

Triumph Register of America



Concours d'Elegance

Judge's Guidelines

TR4 – TR4A

CHASSIS

Introduction

The annual Triumph Register of America (TRA) Concours d'Elegance has been the highlight of *National Meets* for over fifty years. These *Judging Standards and Restoration Guidelines* serve both concours judges and enthusiasts undergoing restorations.

About TRA

TRA is a nonprofit organization established to assist TR2 -TR4A owners in the restoration, maintenance, preservation, and enjoyment of their cars with over twenty-five *Local Centers* from coast to coast. Online communication, local technical workshops, and driving events provide the binding glue for our national organization. More information regarding TRA may be found at www.TriumphRegister.com.

About TRA Concours

Concours competition requires significant commitments of research, time, and cost, and is taken seriously by those involved. Conducting a concours d'elegance also requires significant commitments in planning and preparation. TRA recognizes both, and strives to improve the experience by establishing practical standards subject to periodic review, and recruiting and training judges to employ them.

A successful concours d'elegance requires:

Consistency Across the Event: Evaluations should be consistent across the show field.

Consistency Between Judging Teams: Evaluations should be consistent between judges and judging teams.

Consistency between Successive Events: Evaluations should be consistent from year to year, regardless of judging personnel. Components correctly adjusting deduction notations on *Judging Scoresheets* should not receive further deductions on that account.

Proper Time Management: TRA concours evaluations should take only three hours, though this may prove difficult with crowded show fields. In such cases, increased staffing, or procedure changes consistent with established practice, may be required.

About this Document

The *Judging Standards and Restoration* guidelines result from years of assembling information from factory reference materials, contemporary third party publications, TRA member experience and expertise, and TRA judging school presentations and reviews.

Each section within this guide includes specific cautions regarding the accuracy of provided information which, despite intensive research, often lacks conclusive supporting documentation. This is further complicated by persistent errors in existing supporting documentation because of the mass production methods used by Standard-Triumph. The *Spare Parts Catalogue* often cites changes at specific commission numbers that occurred over several weeks of production, with cars produced during that time having either the early or later configuration. Therefore, judges and restorers should not conclude that a car fitted with components inconsistent with a cited *Service Bulletin* or *Spare Parts Catalogue* parts or engineering change is in error before conducting further research or consulting with experts.

General Rules for Concours Competition

Scope

Judging comprises two elements:

Originality: The components match those specified for the model and commission number.

Restoration Quality: The condition of various components.

Scoring

Cars begin the judging process with 100 points, with deductions made for deviations in *Originality* and *Restoration Quality*.

The 100 points are divided into four sections, with a detailed breakdown of components and their point allocations provided within each judging section. The judging sections include:

<i>Exterior</i>	25 points
<i>Interior</i>	30 points
<i>Underhood</i>	30 points
<i>Chassis</i>	15 points

Examples:

A car receives a single point deduction in *Underhood-Hydraulics*, which is recorded on the *Underhood Scoresheet*.

As *Underhood* contributes 30 points toward the maximum of 100 points, or thirty percent, the weighted value of the deduction is 0.3 points, which is recorded on the *Master Scoresheet*.

Half-Point Deductions: While *Originality* and *Restoration Quality* deductions are made at full points, judging categories or components within a category assigned a single point require an exception allowing judges a choice beyond awarding full points or deducting as though the component within the category was missing entirely. An example is *Underhood*, where 81 percent of evaluated components are assigned a single point. Therefore, ***components assigned a single point may be judged in half-point increments.***

Car Classes: The TRA has established the following classes of cars for concours judging events:

Standard Class: Comprised of TR2 through TR4A cars being judged how well they compare to original new cars when they left the showroom floor. They are judged on both originality and restoration quality. The highest score of the participants in this class will be declared the Best of Show winner along with First Place in their individual class.

Premier Class: Comprised of cars that have won Best of Show at a previous TRA Concours event. Generally, the *Premier Class* car has the fewest originality issues and the focus of judging is the level of restoration quality. Entrants are awarded certificates, as detailed below.

At the conclusion of the judging and with time permitting, the scoresheets will be reviewed by the Chief Judge and all team leaders. In the event of limited time, at a minimum, the review will comprise the top three cars in each of the Standard Class. This supplemental judging review is designed to ensure consistency among and between judging teams.

Scoring Results: Scoring within each class is based upon the score attained by each car against these standards. A minimum score of 70 is required to earn third place, a minimum score of 80 to earn second place and a minimum score of 90 to earn first place. The highest score among all concours entrants in the Standard class is awarded “Best of Show” for that event.

Additionally, each entrant in concours is usually awarded a certificate documenting their concours score. Cars scoring at least 70 points are awarded a Bronze Certificate; at least 80 points, a Silver Certificate and 90 points and above, a Gold Certificate.

Examples: Five cars score the following: three TR3As score 97, 78 and 75 and two TR3Bs score 89 and 85. The scoring results are as follows:

TR3A Standard Class	TR3B Standard Class
TR3A 97 First Place Trophy, Gold Certificate, Best of Show	<i>No First Place</i>
<i>No Second Place</i>	TR3B 89 Second Place, Silver Certificate
TR3A 78 Third Place Trophy, Bronze Certificate	TR3B 85 Third Place, Silver Certificate
TR3A 75 Did Not Place, Bronze Certificate	

Scoresheets

Scoring is recorded on scoresheets for each judging section, with the totals of each section transferred to the *Master Scoresheet*. Judging area scoresheets are provided in the corresponding sections of this document. *The Master Scoresheet* and judging section scoresheets are also included in the *Appendix*.

Exterior Scoresheet: This applies to body and exterior components originality and condition.

Exterior Scoring, Body, Paint and Alignment Worksheet: This supplement to the *Exterior Scoresheet* applies to the quality of bodywork, paint, and alignment of major body panels.

Underhood Scoresheet: This applies to the quality and originality of the engine compartment, including the bulkhead (firewall) and inner fenders.

Interior Scoresheet: This applies to the passenger compartment, hood (convertible top), side-screens (sidecurtains), boot (trunk), jack, required tools, and *Instruction Book*.

Chassis Scoresheet: This applies to the chassis frame, inner fenders, suspension, exhaust, and road wheels.

Master Scoresheet: This records the ‘weighted’ points awarded for the individual scoring sections and calculates a total final score.

Rules for Concours Participants

Driven Onto Field: To be eligible for concours judging, a car must be driven onto the show field.

Hood (convertible top) Fitted: Hoods must be fitted to the car or full points will be deducted for the hood.

Sidecurtains: Sidecurtains are displayed adjacent to the car., typically to the rear. In the event of rain, the Chief Judge may permit sidecurtains to be fitted.

Boot (trunk): The jack, required tools and owner’s handbook are displayed in the boot. Period accessories such as advertisements are allowed, but discouraged as they clutter or conceal the display area. Personal items and mementos, such as previous trophies and restoration documents and photographs, should be removed.

Spare Tire Compartment and Cubby Box: These areas are considered ‘personal’ space and may remain closed during judging.

Judges’ Access to Car: The bonnet (hood) and boot lid should be initially raised for judging access. Judges will require the lowering of the bonnet and boot to access alignment and the opening of doors. Owners may perform these tasks. ***Absent owners will be deemed as having provided implicit consent for judges to do so. Judges are not required to seek absent owners.***

Interaction With Judges: Judges may request owners to open or close body panels to evaluate alignment. Circumstances may require a judge to ask an owner a question, but conversation between judges and participants should be avoided to the extent possible. Questions involving *Originality* or other judging matters should be addressed to the Chief Judge.

Dispute with Standards: If a participant notices an *Originality* discrepancy between the *Judging Standards* and a component demonstratively original to his or her car, the discrepancy should be addressed at the Judges Meeting preceding each concours for discussion and resolution.

Rules for Concours Judges

Contact With Cars: Judges should avoid unnecessary contact with cars, though sometimes this is unavoidable. *Interior* judges will require access to interior components, and *Exterior* judges may be required to open or close bonnets, boot lids and doors should the owner be absent.

Interaction Prior to Event: Judges must avoid inspecting cars or discussing participants' cars with other judges or participants prior to the time of the event.

Interaction With Participants: Judges should avoid interacting with participants. Typically, this would be limited to requesting owners to open and close bonnets, boot lids, and doors. Participants with questions regarding the judging process should be referred to the Chief Judge.

Interaction With Spectators: Judges should avoid interaction with spectators while judging, particularly with matters regarding *Originality*. Spectator questions should be referred to the Chief Judge for later discussion.

Judging Teams

The number of cars being judged influences the number of judges required and the extent of each judge's duties. Ideally, the same judges should judge each section throughout the concours classes, with multiple teams judging sections with many components such as *Underhood* to further enhance consistency and reduce the burden of individual judges. The ideal judging effort would be to have four judging teams each comprised of a lead judge, assistant judge, staff or novice judge and a scribe. At a minimum, a team should be comprised of an experienced lead judge, an assistant judge and a scribe for each of the four section areas to be judged.

Judging Team Selection Guidelines: Judges are enthusiasts with varied experiences and interests volunteering to preserve the marque, and while no specific credentials are required, criteria developed over many years have proven useful.

Attendance at Two Judging Schools: Prior exposure to the judging process and judging material is of significant benefit to potential judges, regardless of the materials covered in a particular judging school.

Encourage Prospective Judges to Serve as Assistants During Judging: Prospective judges recording scores and judges' notes on scoresheets during the judging process trains them while reducing judges' burdens.

Mix Judges with Varied Experience: Pairing new judges with more experienced ones improves consistency while reducing newcomer anxiety.

Demonstrated Knowledge of the Cars and Judging Area: Members with demonstrated knowledge of the cars and the restoration process are favored prospects, though

‘knowledgeable’ does not equate with ‘expertise.’ Expertise will not make a candidate an excellent judge, nor lesser knowledge a poor one.

The same applies to judging sections. Candidates more experienced in mechanicals or bodywork are better assigned to judging sections suited to their skills.

General Judging Guidelines

Begin With the Premier Class: Judges should begin with the *Premier Class*, as these entrants are typically the finest examples from previous years. The primary focus of *Premier Class* judging is the evaluation of their restoration upkeep. *Originality* deductions are potentially minimal, offering experienced judges the opportunity to highlight originality aspects of various components to less experienced judges before evaluating other classes.

Components Before Scoresheet: Judges should evaluate vehicle components before recording deductions on the scoresheet rather than using the scoresheet as a deduction checklist.

Clearly Mark Scoresheets: Scoresheets should be marked as clearly as possible to avoid scoring confusion. When circumstances require or allow, judges should provide short explanatory comments in the space provided on the scoring sheet to assist owners in correcting flaws.

Underhood Judges: Judging the large number of items in this category is best accomplished by establishing two judge teams simultaneously working side-by-side. One team covers *Identification Plates* through *Hydraulics* and the other team covers *Engine* through *Cooling System*. This arrangement is conditioned upon the availability of judges and is to be implemented at the sole discretion of the Chief Judge.

Accessory Items:

Factory Replacement Accessories: Factory accessories replacing standard equipment such as hard tops and adjustable steering assemblies specifically cited in the *Judging Standards* should be judged for *Originality* according to the description provided in the *Standards*.

Fitted factory ‘replacement’ accessories listed in the *Spare Parts Catalogue* such as aluminum sumps and anti-dazzle mirrors not specifically described in the *Judging Standards* should be judged according to the standards applied to the replaced items to the extent possible. When this results in the deletion of required components, the missing components should be fully deducted.

Examples:

‘Factory’ anti-dazzle mirrors are deemed original for *Originality* judging and are judged for *Quality* per the *Judging Standards*.

'Factory' aero windscreens fitted as replacements for the standard windscreen are deemed original for *Originality* judging are judged for *Restoration Quality* per the *Judging Standards*. If the hood (convertible top) is not fitted, the hood should receive full deductions.

Supplemental Factory Accessories: Supplemental factory accessories listed in the *Spare Parts Catalogue* such as 'pre TS42400' ashtrays, wing mirrors, fog/driving lamps, badge bars and 'factory supplied' luggage grids should not be judged.

Supplemental Third-Party Accessory Items: Fitted supplemental accessories such as radios and wind-wings provided by third party purveyors should not be judged.

All concerns regarding accessory judging should be addressed to the Chief Judge.

Exceeding the Standards: The Judging Standards set both the minimum and maximum *Restoration Quality* and *Originality* standards established for TRA concours. Judges should neither evaluate components nor elements of components not cited in the Judging Standards. For example, a component cited as painted semi-gloss black should warrant deductions if painted gloss black, but an item cited as painted black should not be deducted for varied levels of gloss.

Official Scorer

Completed *Judging Scoresheets* are submitted to the Official Scorer, who checks scoring arithmetic, calculates total scores, and transcribes *Judging Scoresheets* to the *Master Scoresheet*. When completed, the *Master Scoresheets* are presented to the Chief Judge for recording. The Official Scorer will then provide copies of the assembled section *Judging Scoresheets* and *Master Scoresheet* to participants upon request to the extent practicable.

Chief Judge

The Chief Judge assigns judges, presides over *Judging Schools*, communicates rules, resolves questions or differences between judges, monitors judging, and addresses participants' questions.

Chassis Originality Guide

As in other sections, judges and restorers alike should recognize that even the most well documented changes are subject to a significant margin of error due to the mass production processes used in TR assembly. Reference information should not be considered the absolute "gospel". Unless otherwise extended for specific components, a margin of error of 100 commission numbers should be used throughout.

For your convenience, the Originality Guide is organized in outline form according to the components listed on the scoresheet and deductions guide. Engineering changes are noted in each section when appropriate. A summary of major changes is provided below.

"Right" or "Left" indicate the side of the car that the component is located in. This is as the driver sitting facing forward on the car center line would judge the location.

Figure CH-14 shows a comparison between TR4 and TR4A IRS chassis. This is an excellent presentation of the general differences in chassis.

Note: factory material and other references use engine, body, and commission numbers to document changes. In this document any a CT or CTC stem is a chassis commission number unless it ends in an "E". Commission numbers ending in "E" are engine numbers. Numbers ending in CT or CTC indicate a body number.

Chassis Frame

Chassis Frame Variations Summary

<u>Model</u>	<u>Number</u>	<u>Description</u>
TR4	CT1	Initial frame a modification of TR3 frame.
TR4	CT23383	Rear Spring Mount Moved
TR4A	CTC50001	Totally new frame introduced. Frame accommodated the independent rear suspension.
TR4A	CTC50001	Long Rear Bumper Mounting Bracket Changed Shape
TR4A	CTC50001	New Shock Tower Support Cross Tube
TR4A	CTC50001	New Radiator Shield

Basic Frame

TR4

The TR4 chassis, shown in Figure CH-1, was a slight modification of the existing TR3 chassis. The modifications included:

- The front cross support tube was eliminated.
- The shock towers were each moved two inches out using welded on channel sections.
- The shock towers and their supports were strengthened to account for the increase in track width.
- Forward body mounts moved even farther forward. Mounts now project forward from the front end of the frame rails.
- The motor mounts changed slightly to accommodate the new shock tower width (the other change was in the front plate of the engine).
- Steering mounts were changed to accommodate the rack and pinion steering. The cradles that held the TR3 steering box and idler arm were eliminated and two vertical brackets added to attach the rack to.
- Rear shock mountings strengthened.
- The early TR4 chassis may have brackets and other small pieces on them "left over" from the TR3. For instance, CT2966L has the small brackets on the side of the main frame rails behind the rear wheels that the TR3 fender brace straps bolted to.
- Since the TR4 body was wider than the TR3, extensions had to be added to the "outrigger" mounts near the inner rocker panels.

Unlike the TR3 chassis that could be painted any color, the TR4 chassis is painted black. The odds are that if a TR4 is present it's chassis will be original. It is theoretically possible to fit a TR3 chassis, practically; however, this is improbable.

Triumph Register Of America TR4 Judging Guidelines

Only one minor frame modification was accomplished during the TR4 production run. At CT23383 the rear spring mount was changed to accommodate the “deep-dish” spring.

TR4A Frame

A totally new frame was put under the TR4A. This frame is shown in Figure CH-2. One will note that this same basic frame was used up through the end of TR6 production with just detail differences. No changes happened to the frame during TR4A production. The changes to accommodate the IRS are readily apparent.

Radiator Protector & Radiator Mounts

These differed for the TR4 and TR4A:

- **TR4.** The TR4 maintained the requirement that the bottom of the radiator had a shield to protect it from road debris and rough roads. The TR4 unit looked like the TR3 shield, basically a big angle iron with ends with bolt holes through them, but it was wider and also bolted to the front of the frame rails via tabs welded on its front. The radiator mounted to the inner frame rails sides via small mounts. Shield was painted black as the frame.
- **TR4A.** The TR4A shields bolted to the inside of the frame rails and contained integral eyelets to secure the car during shipping, eliminating the need for shipping bumpers. It was also painted black. The radiator mounts were moved to brackets that had both the radiator and front body mounting points built into them.

Shock Tower Cross-Tube

These differed for the TR4 and TR4A:

- **TR4.** The tube retained the same shape of the TR3 with three mounting bolts, but was longer. It also incorporated tabs for the radiator support rods. Note that these tabs may be missing for very early TR4s (pre CT1000 at least).
- **TR4A.** The cross tube maintained the same length, but the mounting bolt locations changed. The radiator support tabs changed to accommodate the bars, rather than rods, which were used to brace the radiator.

Bumper Mounting Hardware

The TR4 and TR4A used similar bumper mounting hardware.

- **Front Bumper.** The front bumper was mounted to two brackets that attached to the outside front of the frame rails. The bracket is similar in shape to the TR3A/B brackets, but has a different length. The brackets are painted black.
- **Rear Bumper.** The rear bumper was attached via four brackets, attached to the frame in sets of two. They attach to the outside of the rear frame rails. The short bracket is on the outside, the long one is to the inside. The TR4A long brackets changed shape since they no longer had to go around the rear body mounting points - they became much flatter. Both cars used rear over rider bracket ties. These metal bars that attach the bottom of the rear bumper over riders to the frame rails. All rear bumper bracket hardware is painted black.

Triumph Register Of America TR4 Judging Guidelines

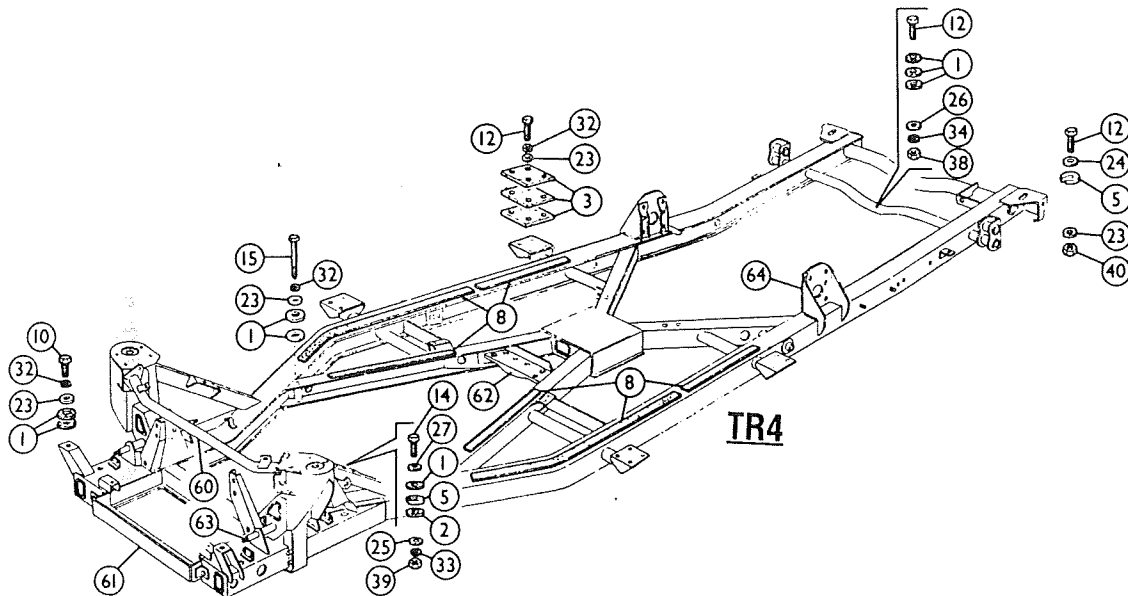


Figure CH-1: TR4 Frame

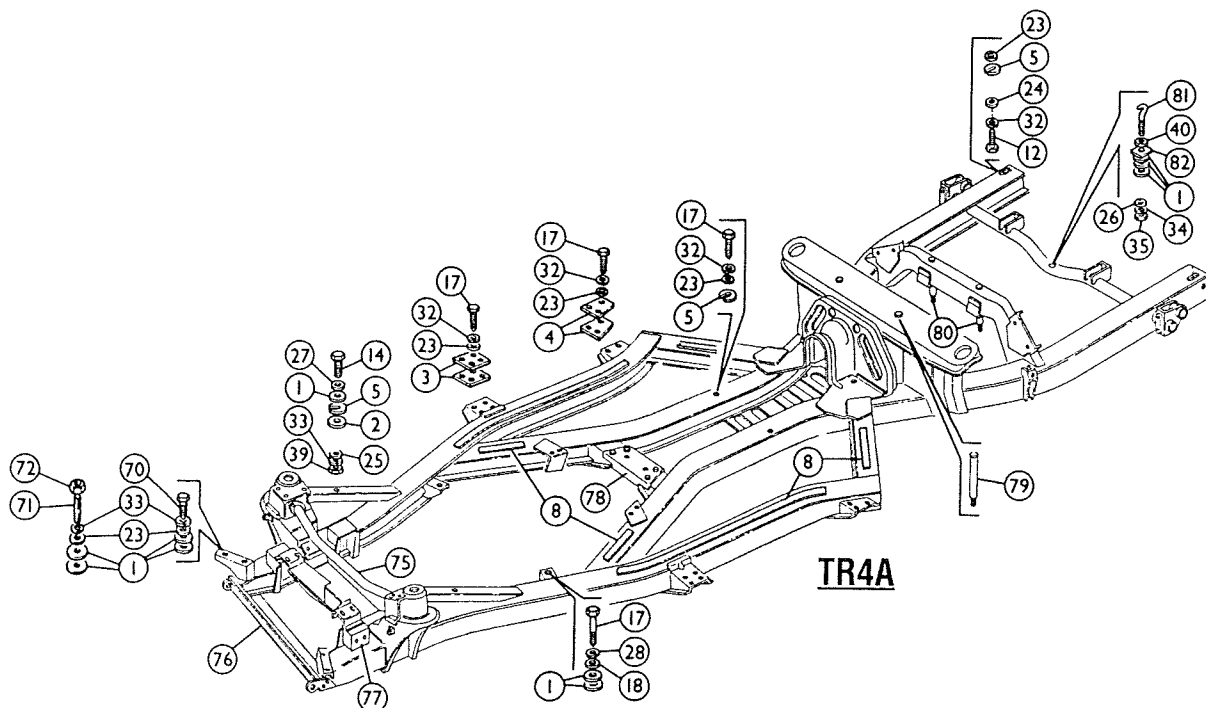


Figure CH-2: TR4A Frame

Body Mounting

The TR4/4A body was mounted to the frame by a series of bolts. The body was buffered by rubber pads both at the attachment points and rubber strips along the major frame rails.

Mounting Locations

Figure CH-1 and CH-2 show the mounting pads used attaching TR4 and TR4A bodies to the frames.

- The TR4 layout is very similar to the TR3 layout. The outrigger mounts used four bolts rather than two, and the number of bolts used to attach the body to the sloping shock tower mounts was reduced to one per side. An additional mount was added in the rear on the “skinny” rear frame cross support tube.
- Even with the new TR4A frame, the mounting points did not change. This took advantage of the existing TR4 body tooling which didn’t require changing.

Mounting Pads and Hardware

Both the TR4 and TR4A used similar mounting hardware. At all locations except for the three rear attachment points, the body was attached by bolts to nuts built into the frame. At the rear separate nuts were used.

At all points except for the outriggers, rubber and cast metal spacers were used. The round cast piece was between round rubber washers with the bolt going through the center. Just rubber pads were used at the outriggers, three pads instead of the four used in the TR3 series of cars.

Strips of rubber were secured to the top of frame rails under the floor of the car. These provided buffer between frame and body.

Since the body was attached after painting, the attachment hardware is unpainted.

Fender Braces

As in the TR3, the rear fenders required bracing. These braces were integral with the side mounting points of the rear bumper. The brace attached to the back of the rear leaf spring mount and went from there to the fender side where it attached to the bumper. The brace was painted black.

Exhaust System

Chassis Frame Variations Summary

TR4	CT1	System similar to TR3
TR4A	CTC50001	Dual pipe manifold and front pipe
TR4A	Early TR4A Run	Front single muffler and Y-pipe feed to rear separate mufflers changed to single rear muffler fed by single pipe.

Figure CH-3 contains the three different types of exhaust system used during the TR4 through TR4A production run. All exhaust systems ran through the mid-frame box. The following is a description of each.

TR4

The TR4 exhaust system was a direct descendant of the TR3 system. It only differed in the front mount.

Layout

The single front pipe ran from the exhaust manifold, here it was attached by nuts to three studs on the manifold, to just aft the frame center box unit. The front pipe was supported by a mount attached to the transmission mount. This mount formed the "nut" for the right side transmission attachment point. The pipe was held by a steel strap which hung from the mount. The front muffler attached to the end of the front pipe via a clamp that looks like a horseshoe. The rear muffler is attached to the front muffler by an identical clamp. Another clamp attaches the rear of the rear muffler to a rubber strap, which is then attached to the frame. An aluminum tailpipe extension is attached to the end of the rear muffler pipe with a wire "Super Grip" clamp, similar to the ones used in the cooling system. The exhaust system, in general, goes diagonal across the car from right to left as it goes aft.

Finish

The exhaust system front pipe and mufflers on the TR4 were mild steel sprayed with a dull silver paint. This finish was of no value except in keeping the exhaust components from rusting during pre-assembly storage! Restored cars will be using either special exhaust paint designed to take the heat, or stainless steel systems which require no paint which are built to look like the original system in form, fit, and function. The other exhaust hardware was left natural. Clamps could have a clear cad coating. Make no deductions for painted natural mild steel, or stainless steel of correct configuration and in good order. The extension was a brushed aluminum piece, not polished to a chrome-like luster. Polished tailpieces are over-restoration.

TR4A

Two different types of TR4A systems were used. The early system was phased out due to expense, performance loss, and noise. It was replaced by a system that, in general architecture, was kept through the TR6 production run.

Triumph Register Of America TR4 Judging Guidelines

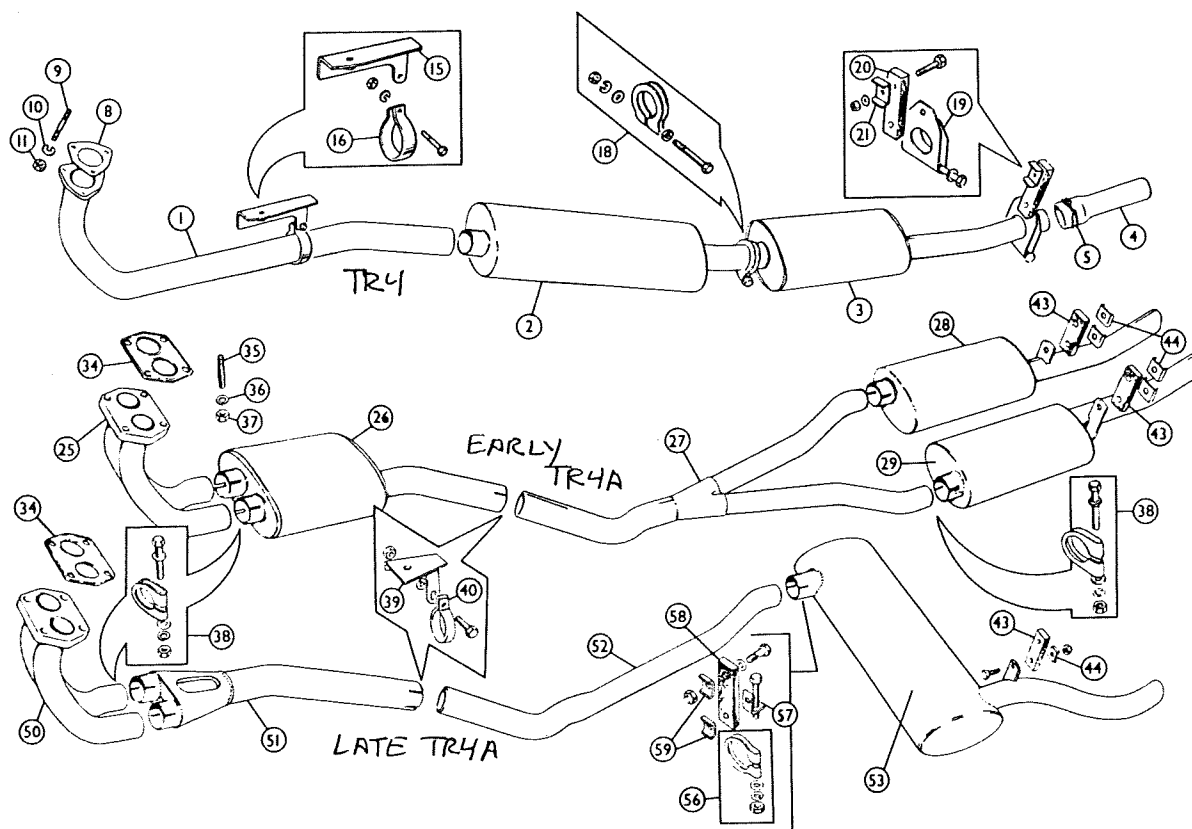


Figure CH-3: TR4 And TR4A Exhaust Systems

Layout.

- Early TR4A: The front pipe was changed to a short, dual down pipe unit that went into a muffler. From that front muffler a single pipe attached to a Y-pipe. The individual outlets of the Y-pipe each had their own rear muffler. Attachment hardware was similar to the TR4, with the added rear muffler hanger for the second rear muffler.
- Late TR4A. The front muffler and Y-pipe were eliminated, replaced with a single pipe which ran to a single muffler mounted cross-wise under the trunk. The single muffler outlet pipe exited on the left side of the car's rear.

Finish

The exhaust system front pipe and mufflers on the TR4A were mild steel sprayed with a dull silver paint. This finish was of no value except in keeping the exhaust components from rusting during pre-assembly storage! Restored cars will be using either special exhaust paint designed to take the heat, or stainless steel systems which

Triumph Register Of America TR4 Judging Guidelines

require no paint. The other exhaust hardware was left natural. Clamps could have a clear cad coating. Make no deductions for painted natural mild steel, or stainless steel of correct configuration and in good order.

Aftermarket Exhausts

High performance exhaust systems are currently available for both the TR4 and TR4A, but were not fitted by the factory. There were some aftermarket systems that were period, such as "Abarth". If an aftermarket system is fitted to the car, the car owner(s) must be able to prove that the particular type of system was available for that car when it was manufactured or it is an originality deduction.

Fuel and Brake Line Routing

Chassis Frame Variations Summary

TR4	CT4691 (wires) CT4388 (steel)	Changes to both solid lines and flexible hoses feeding front brake calipers
TR4A	CTC50001	Fuel and brake line routings changed to account for new frame. Slight difference between the live-axle and IRS version on brake line routing in the back.

The fuel and brake line routing stayed the same throughout the TR4 production. With the new frame in the TR4A the routing changed. The rear routing differed for the brake lines between the live-axle and IRS TR4A versions.

Fuel Line Routing And Components

Figure CH-4 shows the fuel system components up to the fuel pump for both the TR4 and TR4A.

- The TR4 line ran in a similar fashion as the TR3 line, attached to frame rails by clips and passing through frame sections in two places via rubber grommets. The fuel line was actually three lines connected with a short piece of rubber gas line that was pressed on the metal pipe ends, no clamps were used. One pipe ran from the tank to just forward of the rear axle, the middle line ran from there to just under the fuel pump. The other steel line went into the fuel pump itself.
- The TR4A fuel line was also made up of three segments attached with rubber hose. They were just bent differently to account for frame changes.

For safety purposes, clamps and steel sheathed flexible fuel lines are allowed where lines were pressed on and made of simply rubber.

Finish

Fuel lines were clear cad coated, left unpainted. The brass fittings were left bright. The clips holding the lines to the chassis were spring steel finished in black oxide. The rubber lines were black.

Brake Line Routing And Components

The brake line routings for the TR4 and live and IRS versions of the TR4A are in Figure CH-5. Figure CH-6 is a more detailed drawing of the early TR4 system included to show the different fittings used in the system.

- TR4 systems were very similar to the TR3 Girling systems. Three pipes came from the five way connector on cars before CT26930, or the four way systems on cars after CT26930. The front pipes changed slightly at CT4691 (wires), CT4388 (steel wheels) to accommodate the new Girling front calipers. Note that the front flexible pipes to the calipers changed at the same time. The line ran on the right side of the frame, passing though it via rubber grommets twice.

Triumph Register Of America TR4 Judging Guidelines

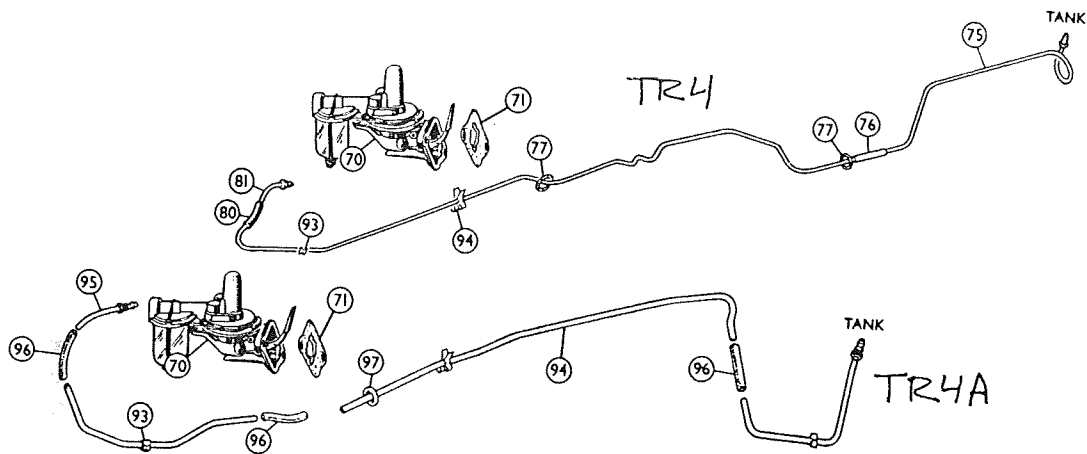


Figure CH-4: Fuel Line Routing For The TR4 and TR4A

- TR4A system configuration responded to the frame change. The four-way connection moved to the right side of the engine, and the rear brake line ran along the right side of the frame. The long line had a double-sided male compression fitting in the middle of it to aid installation. The lines were held by clips that pushed into frame holes. The line did not pass through the frame, so grommets were not required. The IRS line went into a body mounted junction from which a flex line went to the right side rear brakes. A solid pipe went to the left side where another flex line completed the connection. The live-axle version line ran directly to the left rear cylinder via a flex line. The left cylinder does not have a bleeding nipple. Instead, another solid line goes across the axle to the right cylinder which has the bleed nipple (this configuration was used later on the TR7 - just though the reader might want to know).

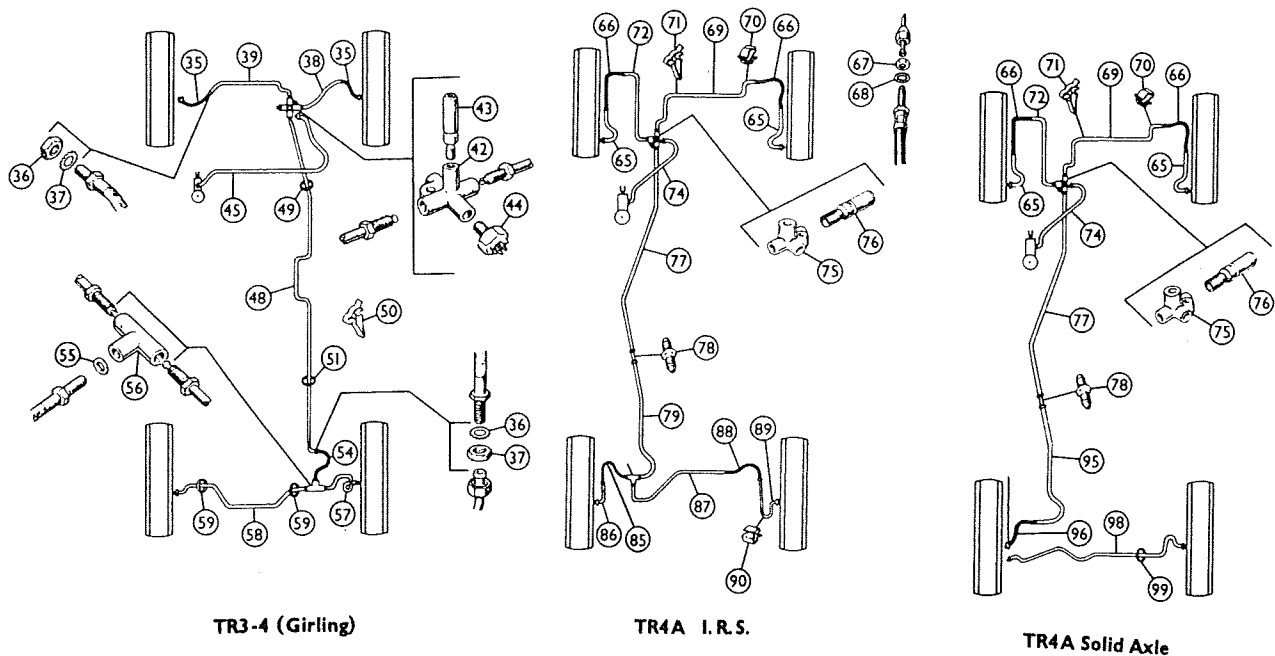


Figure CH-5: Brake Line Routing

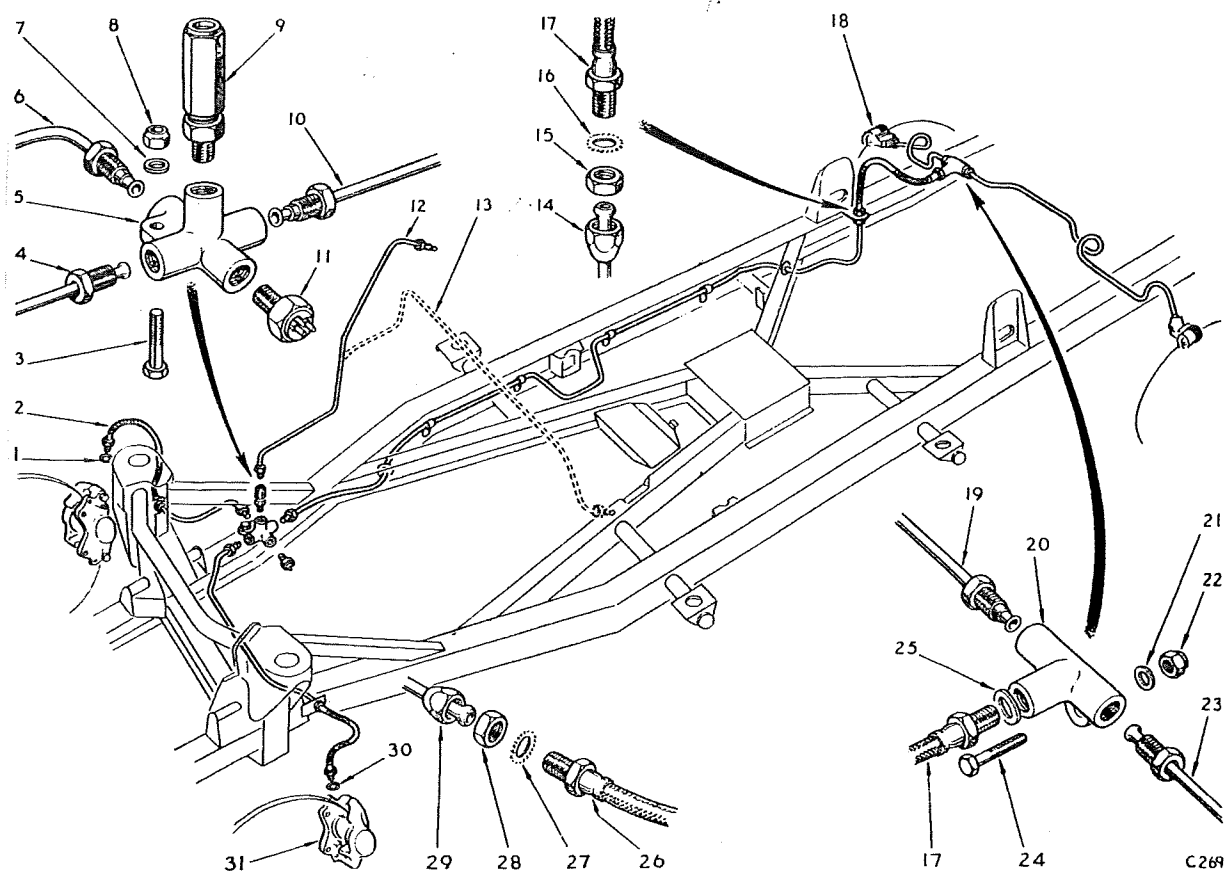


Figure CH-6: Brake Line Routing And Components In Early TR4s

Finish

Brake lines were clear cad coated steel with bright steel or brass fittings. The clips holding the lines to the chassis were made of spring steel and finished in black oxide.

Judging Note: Judging of lines in the engine compartment are covered in Underhood; lines from the four, or five-way junction and back are covered here in addition to the brake lines at the front disc calipers.

Front Brakes, Suspension, and Lower Steering Details

Chassis Frame Variations Summary

TR4	CT4690 (wires) CT4387 (disc)	Front brake calipers changed to smaller caliper packs (same piston area) with pads held in by two pins. The rotor changed slightly at the same time.
TR4	CT6344 (wires) CT6391 (disc)	Upper wishbones, ball joints, tie rods, and trunions changed
TR4	CT7219	Trunion seal changed, two shims added to outer trunion shaft seal.
TR4	CT16463 (wires) CT16350 (disc)	Unspecified tie rod change
TR4	CT20064	Aluminum steering rack mounts changed to rubber.
TR4	CT29985	Road spring lengthened, packing piece eliminated
TR4A	CTC50001	Front suspension, brakes, and steering changed to accomodate new frame. Multiple component changes. Refer to Appendix A, Table 2, for complete list

Front Brakes

The original TR4 front brakes were identical to those used on late TR3A and TR3B Girling units. At CT4690 (wires) and CT4387 (disc) these were changed to a slightly smaller unit that had the same size pistons, but held the pad in with two pins secured by cotter pins. Figure CH-7 shows the difference in the two types of calipers. At the same time the diameter of the rotor was slightly reduced. Early cars with later rotors will not wear the entire pad, while earlier rotors will rub on later calipers. The calipers are mounted with the bleed screw on top to facilitate bleeding.

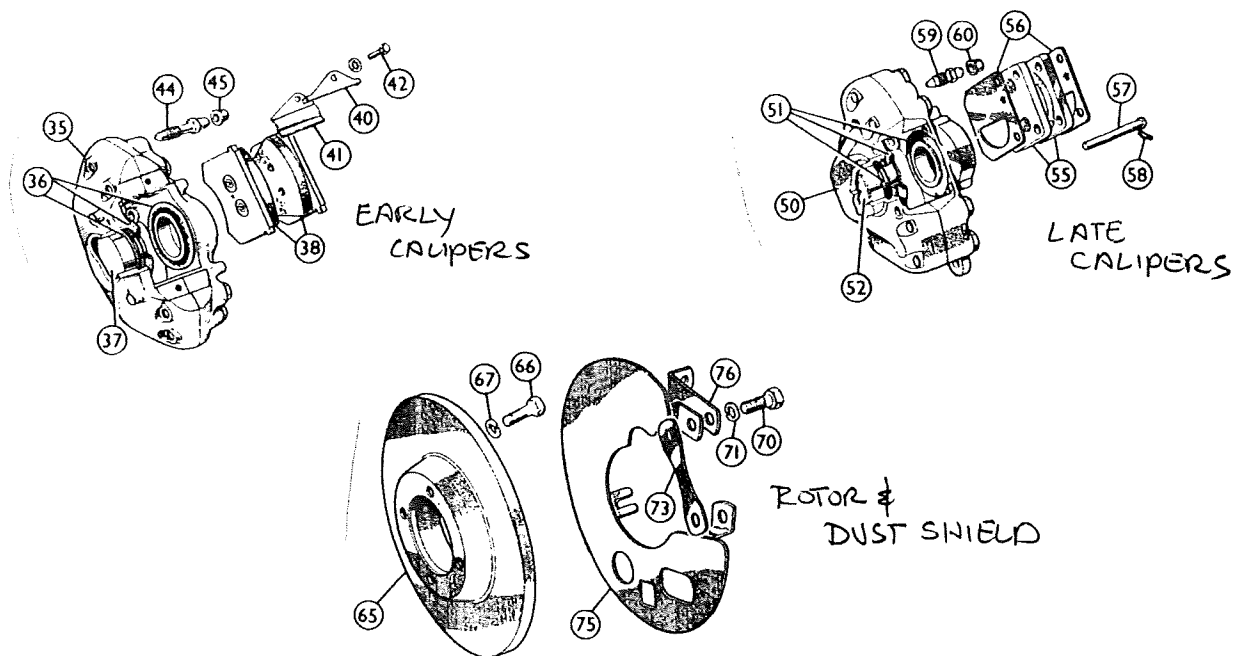


Figure CH-7: TR4 and TR4A Front Brakes

Finish

Both the early and late calipers were made of cast iron and should be left natural metal, or painted to look like natural metal. The rotors were unpainted cast iron. Bleed screws were natural steel or clear cad coated. Attachment bolts were black oxide Grade 8 with lock washers

Front Suspension

TR4

The initial TR4 suspension was identical to the late TR3A, TR3B suspension. At CT6344 (wires) and CT6391 (disc) this was changed. The upper wishbone, ball joint, tie rods, and trunion changed to a stonger unit with a different castor angle. The change can be noted in Figure CH-8. The insert in the upper right corner is the later upper wishbone assembly, the most visible part of the change. Some details to look for when judging the suspension:

- Rubber rebound bolt mounted in the center of the lower, rear wishbone arm. The rebound is conical, black rubber.
- Although originally equipped with blue Armstrong shocks, the shock absorbers can be any unit with fit, form, and function of the originals. Adjustable shocks are acceptable. Air shocks are not.
- Rubber rebounds should be mounted to a bracket on the frame under the center of the lower wishbone.

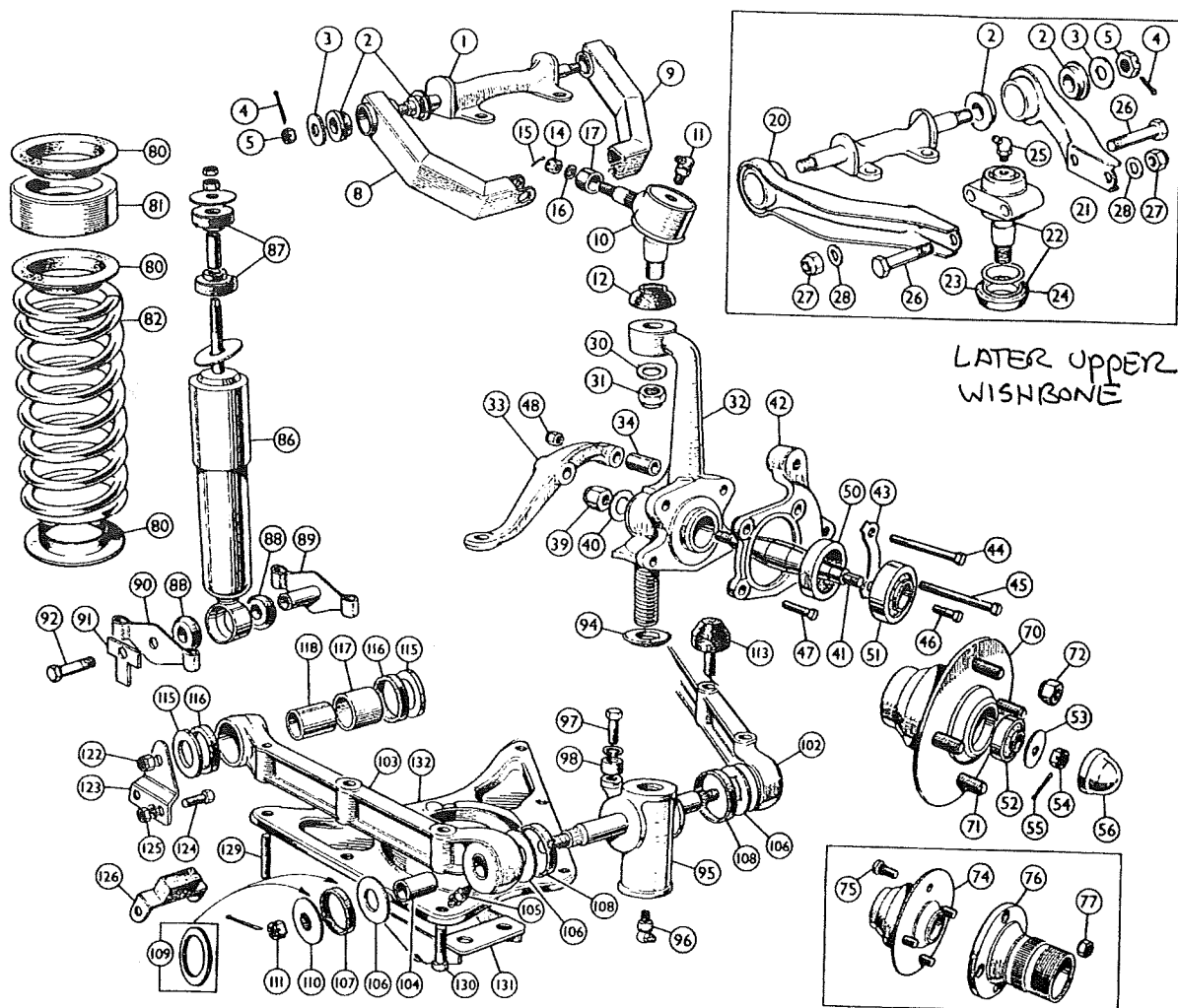


Figure CH-8: TR4 Front Suspension

- Some grease should be present both for lubrication and protection of junctions, but excessive grease allowing dirt build-up is grounds for a quality deduction.
- Rubber seals should be seen over joints on the lower wishbones.
- Black rubber upper wishbone bushings should be visible and in good shape. Modern nyatron and urethane bushings are available, but not original. non-original bushings should be treated as a minor deduction.
- The nuts holding the spring pan to the lower wishbone arms should be castle-type with cotter pins, as well as the nuts on the trunion shafts and upper fulcrum pin.
- Ensure a dust shield is fitted. Those tend to be lost over the years.

Triumph Register Of America TR4 Judging Guidelines

- Post CT7219 cars should have shims in their trunion mounting pint grease seals.
- Wire wheel equipped cars should have the splined hub extension bolted to the hub.
- A round steel piece bolted to the back of the trunion. This was the steering stop. Many times this piece is lost during a restoration.

Finish

In general, most front suspension pieces were painted black. Attachment hardware was not painted, usually Grade 8, black oxide coated. Exceptions to this are:

- Ball joints were left natural cast iron.
- Trunions are natural cast brass
- Shocks may be painted the color consistent with the manufacturer.
- Grease "Zirc" fittings are clear cad coated.
- Packing piece is natural cast aluminum.

TR4A

The TR4A front suspension was roughly similar to the earlier TR4 suspension, but many components had to change given the new frame. Figure CH-9 shows the TR4A front suspension. Note some of the outstanding differences:

- Lower wishbones arms now bolted into brackets, which were, in turn, bolted into the sides of the frame rails.
- Lower trunion became smaller, attached to the lower wishbone by a bolt that passes through it.
- Packing piece was added to the road spring again. The Moss catalog lists two packing pieces, one for a short spring, the other for a long spring. Either could be fitted.

Finish

In general, most front suspension pieces were painted black. Attachment hardware was not painted, usually Grade 8, black oxide coated. Exceptions to this are:

- Ball joints were left natural cast iron.
- Trunions are natural cast brass
- Shocks may be painted the color consistent with the manufacturer.
- Grease "Zirc" fittings are clear cad coated.
- Packing piece is natural cast aluminum.
- Lower wishbone arm bracker shims were left natural steel.
- Lower fulcrum brackets were left natural.

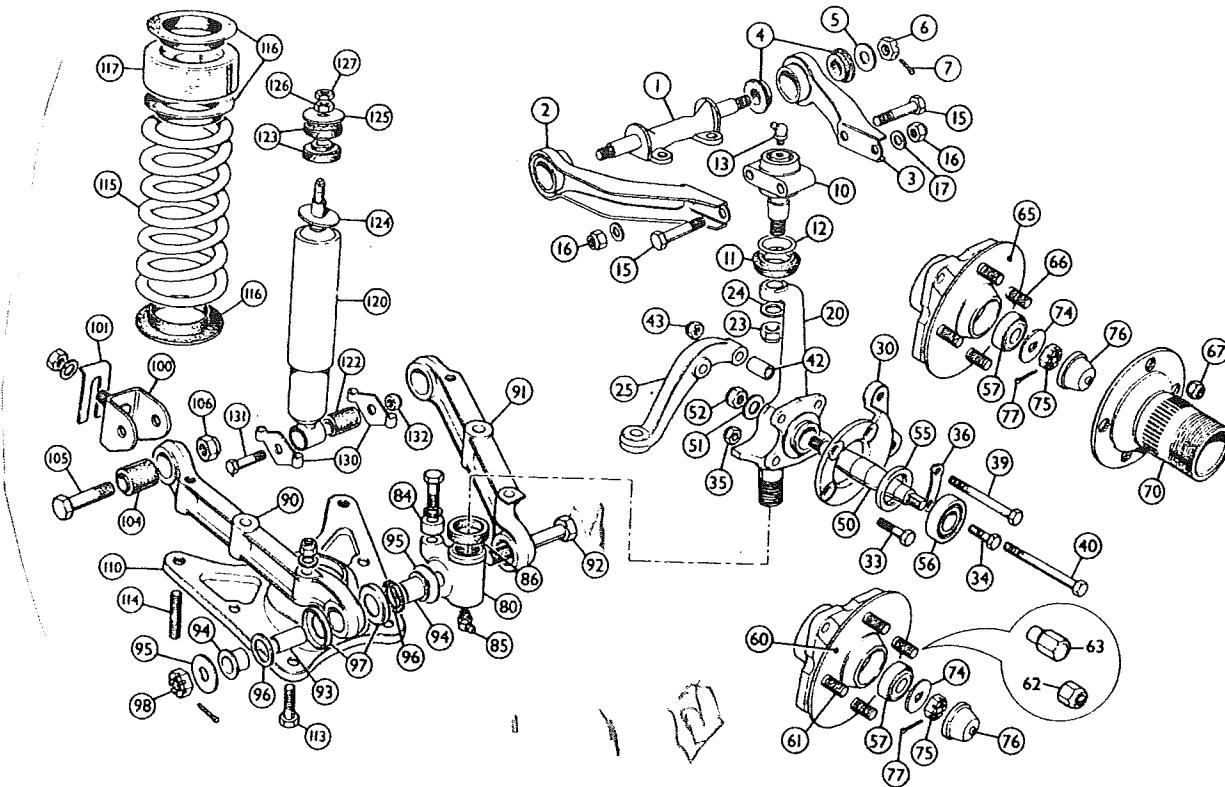


Figure CH-9: TR4A Front Suspension

Lower Steering

The TR4 and TR4A employed rack-and-pinion steering rather than the peg-and-worm gear of the earlier TR3. Figure CH-10 is an exploded view of the rack. The rack is made of a combination of steel and aluminum, all steel except for the aluminum pinion housing. The unit is lubricated via a bolt on the top of the pinion housing. The rack mounted to the chassis using aluminum mounts up to CT20064, rubber mounts after that. The rack has black rubber gaiters at the end to keep dust out of the rack. These gaiters are attached to the rack with a twisted wire on the left side, and a wire clamp on the right. The gaiters are attached to the shaft that the tie rod screws into by wire clamps on both sides. Tie rods with grease fittings were used. Some things to look for while judging:

- Gaiters should be intact.
- Tie rod ends should have intact rubber dust seals.

Triumph Register Of America TR4 Judging Guidelines

- Rubber mount cars should have a ground strap from the rack to the chassis for horn ground circuit.

Finish

The lower steering assembly had the following finishes:

- The pinion housing was natural cast aluminum with the cap and grease point bolt being natural steel.
- The tube housing the rack should be black or left natural. Both have been seen on “original” cars.
- Gaiters are black rubber.
- Gaiter securing wire and clamps are natural or clear cad coated.
- Shaft running to tie rod ends should be natural steel.
- Tie rod ends are natural cast except for the top holding the zirc fitting. The top is bright steel, with the zirc fitting being clear cad coated.

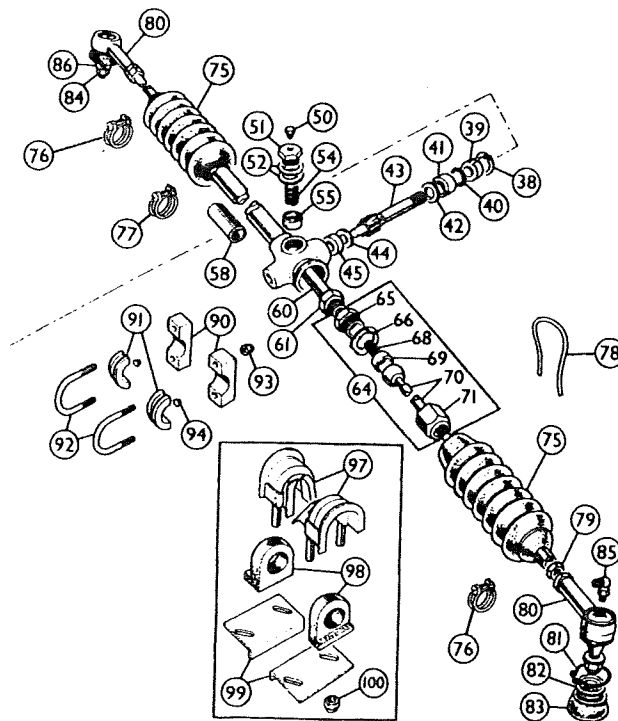


Figure CH-10: Exploded View Of TR4/4A Steering Rack

Rear Brakes, Suspension, and Rear Axle Assembly

Chassis Frame Variations Summary

TR4	CT425	Parking brake tab washer changed to common lock washer
TR4	CT5656 (wire) CT5783 (disc)	Brake cylinder bore reduced to "0.70
TR4	CT23383	Rear spring and mounting changed.
TR4A	CTC50001	IRS rear suspension becomes standard. Optional solid axle configuration available for North American customers. Many changes at this time. Refer to Appendix A for more details.

Rear Brakes

Hydraulic

The TR4 and TR4A rear brakes were identical. The system, illustrated in Figure CH-11, is similar to the TR3 system. The only change was the cylinder bore reduction to "0.70 to redistribute braking forces.

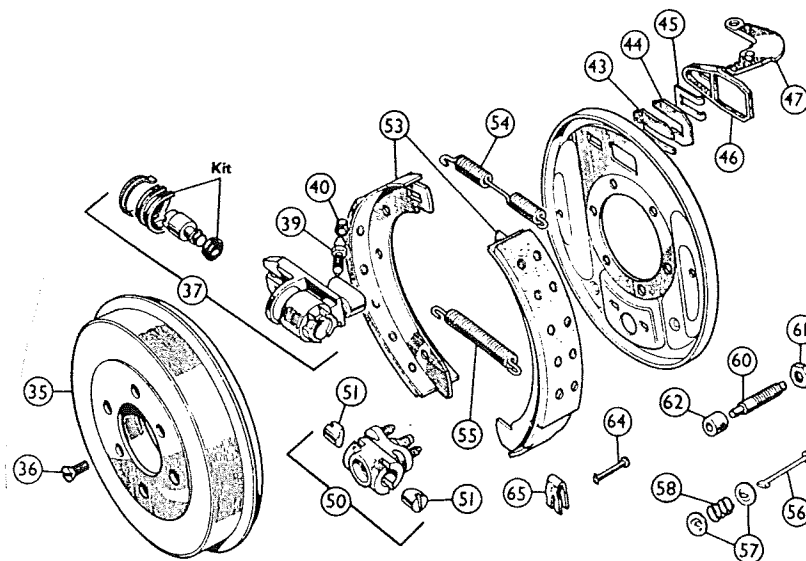


Figure CH-11: Rear Brake Assembly

Triumph Register Of America TR4 Judging Guidelines

Note the rubber dust excluder on the cylinder mounting hardware . This is left off on many restorations. Bleed screw should have a cap.

Finish

The only parts visible during inspection will be the drum, back plate, adjuster screws, hardware, and part of the cylinder.

- The drum and back plate should be painted a semi-gloss or gloss black.
- Adjuster screws should be left natural.
- Attachment bolts from the solid axle to back plate should be painted black.
- Other attachment hardware should be natural.
- Cylinder should be natural cast aluminum, mounting hardware should be natural, bleed screw natural or clear cad plated.

Hand Brake

The TR4 handbrake assembly was identical to the TR3 unit except for details. TR4A used a redesigned handbrake arrangement.

TR4

Figure CH-12 shows the handbrake assembly for the TR4. The difference was the longer cables from the compensator lever on the axle to the brake calipers demanded by the longer axle. The only change occurred at CT425 where the tab washer (#21) was replaced by a common lock washer.

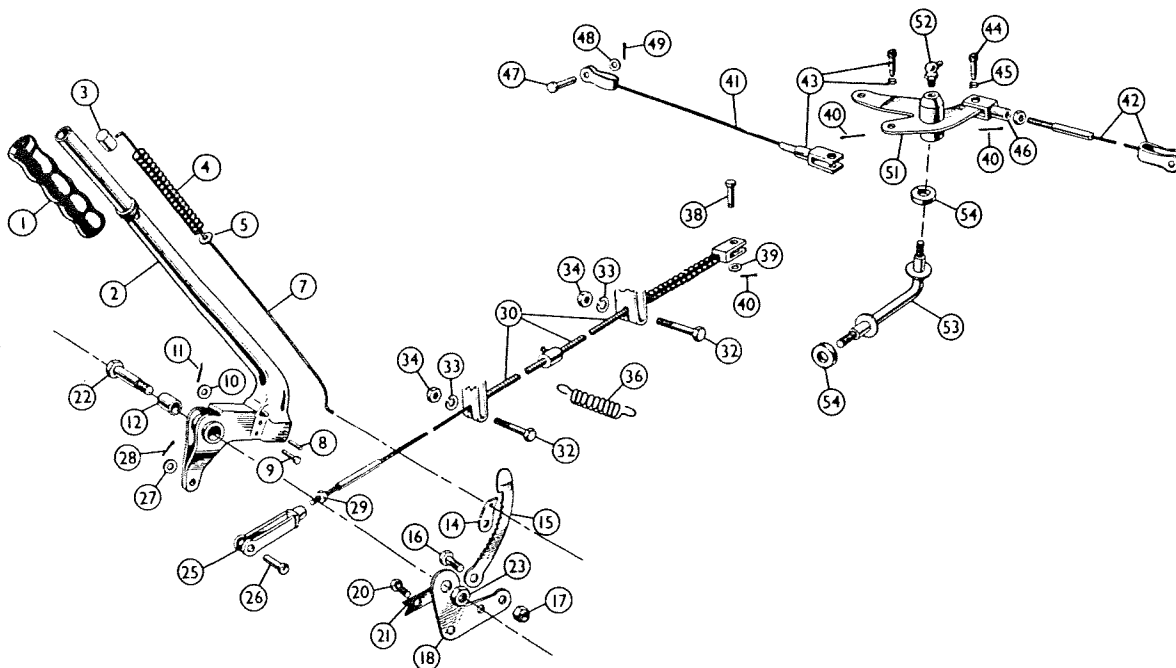


Figure CH-12: TR4 Handbrake Assembly

Triumph Register Of America TR4 Judging Guidelines

When judging the handbrake assembly look out for these problems:

- Missing cable conduit spring. This spring (#36) went from the cable conduit to a tab attached to the underside of the body. This held the conduit up close to the bottom of the frame rails so it wouldn't hit anything.
- Too much grease. The conduit contains an integral grease fitting and excess grease may be on the outside of the conduit.

Finish

The TR4 handbrake parts were pretty much all left natural. The only exception were the compensator bar and lever which could be painted black.

TR4A

The handbrake assembly moved from the right of the transmission tunnel to on top of the drive shaft tunnel with the introduction of the TR4A. Figure CH-13 shows the new configuration which was used for both IRS and solid-axle TR4As. This configuration was kept for later TRs up through the TR6.

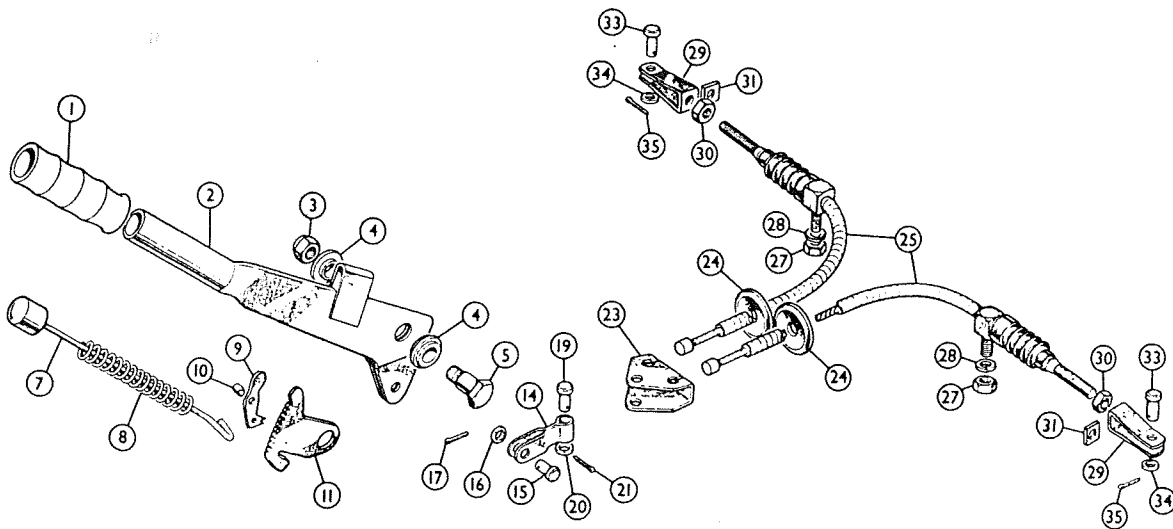


Figure CH-13: TR4A Handbrake Details

Finish

As with the TR4 handbrake hardware, the TR4A system was left natural.

Suspension

The TR4 and TR4A IRS had totally different rear suspension systems. Some (roughly 25%) of TR4A production had solid rear axles, and that makes a third suspension system to worry about! Each of these will be treated separately. The next page contains Figure CH-14 which shows the difference between the TR4 and TR4A chassis, focusing on the rear suspension changes.

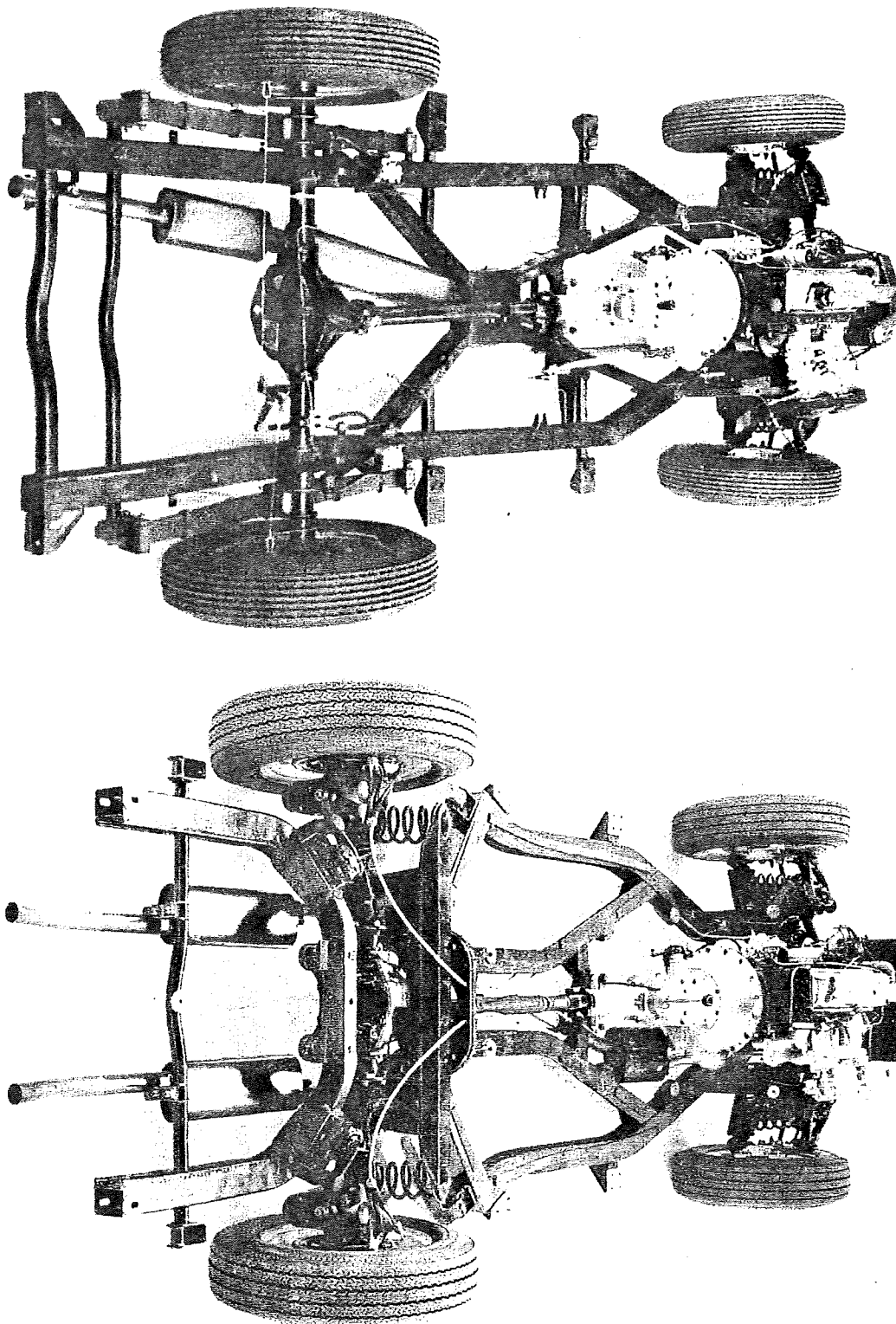


Figure CH-14: Comparison Between TR4 and TR4A Chassis

Triumph Register Of America TR4 Judging Guidelines

TR4

The rear suspension of the early TR4 was essentially unchanged from the TR3. The only change to the leaf spring/axle over frame configuration was in the spring rate, which cannot be seen by looking at it! An exploded view of the left side of the rear suspension is below in Figure CH-15.

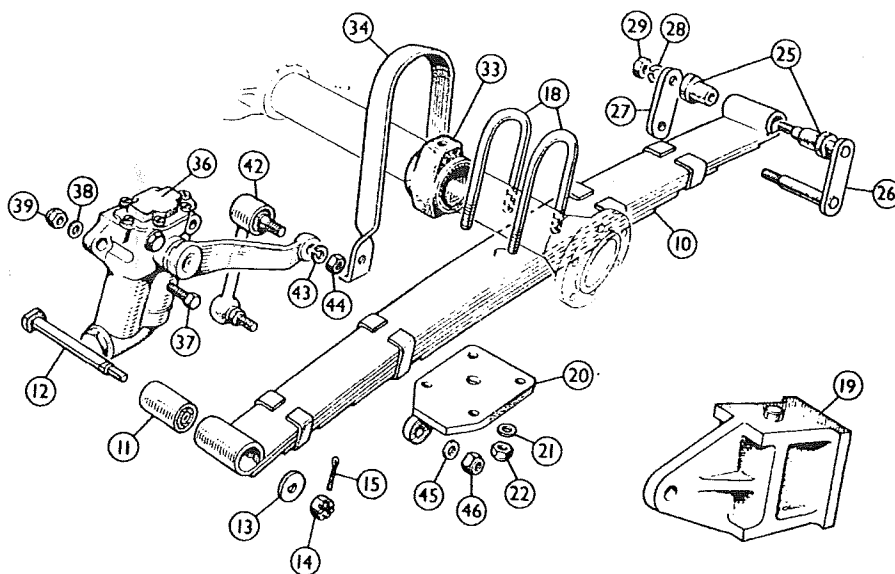


Figure CH-15: Exploded View Of Left Side Of TR4 Rear Suspension

The distance piece (#19) was added at CT23383 when the spring went to a deeper arc design. Since the shock link mount was built into this piece, the bottom plate (#20) changed to eliminate the mount from it.

Finish

The rear suspension was usually finished as thus:

- Leaf spring painted black. Some oil allowed on unit since this is called out for in maintenance instructions.
- Mounting hardware left natural.
- Distance piece natural cast aluminum.
- Shock left natural, shock link is painted black.
- Check strap painted black.

TR4A - IRS

The IRS rear suspension was a total change from the leaf spring configuration. Two figures are included here to show the configuration. The first figure, Figure CH-16, is a photograph of a TR4A show chassis. The way the

Triumph Register Of America TR4 Judging Guidelines

trailing arms were attached to the chassis, brake line and cable routing, shock configuration, and relative have shaft locations can be clearly seen.

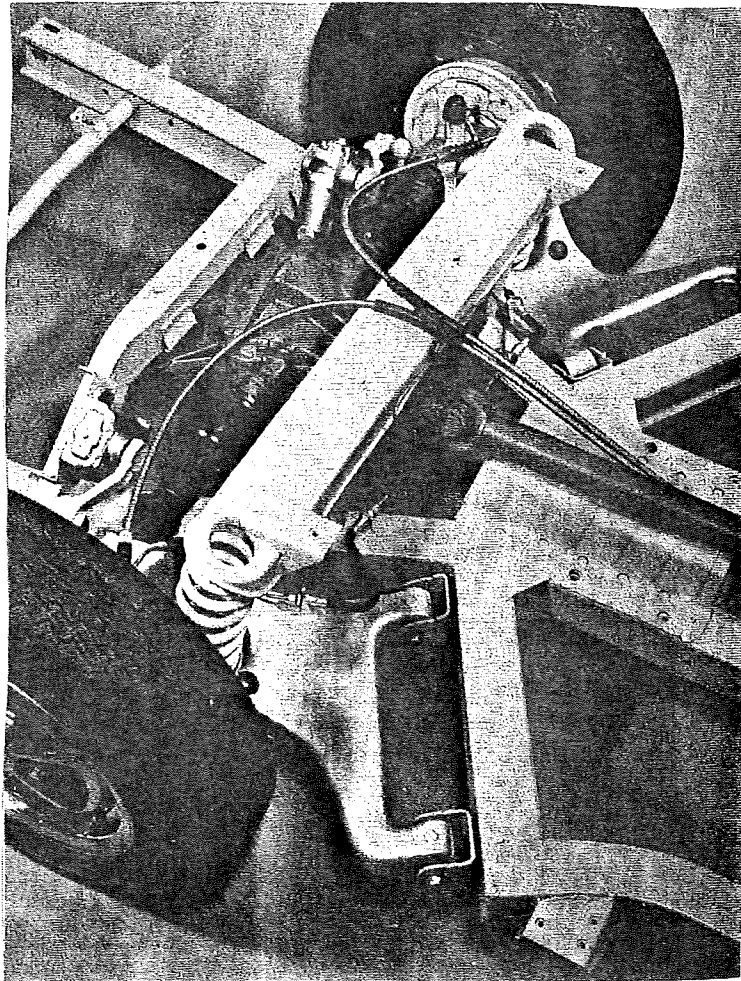


Figure CH-16: Picture Of TR4A Rear Suspension

Figure CH-17 is an exploded view of the rear suspension. This all looks familiar to the TR6 owners reading this, but it's quite a change from the TR3!

Items to Check

- The TR4A chassis is as prone to rust as the TR6 frame it preceded. Rust usually is worse where the trailing arms bolt to the frame, especially on the outer portion where the body mount is at. Check for rust and/or bad repairs in this area.
- The frame is prone to cracking where the springs fit in to it.

Triumph Register Of America TR4 Judging Guidelines

- Conical rubber bumps attached to the trailing arm (bumps against flat spot on shock arm) must be present.

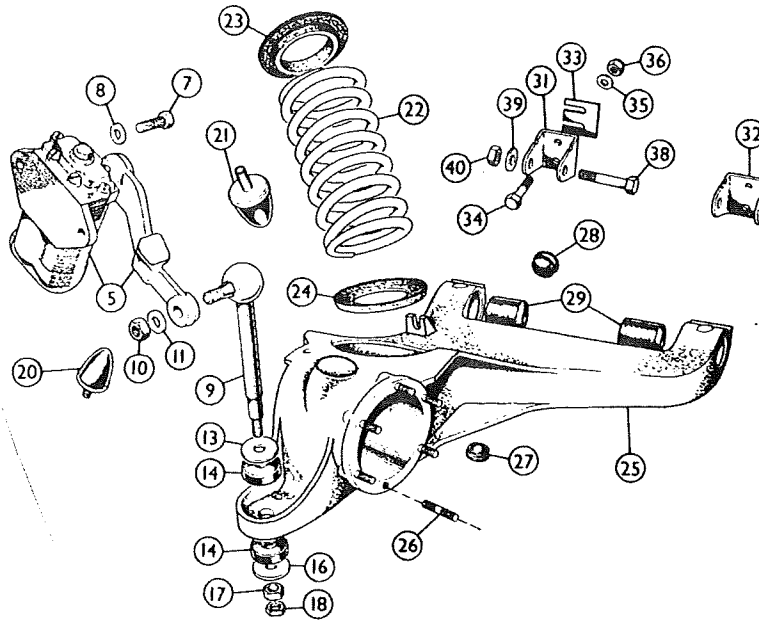


Figure CH-17: Exploded View Of TR4A Rear Suspension

Finish

The finish of the TR4A rear suspension was similar to the TR4. The one huge difference is that the trailing arms are left natural cast aluminum.

- Coil spring painted black.
- Mounting hardware left natural.
- Shock left natural, shock link is painted black.

TR4A - Solid Axle

American dealers were lukewarm about the IRS unit and concerned about the additional price, so Triumph produced a solid axle TR4A variant using TR4 suspension parts which fit on the TR4A chassis. Figure CH-18 is a picture of that arrangement. The chassis was slightly modified to do this. The overhead support for the coil springs was removed and a rear leaf spring mount was welded on. Note that solid-axle cars had a "CT" commission number, while the IRS cars carried "CTC". It is estimated that about 25% of TR4A production was solid-axle.

Triumph Register Of America TR4 Judging Guidelines

Figure CH-19 is an exploded view of the left rear suspension pieces. The Triumph engineers were very ingenious on the reuse of TR4 components and their fitting to the TR4A chassis. No axle check strap was required; however, a rubber bump stop had to be added above the pinion housing.

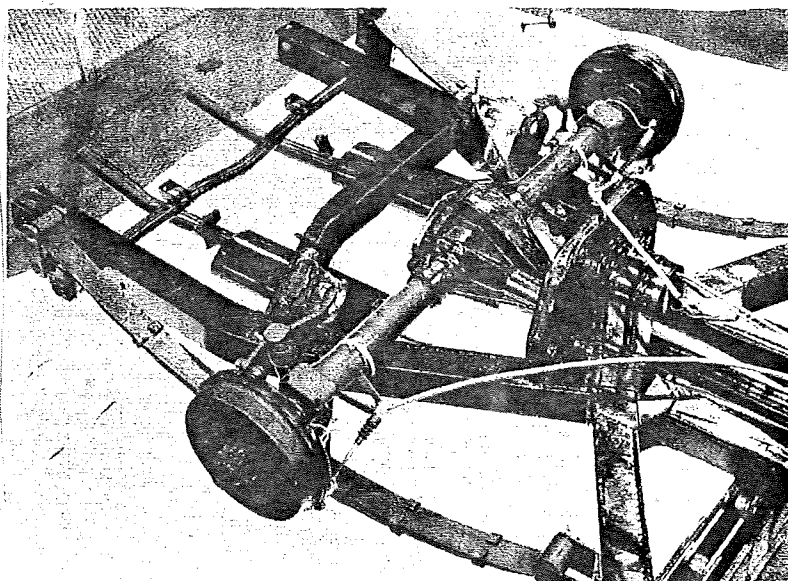


Figure CH-18: Photograph Of Solid-Axle TR4A Rear Suspension

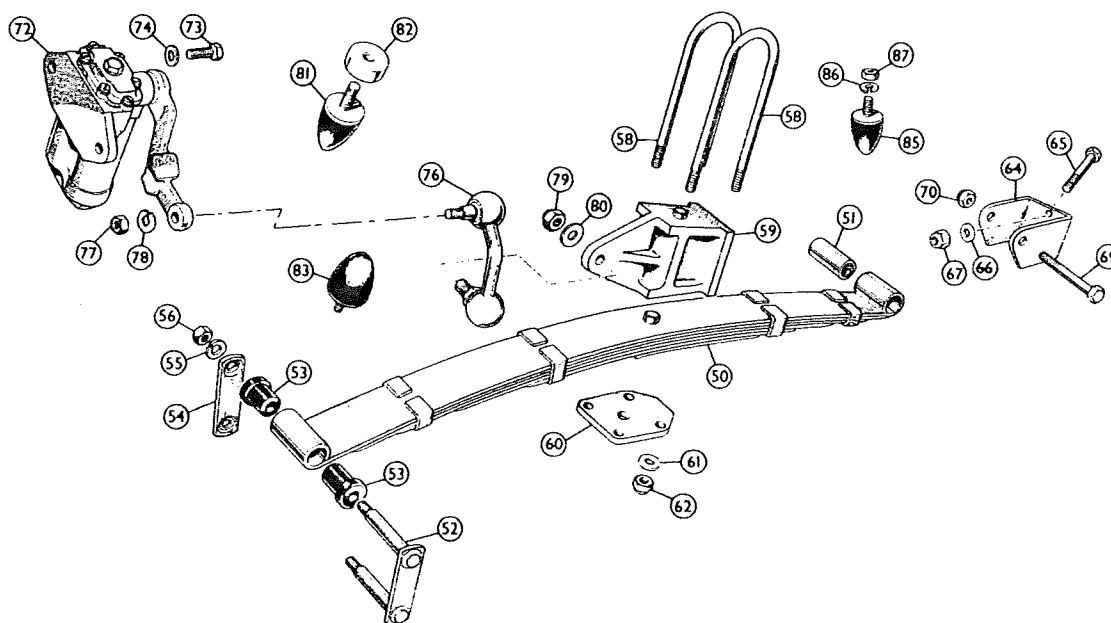


Figure CH-19: Exploded View Of TR4A Solid-Axle Rear Suspension

Triumph Register Of America TR4 Judging Guidelines

Finish

Again, similar to the TR4 and TR4A:

- Leaf spring painted black. Some oil allowed on unit since this is called out for in maintenance instructions.
- Mounting hardware left natural.
- Distance piece natural cast aluminum.
- Shock left natural, shock link is painted black.

Rear Axle Assembly

Two rear axle assemblies were used during the TR4/TR4A production run. The solid axle was used for the TR4 and TR4A solid-axle version. The IRS was in the TR4A IRS (stating the obvious). The solid axle was essentially the TR3 axle with lengthened axle shafts. TR3 axles will not fit a TR4. Good views of this axle are in Figures CH-14 and CH-18.

The IRS unit shared the same crown and pinion gears, but attached to the frame via four rubber mounts. Half shafts with two U-joints each went to the outer bearings built into the trailing arms. Plastic dust covers protected half shaft U-joints. The input flange was identical with the earlier units. The IRS axle assembly can be seen in Figure CH-16.

Some of the items judges should be looking for during concours are:

TR4

- Steel clips holding the brake hydraulic lines to the axle. These flat metal bands fit into a "cotter pin" looking clip and were wound up to tighten the band. Two were used, mounted inboard of the frame rails on the axle housing.
- Rubber bumpers attached to the axle housing above the frame rails to allow the axle to hit the frame without damage. These were secured to the axle housing with twisted wire, a flat side down towards the frame. These can be missing from rebuilds, or in sad shape from years pressing against the frame rails.
- Check for oil leaks from pinion seal and axle shaft seals.
- Check for excess grease at outer axle housing bearing grease nipple (under axle housing close to wheel)

TR4A IRS

- Ensure rubber mounts for differential are in good shape. These are subject to deterioration.
- Ensure half shaft dust covers are in good shape.
- Check for minimal amount of spare grease around U-joints.
- Check for differential oil leaks.
- Ensure rubber gaiters around half shafts are in good shape. They are secured by twisted wire clips on each side.

TR4A Solid-Axle

- No rubber bump stops are on the TR4A Solid-axle.

Triumph Register Of America TR4 Judging Guidelines

- The two steel pipe clips on the TR4 axle were retained.
- Flat steel pieces were attached to the top of the axle housing near the wheels. Unsure of their purpose since the body stops were provided in the shock absorber arm.
- Parking brake cables attached to brackets attached to the axle housing inboard of the wheels.
- Check for oil leaks from pinion and ends of axle shafts.
- Check for excess grease at outer axle housing bearing grease nipple (under axle housing close to wheel)

Finish

Although the rear axles differed during the TR4/4A production run, the finish was similar:

- Differential housings, axle housings, and half shafts were painted black. Hardware attaching axle housings to outer hubs and brake inner plates should be painted black also.
- Filler, and drain plug should be left natural pipe steel, black oxide finish.
- Hose clips are natural clear cad coated.
- Breather should be left natural steel.
- Rubber should be natural, wire clips unpainted steel, clear cad coated.
- U-Joints left natural steel.
- Other hardware was left natural.

Interesting Observation: differential cover inspection has uncovered different color dots painted on them. These probably signified the axle ratio as this changed depending on if an overdrive was fitted. The green dot we believe is the 3.7:1 ratio. This will be researched further for the next judging guideline edition.

Propeller Shaft and Transmission

Chassis Variations Summary

TR4	CTI	Overdrive Model 22/61374
TR4/4A Live Axle	Late October 1964	Overdrive Model 22/61712
TR4A IRS	All	Overdrive Model 22/61753

As one can see, not a whole lot of changes occurred to the transmission and drive shaft during the production run.

Transmission

The TR4 transmission is not simply an improved TR3 transmission, it changed in a few ways that makes it noticeably different from the earlier TR units.

- The addition of a synchronized first gear added a bump to the left side to house the synchros.
- To accommodate the added synchros the unit was longer than earlier transmissions.
- Ribs were added to the bell housing for increased strength.

When checking the transmission, first look for the first gear synchro housing. If that is not present then an earlier unit is fitted. Later (TR250, TR6) transmissions fit, but one must look at the top of the transmission (for reverse lamp switches), or the serial number to tell them apart. Even having a reverse lamp switch is not always indicative of later transmission since a reverse lamp option was available (see Accessories). The serial number is the best way to identify the transmission, but it is hard to see while the car is on the ground. TR4/4A transmissions carry the number on the top of a boss on the left-hand side of the transmission (see Figure UH-1).

When inspecting the transmission area, look for oil from the engine, and insure that the rear transmission mount is in good shape. This is exposed to heat and engine fluids and tends to degrade over the years.

Finish

A general under-car view of the transmission (non-OD) is in Figure CH-20 which shows the finish of the unit.

- Housing was made of cast aluminum, left natural.
- Filler and drain plugs are pipe steel, black oxide or clear cad coated.
- Clutch input shaft and arm were left natural.
- Grease fittings were clear cad coated

Overdrive

TR4 and TR4A could be purchased with optional overdrive unit which attached to the back of the transmission. The unit was made by Laycock-De-Normanville, and was operated by a remote electric switch mounted to the steering column (switch location and type are covered in the Interior Section). Cars with L commission numbers may be refitted with overdrive units; cars with LO commission numbers should be equipped with overdrive units.

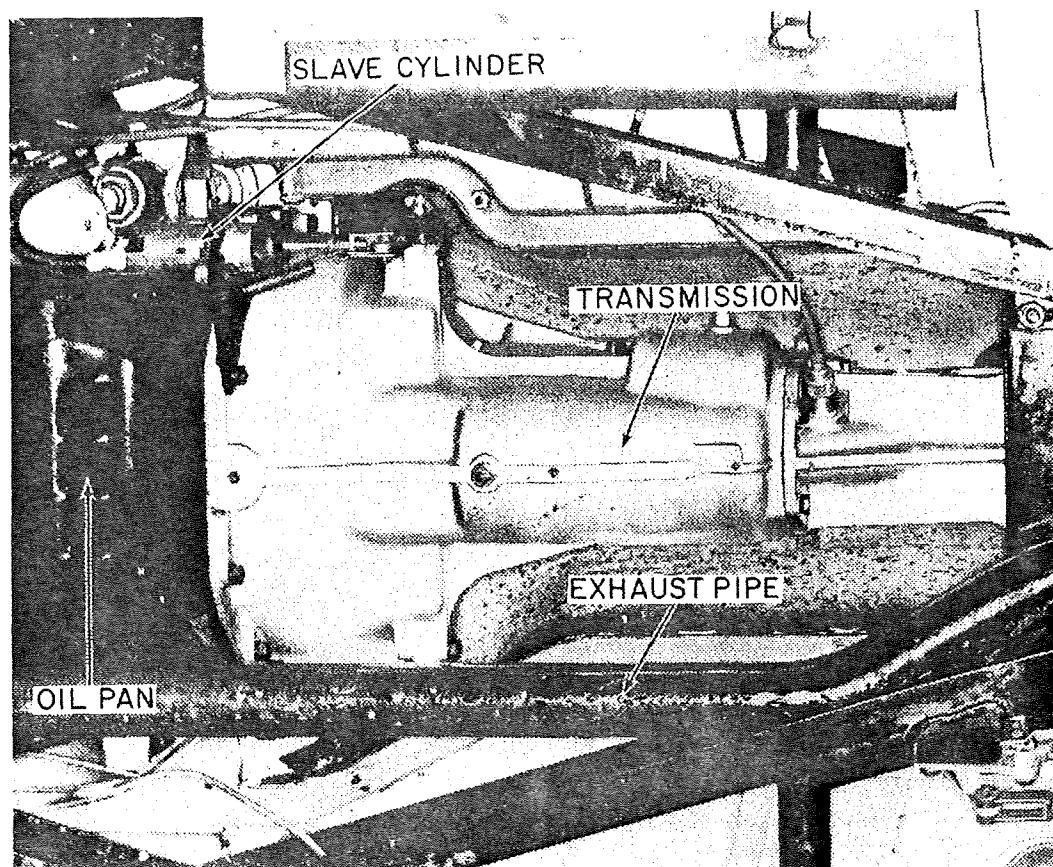


Figure CH-20: View Of Bottom Of Transmission In A TR4

Finish

Overdrive units should be natural. The case, transmission mounting plate, and rear extension are cast aluminum. The brake ring is black oxide steel. All hardware is left natural. The solenoid has a clear cad body with rubber cap. The solenoid plunger should have a rubber dust excluder on it.

Propellor Shaft

The propellor shaft did not change from the TR3, and did not change during the TR4/4a production run. It has a flexible yoke using a U-joint at each end. The sleeved yoke end of the propellor shaft should be mounted forward, on the transmission end.

Finish

The propellor shaft was painted black. Universal joints are natural.

Road Wheels

Chassis Variations Summary

TR4	Late in production run	Hubcap medallion changed from cloisonné to painted
TR4	March 1963	Steel Wheels painted Spa White

Three types of wheels were used on the TR4 and TR4A, steel, wire and alloys. Figure CH-21 shows the wire and steel wheels.

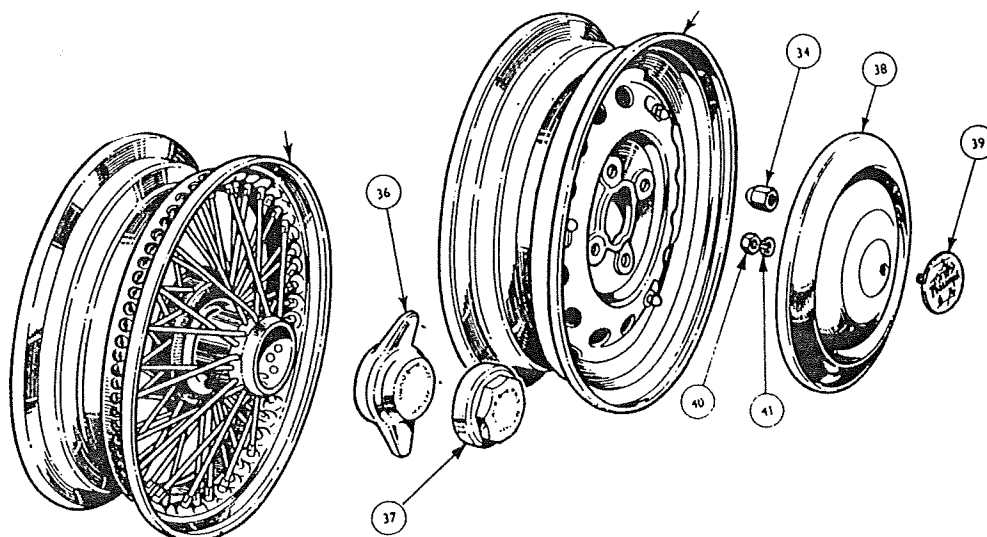


Figure CH-21: Steel And Wire Wheels Used On TR4/4A Cars

Steel Wheels

The stock wheels were pressed steel with hubcaps. The wheels were identical to later TR3 wheels, with a 4.5" width and 15" diameter. The hubcaps were similar to TR3 hubcaps, simple discs with a medallion in the center, but an economic change was made late in the TR4 production where the cloisonné medallions were replaced with cheaper painted ones.

Finish

The wheels were painted a "warm" silver on early TR4s. This was changed to Spa White in March 1963. Hubcaps were chromed. A center medallion on the hubcaps displayed the Triumph "World" logo in color. As is stated above, this chromed medallion changed from cloisonné to painted late in the TR4 series.

Triumph Register Of America TR4 Judging Guidelines

Wire Wheels

Wire wheels were a factory option for both the TR4 and TR4A. These wheels, made by Dunlop, were available painted or chromed in either 48 or 60 spoke models. The wire wheels rode on splined hubs bolted to the car's hubs. The wheels were held on by "eared" knockoffs on early cars, octagon ones on later cars. TR4s should have eared knockoffs, TR4As can have either style. Over the years many steel wheel cars have been converted to wires. Some things to look for when judging wheels:

- Check the integrity of the wheels. Look for missing or bent spokes. Treat missing spokes as major deviations and warn the owner that spokes are missing. This is a safety concern.
- Check for wheel to be on the proper side. The wheels have left and right side models (left wheels should be on driver's side for LHD models). Treat wheels on wrong side as a major deviation and warn owner. This is a safety concern.

Finish

Wire wheels came either painted or chromed. The paint used was either a Lacquer finish (warm silver), or "aluminium". Chrome wheels were either "bright" or "dull" chrome. The chrome wheels can either be all chrome, or have a chromed rim with stainless wires. Do not deduct for stainless wires since that is done to increase the structural integrity of the wheel, i.e., an allowed safety modification. Knockoffs are bright chromed and should exhibit minimal damage from being removed and tightened (the owner should use a rawhide hammer or knockoff wrench to minimize damage).

Alloy Wheels

Alloy wheels were not provided by the dealer, but were an aftermarket item. As such the owner would have to prove the vintage of the wheels for concours showing. The one exception would be the American Racing "mini-lite" wheels used in the 1960's on TR4/4As. These were very popular for use on the Triumphs, and were only made for a few years. Figure CH-21 shows these wheels on a TR4 prepared to race (and win!). These had a center hub which looked like a knock-off, eared for early wheels, octagon for late, but it was strictly for show. These were removed for racing in the photo.

Finish

Early wheels, such as would be found on the TR4, would have the rims natural, the center and spokes painted charcoal gray. Later units, as would be found on later TR4As had the center and spokes painted a lighter gray. The fake knockoffs should be bright chromed.

Tires

The tires fitted to the earliest TR4s were Michelin "X" series radials, and 590 series bias-ply Dunlops. Later cars were offered only with radial tires. Bias ply tires are acceptable on later cars since they were aftermarket period options. Both blackwall and whitewall styles were offered. As tires are consumables and older tires are a safety hazard, judges should accept tires that are comparable replacements to the originals (for example, a wide ply tire would not be comparable to a Dunlop 590 but a similar sized radial from a Michelin competitor would be comparable). The acceptable ranges are:

- Radials - width: 155 to 165, diameter: 15
- Bias plies - width: 590 to 650, diameter: 15

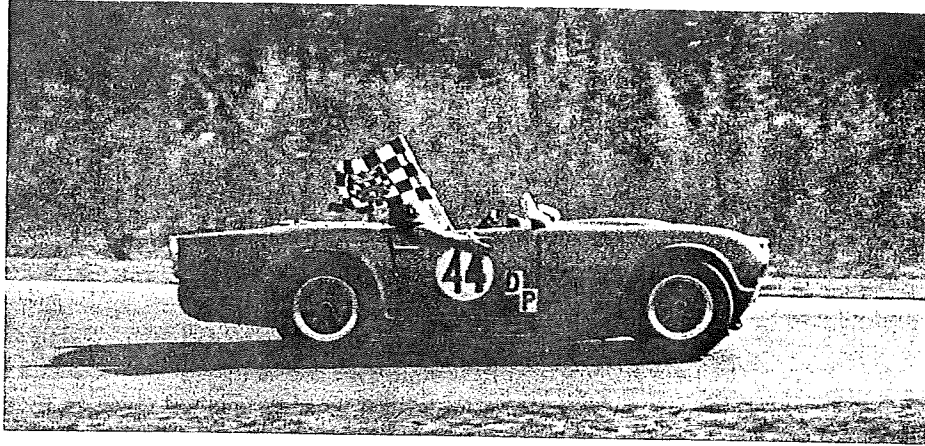


Figure CH-22: TR4 Race Car Showing American Racing Alloy Wheels

One last note. The type of spare tire matched the fitted tires for wires and steel wheels. Insure that this matches when judging. If not, treat as incorrect component.

Wheel Arches and Underbody Paneling

Chassis Frame Variations Summary

No recorded changes during production run.

This section covers the components in the wheel arches and the underbody paneling (floors).

Wheel Arches

When checking the arches, insure that the baffle plates (bulkhead sealer plates) are present with the rubber strip on the end which seals against the fender. Check for the presence of the sill sealing plates on the end of the rocker panels.

Finish

TR4/4A wheel arches were painted body color. This includes the bulkhead sealer plates and rubber seals. This was not the world's greatest paint job, runs and other imperfections are to be expected. No other components in the wheel arches should exhibit body color overspray since they were attached after painting. In addition, a thin spray of Waxoyl or other similar types of rustproofing has been found running along the underside seam between the fenders and inner wheel arch sections of the main body tub. Make no deductions for the presence or absence of this material.

Undercoating (black tar/asphalt substance) hides details and is subject to a major deviation unless the owner can produce documentation showing it was done by the dealer which originally sold the car. The same argument goes for other types of rustproofing not covered above.

Underbody Panels

These are the bottoms of the floors and trunk. These panels have corrugations in them for added stiffness. Jacking holes have rubber plugs in them, as well as holes toward the outside of the footwells and other places.

Check for:

- Missing captive nuts holding the body to the chassis, and seats to the floor.
- Rubber grommet in body hole for gas tank vent. The gas tank vent line should pass through a clip on the frame.
- Oil and grime. A small amount is to be expected. Large amounts indicate lack of care.
- Rubber plug on the bottom rear of the trunk.
- Jagged/non-round holes (except for the handbrake hole) which could be present due to modifications (such as roll bars).

Triumph Register Of America TR4 Judging Guidelines

- Rubber plug in the forward outside of the foot wells.
- TR4As have rubber bump stops for the rear suspension attached to the panels above the rear shocks.

Finish

The panels themselves should be painted body color. The finish on the paint may contain runs and other errors since the same care as painting the top body panels was not taken. The hardware was unpainted as well as the rubber plugs, stops, and grommets.

Factory Accessories

Accessories

The se are the only factory accessories listed for the TR4/4A Chassis:

- Anti-Roll Bar. This bar is shown in Figure CH-23. The bar is black with natural hardware. This bar is only listed for the TR4.
- Overdrive Transmission.

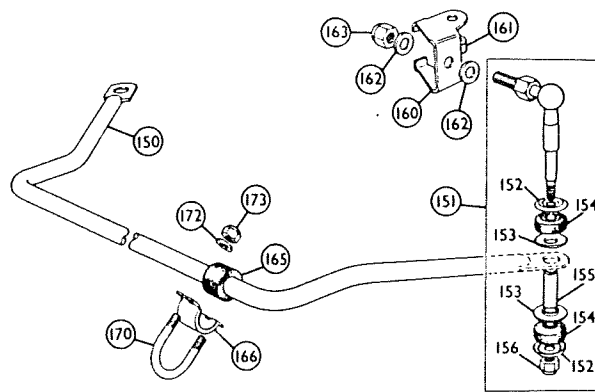


Figure CH-23: Optional TR4 Front Anti-Roll Bar

- Reverse Lamp Kit

A number of high speed and handling accessories were available to the TR enthusiast when the cars were new, both from the factory and from a host of aftermarket suppliers. Make no deductions for the presence of these items, as long as they are consistent with the period of the cars' manufacture. If there is a question, the owner must provide proof of period availability. Some of these items include: Mag Wheels, Rim embellishers (trim rings), and Skid-plates.

Hardware

The manufacturers of the various nuts and bolts that were used on the TRs were many and some of the finishes no doubt varied. A general rule on undercarriage hardware is that bolts and setscrews were most often finished in black oxide industrial finish, not the gold cadmium used later in the late 1960s. Some castle nuts and standard pattern nuts may have been black also. Nyloc nuts were usually finished bright. Judges are not to make deductions for consistency, as consistency didn't always exist. Neatness and safety take precedence on this one.