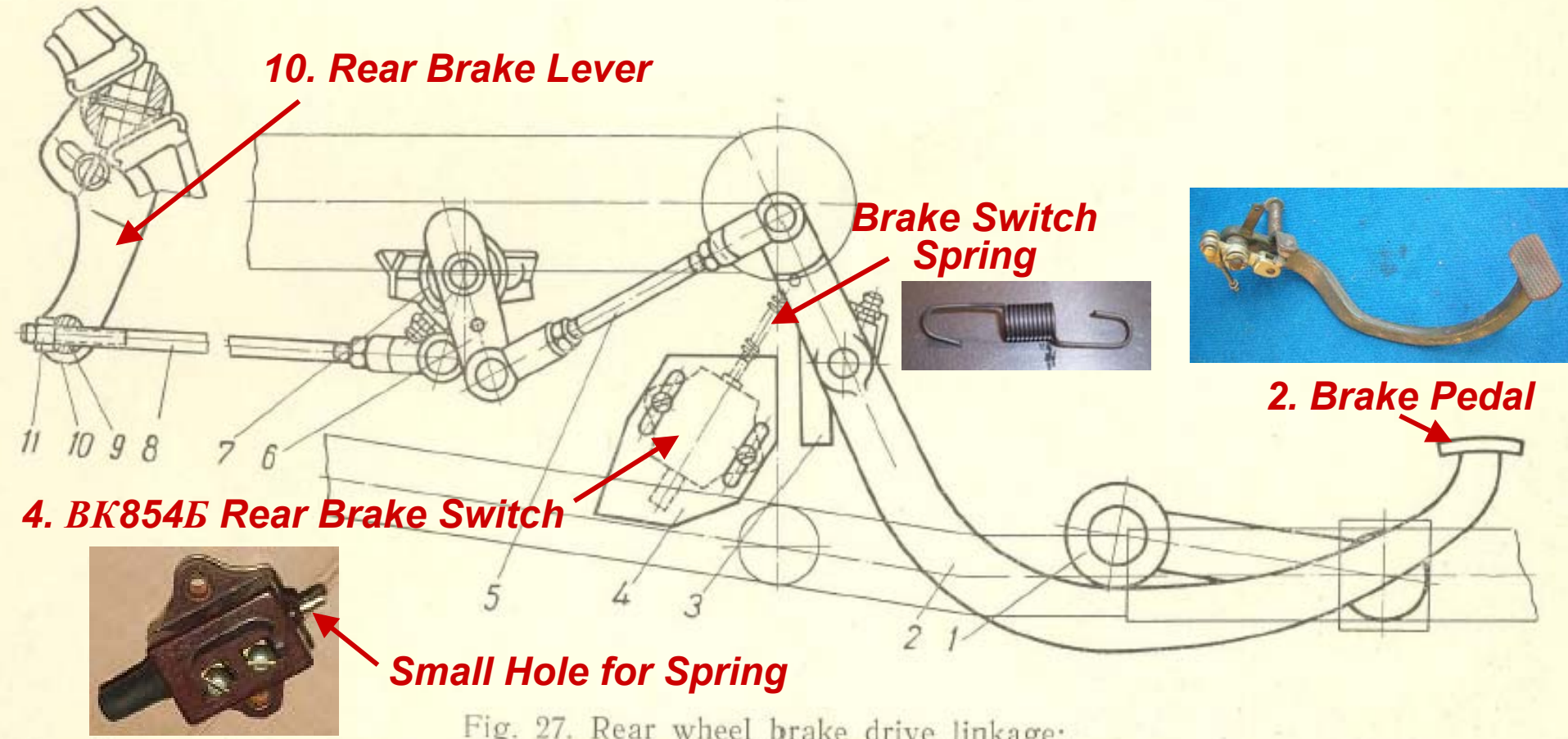


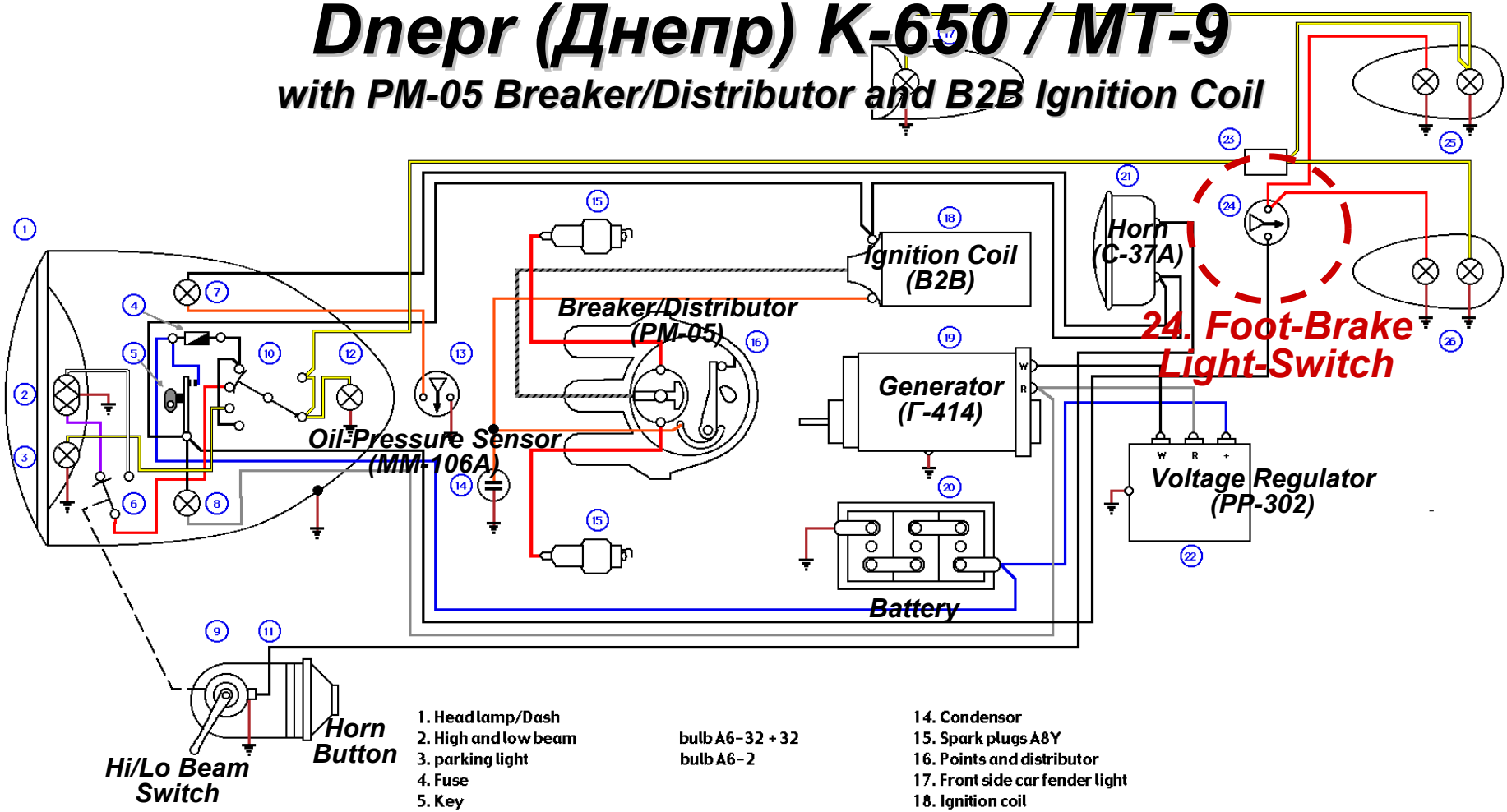
Fig. 27. Rear wheel brake drive linkage:

1 — side support; *2* — pedal; *3* — pedal hinge with lubricator; *4* — stop (brake) light switch; *5* — front draw rod; *6* — intermediate lever; *7* — intermediate lever hinge joint with lubricator; *8* — rear draw rod; *9* — lever axle; *10* — brake cam lever; *11* — nut

The center rod of the switch is connected by a spring to the upper arm of the foot brake pedal. When the brake is applied, the spring stretches and moves the rod which closes the electrical contacts, turning on the bike and sidecar brake-lights.

Dnepr (Днепр) K-650 / MT-9

with PM-05 Breaker/Distributor and B2B Ignition Coil



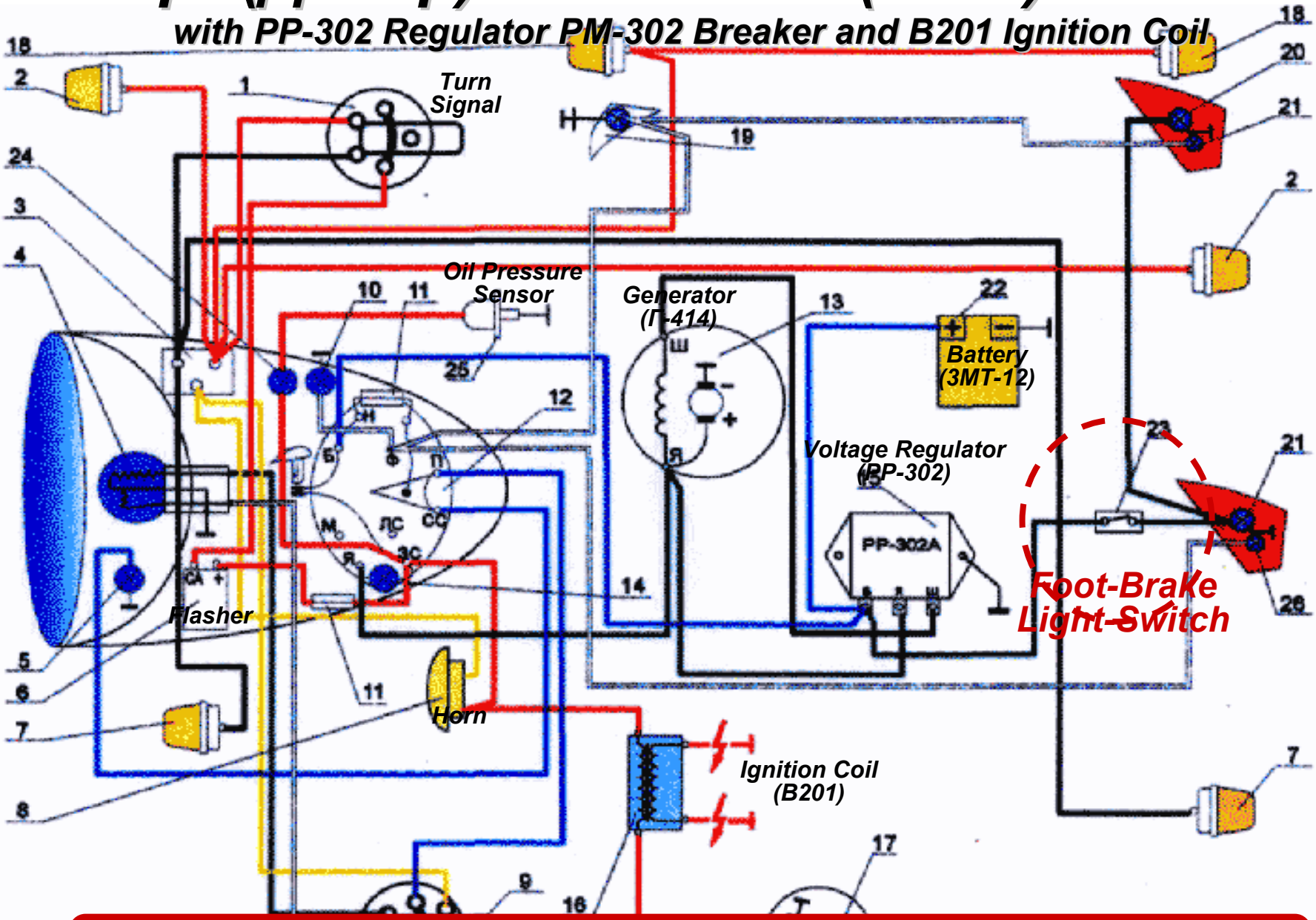
1. Head lamp/Dash		14. Condensor	
2. High and low beam	bulb A6-32 + 32	15. Spark plugs A8Y	
3. parking light	bulb A6-2	16. Points and distributor	
4. Fuse		17. Front side car fender light	
5. Key		18. Ignition coil	
6. dimmer switch		19. DC Generator	
7. Oil pressure indicator	A6-1	20. Battery	3-MT-12
8. Generator charge indicator	lamp A6-0.25	21. Horn	C37A
9. Mechanical dimmer switch lever		22. Regulator	
10. Primary switch		23. Connector	
11. horn button		24. Stop light switch	BK854
12. speedometer bulb		25. Rear side car fender light	
13. Oil pressure switch		26. Rear light	

Only the foot-brake light switch activates the rear brake-light.

Carl Allison

Dnepr (Днепр) Later K-650 (MT-8) and MT-9

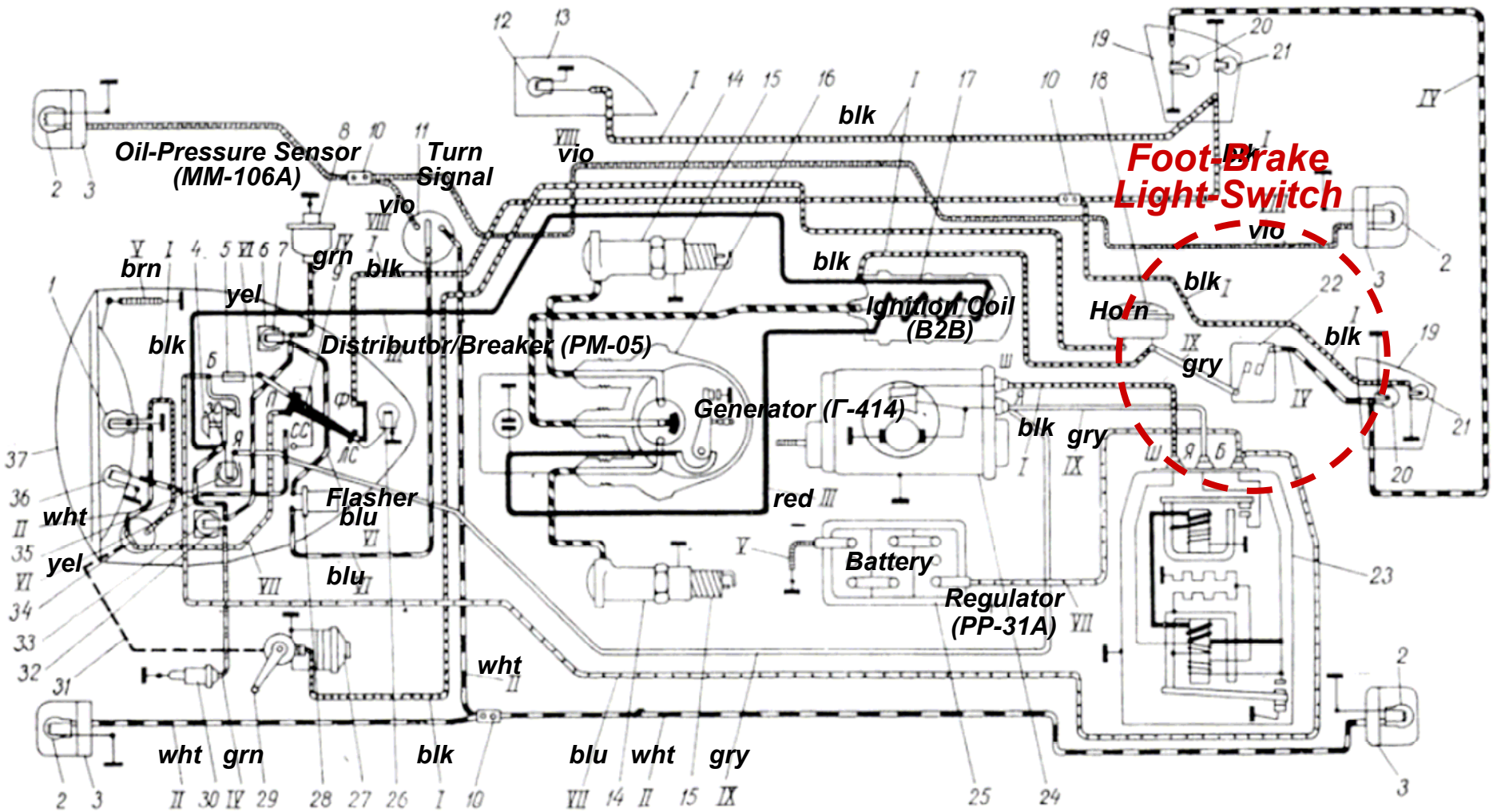
with PP-302 Regulator PM-302 Breaker and B201 Ignition Coil



Only the foot-brake light switch activates the rear brake-light.

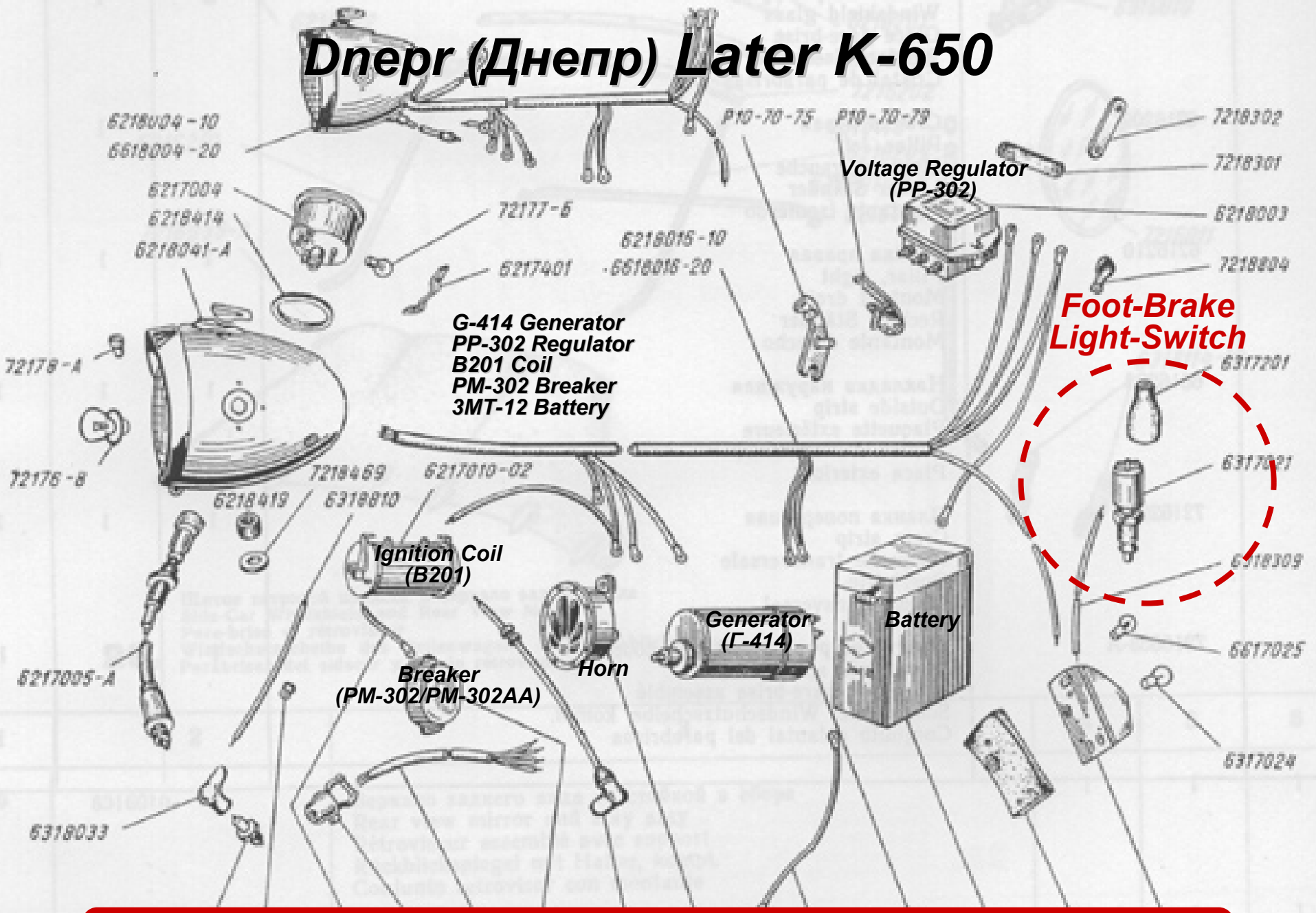
Dnepr (Днепр) Early K-650 (MT-8)

with PM-05 Breaker/Distributor and B2B Ignition Coil



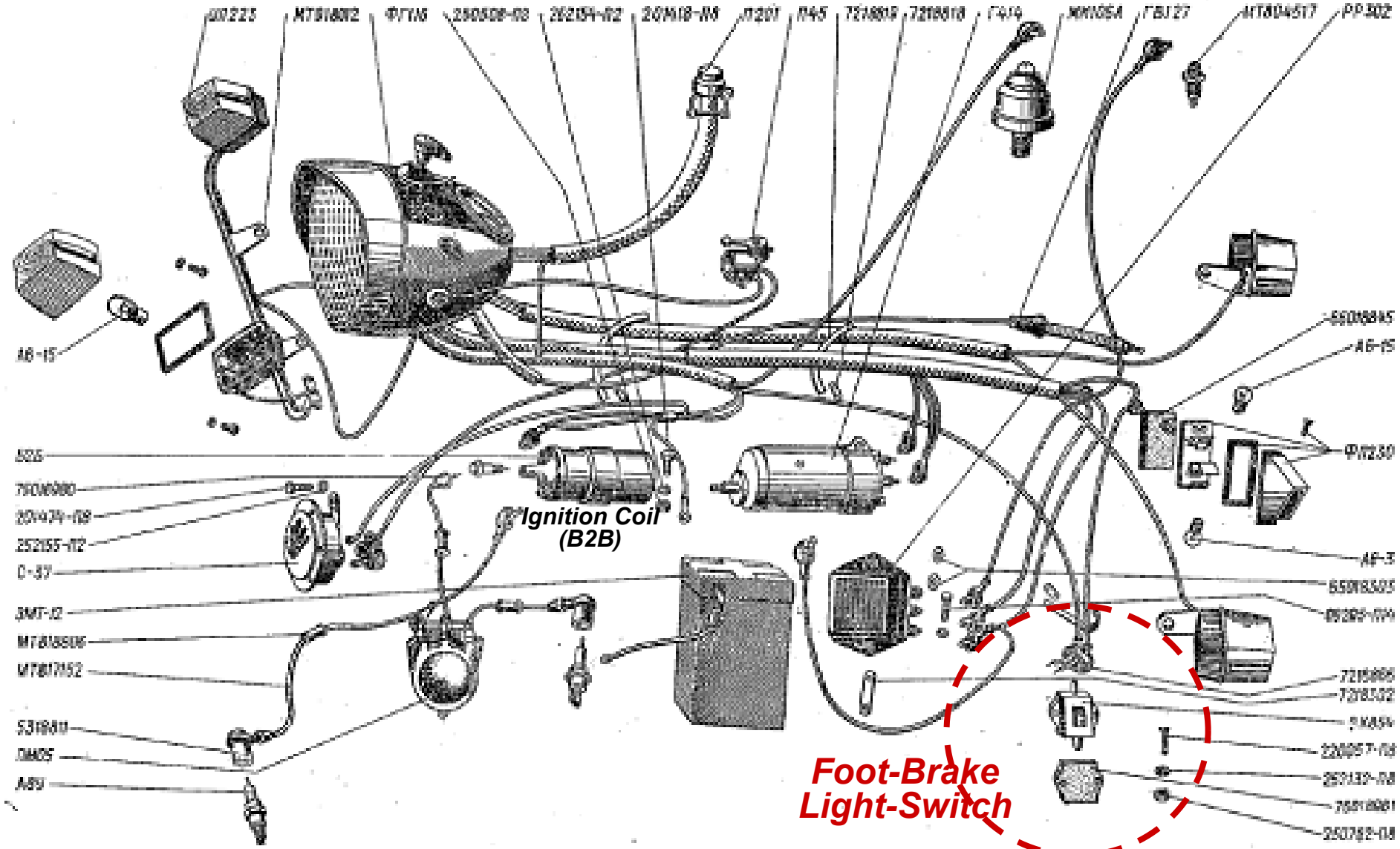
K-650's (MT-8) used only the foot-pedal brake-switch (ВК854Б) to activate the rear brake-light.

Dnepr (Днепр) Later K-650



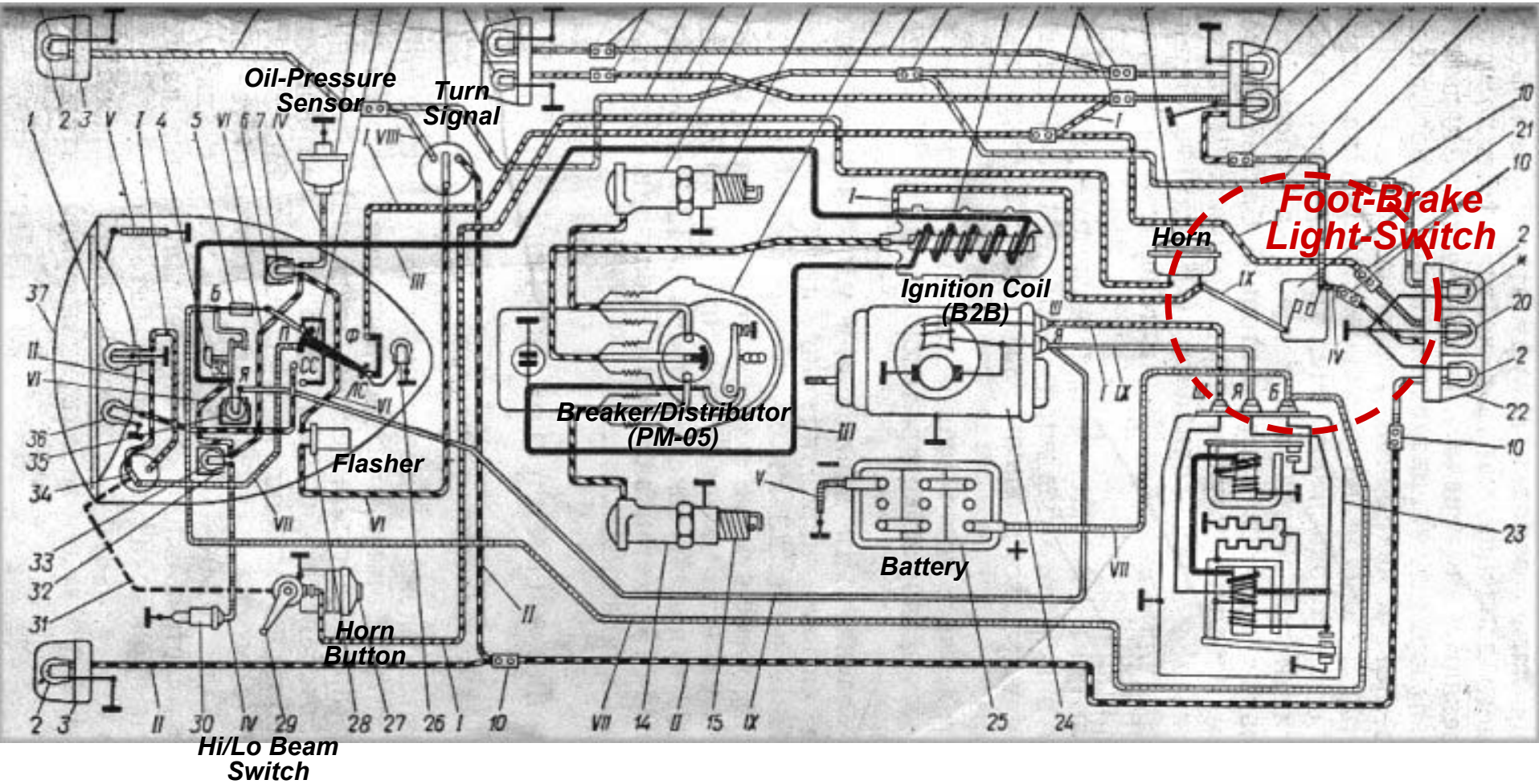
Only the foot-brake light switch activates the rear brake-light.

Dnepr (Днепр) MT-9



Only the foot-brake light switch (ВК854Б) activates the rear brake-light.

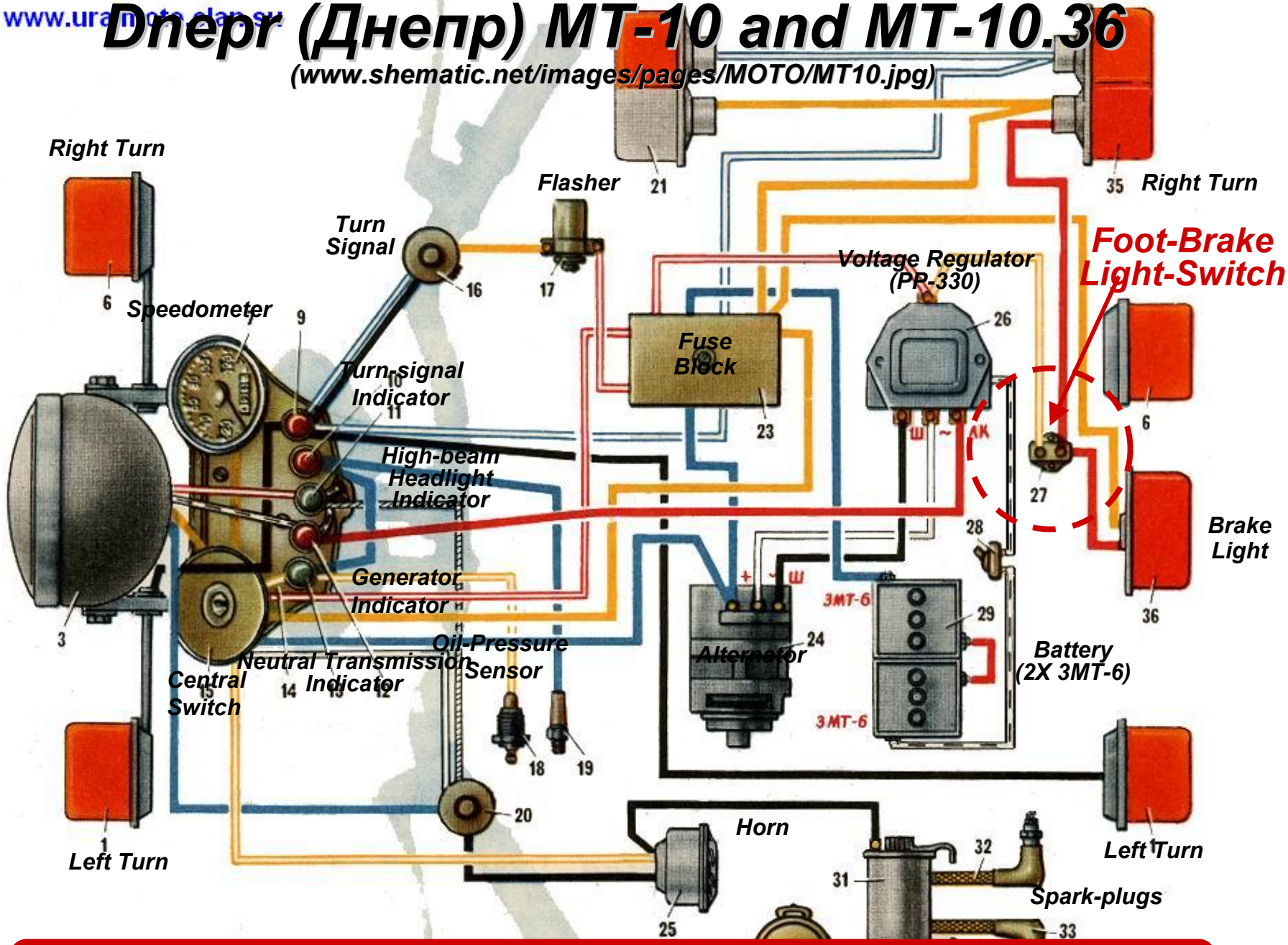
Dnepr (Днепр) MT-9



Only the foot-brake light switch (ВК854Б) activates the rear brake-light.

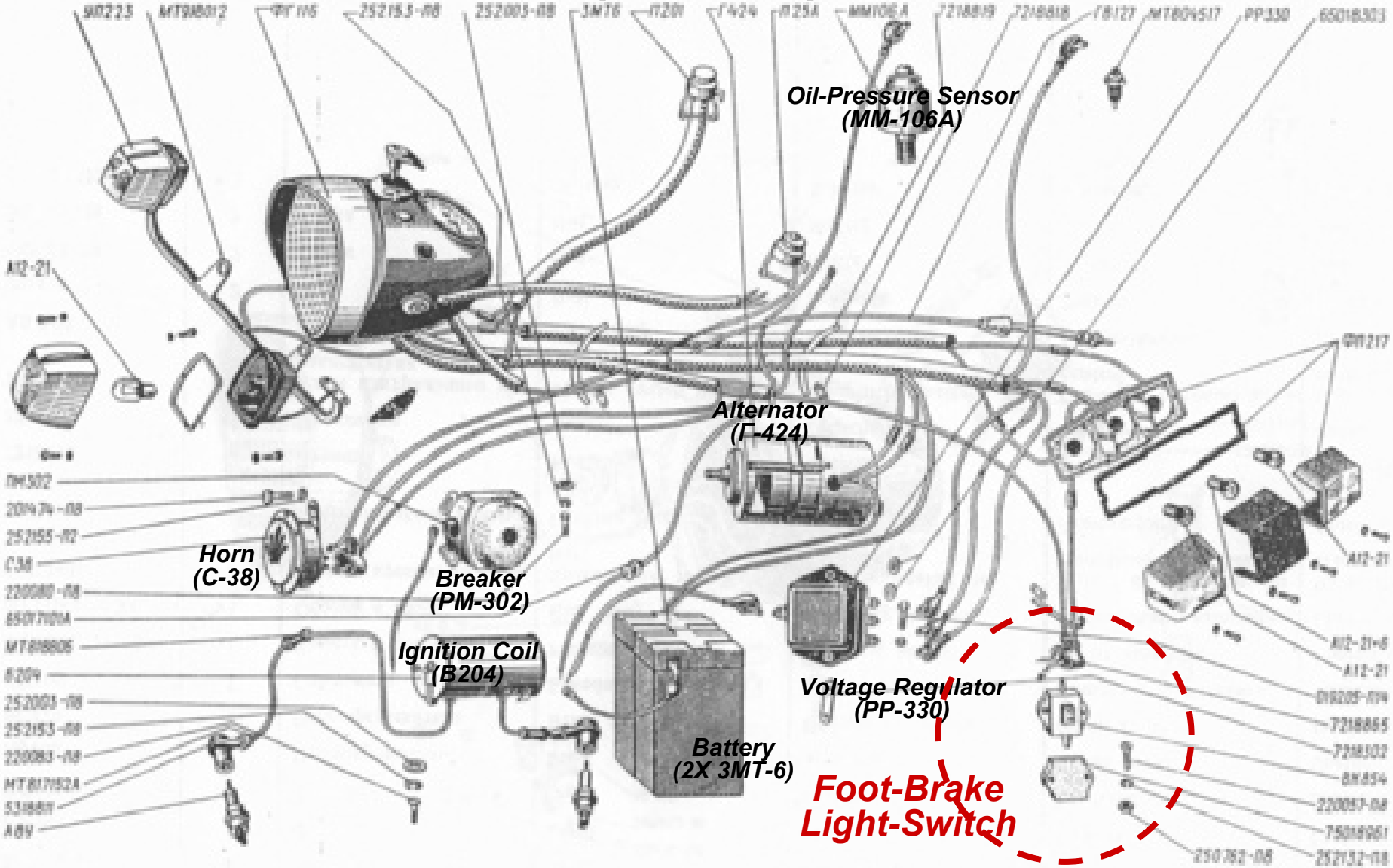
Dnepr (Днепр) MT-10 and MT-10.36

(www.shematic.net/images/pages/MOTO/MT10.jpg)



Only the foot-brake light switch activates the rear brake-light.

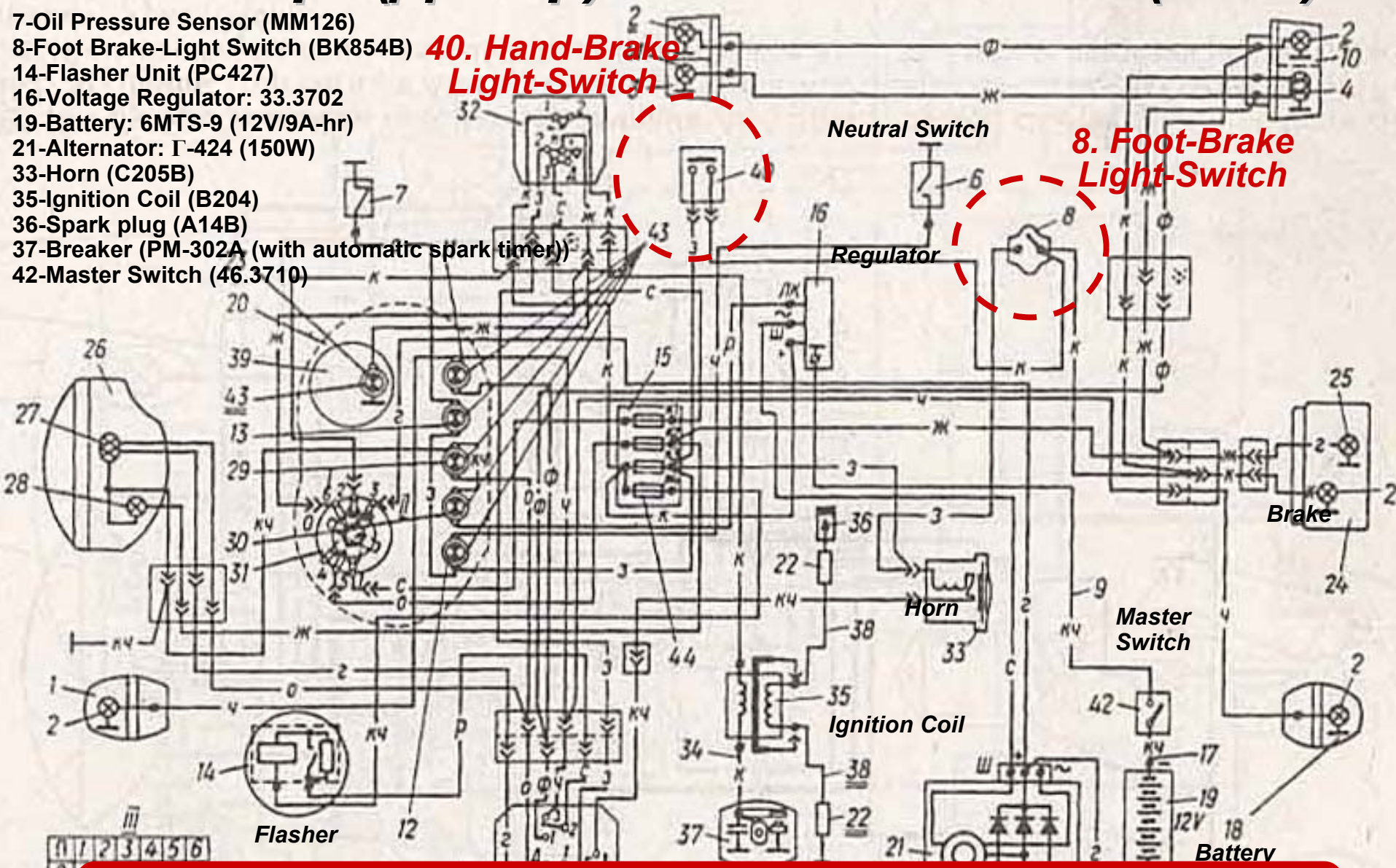
Dnepr (Днепр) MT-10



Only the foot-brake light switch (ВК854Б) activates the rear brake-light.

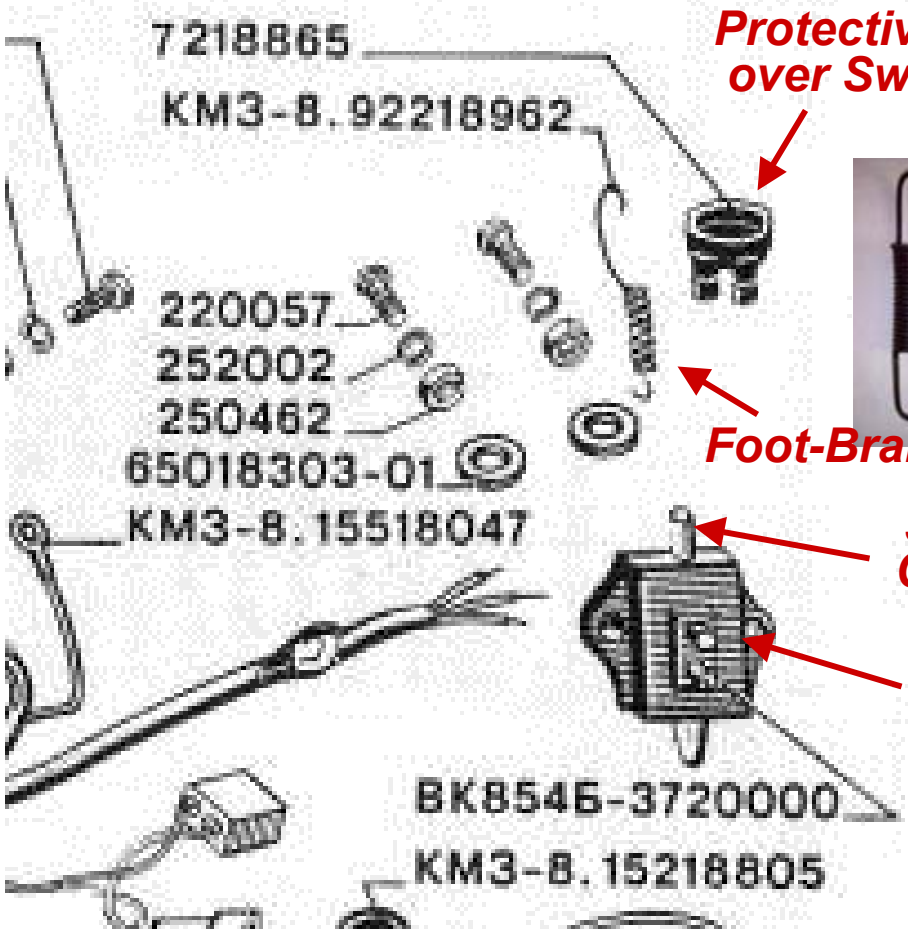
Dnepr (Днепр) MT-11 and MT-16 (1992)

7-Oil Pressure Sensor (MM126)
8-Foot Brake-Light Switch (BK854B)
14-Flasher Unit (PC427)
16-Voltage Regulator: 33.3702
19-Battery: 6MTS-9 (12V/9A-hr)
21-Alternator: Г-424 (150W)
33-Horn (C205B)
35-Ignition Coil (B204)
36-Spark plug (A14B)
37-Breaker (PM-302A (with automatic spark timer))
42-Master Switch (46.3710)



The hand-brake light-switch (13.3720) is electrically in parallel with the foot-brake light-switch (ВК854Б).

Dnepr MT-11 and MT-16
Foot-Pedal Brake-Switch (ВК854Б)



Protective Rubber Boot over Switch Terminals

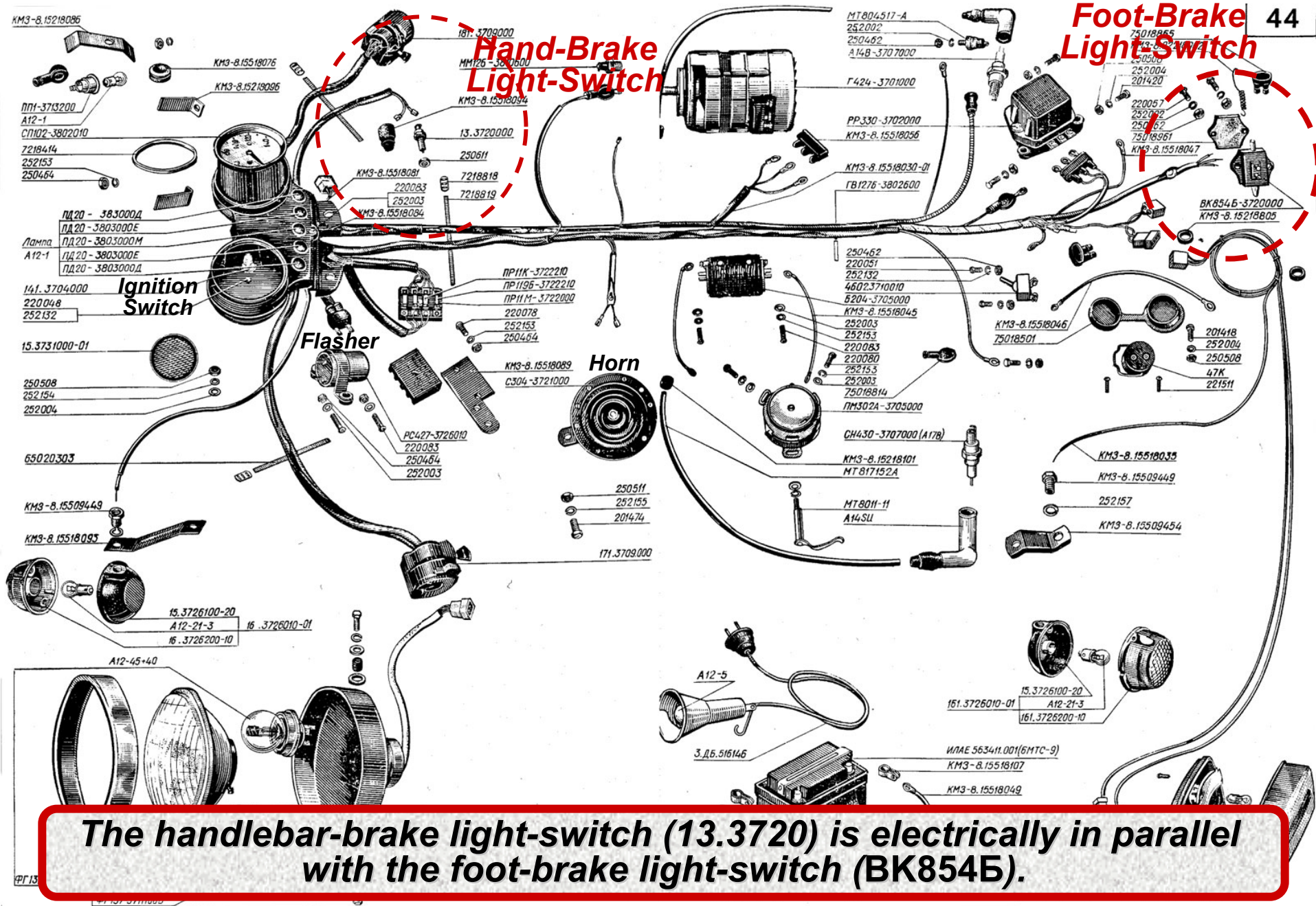
Foot-Brake Switch Spring

Small Hole in Center of Rod for Spring

Foot-Brake Switch

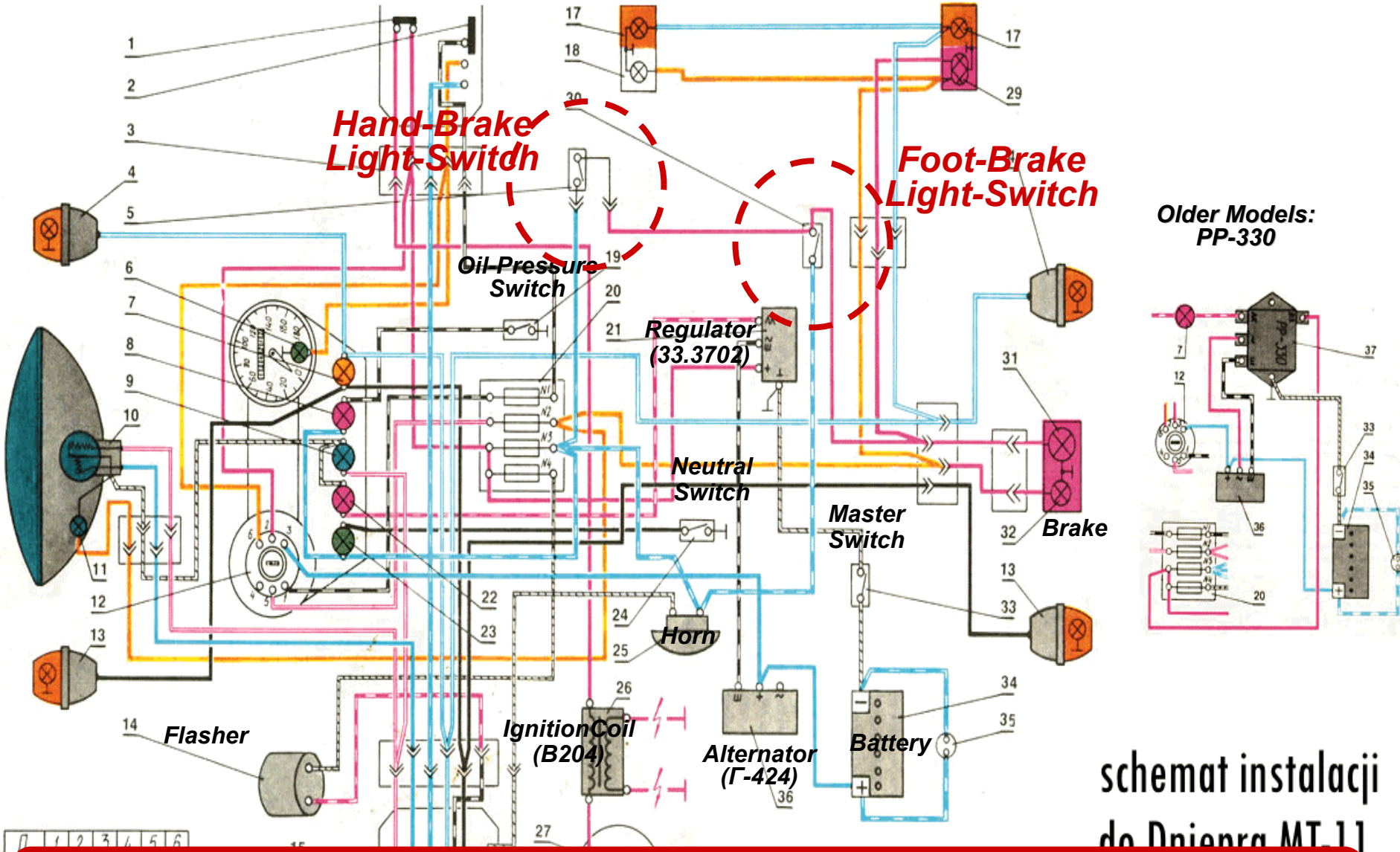
The brake-light switch (ВК854Б), enclosed in protective rubber cap, is attached with two screws to the bracket welded to the frame, right-hand lower-side tube.

Dnepr MT-11 and MT-16 Parts Layout



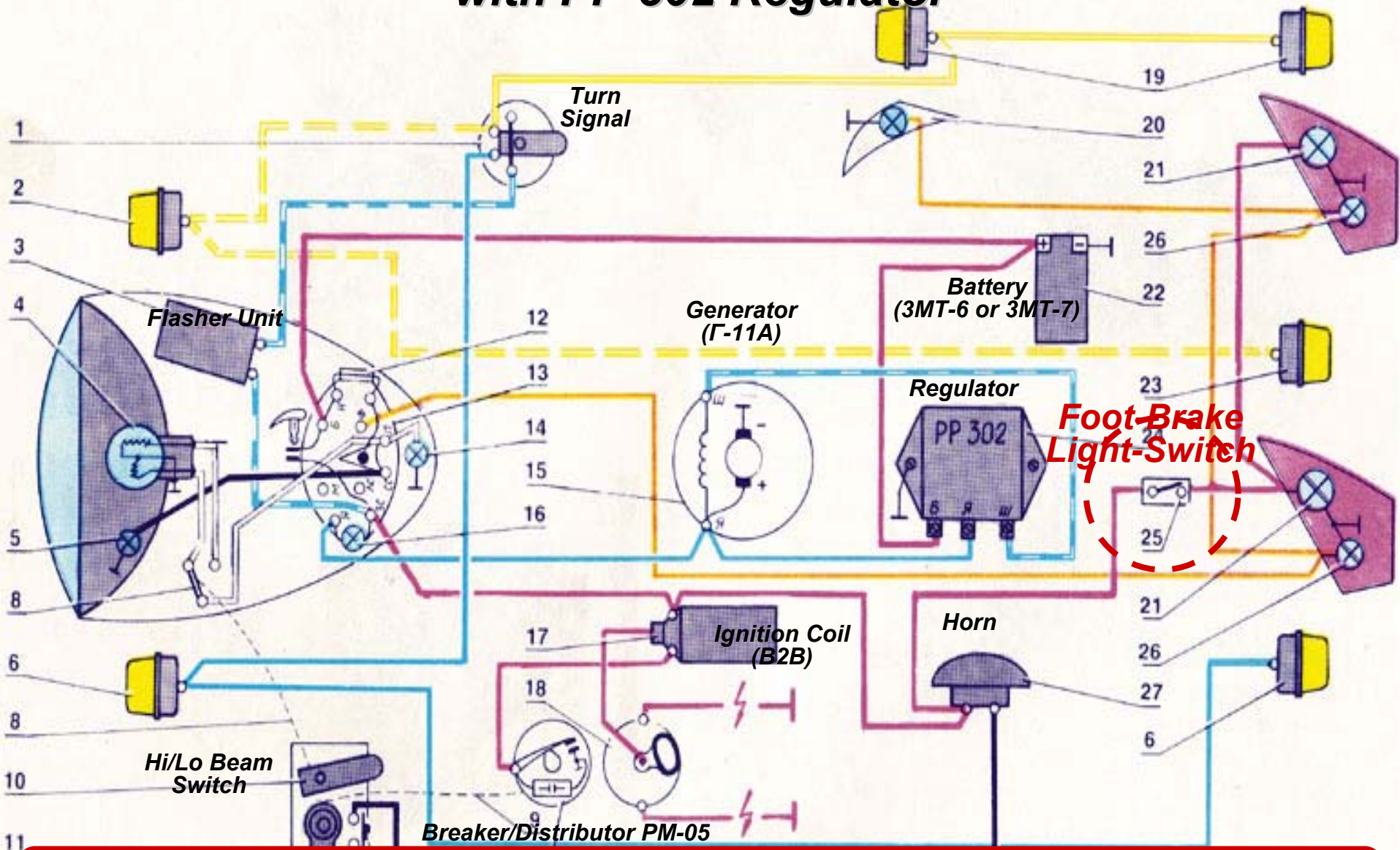
The handlebar-brake light-switch (13.3720) is electrically in parallel with the foot-brake light-switch (ВК854Б).

Dnepr (Днепр) MT-11, MT-14 and MT-16



The handlebar-brake light-switch (13.3720) is electrically in parallel with the foot-brake light-switch (ВК854Б).

Ural (Урал) later M-61 and M-72M, M-72K
with PP-302 Regulator



Only the foot-brake light switch (ВК854Б) activates the rear brake-light.

Ural (Урал) M-61

1 Переключатель указателей поворотов П-201
2 Правый передний указатель поворота на мотоцикле-одиночке
3 Реле-прерыватель указателей поворотов РС-419
4 Лампа головного света фары А6-32+21 или А6-32+32
5 Лампа стояночного света фары А6-2
6 Левые указатели поворотов
7 Прерыватель ПМ-0,5
8 Переключатель света (расположен в кожухе фары) и его тросик
9 Тросик манетки опережения зажигания
10 Рычажок переключателя света
11 Манетка опережения зажигания
12 Предохранитель 15А
13 Центральный переключатель (на М-72 и К-750 имеет несколько иное обозначение клемм)
14 Лампа А6-2 подсветки шкалы спидометра
15 Генератор
16 Контрольная лампа работы генератора А6-0,25
17 Катушка зажигания КМ-01 или Б-2Б
18 Распределитель
19 Указатели поворотов правые (на коляске)
20 Передний габаритный фонарь коляски
21 Лампы А6-15 стоп-сигналов (только в фонарях ФП-230 и ФП-246)
22 Аккумуляторная батарея 3Т-6 или 3МТ-7
23 Правый задний указатель поворота на мотоцикле-одиночке
24 Реле-регулятор
25 Включатель стоп-сигнала
26 Лампы задних габаритных фонарей
27 Звуковой сигнал С-35
28 Кнопка звукового сигнала

Flasher Unit

Generator (Г-11А)

Battery (3МТ-6 or 3МТ-7)

РР-302 Regulator

25. Foot-Brake Light-Switch

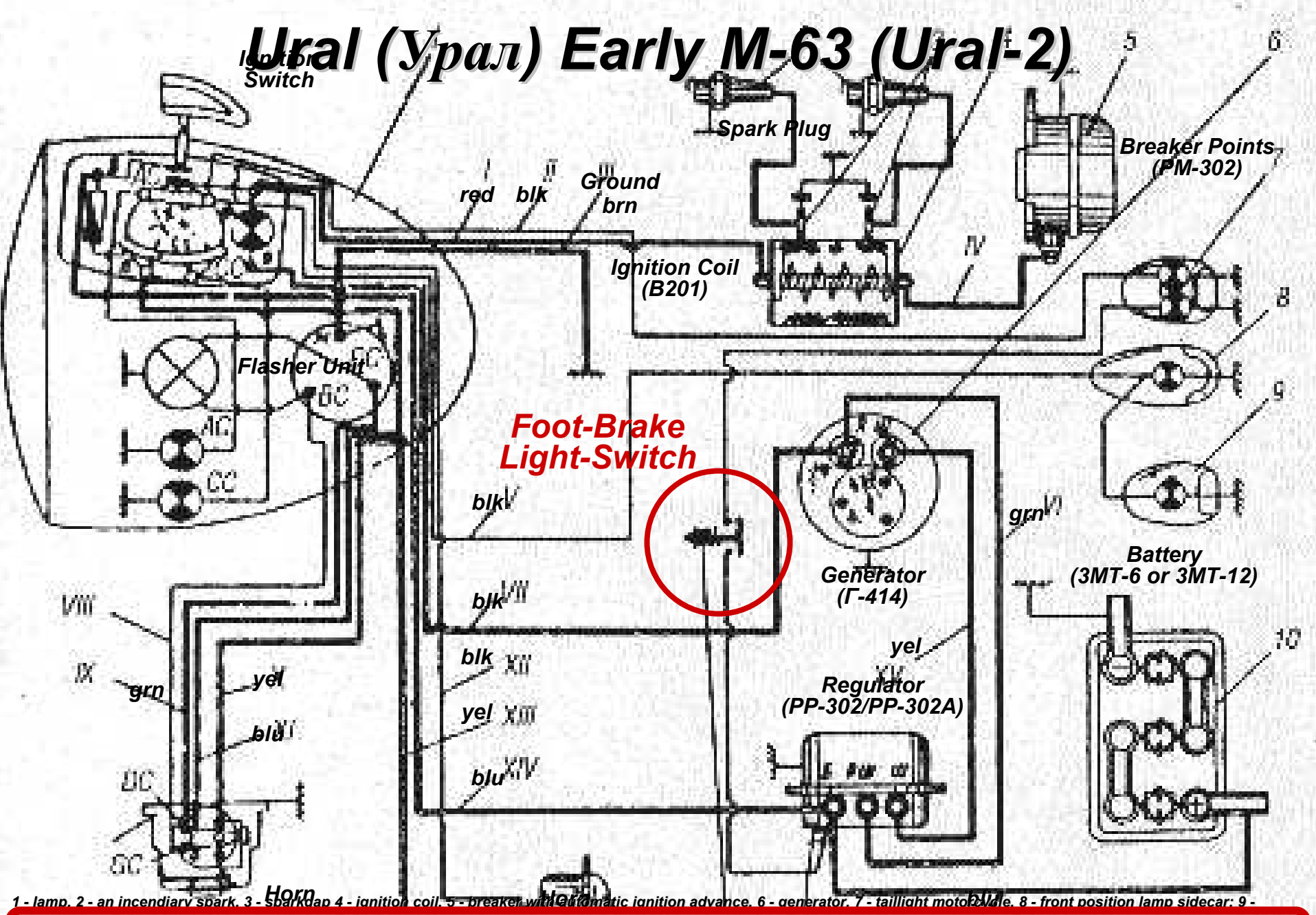
Horn

Hi/Lo Beam Switch

Ignition Coil (В2В)

Only the foot-brake light switch (ВК854Б) activates the rear brake-light.

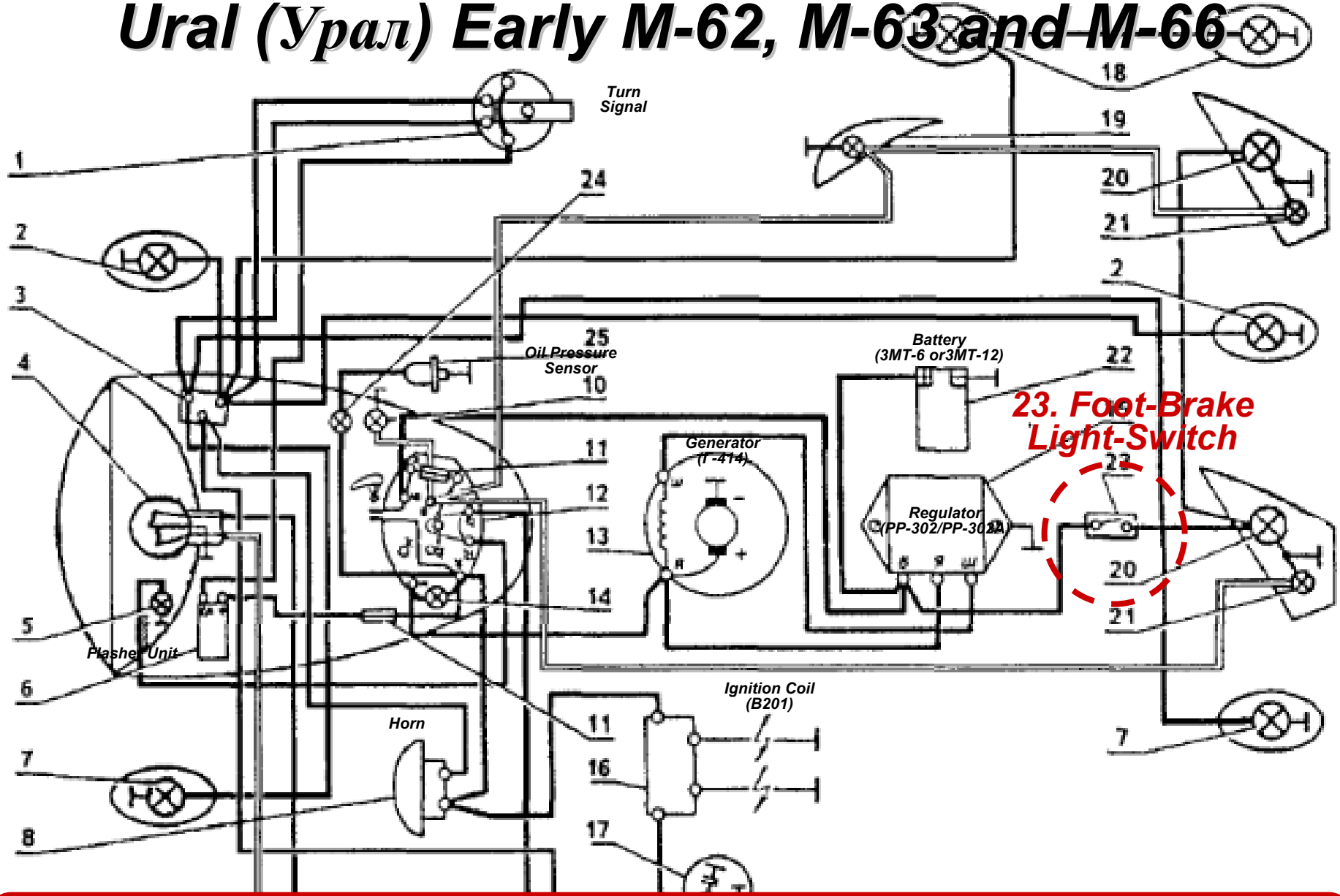
Ural (Урал) Early M-63 (Ural-2)



1 - lamp, 2 - an incendiary spark, 3 - sparkgap 4 - ignition coil, 5 - breaker with automatic ignition advance, 6 - generator, 7 - taillight motorcycle, 8 - front position lamp sidecar; 9 -

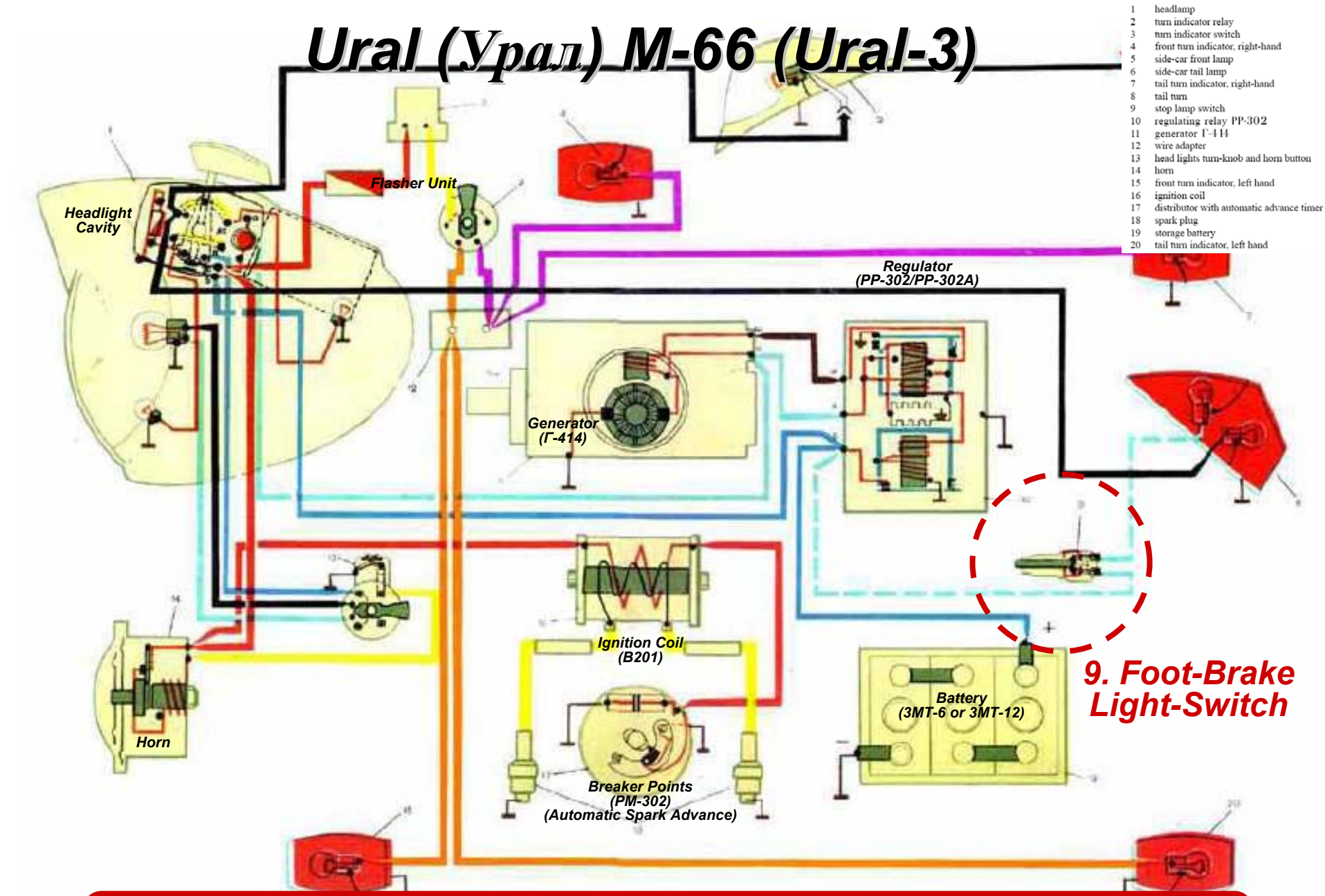
Only the foot-brake light switch (ВК854Б) activates the rear brake-light.

Ural (Урал) Early M-62, M-63 and M-66



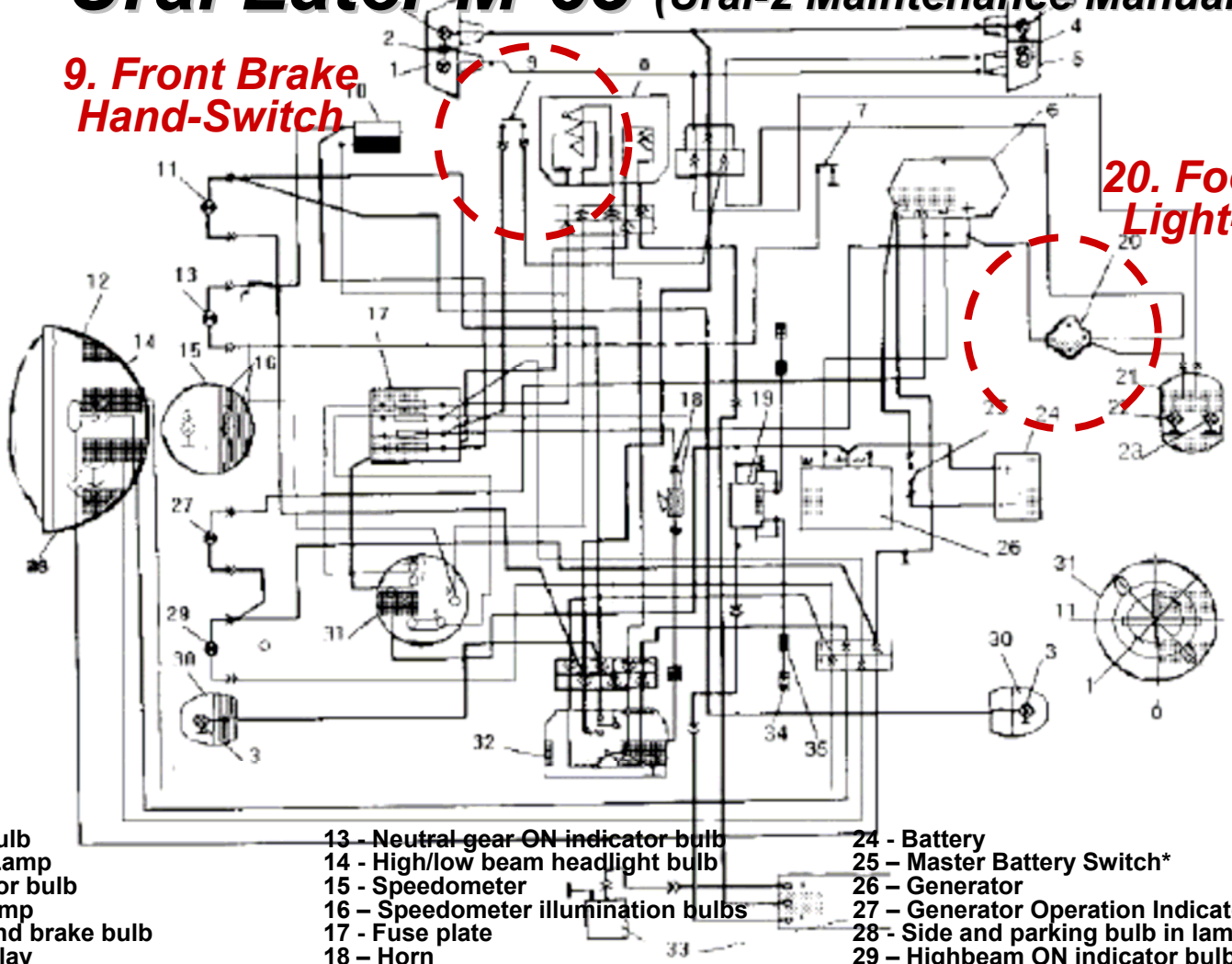
Only the foot-brake light switch (ВК854Б) activates the rear brake-light in the M-62, M-63 and early M-66.

Ural (Урал) M-66 (Ural-3)



Only the foot-brake light switch (8.102-17048) activates the rear brake-light in early M-66's.

Ural Later M-63 (Ural-2 Maintenance Manual)

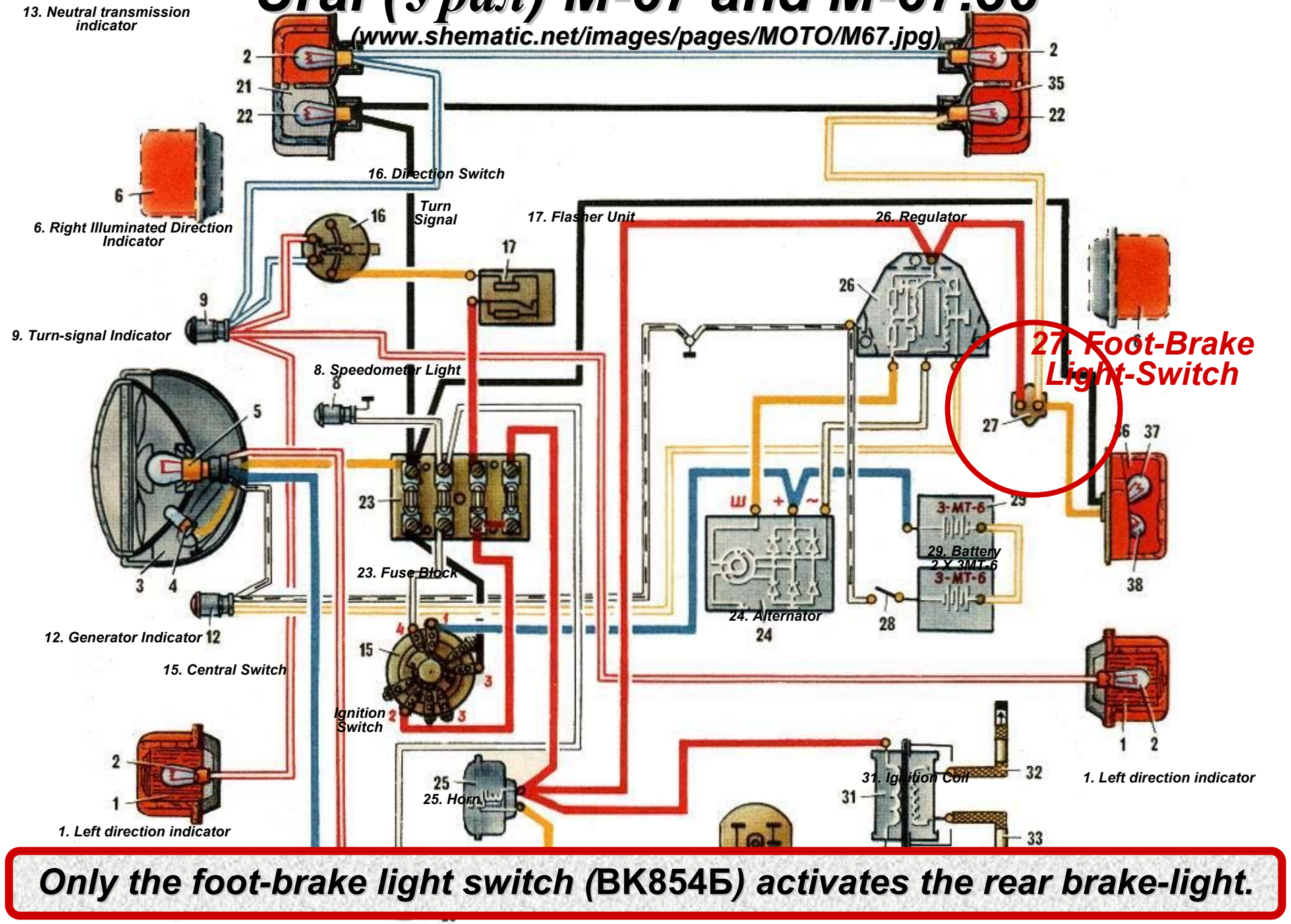


1 - Sidecar side bulb
2 - Sidecar front Lamp
3 – Traffic indicator bulb
4 - Sidecar rear lamp
5 - Sidecar side and brake bulb
6 – Adjustment relay
7 – Neutral gear indicator switch
8 - "Day/night“ switch with emergency "ignition out“ switch
9 - Hand brake signal switch
10 – Turn indicator interrupter
11 – Turn indicator bulb
12 – Motorcycle head lamp plate illumination bulb
13 - Neutral gear ON indicator bulb
14 - High/low beam headlight bulb
15 - Speedometer
16 – Speedometer illumination bulbs
17 - Fuse plate
18 – Horn
19 - Induction coil
20 - Foot brake signal switch
21 – Motorcycle rear lamp
22 – Braking signal bulb
23 - Side bulb & number
24 - Battery
25 – Master Battery Switch*
26 – Generator
27 – Generator Operation Indicator
28 - Side and parking bulb in lamp
29 – Highbeam ON indicator bulb of lamp
30 - Left turn indicator
31 - Ignition lock
32 - Light and turn indicator switch, horn button
33 – Interrupter and commutator
34 - Spark plug
35 - Spark plug cap

The hand-brake light-switch (8.102-17048) is electrically in parallel with the foot-brake light switch (ВК854Б) in later M-63's.

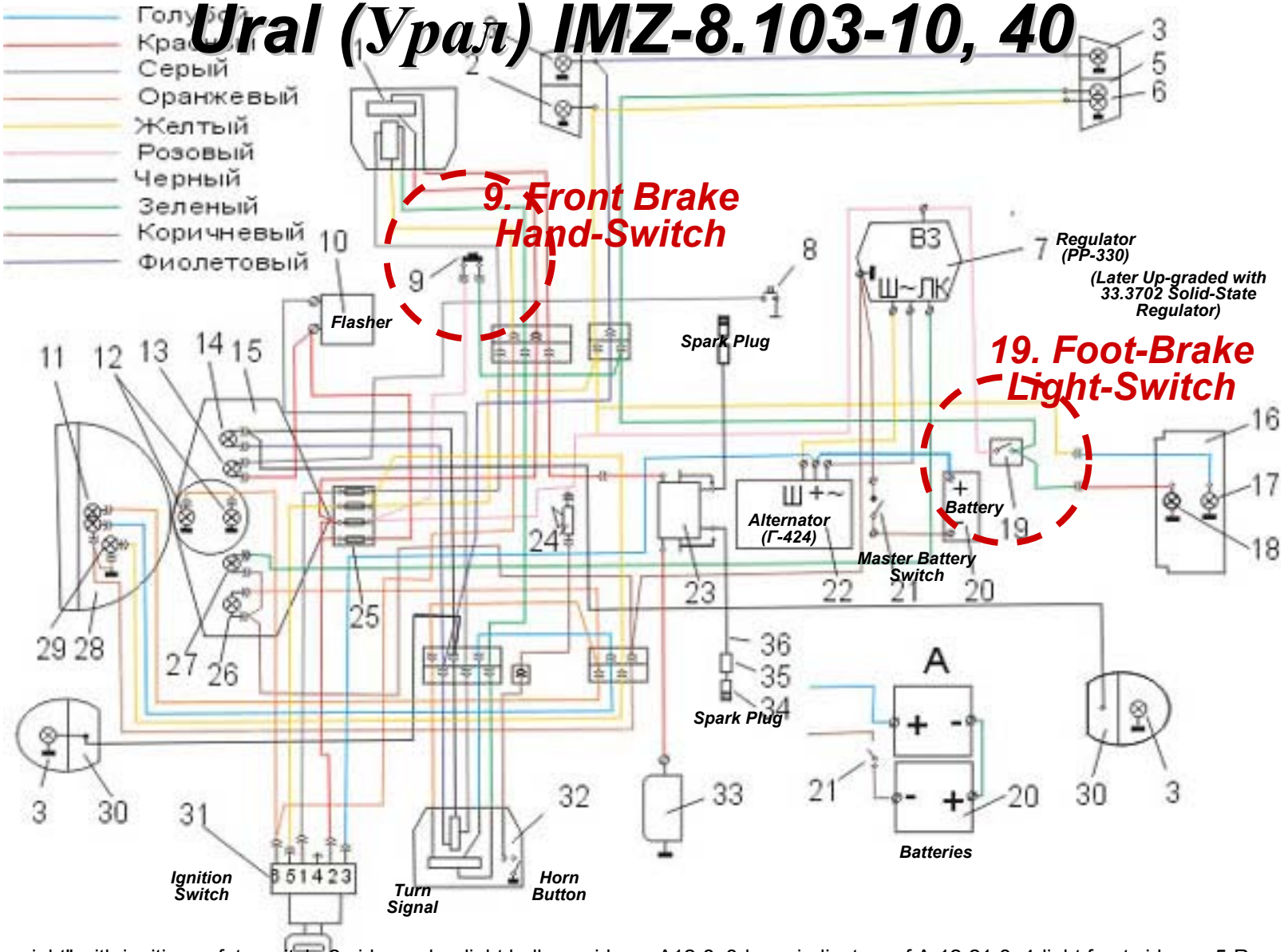
Ural (Урал) M-67 and M-67.36

(www.shematic.net/images/pages/MOTO/M67.jpg)



Only the foot-brake light switch (ВК854Б) activates the rear brake-light.

Ural (Урал) IMZ-8.103-10, 40

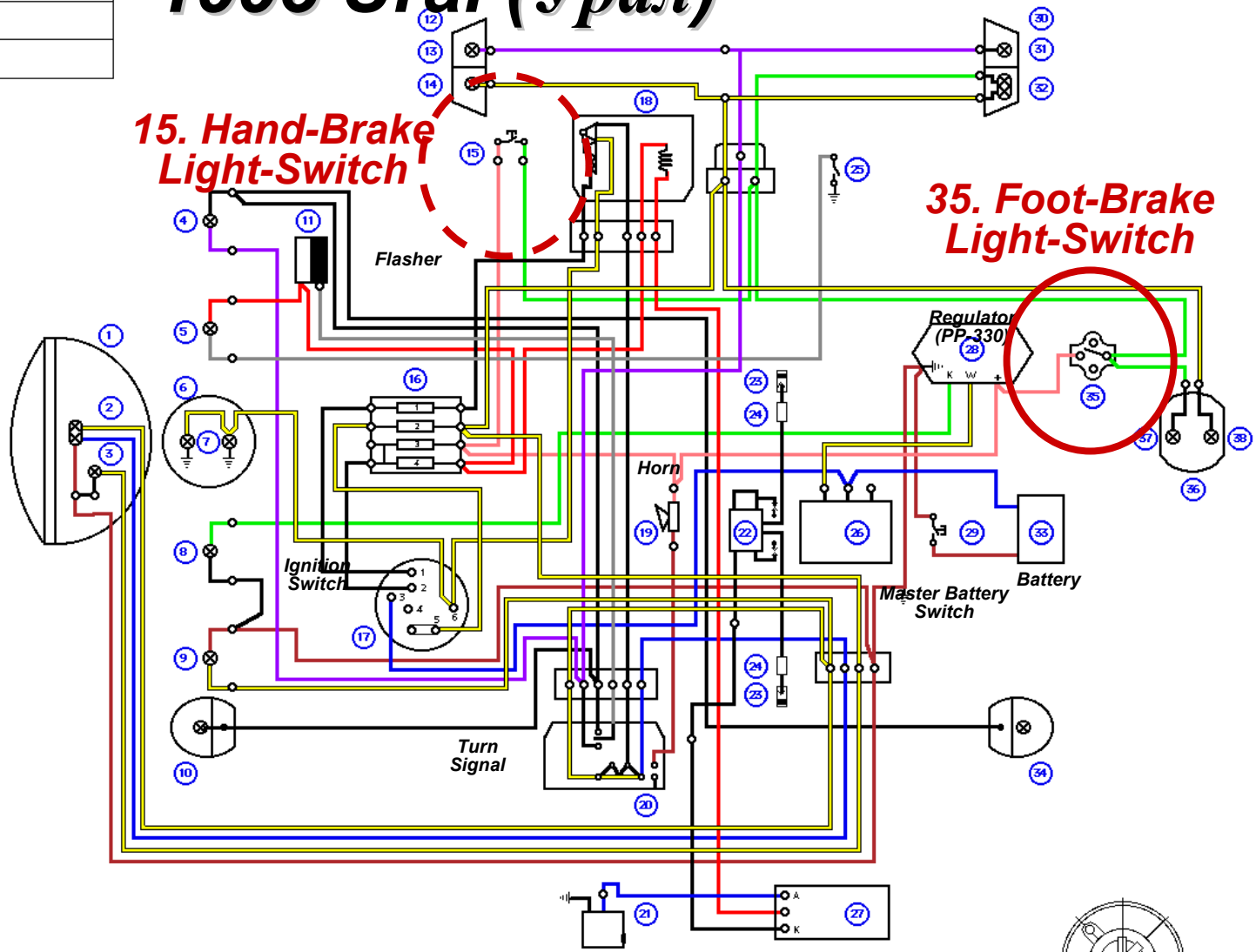


1-select "day-night" with ignition safety switch, 2-side marker light bulb on sidecar A12-8, 3-lamp indicators of A-12-21-3, 4-light front sidecar, 5-Rear sidecar, 6-bulb marker light and a braking signal in a wheelchair A12-212 5, 7-relays, lights, 8-contact (switch controls lamp neutral) 9-switch braking signal handbrake, 10-flashers, 11-driving lamp and low beam headlights A12-45 +40, 12-illumination speedometer A12-1, 13-light control switch neutral A12-1; 14-lamp control indicators A12 signal; 20-rechargeable b 2-1, 28-headlight; 29-s -chopper; 34-spark plug; 35-

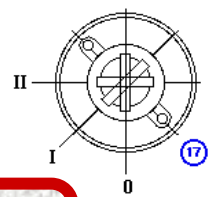
The hand-brake light-switch is electrically in parallel with the foot-pedal brake-switch.

1995 Ural
15 September 2007
Carl Allison
Absolutely no guaranty that wire colors are correct.

1995 Ural (Урал)



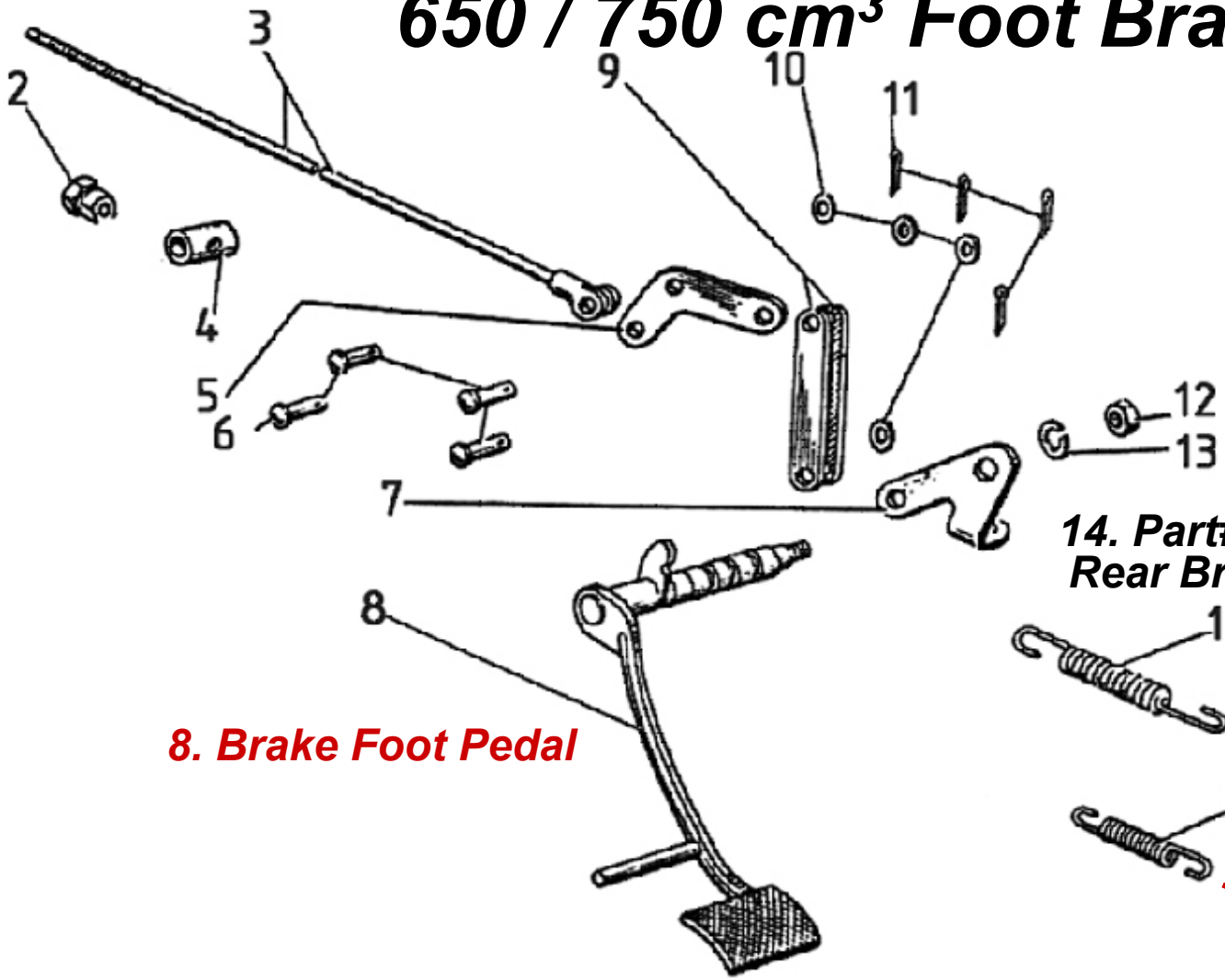
1. Motorcycle head lamp
2. High-low beam headlight bulb
3. Side and parking bulb in headlight
4. Turn indicator bulb
5. Neutral gear indicator bulb
6. Speedometer
7. Speedometer illumination bulb
8. Generator
9. Highbeam indicator lamp
10. Left turn indicator
11. Turn signal flasher
12. Sidecar front lamp
13. Sidecar side bulb
14. Traffic indicator bulb
15. Front brake light switch
16. Fuse plate
17. Ignition lock
18. "Day-night" switch with emergency "ignition out" switch
19. Horn
20. Light and turn indicator switch, horn button
21. Distributor
22. Induction coil
23. Spark plug
24. Spark plug cap
25. Neutral gear indicator switch
26. Generator
27. Ignition module
28. Voltage regulator
29. Earth disconnect switch
30. Sidecar rear lamp
31. Sidecar lamp
32. Sidecar side and brake bulb
33. Battery
34. Left rear turn signal
35. Foot brake signal switch
36. Motorcycle rear lamp
37. Brake light
38. Side bulb and [illegible] illumination



The hand-brake light-switch is electrically in parallel with the foot-pedal brake-switch (ВК854Б).

3	4	5	6

650 / 750 cm³ Foot Brake



14. Part# IMZ-8.101-11414
Rear Brake Lever Spring

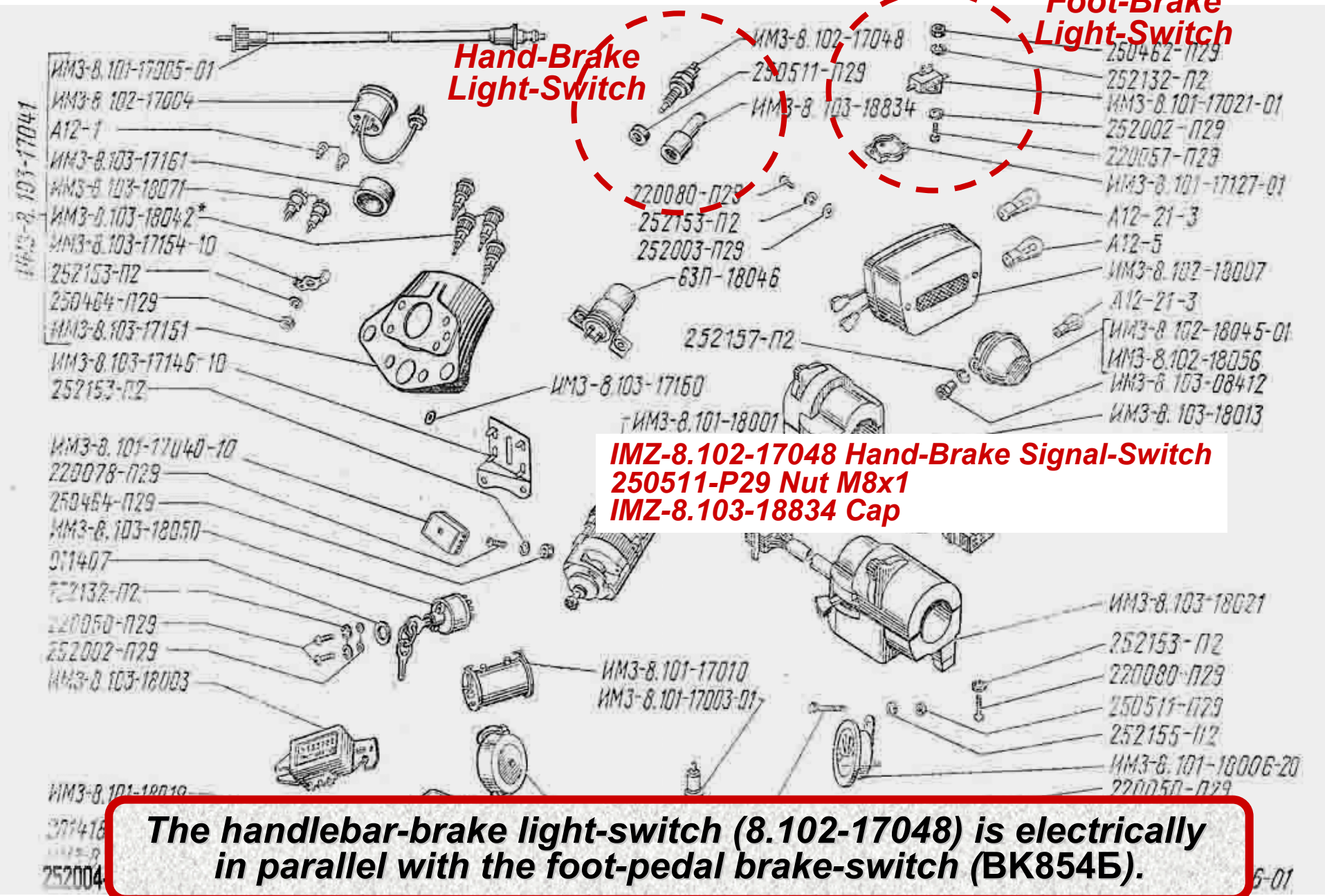
8. Brake Foot Pedal

15. Part# IMZ-8.101-11411
Brake Signal Switch Spring

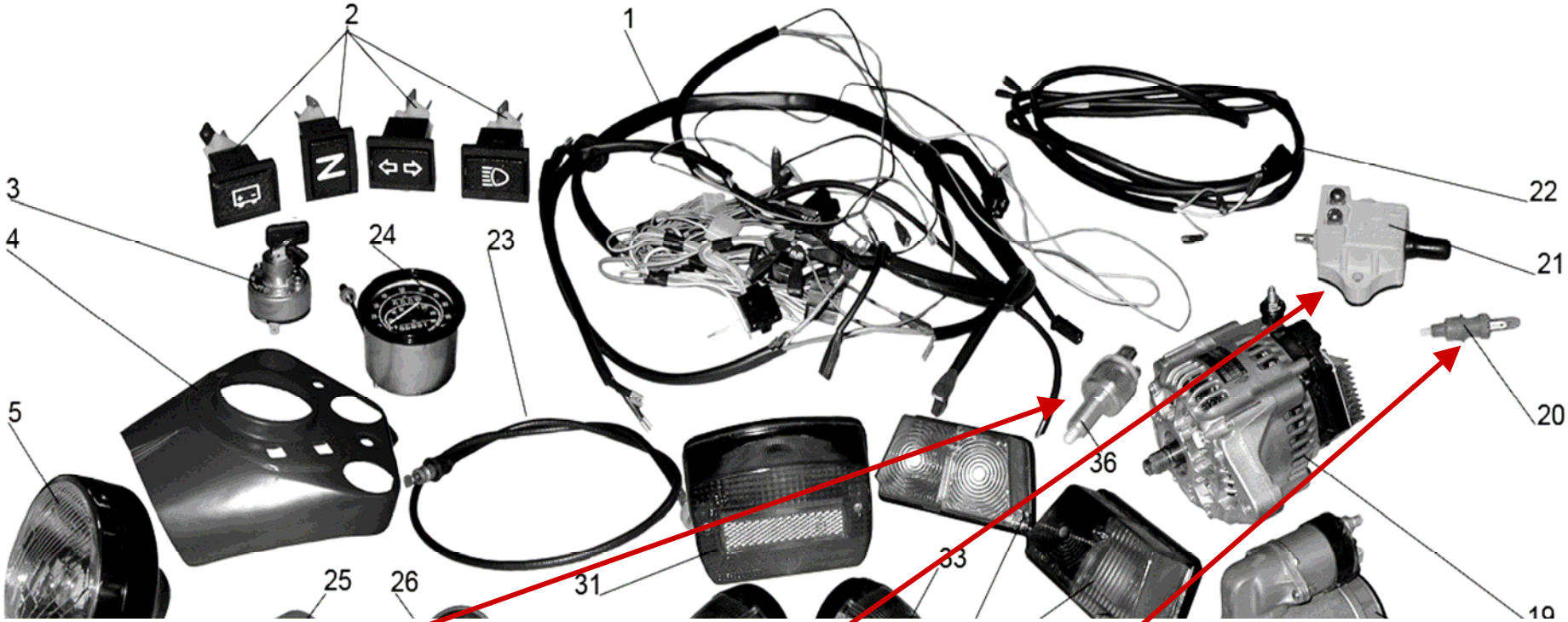
to Small hole in center rod of ВК854Б Brake Switch

When the foot-pedal brake is applied, the switch spring stretches and moves the center rod of the switch, closing the electrical contacts and turning on the bike and sidecar brake-lights.

Ural (Урал) 8.103 (650/750) Parts



Ural 8.103 Parts



Part 36

'IMZ-8.102-17048: Rear Brake Signal Switch
'IMZ-8.1037-17048: Brake Stop Light Switch Front for Drum Brake (italian)
'IMZ-8.1037-17048-EU: Brake Stop Light Switch Italian for European Wire Harness 2007

Part 21

'IMZ-8.101-17021-01: Rear Brake Signal Switch, Installed thru 1998 (ВК854Б)
'IMZ-8.101-17021-01: Rear Stop Lamp Switches until Model 2004
'IMZ-8.101-17127-01: Protection Cap for Brake Lamp Switch until Model 2004

Part 20

'IMZ-8.1037-17048-2007: Handlebar Brake Signal Switch, Used for Brembo Master Cylinder
'IMZ-8.1037-1037-17048: Handlebar Brake Signal Switch, Drum Brakes Only

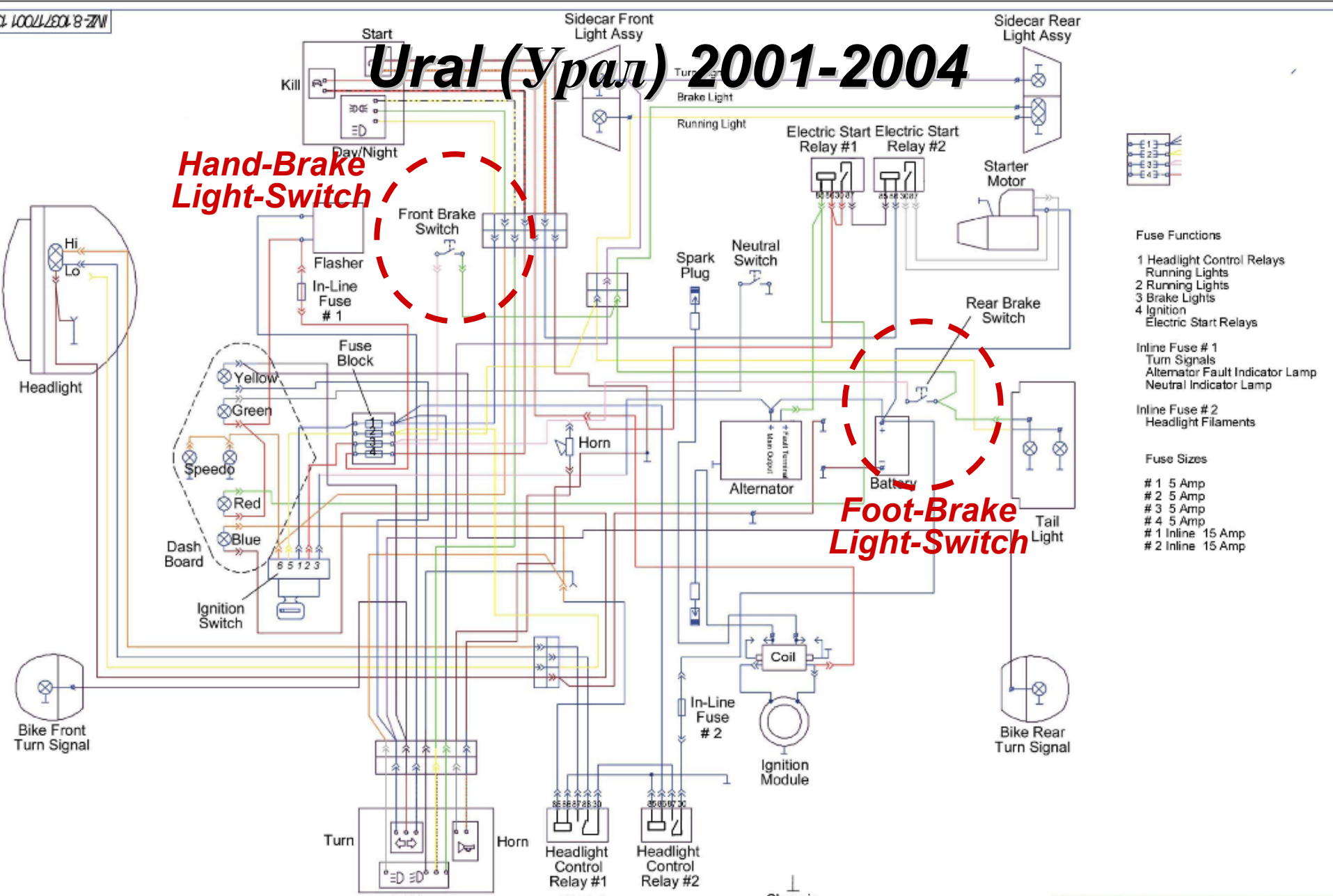
The hand-brake light-switch and foot-brake light switch were similar (IMZ-8.1037-17048) for a few years.

Switch for Brake-Light for disc brake

(www.f2motorcycles.ltd.uk)

- ***Handlebar Brake-Light (front) Signal-Switch***
  - ***For Newer Ural 750s fitted with Brembo Front Disc Brakes***
  - ***Just to confuse matters there are two slightly different types.***
    - ***Part - F23307/TO 2007***
    - ***Part - F23307/AFTER 2007***

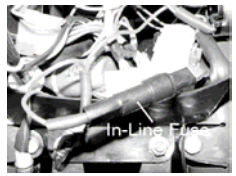
Ural (Урал) 2001-2004



The hand-brake light-switch is electrically in parallel with the foot-pedal brake-switch.

2001-2005 Ural Brakes/Turn Signals/Running Lights

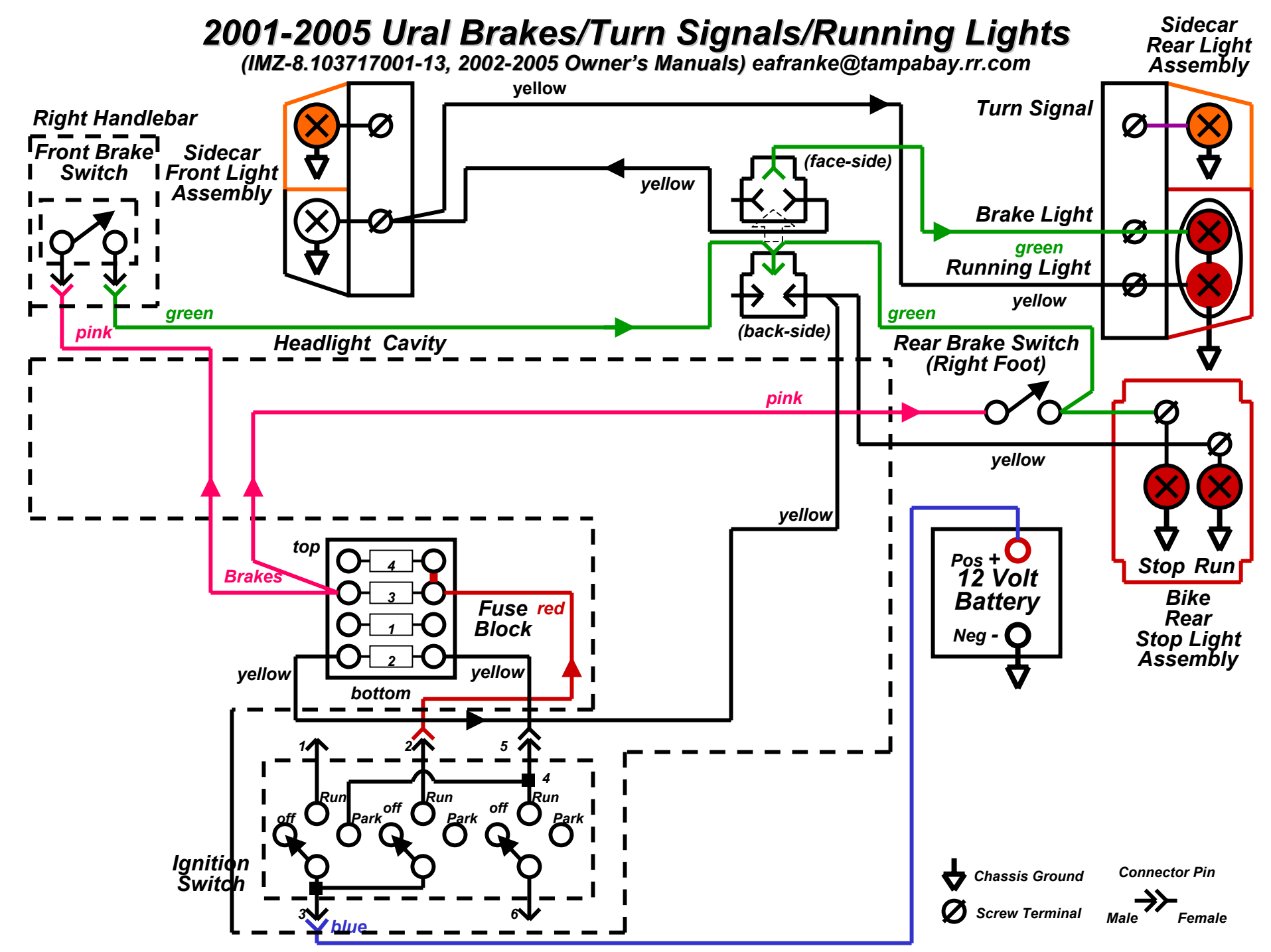
(IMZ-8.103717001-13, 2002-2005 Owner's Manuals) eafranke@tampabay.rr.com



Right Handlebar
Front Brake Switch
Sidecar Front Light Assembly
yellow
purple
yellow
(face-side)
(back-side)
Turn Signal
purple
Brake Light
green
Running Light
yellow
Sidecar Rear Light Assembly
green
pink
green
Headlight Cavity
Rear Brake Switch (Right Foot)
black
purple
Yellow Turn Indicator
Flasher Unit
In-Line Fuse #1
gray
pink
purple
yellow
black
yellow
Stop
Run
Bike Front Turn Signal
black
top
red
Brakes
4
3
1
2
Fuse Block
red
yellow
bottom
yellow
blu/blk
blue
Pos +
12 Volt Battery
Neg -
Bike Rear Stop Light Assembly
(back-view)
(face-view)
red
Turn Signal Switch (Left Handlebar)
Center Off
Bike Rear Turn Signal
Ignition Switch
1
2
5
4
Run
off
Park
Run
off
Park
Run
off
Park
3
blue
6
Chassis Ground
Screw Terminal
Connector Pin
Male
Female

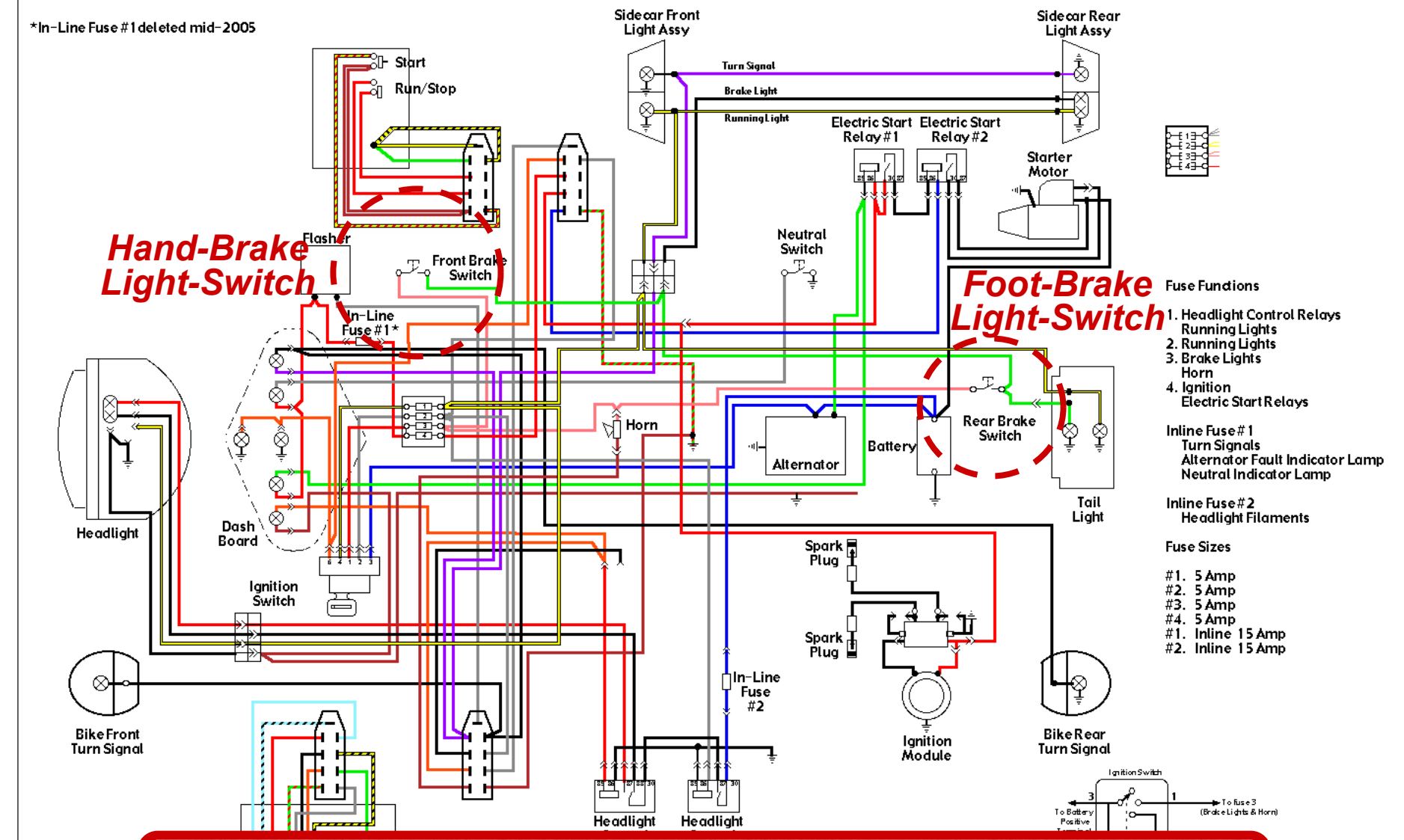
2001-2005 Ural Brakes/Turn Signals/Running Lights

(IMZ-8.103717001-13, 2002-2005 Owner's Manuals) eafranke@tampabay.rr.com



2005 Ural Patrol (USA)
23 March2006
Carl Allison

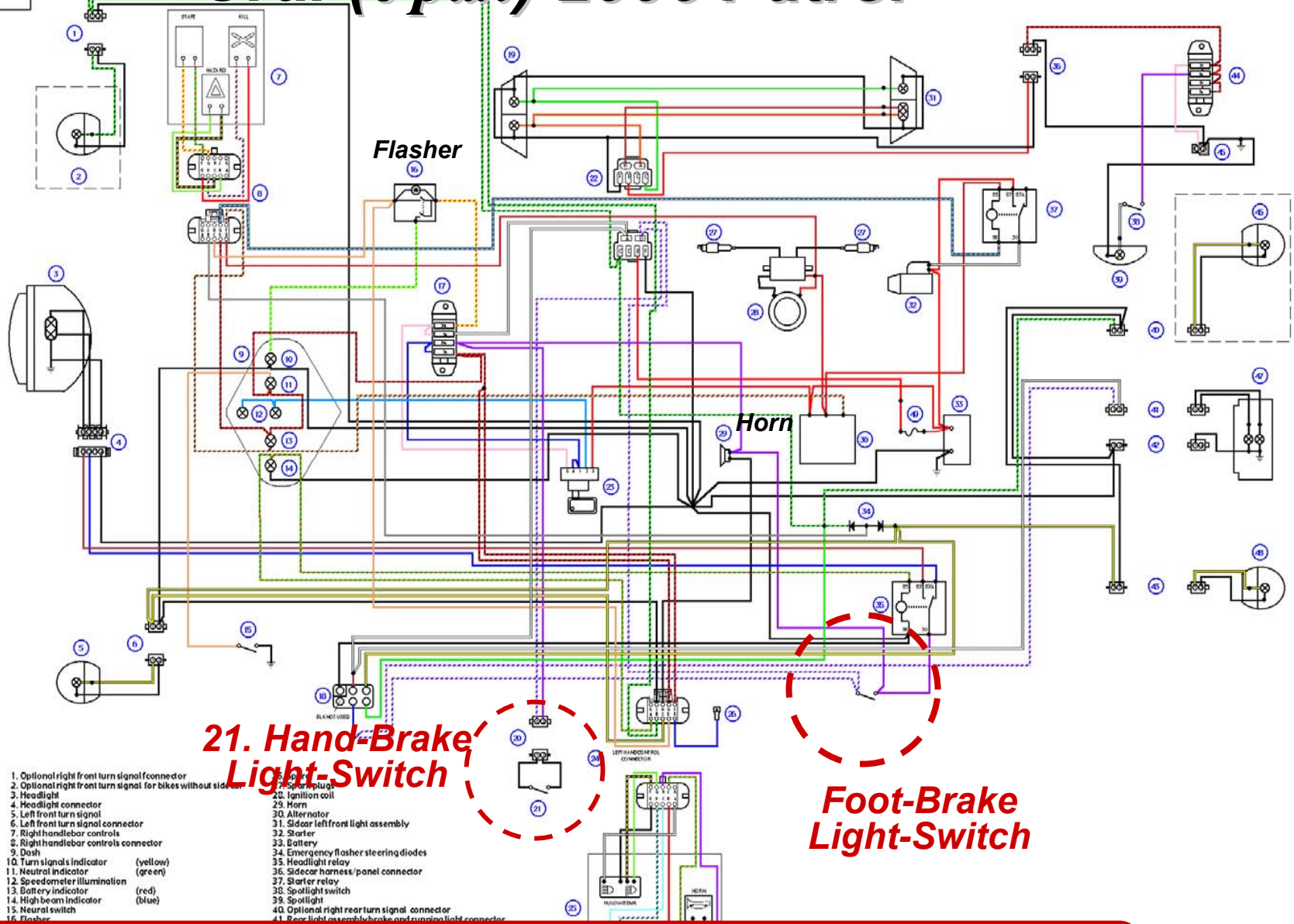
Ural (Урал) 2005 Patrol



The hand-brake light-switch is electrically in parallel with the foot-pedal brake-switch.

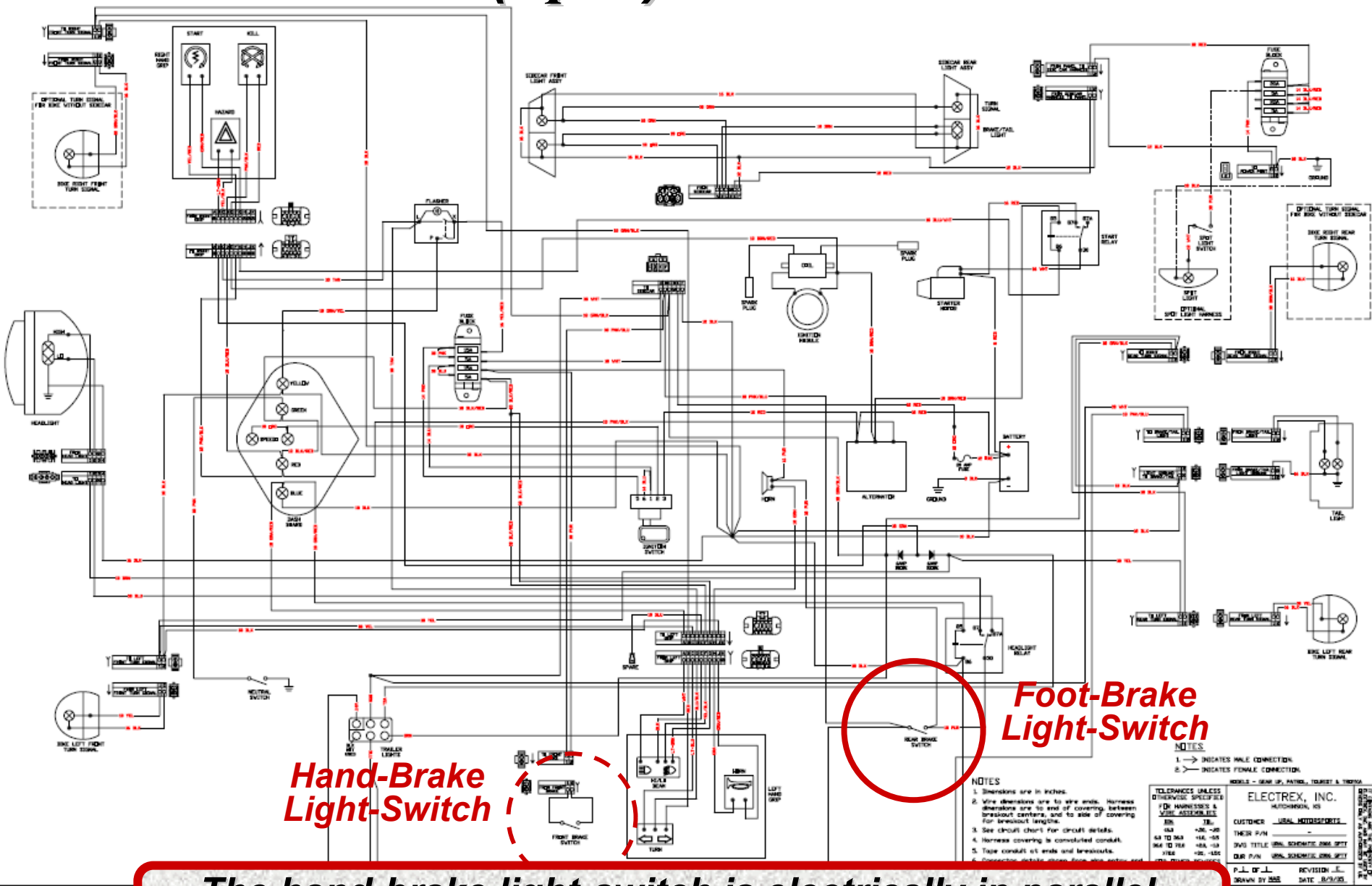
2006 Ural Patrol (USA)
27 August 2006
Carl Allison
Drawing is sized to print as super A3 (13"x19") at 50%

Ural (Урал) 2006 Patrol



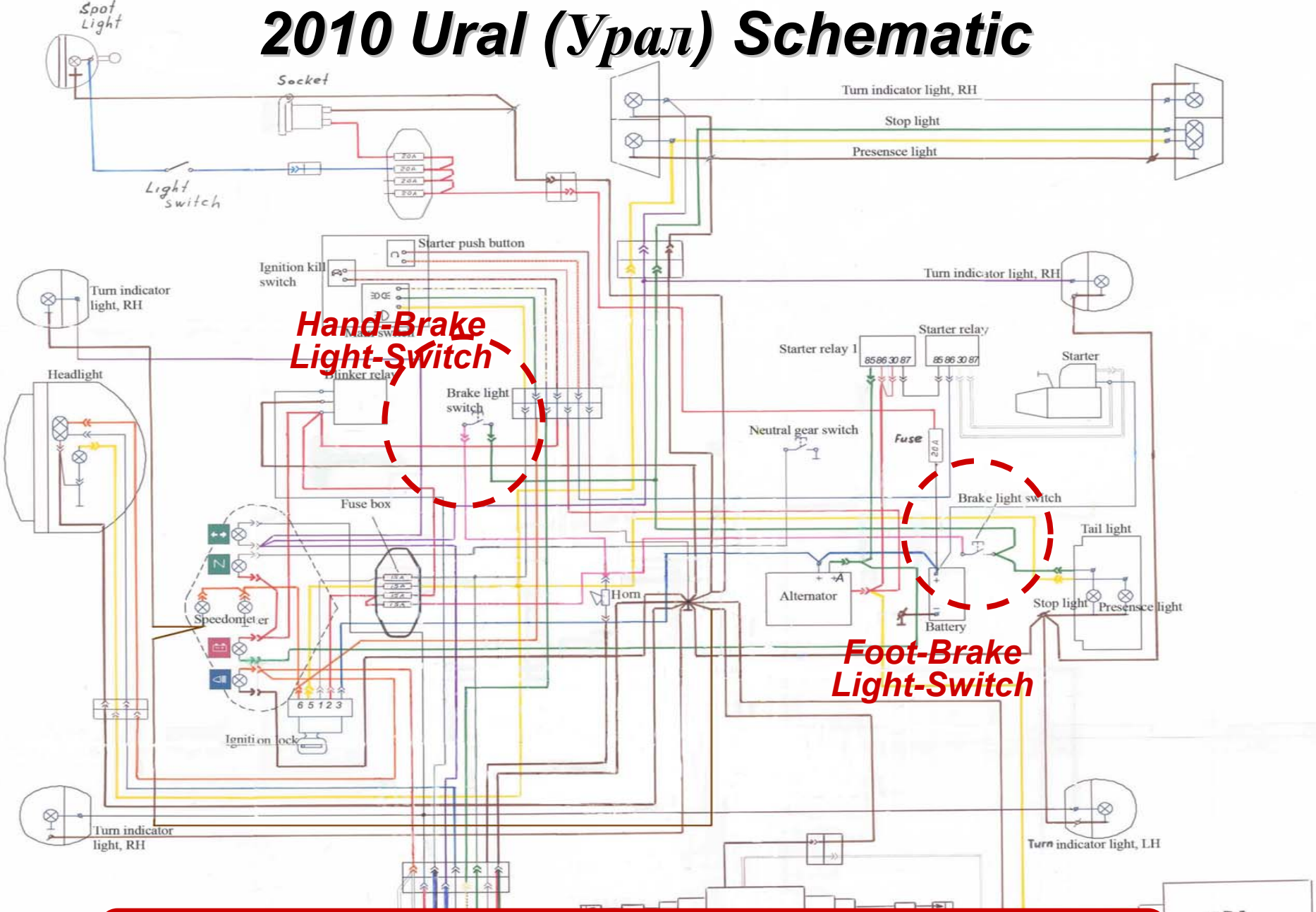
The hand-brake light-switch is electrically in parallel with the foot-pedal brake-switch.

Ural (Урал) 2006 Patrol



The hand-brake light-switch is electrically in parallel with the foot-pedal brake-switch.

2010 Ural (Урал) Schematic



The hand-brake light-switch is electrically in parallel with the foot-pedal brake-switch.

Brake-Light Visibility (Conspicuity)

- *"I Never Saw the Motorcycle"*
  - *Conspicuity Is What It's All About!*
- *Modern Motorcycles Employ Signal Lights for Numerous Turn, Brake, Driving, Parking and Fog Lights*
- *Brake Light Modulator*
  - *Brake Light System Automatically Flashes Brake Light to Capture Attention of Following Drivers*
  - *Extremely Visible to Other Traffic*
    - *Pulses Brake-Light Signal*
    - *Significantly More Noticeable because Brake Light Modulates Three Short Flashes Followed by One Steady-On Pulse of Four Seconds*
  - *More Visible While Braking and While Stopped at Stoplights*
    - *Pattern Automatically Repeats Itself as Long as Brakes Are Applied*
  - *Modulator Wires into Tail Lamp Circuitry*

Multiple vendors offer brake-light modulators to increase conspicuity (visibility) to other drivers.

Light Emitting Diode (LED) - Brake and Rear

(www.f2motorcycles.ltd.uk)

- Multiple Vendors Offer LED Replacement Lamps
  - –LED Cluster Directly Replaces Standard Stop and Tail Light-Bulb
  - –Reacts Quicker than Standard Incandescent Bulb
    - Helps Reaction Time of Driver Behind
  - –Withstand Much Greater Vibration
    - Lasts Much Longer than Standard Incandescent Bulbs
  - –Draws less than 1-Amp
    - Really Useful if Low Output from an Old Generator/Alternator
  - –Super Bright White Can Be Used with Standard Red Rear Lens
- Caveat Emptor "Let the Buyer Beware“
  - –Purchase High-Quality Cluster Units
  - –Replace the Lamp Socket with Insulated Board of Multiple Clusters

In order to minimize current and heat density in LED’s, multiple diodes (cluster) are arranged in parallel to spread the heat, yielding a large, bright-red braking signal.

LED Classic License Frame (pashnit.com and customdynamics.com)

- LED (Light Emitting Diode) Give Greater Visibility and Conspicuity
- Function in Both High and Low Intensity Brightness
- Brilliant Mirror Chrome or Black Powder Coat Finish
- Dimensions:
  - "Standard" Fits 49 States License Plates (7-3/16" x 4-1/4")
  - Measurement from Center-to-Center is 5-3/4" x 2-3/4“

Single LED Light Bar

Dual LED Light Bars

Multiple vendors are available on the web to supply license-plate frames with LED light-bars for added visibility.