Historical Wiring Diagrams For Original Lucas Rita Installations

Timing data is included where it is available

One of the most common questions we receive is: "How do I wire my RITA?" In response, we've compiled this collection of historical wiring information for original Lucas RITA A5 & AB11 systems. Our goal has been to gather publicly available wiring diagrams from various sources, and compile them into a single, easy-to-use document for RITA owners. This is an ongoing project, and while it aims to provide helpful reference information, it is continually being updated and refined. If you are fitting a 'Revival' circuit refer to the Revival installation guide, this document does not replace or overrule the 'Revival installation guide'.

We would like to acknowledge the original creators of this information in all instances and respect any intellectual property rights associated with it. If we have inadvertently overlooked a credit or if you are the rightful owner of any content we've included, please feel free to contact us, and we will ensure proper attribution is given.

In addition to this publication, we offer our '**RITA Revival Fitting Guide'**, which outlines the best modern combinations for optimal performance. We also provide an up-dated and comprehensive **Troubleshooting Guide**, filled with detailed solutions to common issues. For those looking for more background information we invite you to explore our publication titled **'Overview of the Lucas RITA Ignition for Motorcycles'.**

A Note on Positive Earth

In all DC circuits, power should always be connected positive to positive and negative to negative. The term 'earth' often causes confusion, so it's best to avoid using it. When making connections, clearly identify the positive and negative terminals or wires on the vehicle, and connect the RITA wires accordingly. Incorrect polarity will damage the circuit.

Important Note on Historical Schematics

We would like to clarify that the schematics provided here are historical in nature and have not been updated. As such, we cannot confirm that they represent the latest revisions. The original designs were likely influenced by the technological and cost constraints of the time when the system was commercially available, which may result in solutions that are less optimal by today's standards.

The twin and single applications are sound, however we guide you toward more suitable options and highlight certain aspects you may wish to avoid. Please note that we take no responsibility for the use of these historical schematics, and users should proceed with caution and ensure the information is appropriate for their specific application.

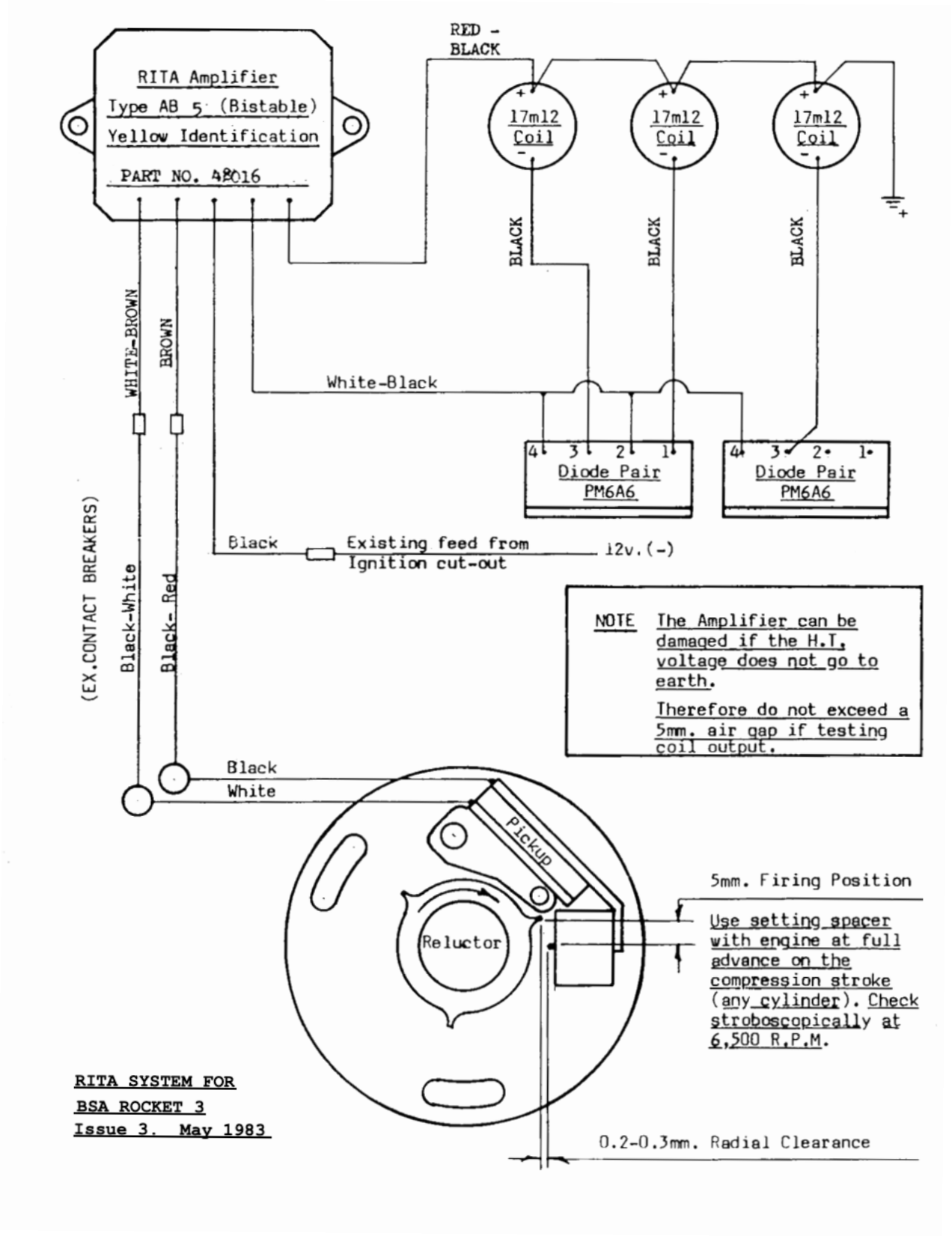
Finally

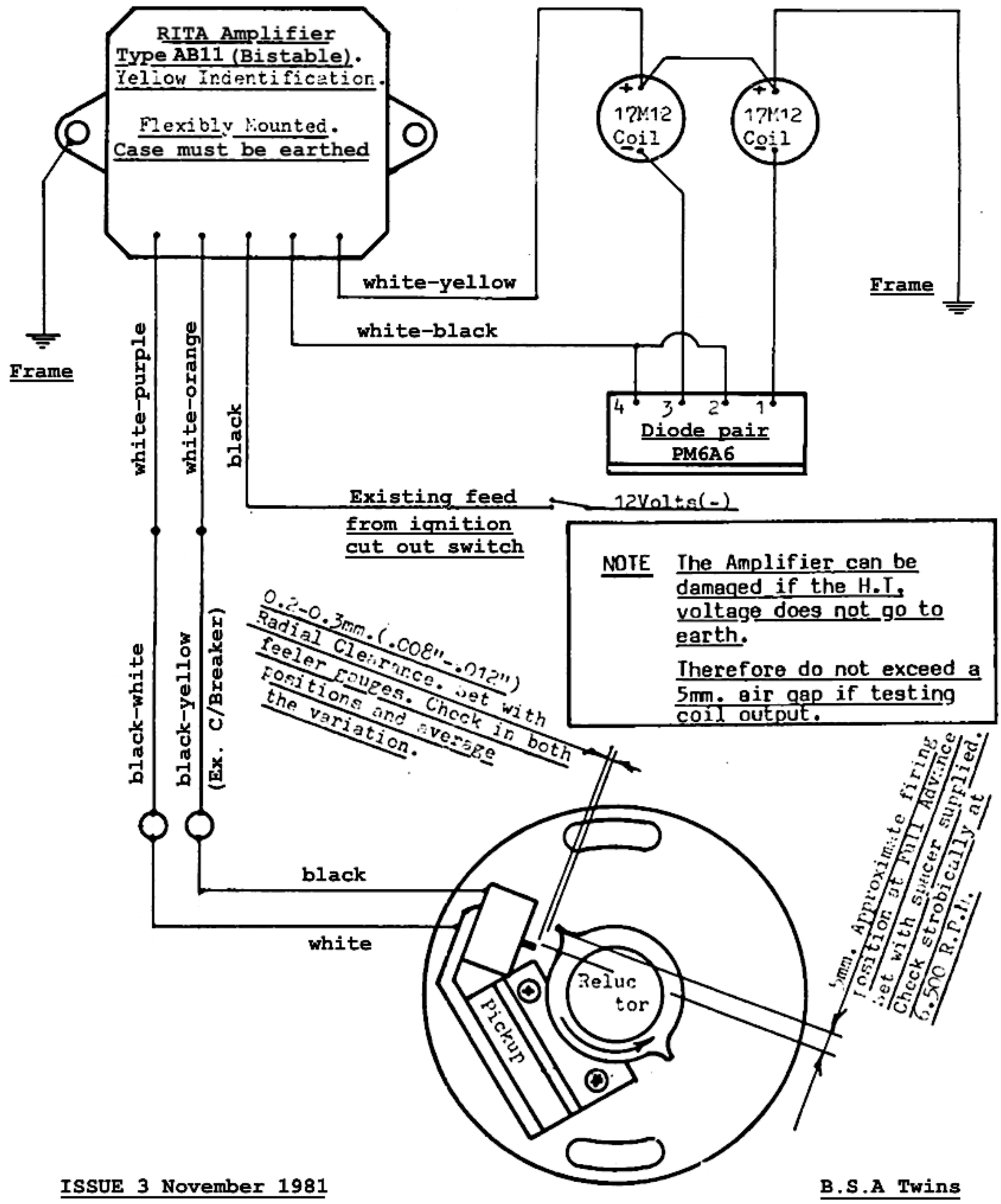
We provide everything you need to keep the iconic 1970s AB5 & AB11 running smoothly, adding a touch of vintage authenticity to your ride. Our "RITA Revival" repair, along with replacement parts, is available, and we offer technical back-up and information exclusively online and e-mail.

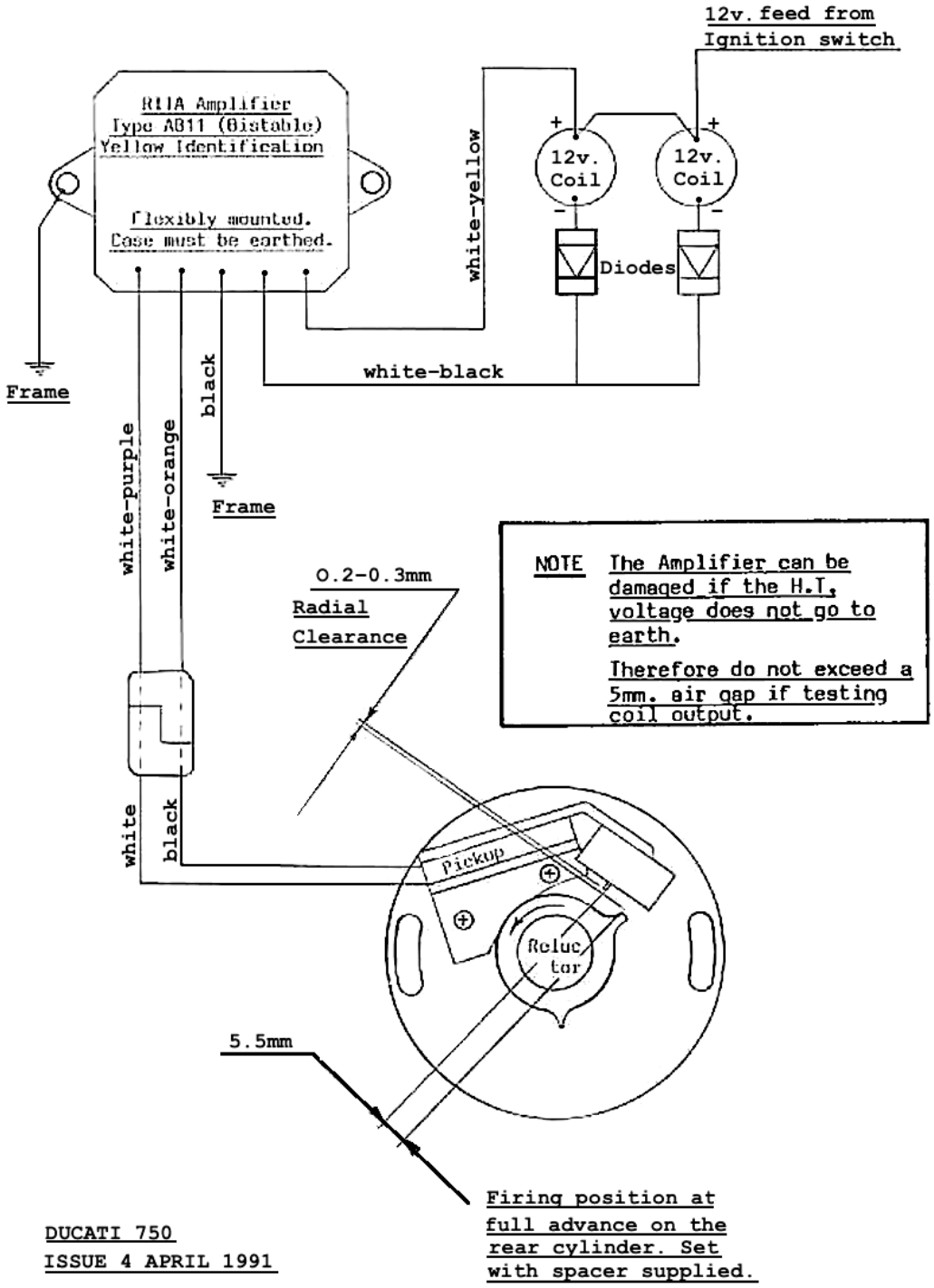
- New RITA 'Revival' electronics for existing systems.
- Diode packs
- 'C' Type pick-ups
- Recommended HT Coils
- Wiring supplies & suitable connectors

BSA Rocket 3. Issue 3, May 1983.

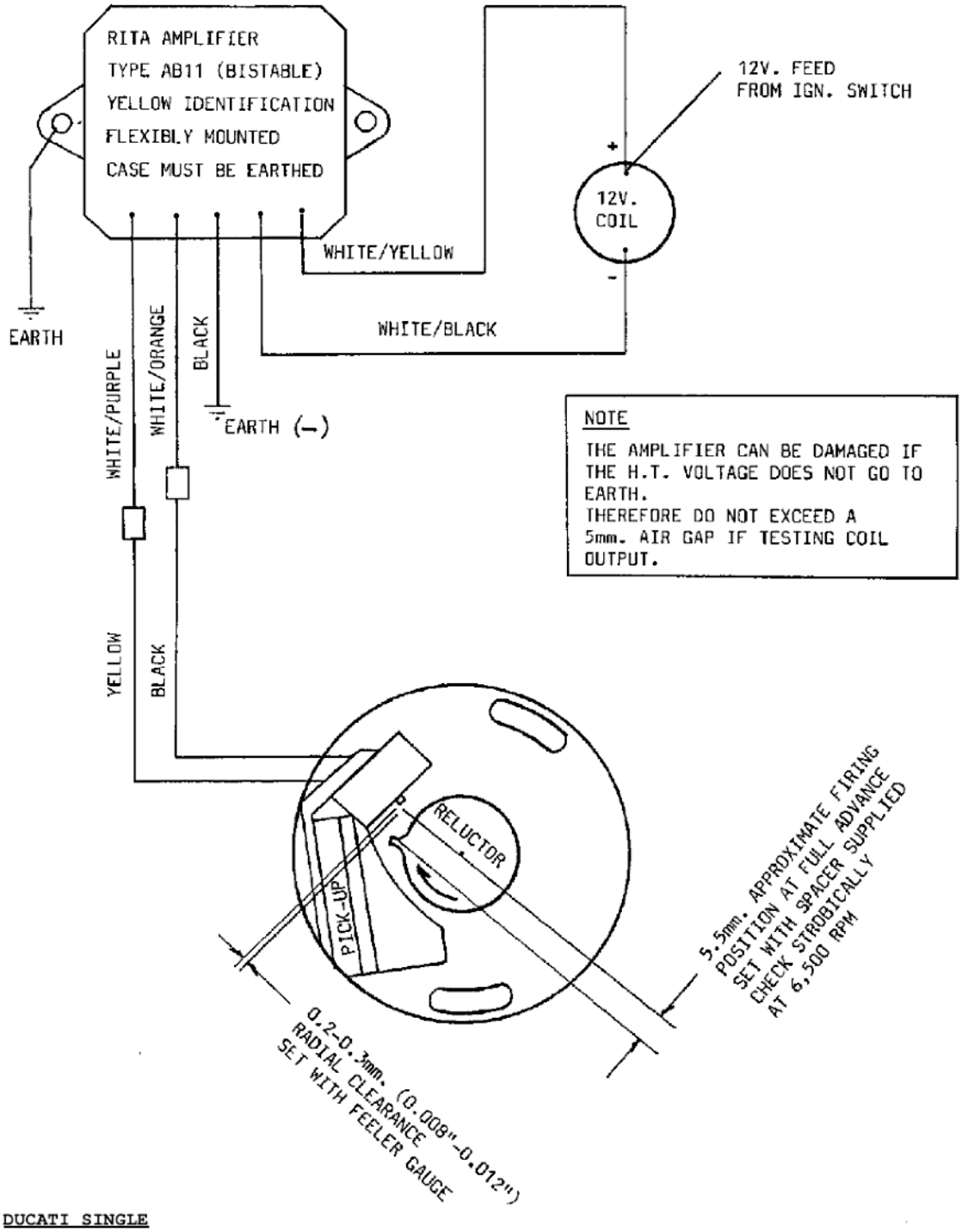
Notes: Using a AB11 with 12V HT coils connected as shown will give the best performance of all the historic RITA configurations. 12 volt coils give the best starting and high RPM spark. An AB11 unit is undoubtedly preferable over an AB5.




RITA Amplifier
Type AB11 (Bistable).
Yellow Indentification.
Flexibly Mounted.
Case must be earthed
17M12 Coil
17M12 Coil
Frame
Frame
white-yellow
white-black
white-purple
white-orange
black
Diode pair
PM6A6
Existing feed from ignition cut out switch
12Volts(-)
NOTE The Amplifier can be damaged if the H.T. voltage does not go to earth.
Therefore do not exceed a 5mm. air gap if testing coil output.
0.2-0.3mm.(.008"-.012") Radial Clearance. Set with feeler gauges. Check in both positions and average the variation.
black-white
black-yellow
(Ex. C/Breaker)
black
white
Reluc tor
Pickup
Approximate firing position at Full Advance set with spacer supplied. Check strobically at 6,500 R.P.M.
ISSUE 3 November 1981
B.S.A Twins

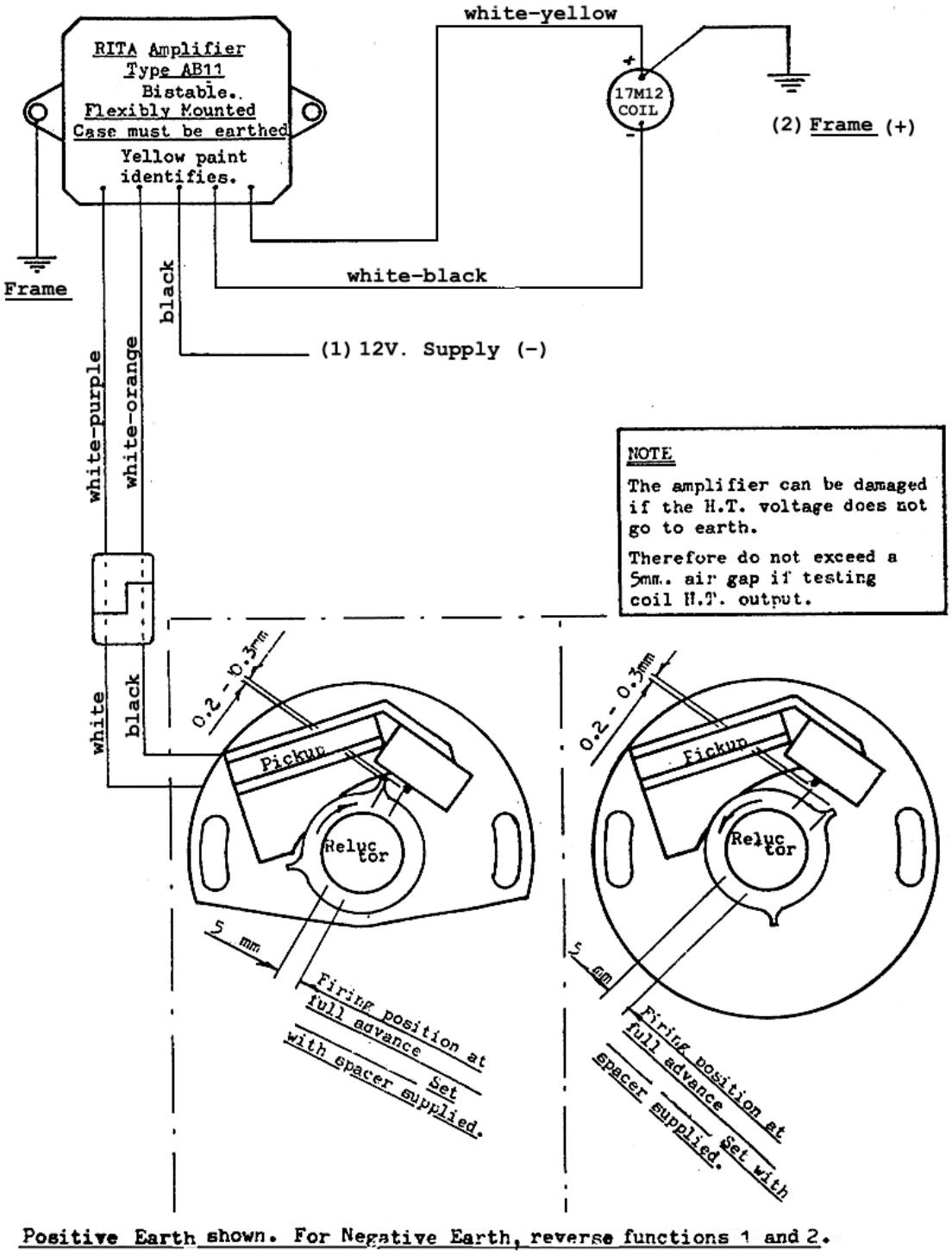

12v. feed from
Ignition switch
RIIA Amplifier
Type AB11 (Bistable)
Yellow Identification
Flexibly mounted.
Case must be earthed.
white-yellow
12v.
Coil
12v.
Coil
+
+
-
-
Diodes
white-black
Frame
black
white-purple
white-orange
Frame
NOTE The Amplifier can be damaged if the H.T. voltage does not go to earth.
Therefore do not exceed a 5mm. air gap if testing coil output.
0.2-0.3mm
Radial
Clearance
white
black
Pickup
Reluc
tor
5.5mm
Firing position at full advance on the rear cylinder. Set with spacer supplied.
DUCATI 750
ISSUE 4 APRIL 1991

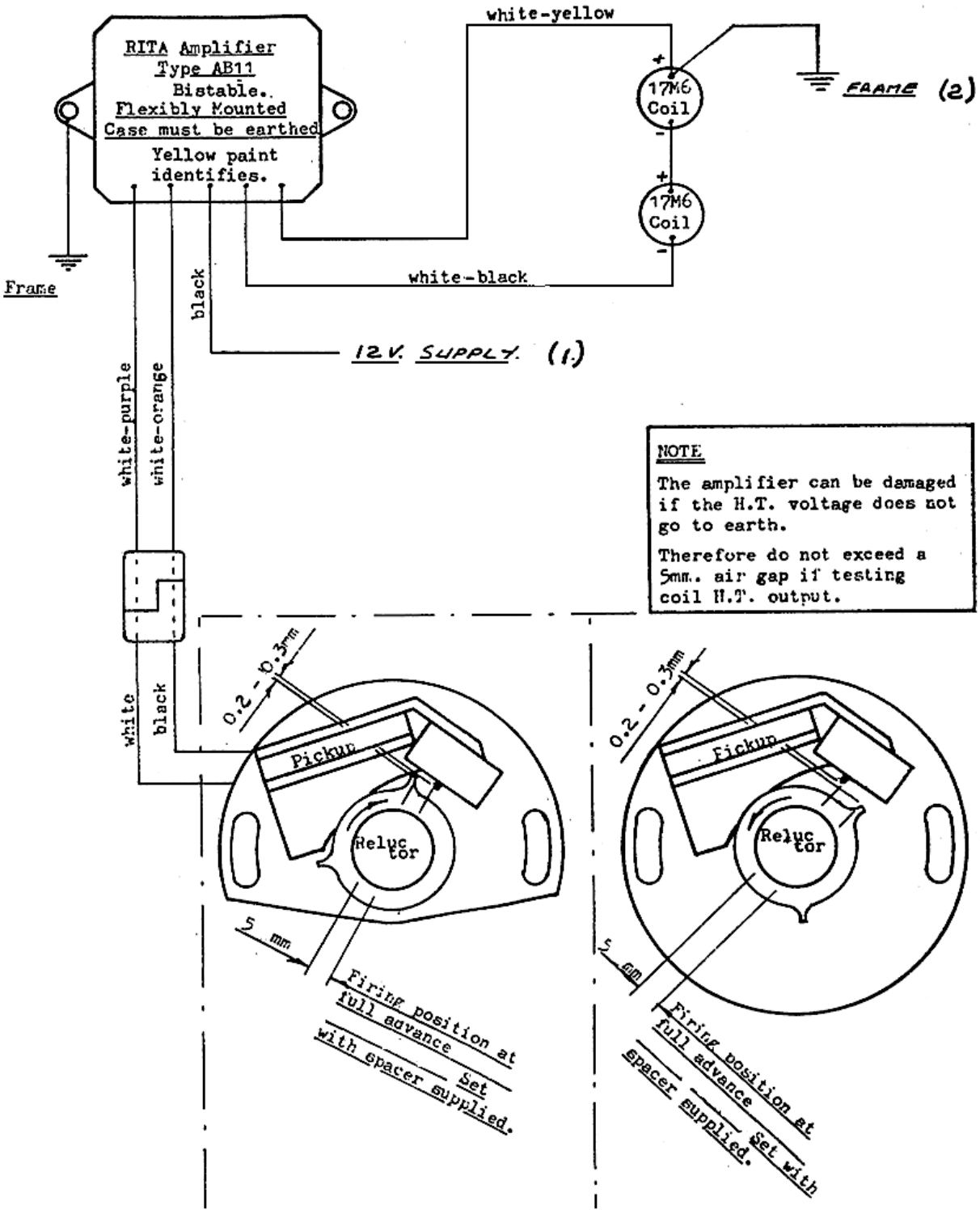
Ducati Single



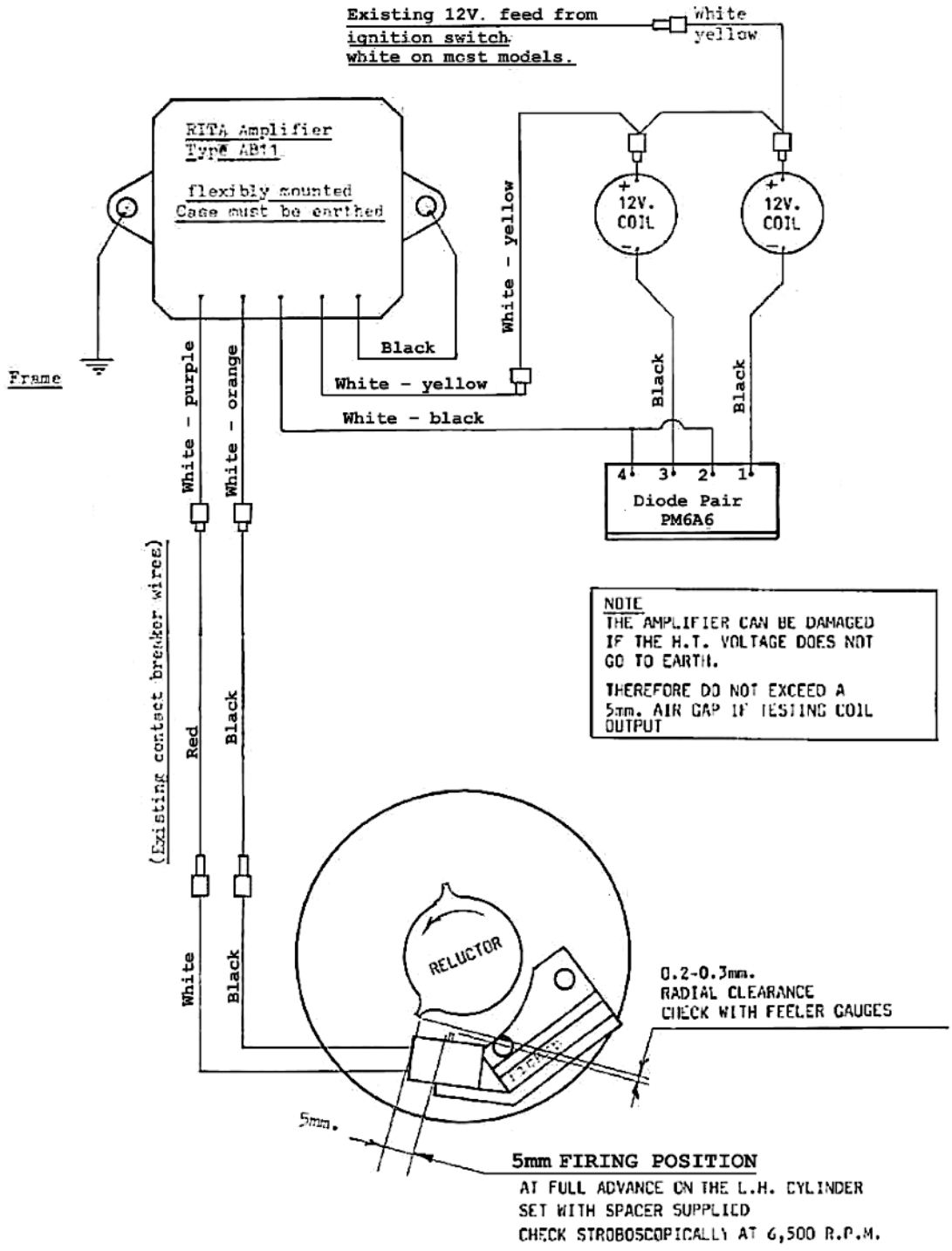
DUCATI SINGLE

Single cylinder Magneto Replacement

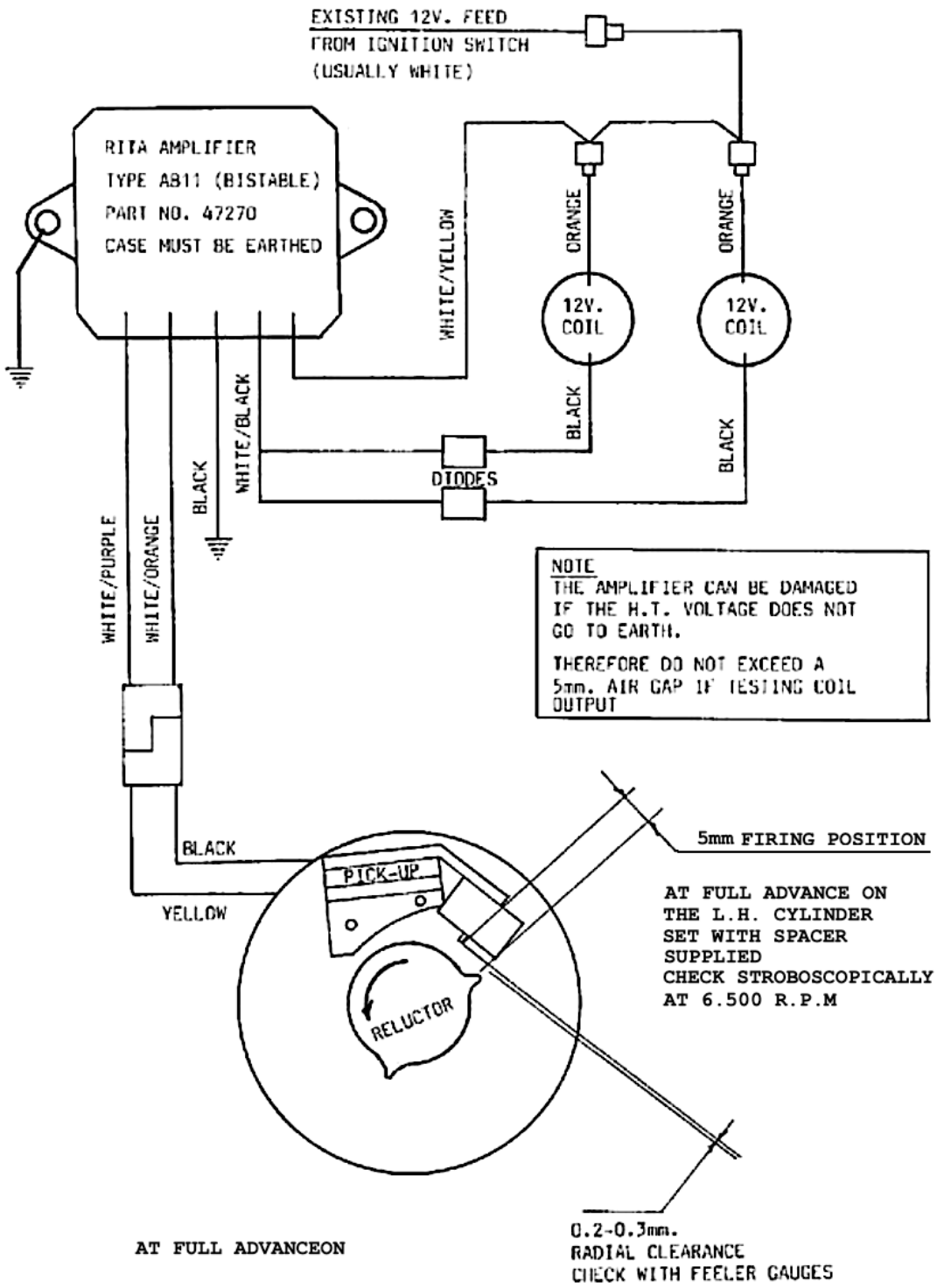




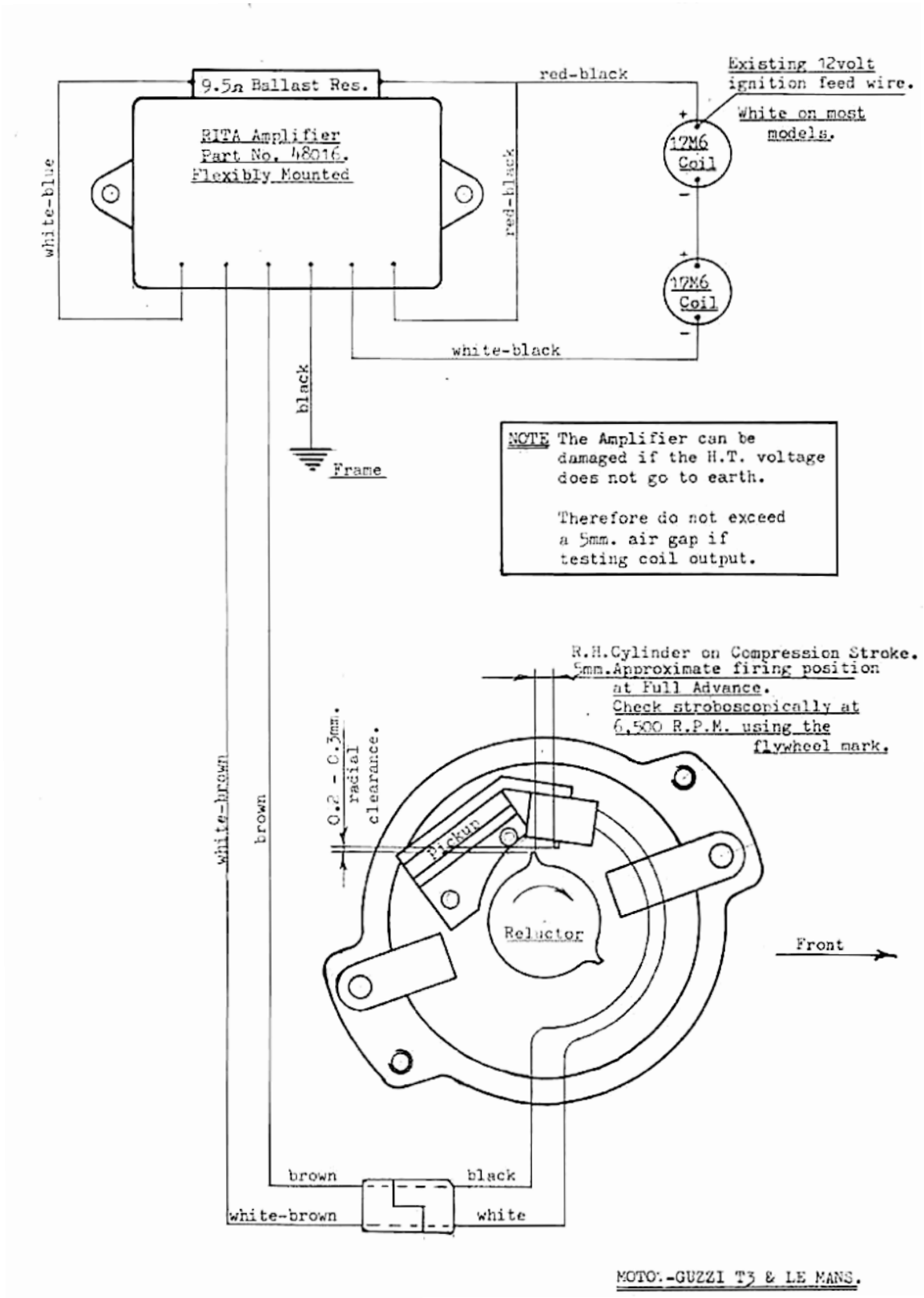
Positive Earth shown. For Negative Earth, reverse functions 1 and 2.

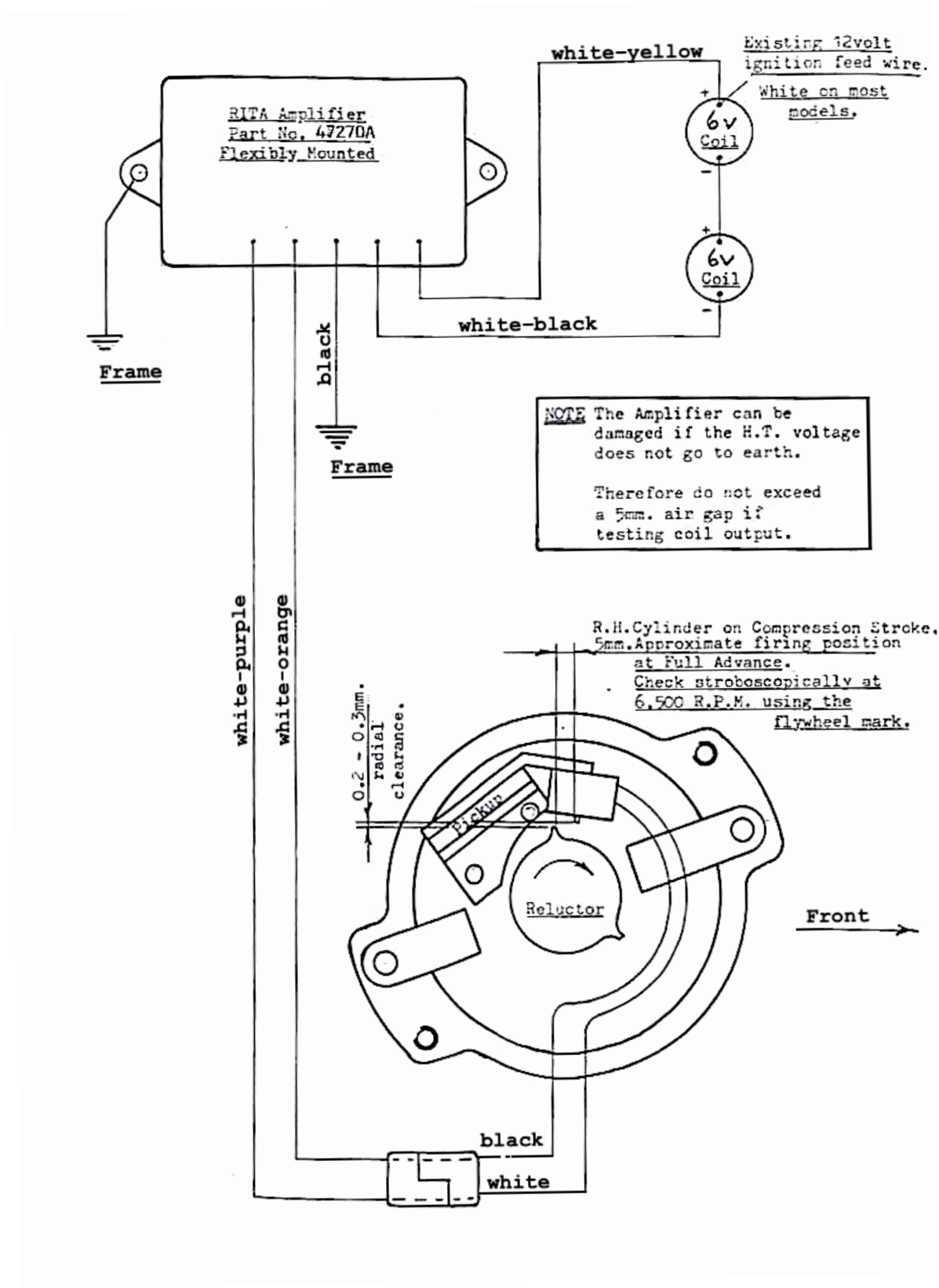


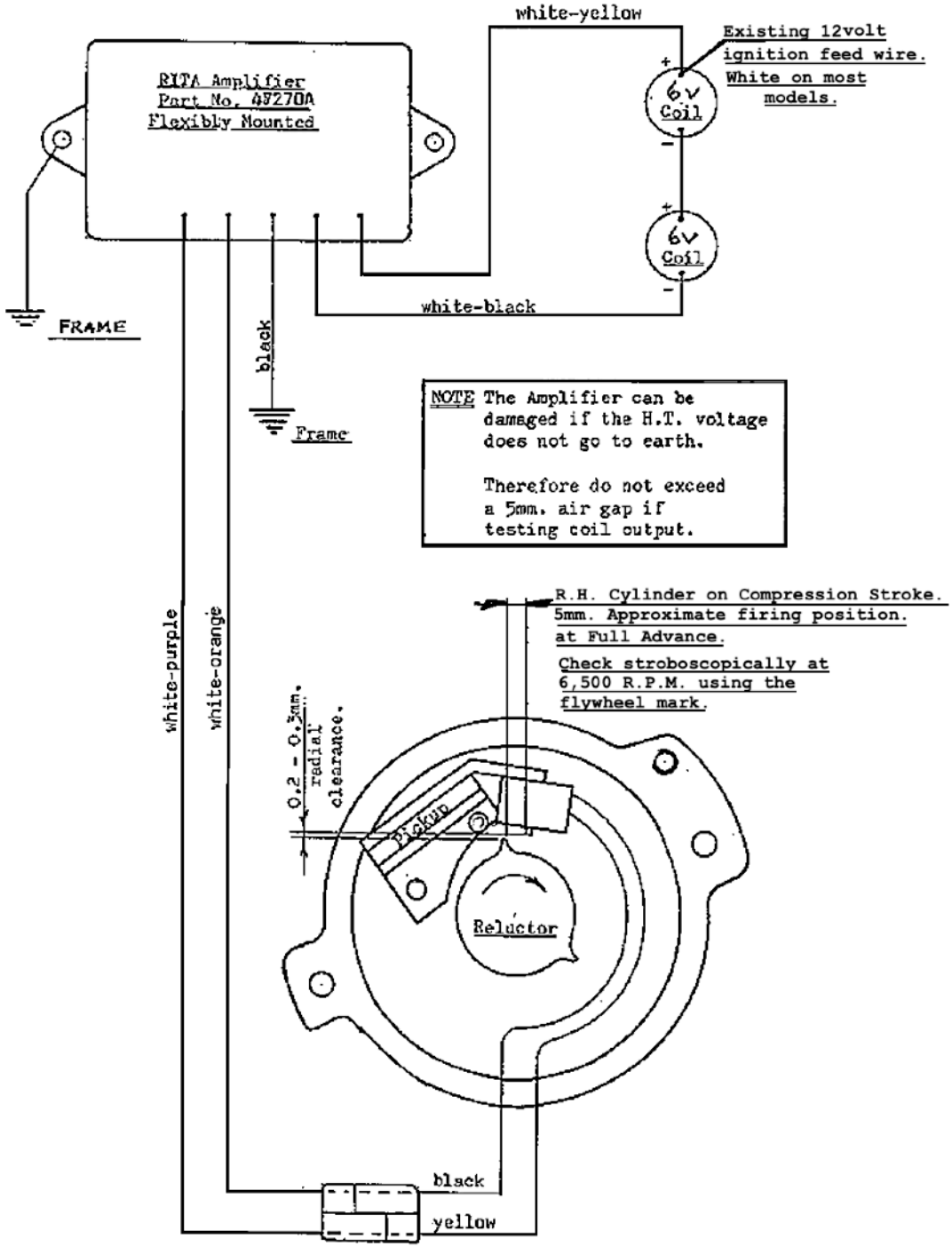
MOTO GUZZI V50 REPLACEMENT OF CONTACT BREAKERS.



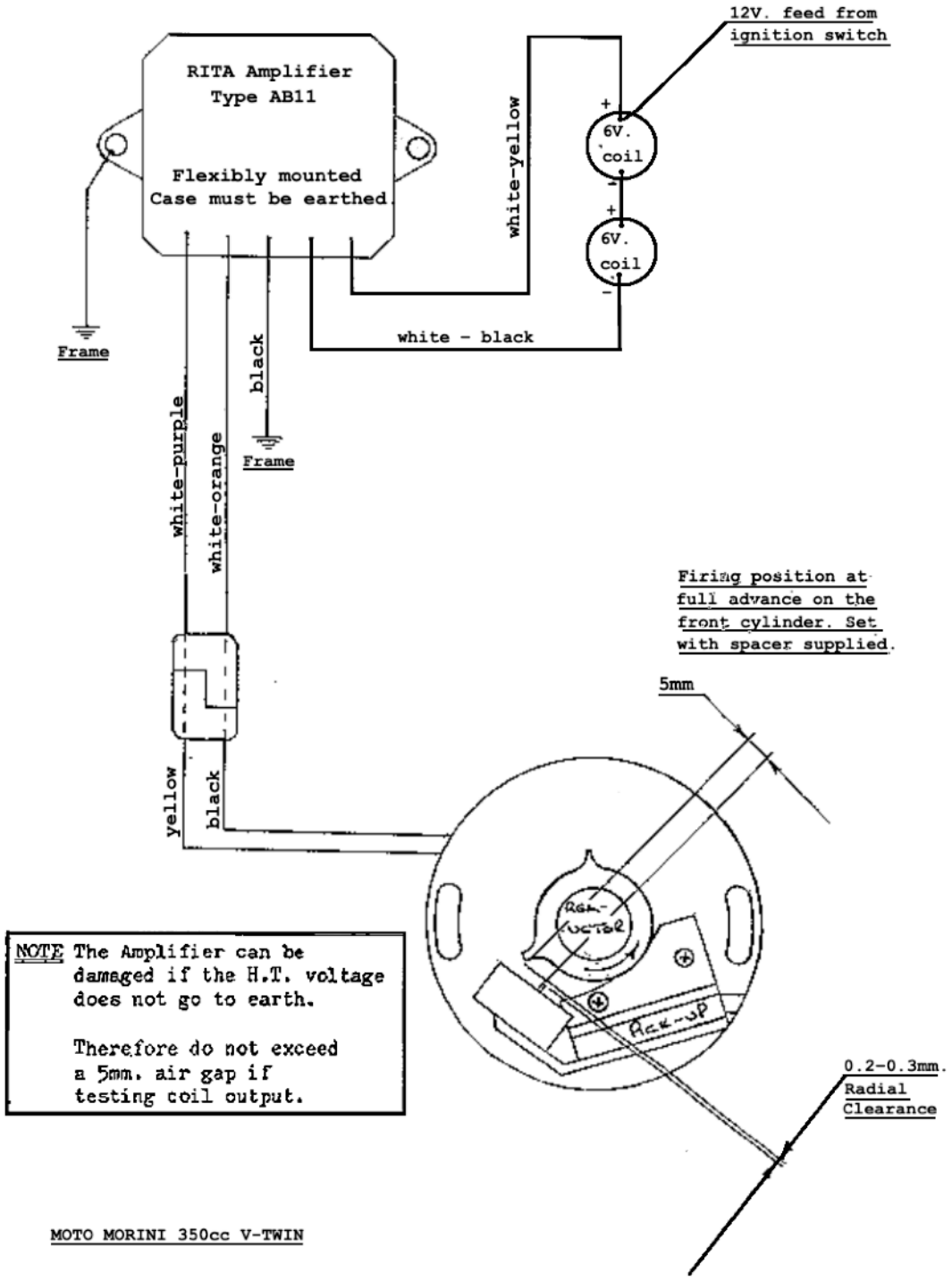
MOTO GUZZI TARGA 750
(REPLACEMENT OF MOTOPLAT IGNITION)


9.5Ω Ballast Res.
red-black
Existing 12volt ignition feed wire.
White on most models.
RITA Amplifier Part No. 48016. Flexibly Mounted
white-blue
red-black
12M6 Coil
12M6 Coil
white-black
black
Frame
NOTE The Amplifier can be damaged if the H.T. voltage does not go to earth.
Therefore do not exceed a 5mm. air gap if testing coil output.
R.H.Cylinder on Compression Stroke. 5mm.Approximate firing position at Full Advance. Check stroboscopically at 6,500 R.P.M. using the flywheel mark.
0.2 - 0.3mm. radial clearance.
Pickup
Reluctor
Front
white-brown
brown
brown
black
white-brown
white
MOTO.-GUZZI T3 & LE MANS.

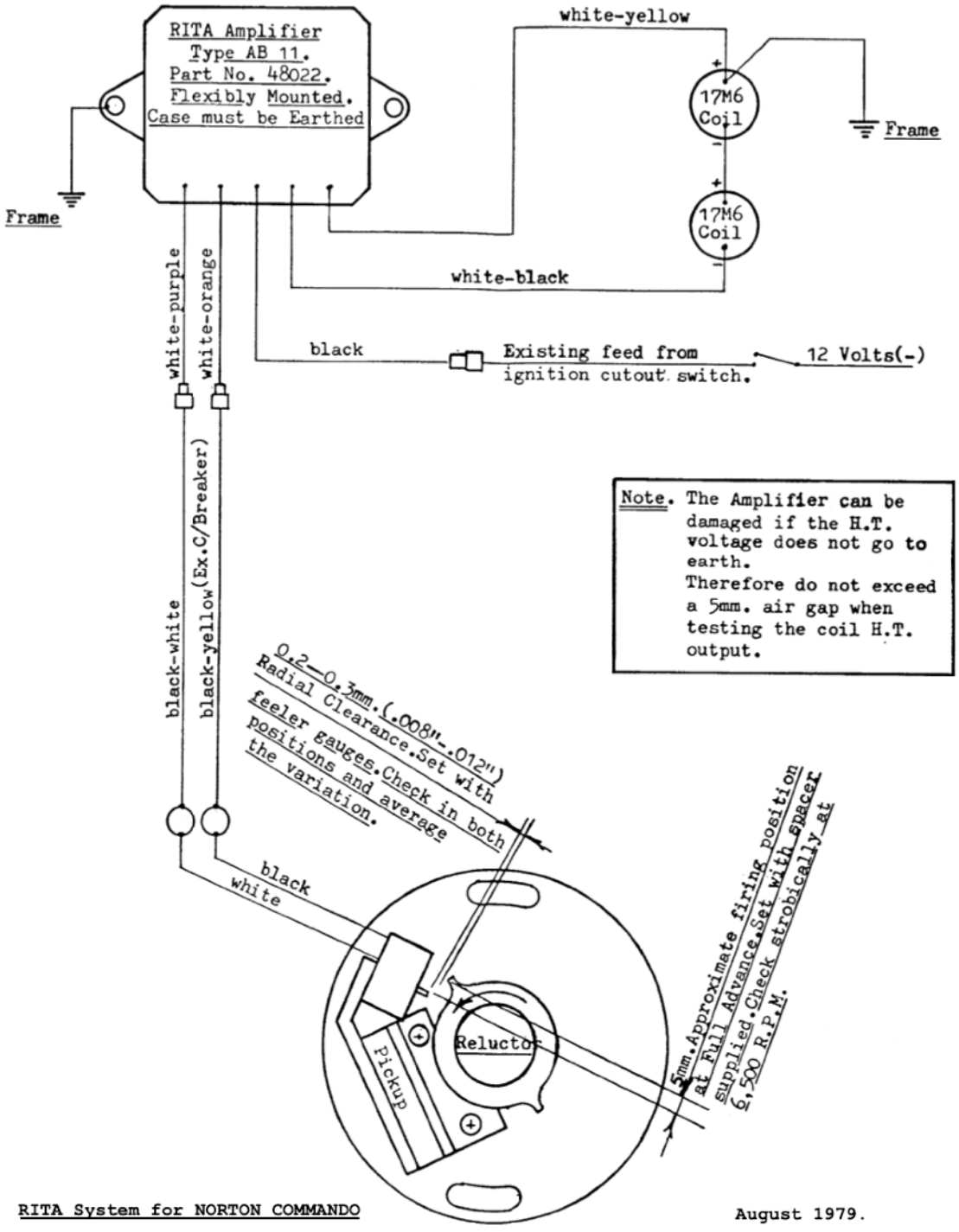

white-yellow
Existing 12volt ignition feed wire.
White on most models.
RITA Amplifier
Part No. 47270A
Flexibly Mounted
6v Coil
6v Coil
white-black
Frame
black
Frame
NOTE The Amplifier can be damaged if the H.T. voltage does not go to earth.
Therefore do not exceed a 5mm. air gap if testing coil output.
white-purple
white-orange
R.H.Cylinder on Compression Stroke. 5mm.Approximate firing position at Full Advance.
Check stroboscopically at 6,500 R.P.M. using the flywheel mark.
0.2 - 0.3mm. radial clearance.
Pick-up
Reluctor
Front
black
white



MOTO GUZZI REPLACEMENT OF MOTOPLAT IN DISTRIBUTOR


12V. feed from ignition switch
RITA Amplifier Type AB11
Flexibly mounted Case must be earthed
white-yellow
6V. coil
6V. coil
white - black
Frame
black
Frame
white-purple
white-orange
yellow
black
Firing position at full advance on the front cylinder. Set with spacer supplied.
5mm
0.2-0.3mm. Radial Clearance
NOTE The Amplifier can be damaged if the H.T. voltage does not go to earth.
Therefore do not exceed a 5mm. air gap if testing coil output.
MOTO MORINI 350cc V-TWIN

Norton Commando with AB11 and 6 Volt Coils



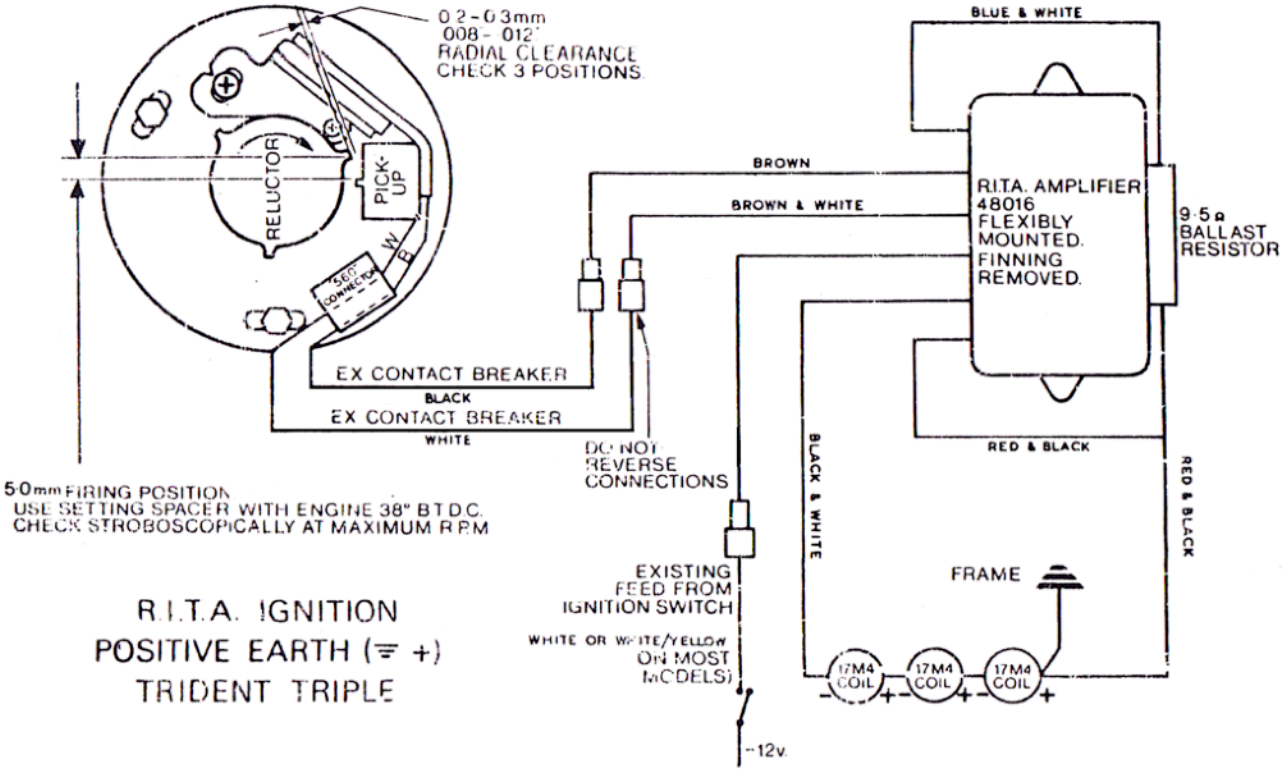
Important Notice on the Lucas RITA AB5 System for British Triples with 4-Volt Coils

The Lucas RITA AB5 system, when used with 4-volt HT coils, represents a less-than-ideal combination for British Triples. In our assessment, this setup significantly compromises system performance due to several key issues:

- **Excessive Power Demand:** The AB5 unit itself is inherently power-hungry, and when combined with 4-volt coils connected in series, it further strains the system.
- **Weak Spark Output:** The 4-volt HT coils, while consuming a substantial amount of current, provide a weak spark when connected in series as the current to each coil is substantially reduced.
- **Poor Starting and High RPM Performance:** Due to the low voltage of the HT coils, and limited current, starting performance is notably hindered, and at higher RPMs, the 4-volt coils struggle to deliver adequate spark energy.

While this system has been used in the past and many examples still exist, we strongly recommend avoiding this configuration as it is associated with significantly reduced performance and starting issues. A set of 12 volt HT coils and a diode pack gives the best performance.

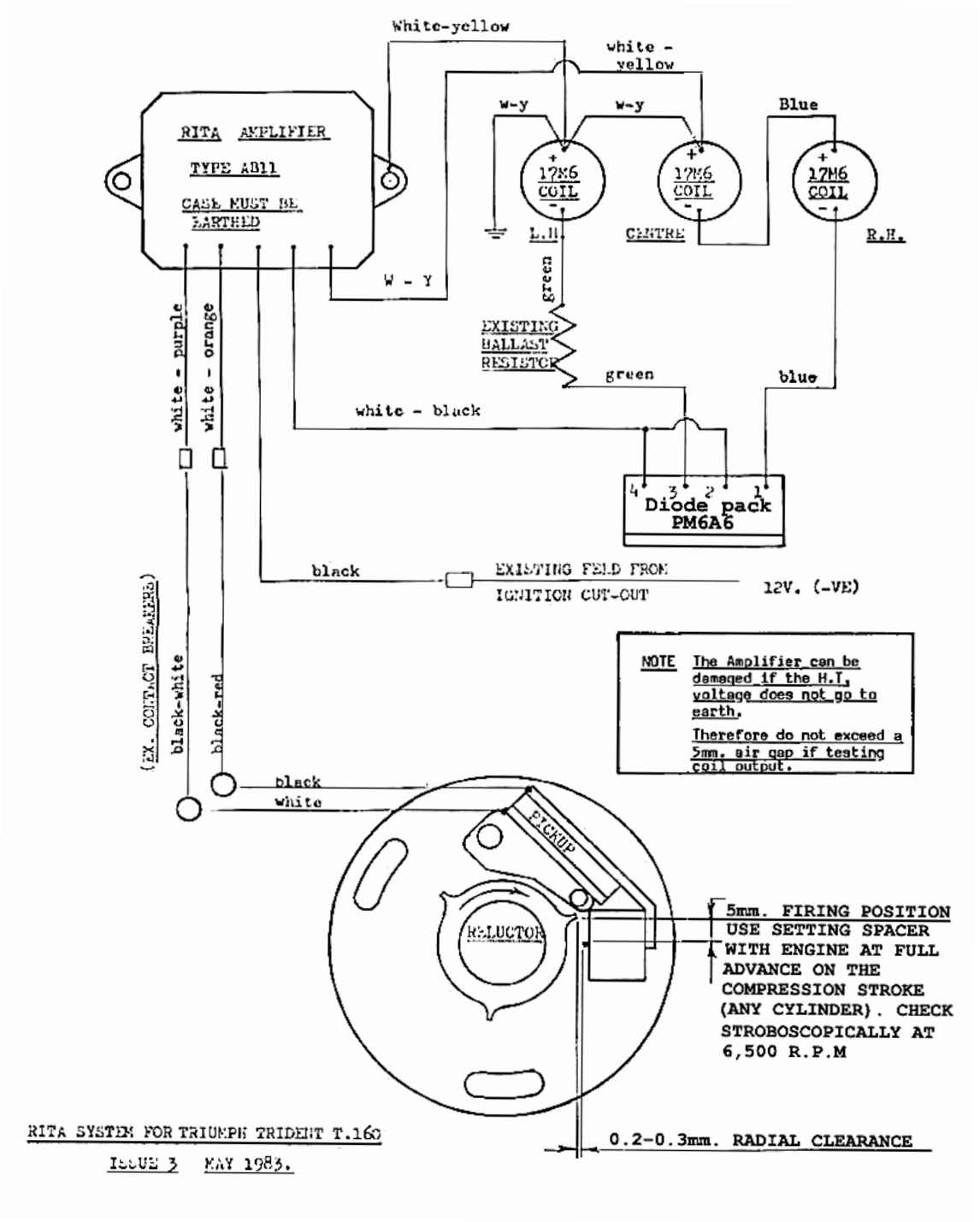
✖Avoid using this combination



Triumph T160 1983 (issue 3)
This schematic represents a notable improvement over the 4-volt coils but remains less than ideal. It uses two 6-volt coils wired in series, a reliable setup, but this leaves the third coil having to use a ballast resistor, wasting power as heat. A better solution is to replace the 6-volt coil connected to the resistor with a 12-volt one, eliminating the resistor and using all power to produce sparks.

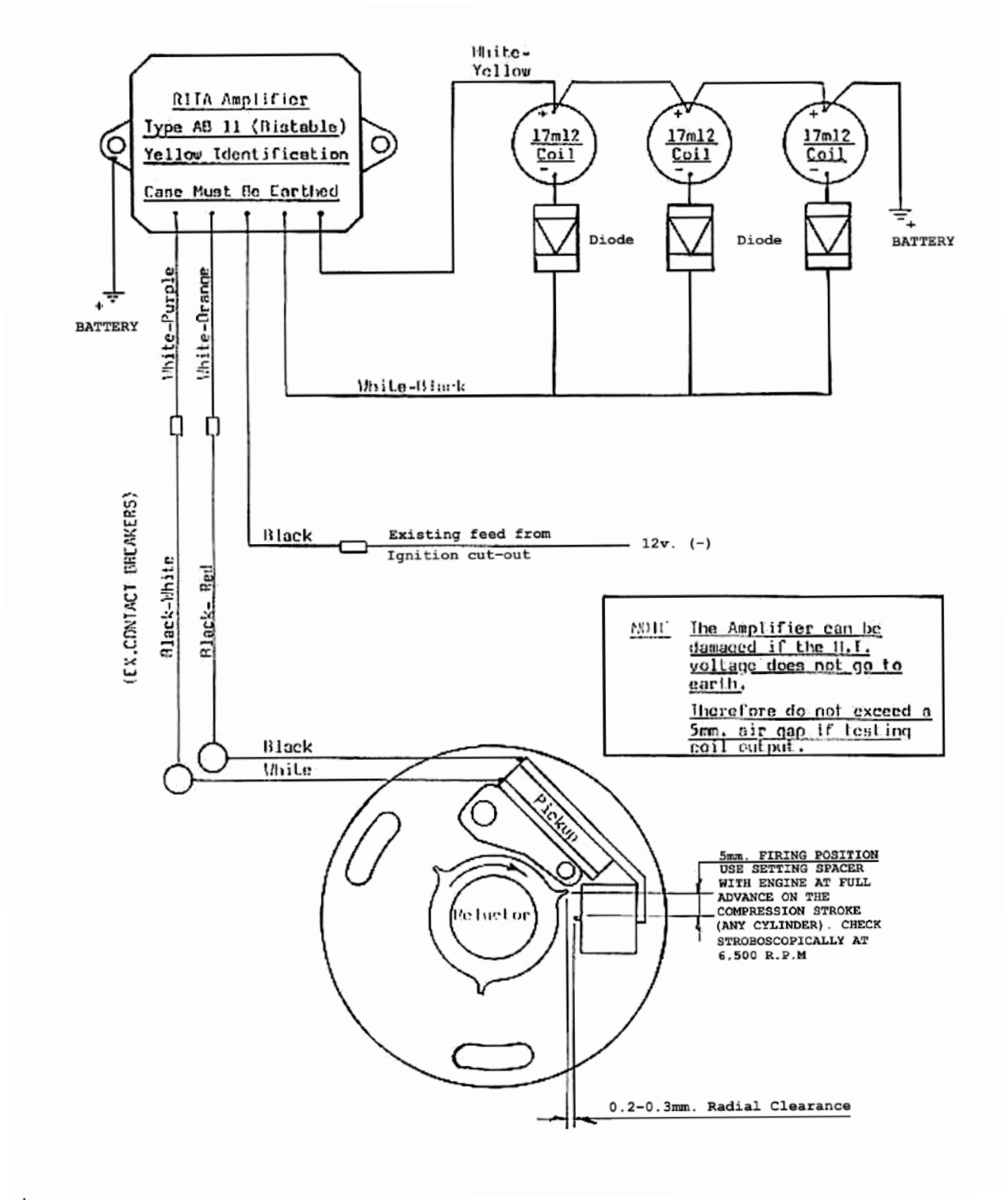
This setup likely reused existing parts to reduce costs at the time. If this system is fitted and working it can remain, however if it has failed maybe it is the time to up-grade. This schematic supports both positive and negative frame connections.

Less than optimal



T150 Revision 5 Dated 1991.
To the best of our knowledge this represents the last revision of the the Triumph T150 RITA wiring published. It can be used on all British Triples and in our assessment gives the best performance possible from the RITA and is the one we recommend owners adopt. We warn you not to leave the ignition on and the engine un-started for any longer than absolutely necessary. A good AGM battery is also needed with modern voltage regulator. Zener diodes cause power surges and regulate at a far higher voltage than is recommended. Can be adapted for positive and negative frame connections.

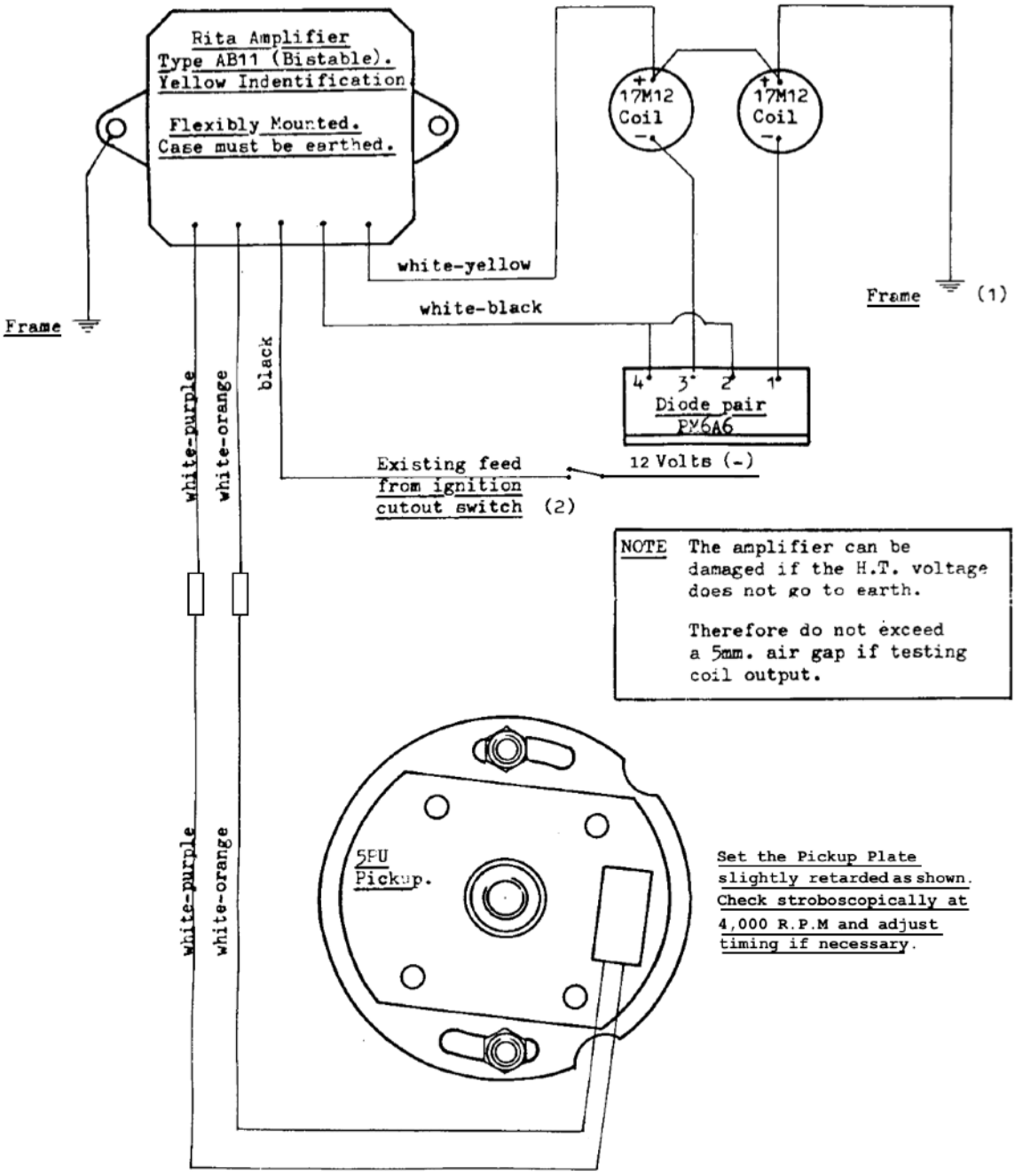
✔Recommended



Triumph Twins using a 5PU Pick-up & Reluctor.

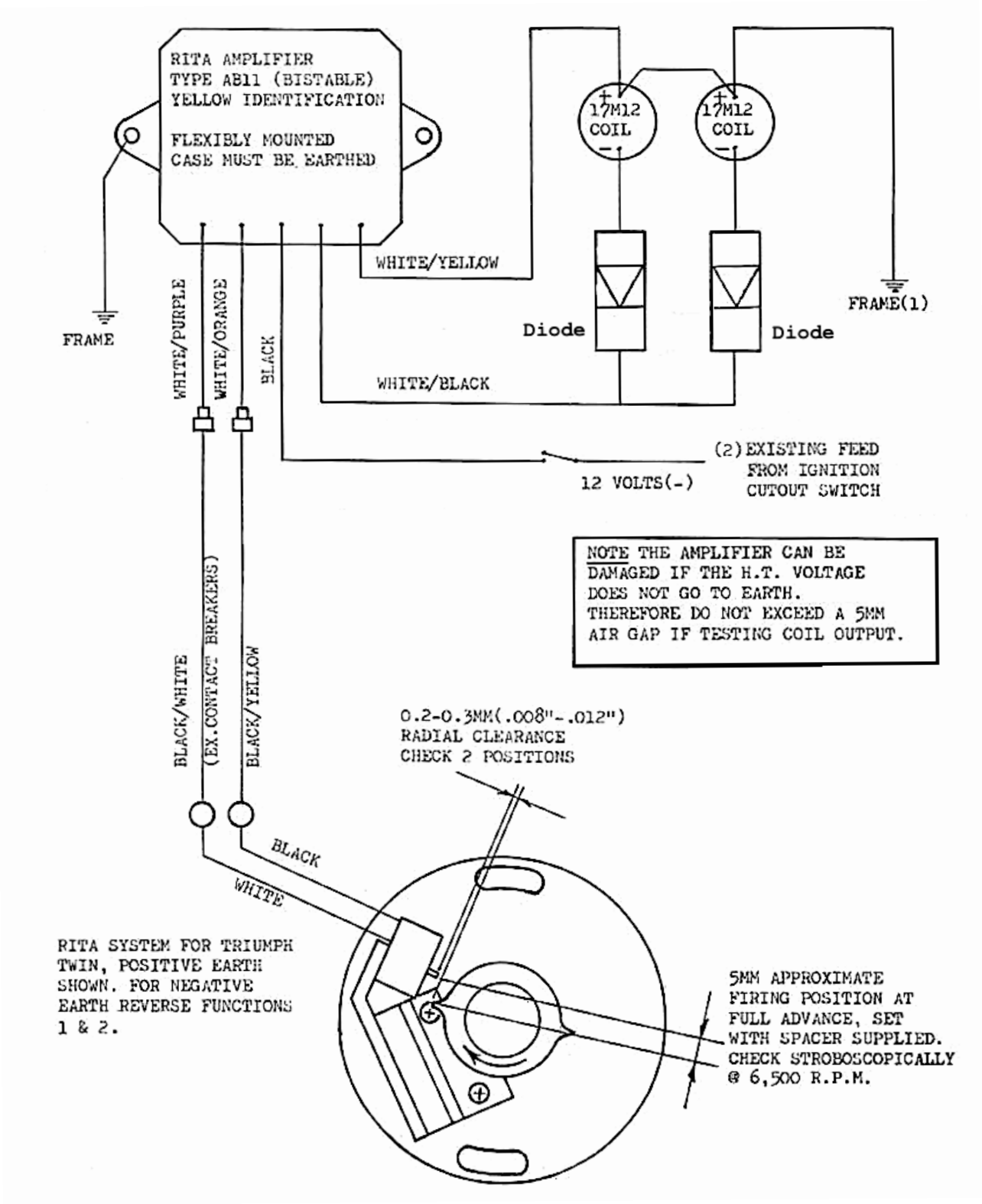
A pair of 12 volt HT coils are used, connected via a diode pack. Equally a pair of 6V coils connected in series could be used which would mean the diode pack is no longer required. By observing the polarity of the RITA wires this can be used on positive and negative earth vehicles.

The 5PU can be swapped for a ‘C’ type pick-up if you have all the parts to do so. This item is for Triumph, T140E, 1979 and on. Lucas Rita Electronic Ignition Pick-up and Base Plate P/N: - 54400766. Alternate number 99-7044. Part itself is sometimes marked marked 48029 4681.



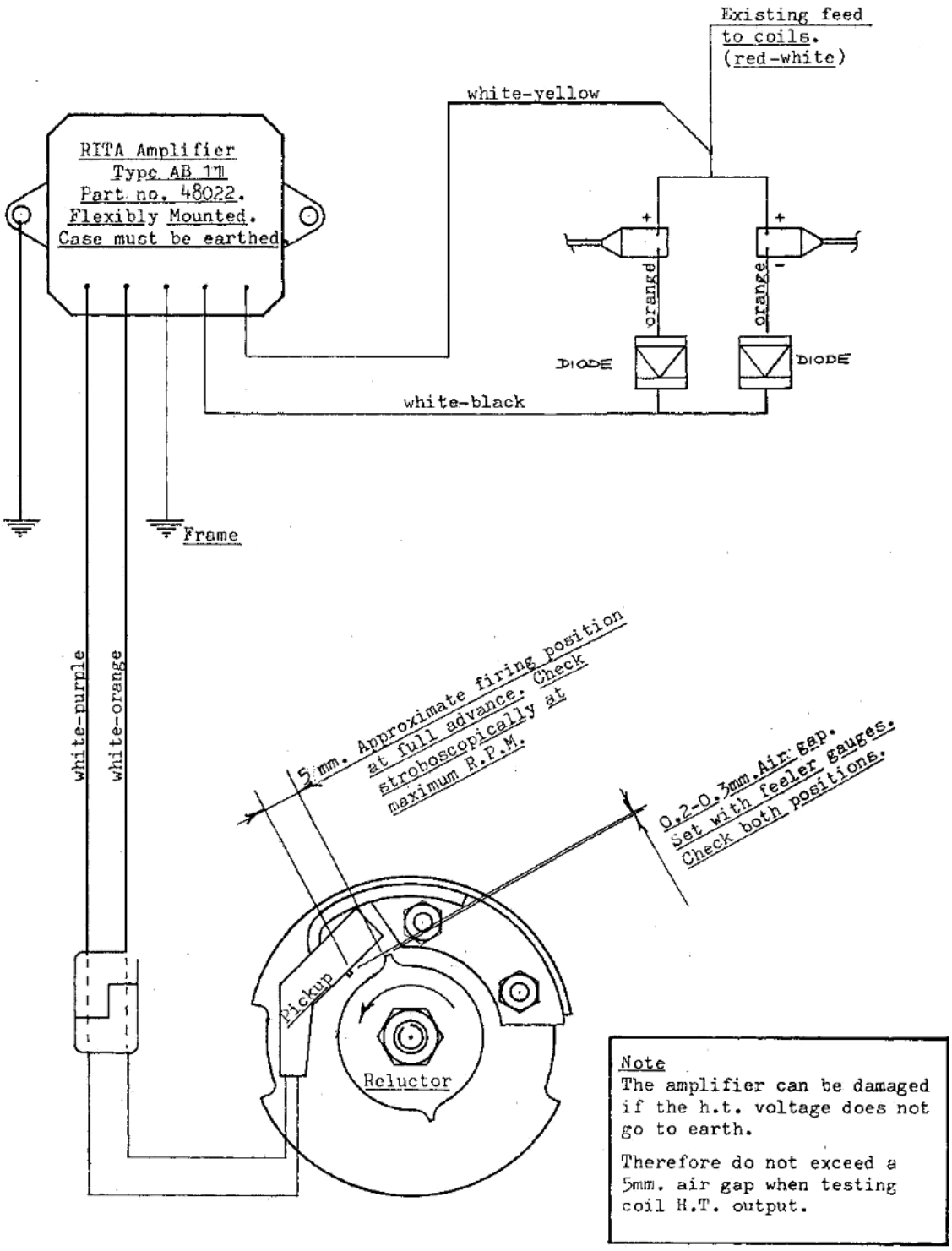
RITA System for Triumph Twin using AB11 amplifier and 5PU Pickup.
Positive Earth shown. For Negative Earth, reverse functions 1 and 2.

Triumph Twins using a ‘C’ Type Pick-up & Reluctor.



Yamaha XS650

Uses the standard HT coils which are 12 volt items, a PM6A6 diode pack was added to enable the HT coils that came with the bike to be retained. The points quickly go out of adjustment so the XS650 really benefits from using a RITA ignition.



YAMAHA XS 650. RITA Ignition with electronic Advance/Retard.