

Section 3
General Equipment Standards

All motorcycles must meet the requirements contained in this section. In addition to the following General Equipment Standards, motorcycle components may only be modified, removed, or replaced with the exceptions and restrictions listed under the specific rule sections for twin- and single-cylinder motorcycles.

Section	General Equipment Standards	Page
3.1	Special Technical Requirements	42
3.2	Engines	42
3.3	Restrictor Plates	42
3.4	Weight Limits	42
3.5	Weighing Procedures	43
3.6	Sound Requirements	43
3.7	Fuel Specifications	43
3.8	Tires	44
3.9	Coolant/Fluid	45
3.10	Fairing/Bodywork	45
3.11	Fenders	46
3.12	Numbers Fonts and Sizes	46
3.13	Number Plates	48
3.14	Telemetry and Video	50
3.15	Rider Apparel	51
3.16	Rider and Mechanic Appearance	52
3.17	Advertising, Identification and Branding	53
3.18	Series and Partner Logo Requirements	53
3.19	Rider Suit and Crew Shirt Logo Placement	55
3.20	Rider Responsibility	56

3.1 Special Technical Requirements

- a. ***Twin-cylinder machines must maintain the traditional appearance of a flat track twin-cylinder motorcycle. Machines must not be constructed to resemble Motocross or Supermoto motorcycles. AMA Pro Racing will make sole determination if any machine does not meet this criteria.***
- b. Where the rules permit or require components of equipment to be installed, replaced, altered or fabricated, it is the sole responsibility of the rider to select components, materials and/or fabrication methods so that the motorcycle components will perform in competition properly.
- c. Any component of a motorcycle, deemed by AMA Pro Racing as necessary for acceptable operation, must be in place, securely mounted, in proper working order and structurally sound prior to technical inspection and anytime the machine is on the race track.
- d. Superseded parts controlled by these rules must be submitted to AMA Pro Racing for review and approval before use in competition. In addition, these parts must then be listed in the current OEM parts list as supplied to AMA Pro Racing and must be available to all entrants.
- e. A model may be granted Technical Allowances at the discretion of AMA Pro Racing. The Technical Allowances list will be published to AMA Pro Racing's website. If a model is allowed to compete with Technical Allowances, it can continue to compete as such unless specifically forbidden, in writing, by AMA Pro Racing.
- f. Regardless of previous approval, the use of specific components or equipment, including tires and fuel, may be withdrawn for any reason AMA Pro Racing deems in the best interest of professional competition.
- g. Safety wire used to secure required items must be a minimum of .024-inch diameter.

3.2 Engines

- a. Engine displacement shall be recorded in cubic centimeters.
- b. Supercharging and turbo-charging are prohibited.

3.3 Restrictor Plates

- a. Restrictor plates may be required to control horsepower and speed or to improve competition.
- b. AMA Pro Racing reserves the right to require restrictor plates on any approved model. Different diameter plates may be assigned to different models.
- c. Mandated restrictor plates must be obtained from AMA Pro Racing.

3.4 Weight Limits

- a. Minimum bike weight:
 - i. AFT Twins (all displacements): 310 lbs.
 - ii. AFT Singles (all displacements): 235 lbs.

3.5 Weighing Procedures

- a. Weight limits must be met after qualifying and races in the condition the motorcycle finishes the session.
- b. The official AMA Pro Racing scale used on race day will be the only scale used for weight verification and official weights will be deemed final.
- c. If the weight displayed on the scales after the momentary stabilization period oscillates between two numbers, the higher number will be used.
- d. The official AMA Pro Racing scale will be available for weight checking before qualifying and final races.
- e. If the official AMA Pro Racing scale is not available for weight checking prior to the final races, then post-race weighing will not take place.
- f. A motorcycle must be taken directly from the track to the scale and weighed with remaining fuel in the fuel tank. No additional fluids may be added.
- g. Additional weight requirements may be listed under the Technical Regulations for single- and twin-cylinder motorcycles.
- h. All chassis ballast must be fixed to the frame. Under no conditions is it allowable to add chassis ballast as rotating mass to the wheels outside of normal balancing procedures.

3.6 Sound Requirements

- a. All motorcycles must remain below a sound limit of 105 dB measured on the "A" scale at 0.5 meters (20 inches). Test procedures have been prescribed by AMA Pro Racing in accordance with SAEJ1287, and detailed procedures can be found in the Appendices of the Rulebook.
- b. Certain racetracks may require lower sound limits. Where specific maximum noise levels are required, those limits will be noted in the Supplementary Regulations.

3.7 Fuel Specifications

- a. Sunoco Supreme 112 will be the official spec fuel for all riders competing in American Flat Track events.
- b. ***For 2019, use of Unleaded fuel will be mandatory. The specification will be announced as soon as possible.***
- c. Only air may be mixed with the fuel as an oxidant, and no other substances, chemicals and/or liquids whatsoever shall be added, combined, mixed and/or introduced to the official fuel whether intentionally or unintentionally.
- d. Competitors are responsible for the safe and proper handling and security of their fuel from when it is dispensed to them until it is used.
- e. Competitors are responsible for properly disposing of all unused fuel.

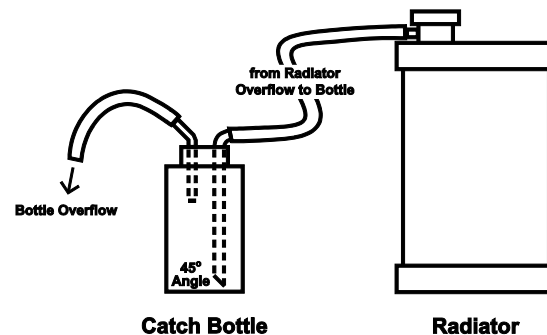
- f. AMA Pro Racing reserves the right to impound fuel at any time during a meet for whatever inspection and/or testing it deems necessary. Fuel Testing Procedures are identified in Appendix C.

3.8 Tires

- a. The only tires eligible for use at American Flat Track events are:
 - i. AFT Twins
 - 1. Front Tire: All Tracks
Dunlop DT3 130/80-19 compound F5 (p.n. 15DT04)
 - 2. Rear Tire: Short Track, TT **and Half-Mile**
Dunlop DT3 140/80-19 compound R5 (p.n. 15DT05)
Dunlop DT3 140/80-19 compound R8 (p.n. 15DT06)
 - 3. Rear Tire: Half-Mile and Mile
Dunlop DT3 140/80-19 compound R8 (p.n. 15DT06)
Dunlop DT3 140/80-19 compound R10 (p.n. 15DT12)
 - ii. AFT Singles
 - 1. Front Tire: All Tracks
Dunlop DT3 130/80-19 compound F5 (p.n. 15DT04)
 - 2. Rear Tire: Short Track, TT **and Half-Mile**
Dunlop DT3 140/80-19 compound R5 (p.n. 15DT05)
 - 3. Rear Tire: Half-Mile and Mile
Dunlop DT3 140/80-19 compound R8 (p.n. 15DT06)
 - iii. AMA Pro Racing reserves the right to mandate that all competitors use a specific tire at any **time during any** event.
- b. No chemical applications are permitted.
- c. Tractionizing or cutting of the tread block is not permitted.
- d. Rasping and deglazing will be permitted but not required. All deglazing must be done with a hand held rasp or surform. The use of air, AC or DC power tools is prohibited. Any attempt to change the profile of the tire is also prohibited. The intent of the rule is to allow the rider or crew to renew the edges of the tread block or remove the glaze to allow continued use of the tire. Final determination will be made by AMA Pro Racing.
- e. Studded tread of any material is not permitted.
- f. All Dunlop spec tires must run a single inner tube. No other devices aside from standard style inner tubes may be run.
- g. Any type of fluid in the tires is not permitted.
- h. AMA Pro Racing reserves the right to impound tires at any time during a meet for any inspection and/or testing deemed necessary. Tire Testing Procedures are identified in the Appendices of the Rulebook.

3.9 Coolant/Fluid Containment

- a. Coolant may be propylene glycol based. It must be nontoxic and water soluble. Ethylene glycol is not an acceptable coolant.
- b. All drain plugs and oil fill caps must be safety-wired except plugs that are secured by other approved methods. In addition, glass oil sight windows must be adequately protected. A metal guard is preferable and duct tape, by itself, is not sufficient protection.
- c. Oil filter bolts must be secured with safety wire. Oil filter cans must be secured with metal clamps and safety wire.
- d. All vent lines coming out of the engine that have positive pressure must be routed into a filter of at least 23 square inches (2.5" diameter by 3" long) or a heat-resistant catch can of at least 350cc or of sufficient capacity to contain breather oil for the duration of a race.
- e. All vent, breather or overflow tubes coming from the radiator must be routed into a heat-resistant catch can with a capacity of at least 250cc. Soda cans or bottles, or the like, are not acceptable. See illustration:



- f. Overflow tube exiting the catch can must be routed to the rear of the motorcycle and configured so as to discharge onto the exhaust or muffler.
- g. No bikes will be allowed through tech until the bottle is properly installed.

3.10 Fairings/Bodywork

- a. Fairings/Bodywork or other devices solely designed for the purpose of decreasing wind resistance are not permitted on the front or rear of the motorcycle, with the following exceptions:
 - i. With the exception of a seat/tail section or number plate, no bodywork is permitted to the rear of a plane drawn vertically through the rear wheel axle.
 - ii. Seat/tail section cannot be wider than 450mm (17.7 inches) and cannot extend further to the rear than a vertical line at the rear edge of the rear tire.
 - iii. Seat/tail section cannot be more than 200mm (7.8 inches) in height, measured from the seat base.

3.11 Fenders

- a. Rear fenders must provide adequate tire clearance.
- b. Front fenders are not allowed, with the following exceptions:
 - i. Supermoto-style fenders (Singles only).
 - ii. Small fenders may be fitted to keep radiators from packing with dirt on loose track surfaces. The intent is to reduce the possibility of overheating. Any fenders designed for aero purposes will be disallowed by AMA Pro Tech.
 - iii. ***In all cases, front fenders will only be permitted at TT events.***
- c. Small guards under the center lower triple clamp to prevent dirt from entering the steering stem and triple tree interface are permissible. AMA Pro reserves the right to determine legality of this item.

3.12 Number Fonts and Sizes

- a. Fonts for Number Plates
 - i. National Number 1:
 1. Current class champions may use specially-sized number ones with prior written approval from AMA Pro Racing.
 - ii. National Numbers 1 – 99:
 1. The designated font for single- and double-digit numbers on number plates is Impact:

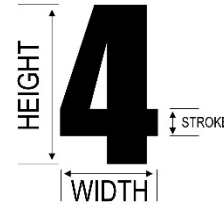
1234567890 IMPACT

2. When the designated font is used, the numbers cannot be altered in any way.
 3. Riders may apply to use an alternate number font by submitting a request to AMA Pro Racing with an example graphic.
 4. If applying to use an alternate font, excessive condensing or stretching of numbers will not be allowed.
 5. Approved number plates using alternate fonts cannot be altered for the balance of a season.
- iii. Numbers 100-399:
 1. The only approved font for three-digit numbers is League Gothic:

1234567890 LEAGUE GOTHIC

2. The numbers cannot be altered in any way.
3. No exceptions are permitted.

- b. Number Size and Layout Requirements
 - i. Numbers must be centered on the number plate, and ample space must be provided around and between numbers.
 - ii. All numbers must be solid, using the color designated for the class, and must have no outlining.
 - iii. Numbers must not overlap. Stylized numbers are not allowed.



- c. The definitions of height, width and stroke are identified in the illustration above. Spacing is defined as the measurement from the edge of the plate to each number, and between each number.
- d. Front and left side numbers must have the following dimensions:
 - i. National Number 1:
 1. Height: 8 inches (min)
 2. Width: 5.5 inches (max)
 3. Stroke: 1 inch (min) up to 3 inches (max)
 - ii. National Numbers 1 – 99:
 1. Height: 8 inches (min)
 2. Width: 5 inches (max)
 3. Stroke: 1 inch (min) up to 2 inches (max)
 4. Spacing: 1 inch
 - iii. Numbers 100-399 (League Gothic font only):
 1. Height: 7.5 inches (min)
 2. Width: 3.3 inches (max)
 3. Stroke: 1 inch (min)
 4. Spacing: 0.5 inch (min)
- e. Right side numbers may be reduced to seven inches tall to provide space for sponsor logos.

3.13 Number Plates

a. AFT Twins – Front Number Plates



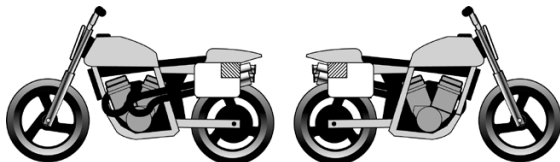
- i. Size: Must have exact dimensions of 12" by 12"
- ii. Plate Color: White
- iii. Number Color: Black (PANTONE Process Black C)
- iv. Series Logos: The top 1.33" of the number plate must be black and include two (2) American Flat Track (Reversed) series logos (Size: 4"W by 1"T) equally spaced on either side of the mounting bolt.



- v. Class Logos: The bottom of the number plate must have two (2) AFT Twins class logos (Size: 2.5"W by 0.75"T) equally spaced on either side of the mounting bolt.



- vi. Front number plates must be flat and mounted parallel to the fork tubes in such a manner as to prevent deflection of the plate during the event. Attempts at streamlining are prohibited, such as using curved plates or plates that are not rigidly mounted.
 - vii. Plastic or fiberglass number plates may be no less than 0.0625-inch thick. Metal plates may be no less than 0.045 inch thick or 0.030 inch thick if bead-edged.
- b. AFT Twins – Side Number Plates



- i. Size: Must be 12" wide, and between 10" and 12" in height.
- ii. Plate Color: White
- iii. Number Color: Black (PANTONE Process Black C)
- iv. Series Logos: The striped areas on both side number plates must have one (1) American Flat Track series logo (Size: 4"W by 1"T).



- v. Side number plates may be contoured to accommodate mufflers, suspension or other components but the numbers and required logos must be readable 90 degrees from direction of travel. AMA Pro Racing has the right to determine if side number plates meet these criteria. Side number plates that are not flat must be submitted to AMA Pro Racing for pre-approval before being used in competition.

c. AFT Singles – Front Number Plates



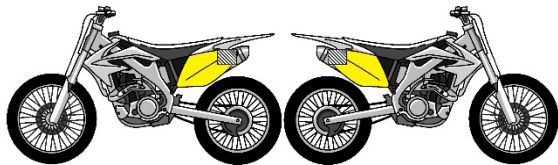
- i. Size: OEM front number plate, must be from the same model, year and manufacturer as the frame.
- ii. Plate Color: Yellow (PANTONE Yellow C)
- iii. Number Color: Black (PANTONE Process Black C)
- iv. Series Logos: The top 1.33" of the number plate must be black with two (2) American Flat Track (Reversed) series logos (Size: 4"W by 1"T), centered and equally spaced.



- v. Class Logos: The bottom of the number plate must have one (1) centered AFT Singles class logo (Size: 3"W by 0.75"T).



d. AFT Singles – Side Number Plates



- i. Size: OEM side number plates, must be from the same model, year and manufacturer as the frame.
- ii. Plate Color: Yellow (PANTONE Yellow C)
- iii. Number Color: Black (PANTONE Process Black C)
- iv. Series Logos: The striped areas on both side number plates must have one (1) American Flat Track series logo (Size: 4"W by 1"T).



3.14 Telemetry and Video

- a. Electronic transmitting of information, including radio communication, to or from a moving motorcycle is prohibited, with the following exceptions:
 - i. AMA Pro Racing-issued transponders utilized for scoring purposes (mandatory equipment assigned by AMA Pro Racing).
 - ii. Data or video transmitted for the sole use of the AMA Pro Racing-approved broadcast production company (mandatory equipment assigned by AMA Pro Racing).
- b. Onboard Cameras
 - i. AMA Pro Racing or American Flat Track's designated broadcast partner may request that riders utilize onboard cameras at any point during the event. Riders are urged to comply with requests whenever possible.
 - ii. Riders are permitted to use personal onboard cameras during practice and timed qualifying sessions only. An On-Track Camera Authorization form must be filled out at tech prior to the start of the event.
 - iii. The following rules and requirements apply to the use of Onboard Cameras during any competition session:
 1. Cameras must be secured to the motorcycle with safety wire and/or a tether in addition to the standard camera mount. Any onboard camera that becomes detached from a motorcycle may not be re-installed for the remainder of the event. Additional penalties may be imposed.

2. Onboard cameras must be mounted within the body/frame envelope of the motorcycle and cannot be positioned where it may be struck by a passing bike or rider. If unsure of suitable mounting positions, check with AMA Pro tech for clarity and approval.
3. With prior, written approval by AMA Pro Racing, cameras which are designed and developed for integration into rider apparel may be utilized. This includes, but is not limited to, chest, back protectors, leathers and/or helmets. No other onboard cameras may be attached to the rider in any way.
4. Onboard cameras must have the rider's competition number clearly indicated on the camera and external case.

3.15 Rider Apparel

- a. Helmet/Goggles
 - i. Riders must wear a helmet which is in good condition, provides a good fit and is properly fastened at all times when riding on track.
 - ii. Helmets must be of the full-face type and conform to one of the following recognized standards. The helmet must have a label affixed certifying its approval.
 1. BSI: 6658 Type A
 2. USA: Snell M2010 / M2015
 3. United Nations: Regulation ECE 22.05 P'
 4. Japan: JIS 8133:2007
 - iii. It is recommended that all helmets used in competition be equipped with a commercially-manufactured emergency helmet removal device such as the Hats Off device.
 - iv. Face shields or goggles must be shatter resistant. Goggles must be worn at the start of each event.
 - v. **Full-face, road style helmets are permitted for use at all track configurations and are required for all Short Track, Half-Mile and Mile tracks. Motocross style helmets are permitted for use on TTs courses only.**
- b. Boots/Skid Shoes
 - i. Boots must be at least eight inches high.
 - ii. A skid shoe must be used. The skid shoe must be made with a curved front end at the toe end of the shoe, with no sharp edges on the entire shoe. Titanium cannot be used in the construction of skid shoes.
 - iii. A skid shoe must be attached to a rider's boot so it will not come loose. If a skid shoe becomes loose and has the potential to injure the rider or break free and endanger other participants, the rider will be black flagged.

- c. Riding Suit/Gloves
- i. Leather riding suits are mandatory. Riders must wear a complete leather suit with additional leather padding or other protection on the principal contact points, knees, elbows, shoulders, hips, etc.
 - ii. Suits must be one piece or, if a two-piece suit is worn, the upper and lower pieces must be securely fastened.
 - iii. Riders must also wear leather gloves while the motorcycle is on the racetrack. Nylon gloves or other lightweight materials that do not provide a high level of abrasion resistance are prohibited. Approval of gloves will be at the sole discretion of AMA Pro Racing.
 - iv. Leather substitute materials may be used, providing they have been approved by AMA Pro Racing.
 - v. All riders must display the American Flat Track and exclusive technical partner logos in the approved locations of their leathers.
 - vi. If the rider uses a chest/back protector, the American Flat Track logo must be located in the center front on the chest/back protector. This is in addition to the logo located on the leathers.
 - vii. Riders are required to wear a commercially-manufactured back protector specifically designed for race use.
 - viii. All riders must have their name on the back of the riding suit at the shoulder level. Riders numbers are optional and are allowed in addition to a name, but not in place of a name. Rider numbers, if used, must be the same as the competition number on the motorcycle. No conflicting numbers are permitted. Riders will receive one warning. Failure to comply can result in the following penalties: Fine, gridding at the rear of the field, loss of championship points or suspension.
 - ix. Devices solely designed for the purpose of reducing wind resistance may not be attached to the rider's apparel.

3.16 Rider and Mechanic Appearance

- a. Riders and mechanics must present a clean and neat appearance at all times.
- b. Only appropriately dressed persons displaying proper credentials will be allowed in the pit area. Cut-offs, torn jeans, sleeveless shirts and open-toe shoes are prohibited in the pits.
- c. Wearing clothing exhibiting obscene material or inappropriate slogans is prohibited.
- d. Crew Uniforms:
 - i. Crew must be in uniform designating a rider or team in order to be allowed on track, hot pit, signaling and starting areas.
 - ii. Crew uniforms are required to display the American Flat Track and official series sponsor logos on uniform shirts.

- iii. Crew members not in compliance may be subjected to fines or suspension or a loss of championship points for their riders.
- iv. Mechanics and race crew personnel not wearing team uniforms will be considered guests and may not be allowed in competition related areas including tech inspection, riders meeting, staging and track areas.

3.17 Advertising, Identification and Branding

- a. **Display of Branding & Advertisements.** AMA Pro Racing may refuse to permit, or it may restrict or assign the size and/or placement of all patches, decals, advertising logos, text or identification of entities, persons, and/or sponsors ("Branding") on the motorcycles, transporters, Crew uniforms, and in the Paddock during an Event, if AMA Pro determines in its sole discretion that such Branding is: (i) detrimental to the sport, AMA Pro, American Flat Track, Series sponsors, Promoter and/or Broadcasters for any reason, including but not limited to the public image of the sport and/or (ii) does not comply with the Branding terms and conditions set forth in the Rulebook as may be amended from time to time. AMA Pro's determination in this regard shall be final, and all such determinations shall be conclusive.
- b. Motorcycles with logos of other series and sanctioning bodies are prohibited in the Paddock or on track until such logos are removed.

3.18 Series and Partner Logo Requirements

- a. **American Flat Track and Exclusive Technical Partner Logos (Mandatory)**
 - i. The official American Flat Track logo and class logos are required parts of the front number plate design; series title sponsor logos and class title sponsor logos may also be required.
 - ii. All riders are required to have the official American Flat Track logo and the approved exclusive technical partner logos in place on their leathers when competing in any part of an American Flat Track event.
 - iii. To be eligible for purse payments at American Flat Track events, as well as any exclusive technical partner supported purse, all sticker, patch and logo placement requirements must be met. These programs will be outlined on a yearly basis under Competitor Information at www.amaproracing.com. Applicable to these mandatory programs, riders will be given one warning to comply with this regulation. Failure to affix required exclusive partner logos by the next event could result in one or more of the following penalties: Ineligibility for event general purse, additional fine, gridding to the back of the field, loss of championship points, suspension.
 - iv. Riders and/or teams with series sponsor logo conflicts must contact AMA Pro Racing immediately for resolution options.

b. Contingency, Rider Awards and Year End Points Fund Partners

- i. To be eligible for contingency, rider awards and year-end point funds, riders must meet all sticker, patch and logo placement requirements applicable to the specific program. These programs will be outlined on a yearly basis under Competitor Information at www.amaproracing.com.
- ii. It is the individual rider's responsibility to pre-register and fully comply with all award program requirements. Periodic confirmation of program requirements may be conducted by AMA Pro Racing. If at any time a rider does not meet the specific requirements, they may be disqualified from the associated award program.

c. How to obtain the logo and/or logo artwork file.

- i. At Events: All number plate stickers and adhesive apparel patches will be available at Tech Inspection at each event.
- ii. Online: Visit the Competitor Information Page at www.amaproracing.com.
- iii. If a third party produces number plates for riders prior to meets, they may request logo files from AMA Pro Racing's Marketing Department. The request for artwork by a third party must include the rider's name.

d. Disclaimer for use of AMA Pro Racing registered trademarks:

- i. American Flat Track and the other logos and trademarks shown herein are licensed trademarks of AMA Pro Racing. Participants are to use the approved logos on number plates and apparel only when participating in American Flat Track events. Any further use of the marks outside of this capacity is not permitted without prior written consent from AMA Pro Racing

e. Required Rider Suit and Crew Shirt Logos:

- i. American Flat Track Logo:



1. Dimensions: 4 inches wide x 1 inch tall
2. Location: Left Chest

ii. Sunoco Logo:



1. Dimensions: 4.5 inches wide by 2.787 inches tall
2. Location: Left Sleeve

iii. Dunlop Logo:



1. Dimensions: 4.89 inches wide by 1 inch tall
2. Location: Right Sleeve (For 2017, Upper Shoulder Area, Chest or Left Sleeve are alternative placements)

3.19 Rider Suit and Crew Shirt Logo Placement

a. Location of Required Rider Suit Logos (**Mandatory**):



- b. Location of Required Crew Shirt Logos (Mandatory):



3.20 Rider Responsibility

- a. IT IS THE RESPONSIBILITY OF THE RIDER TO SELECT A HELMET AND APPAREL WHICH WILL PROVIDE APPROPRIATE PROTECTION.
- b. ALTHOUGH AMA PRO RACING APPROVES MATERIALS, AMA PRO RACING DOES NOT ENDORSE OR GUARANTEE SPECIFIC PRODUCTS OR MANUFACTURERS.
- c. RIDERS MUST RELY ON THEIR OWN JUDGMENT IN THE SELECTION OF HELMETS AND APPAREL FOR PROTECTION AND DURABILITY.

Section 4

AFT Twins Technical Standards

AFT Twins motorcycles must meet the following requirements in addition to the applicable requirements in General Equipment Standards. ***Twin-cylinder motorcycles must maintain the traditional appearance of a flat track twin-cylinder motorcycle. Machines must not be constructed to resemble Motocross or Supermoto motorcycles. AMA Pro Racing will make sole determination if any machine does not meet this criteria. All other modifications are unrestricted.***

Section	AFT Twins Technical Standards	Page
4.1	Engine Eligibility	58
4.2	Engines	58
4.3	Engine Control System/Electronics/Traction Control	60
4.4	Manifolds/Carburetors/Fuel Injection/Restrictors	60
4.5	Exhaust System	62
4.6	Frame and Swingarm	62
4.7	Forks and Shocks	62
4.8	Brakes	63
4.9	Wheels	63
4.10	Footrests	63
4.11	Handlebar and Controls	64
4.12	Fuel Tanks	64

4.1 Engine Eligibility

- a. Only 4-stroke twin-cylinder engines with prior, written approval by AMA Pro Racing are eligible for competition in AFT Twins. This includes both production engines designed for street motorcycles and racing-only engines.
- b. All engines approved for competition will appear on the Approved Twins Engine List on the AMA Pro Racing website.

4.2 Engines

a. Engine Displacement

(Note: Lowering production engine maximum displacement is under evaluation. Any reduction will be applied in 2019 and will be announced as soon as possible.)

- i. 649cc – 999.9cc with the following restrictions:
 1. Production Engines:
 - a. Engines that were originally under 750cc may be bored and stroked but may not exceed 750cc as a final displacement.
 2. Racing-only Engines:
 - a. Racing-only engines may not exceed 750cc with a maximum allowable overbore of 0.045" per cylinder.
 - b. Liquid cooled racing-only engines may not exceed 750cc. There is no provision for overbore.
- b. To prohibit the practice of "twingling" a twin, any modification of engine components to alter the stock OEM firing order/spacing of the cylinders is prohibited.
- c. Substitute Parts
 - i. In the case where aftermarket parts are available that represent a substantial financial saving over stock parts, substitutes may be allowed.
 - ii. Allowed substitute parts must be mechanically identical to the homologated parts they replace as it pertains to fitment with associated assemblies.
 - iii. Substitute parts must be readily available and approved in advance by AMA Pro Racing.
 - iv. Approved substitute parts will appear on the Allowed Substitutes List posted on the AMA Pro Racing website.
- d. Cylinder Head, Valves, Springs and Retainers
 - i. Material and castings must be the same as on the homologated model. Material may be added or removed from these components.
 - ii. Cylinder head and cylinder head gasket surface may be machined.
 - iii. Intake and exhaust ports may be modified.

- iv. Valves and valve seats may be modified or replaced. Valve springs, valve spring retainers, guides and keepers may be modified or replaced. The original number of valves must be maintained.
- e. Camshafts and Sprockets
 - i. The original camshafts may be modified or replaced. Camshaft duration and lift is unrestricted.
 - ii. The original cam chain and sprockets may be modified or replaced.
 - iii. The original cam chain tensioner may be modified or replaced.
- f. Cylinders
 - i. Cylinder liners or coating may be replaced or added, provided that the original casting is utilized.
- g. Crankcase
 - i. Material and casting must be the same as on the homologated model.
 - ii. Material may be added or removed.
- h. Crankshaft
 - i. The original crankshaft may be modified or replaced.
- i. Connecting Rod/ Piston/ Piston Rings, Pins and Clips
 - i. May be modified or replaced.
- j. Oil Pump/ Water Pump
 - i. May be modified or replaced.
 - ii. Oil and water lines may be replaced. Braided steel with proper AN connections are recommended in any pressure application.
- k. Clutch Basket/ Clutch Hubs/ Clutch Plates
 - i. May be modified or replaced.
 - ii. Back torque limiting clutches (slipper style) are strongly recommended.
- l. Transmission and Primary Drive
 - i. Primary drive style must remain as homologated except that chain or belt drive may be interchanged.
 - ii. Primary drive must be completely enclosed by a cover or guard.
 - iii. A maximum of six gears is allowed in the gearbox. There is no minimum requirement for number of gears installed.
 - iv. Motorcycles must be driven by rear-wheel-transmitted power only.

4.3 Engine Control System/Electronics/Traction Control

- a. The Engine Control Unit (ECU) that comes on the homologated motorcycle or engine may be used. The use of non-standard/aftermarket ECUs must be approved in writing by AMA Pro Racing. Approved non-standard/aftermarket ECUs will be listed on the Approved Engine Controller List on the AMA Pro Racing website.
- b. Only OEM engine sensors may be used to provide input to the ECU unless otherwise specified.
- c. The software in ECUs may only be modified to affect spark and fuel table control, as well as data logging.
- d. AMA Pro Racing reserves the right to download and inspect ECU information from any competitor at any time. Teams are required to provide any and all available download cables and operating software upon request.
- e. Wheel speed sensors, countershaft speed sensors, transmission speed sensors or any other type of speed sensor that transmits information to the ECU is expressly forbidden.

4.4 Intake Manifolds, Carburetors, Fuel Injection and Restrictors

- a. Intake Manifolds
 - i. Engines may be equipped with a maximum of one carburetor per cylinder.
 - ii. Manifolding between cylinder intakes is not allowed unless equipped on the original engine.
 - iii. In the case of restrictors being mandated, no manifolding will be allowed.
 - iv. If a restrictor is mandated, manifolds may be modified to accommodate the restrictor. All modifications must be pre-approved by AMA Pro Racing.
- b. Throttle Body Specifications:
 - i. Carb/Throttle Body **Maximum** Inner Diameter:
 1. 649cc – **850cc**: 38mm
 2. Race-only engines: 38mm
 3. **851cc** – 999.9cc: 44mm
 - ii. Any throttle body from an approved engine, or applicable carburetor may be utilized and modified as long as the throttle body stays in compliance with the **maximum** inner diameter regulation listed above.
 - iii. Throttle bodies which come standard on approved engines and are smaller or larger than the **maximum** inner diameter regulation **may be modified to meet the maximum inner diameter regulation listed above. Modifications must be pre-approved by AMA Pro Racing.**

- iv. **Fuel injected machines that have throttle bodies unsuitable for racing may petition AMA Pro Racing for acceptable alternative throttle bodies. Approved alternative throttle bodies will be posted to the Approved Substitutes List on AMA Pro Racing's website.**
 - v. **Aftermarket throttle bodies are permitted with pre-approval and must adhere to the following:**
 1. **Assemblies can only use a maximum of one throttle plate, slide or guillotine metering device per cylinder.**
 2. **Maximum inner diameter is 38mm.**
 - vi. In all cases, any type of electronic throttle control or fly-by-wire, secondary throttle plates or other such induction controlling devices are prohibited. The rider must have **uninterrupted** mechanical connection **via traditional cables from handlebar to** the induction components.
 - vii. Throttle body assemblies include all attached parts with the exception of: fasteners, cables, cable actuating pulleys and associated linkages, flexible fuel lines, vacuum lines, airbox tube connections, velocity stacks and sensors.
 - viii. **For enforcement purposes, a measurable max bore diameter choke point must be located within the throttle body itself. Other than an injector relief located within a choke point, no part of this continual cross section can exceed the maximum inner diameter. This measuring area can be located anywhere within the throttle body.**
- c. Fuel Injection
 - i. OEM fuel-injected engines may be changed to carburetion.
 - ii. OEM carbureted bikes may be changed to fuel injection.
 - iii. **Fuel injector type, number and location may be changed.**
 - d. Restrictors
 - i. AMA Pro Racing reserves the right to mandate restrictors as needed to maintain competitive balance. Restrictors can be mandated at any time.
 - ii. Failure to run a restrictor when requested by AMA Pro Racing may result in fines, starting on the back of the grid, loss of championship points, etc.
 - iii. In the case where AMA Pro Racing imposes restrictors for competitive balancing and the OEM throttle body and/or manifold diameter on 751cc to 999.9cc production based engines is inadequately sized for a restrictor the following criteria must be followed:
 1. The manifold inner diameter may be set at 44mm from the cylinder head to the throttle body.

2. The throttle body outer diameter may be increased to 44mm (with affixed adapter). No other throttle body changes may be made unless approved in writing by AMA Pro Racing.
3. The restrictor will be placed in the manifold with the same method as a carbureted model, i.e. with a minimum distance of 44mm one inch upstream as well as one inch downstream of the restrictor.

4.5 Exhaust System

- a. Exhaust pipes and mufflers must be used and be securely attached together and bolted to the frame. Mufflers must have sound absorption mechanisms or packed baffling.
- b. The discharge end of the exhaust pipe may not extend beyond the rear edge of the rear tire. For safety reasons, the exposed edge(s) of the exhaust pipe outlet(s) must be rounded to eliminate any sharp edges.
- c. The inside of the exhaust discharge end must be a maximum of five inches from the outside edge of the tire or frame in order to prevent another rider's wheel or leg from becoming trapped.

4.6 Frame and Swingarm

- a. Cracked or broken frames are not permitted.
- b. All stands must be removed.
- c. Frames must be constructed of steel.
- d. Engine mount location, steering head, swingarm pivot point and rear suspension pick up points are not regulated.
- e. Fork stops must be installed of sufficient size and strength to prevent fork tubes or other components from contacting the fuel tank in a crash.
- f. Swingarms may be constructed of aluminum or steel.
- g. Frames should be constructed to allow ballast to be secured in a positive fashion as needed to meet weight limits.
- h. Frames and swingarms must be constructed with safety as the overriding concern. AMA Pro Racing reserves the right to make the final determination in that regard.

4.7 Forks and Shocks

- a. Any commercially available inner and outer fork tubes and axle lugs may be used. Modifications are permitted. All other fork parts may be modified.
- b. A steering damper may be installed; however, it may not be used as a steering lock limiting device.
- c. Steering stems should preferably be made of a ferrous material (i.e. steel) or stainless steel. It is the responsibility of the team and rider to fit a steering stem of adequate design and strength for the intended usage.
- d. Any rear damper may be used:
 - i. Single or dual shocks are permitted
 - ii. Linkages are permitted.

4.8 Brakes

- a. Aluminum or titanium rear brake discs are prohibited.
- b. In Mile, Half Mile, and Short Track races, all motorcycles must be equipped with adequate and operating rear wheel brakes. Operating front wheel brakes are not allowed.
- c. In TT races, all motorcycles must be equipped with adequate and operating front and rear wheel brakes.
- d. Foot-operated, solid, non-folding brake levers must be rubber-covered.

4.9 Wheels

- a. All Flat Track motorcycles must use 19-inch diameter wheels, front and rear.
- b. Maximum wheel rim width is 3.5 inches, as measured at the inside, bead to bead.
- c. AFT Twins may use wheels constructed of carbon fiber. Carbon fiber wheels must be approved by AMA Pro Racing prior to use.
 - a. Wheel axles must be ferrous metal (i.e. steel) or stainless steel. Titanium or aluminum is not permitted.
 - d. Maximum wheel assembly weight must not exceed 40 lbs. The wheel will be weighed as it comes off of the race track. Removal of dirt and track debris is permitted.
 - e. A wheel assembly consists of a tire, a single standard inner tube, approved rim tape or tube protector (located between rim and tube), rim, spokes, hub, wheel spacers, rotor, sprocket (and associated fasteners), and whatever minimum weight is required to balance the wheel assembly. The minimum amount of balancing wheel weights must be located in a single radial position for the sole purpose of legitimate static wheel balancing. AMA Pro Racing will make the final determination if any component or affixed balancing weights meet these criteria.
 - f. No ballast can be added to the wheel assembly.

4.10 Footrests

- a. Both footrests must fold backward to a 45-degree angle.
- b. The top of the right footrest may be serrated.
- c. A rubber encased foot peg must be fitted on the left side of the motorcycle.
- d. The edge of both footrests must be covered with at least 0.25-inch of rubber or soft plastic (not tape) and must present no cutting hazard.
- e. The maximum length of the footrest from the pivot point is five inches.

- f. Shift lever ends must be rubber covered.

4.11 Handlebar and Controls

- a. Cracked or broken handlebars are prohibited.
- b. Handlebars, hand controls and cables are unrestricted.
- c. Control levers must have minimum 0.25-inch diameter ball ends.
- d. Bar ends must be covered with a grip or fitted with a plug so as not to present a cutting hazard.
- e. Motorcycles must be equipped with a functional ignition cut-off switch or button, mounted on the handlebar and within reach of the rider's hand when placed on the grip. Momentary-off style switches are recommended and preferred.
- f. Throttles must be self-closing. If the original throttle bodies or carburetors came with a push/pull dual cable arrangement, it must be utilized.

4.12 Fuel Tanks

- a. Minimum capacity is 5 liters (1.32 gallons).
- b. The same size fuel tank used on a motorcycle in qualifying must be retained for the entire event.
- c. Fuel tank vent lines must have a device which prevents the escape of gasoline, i.e. a one-way valve.
- d. On carbureted machines, fuel shut off valves must be installed between the tank and carbs.
- e. Tip over switches are highly recommended on fuel injected machines.
- f. Shut-off valves are required on all fuel lines coming from the fuel tank, except for fuel-injected models not originally equipped with shut-off valves.

Section 6 AFT Singles Technical Standards

Single-cylinder motorcycles must meet the following requirements in addition to the applicable requirements in General Equipment Standards. Everything that is not authorized or prescribed in these rules is strictly forbidden.

Section	AFT Singles Technical Standards	Page
6.1	Engine Eligibility	
6.2	Engines	
6.3	Engine Control System/Electronics/Traction Control	
6.4	Carburetors and Fuel Injection	
6.5	Exhaust System	
6.6	Frame and Swingarm	
6.7	Forks and Shocks	
6.8	Brakes	
6.9	Wheels	
6.10	Footrests	
6.11	Handlebar and Controls	
6.12	Fuel Tanks	
6.13	Items That May Be Replaced	

6.1 Engine Eligibility

- a. Only 4-stroke single-cylinder motorcycles homologated by AMA Pro Racing may be used in AFT Singles competition. The list of Approved Motorcycles is available on the AMA Pro Racing website.
- b. Homologation procedure information is available on the AMA Pro Racing website.
- c. AMA Pro Racing will only review applications for homologation from motorcycle manufacturers or their distributors or designated representatives.
- d. Once a motorcycle has been approved, it may be used until such time that it no longer complies with the technical rules.
- e. Compliance with homologation requirements will not guarantee AMA Pro Racing approval. Homologation may be withheld or withdrawn for any reason AMA Pro Racing deems in the best interest of Flat Track competition.
- f. To be considered a homologated machine, swing arm, frame, engine cases, cylinder and cylinder head must all be of the same year of manufacture. Parts that are mechanically identical may be exchanged between model years.

6.2 Engines

- a. Engines are restricted to single-cylinder, 4-stroke with a displacement of 251 - 450cc.
- b. All single-cylinder engine displacements are absolute, with no overbore allowances.
- c. Single-cylinder engines must maintain stock bore and stroke.
- d. Material and castings of cylinders, cylinder heads, and crankcases must be the same as an originally approved model of the same manufacturer. Material may be added or removed from these items. Cylinder liners or coating may be replaced or added provided the original cylinder casting is utilized.
- e. Cylinder Head
 - i. Material and castings of cylinder heads must be the same as an originally homologated model of the same manufacturer.
 - ii. Material may be added or removed.
 - iii. Cylinder head and cylinder gasket surfaces only may be machined for increased compression.
 - iv. The cylinder head gasket may be changed.
 - v. Valve seats may be machined or replaced.
 - vi. Intake and exhaust valve angle must remain the same as on the homologated model.
 - vii. Cylinder heads may be exchanged between model years only if all other components, i.e. camshafts, cam chains, rocker arms, cylinder head covers, etc. are interchangeable.

- f. Cylinders
 - i. Cylinder liners or coating may be replaced or added provided the original cylinder casting is utilized.
 - ii. Spacers are not allowed.
- g. Crankcase
 - i. Crankcases must remain as homologated. No modifications are allowed.
- h. Valves, Springs and Retainers.
 - i. Aftermarket or modified valves, springs, retainers and other valve-train components are permitted. The original number of valves must be maintained.
 - ii. Valve diameter must remain as homologated.
 - iii. Valves must remain in the same location and at the same angle as the homologated model.
- i. Camshafts and Sprockets
 - i. The original camshafts may be modified or replaced from those fitted to the homologated motorcycle.
 - ii. The method of drive must remain as homologated.
 - iii. Cam sprockets can be modified or replaced to allow the degreeding of camshafts.
 - iv. The tooth count of the cam sprockets and cam drive sprocket on the crank must remain as homologated.
 - v. The cam chain must remain as homologated.
 - vi. The camshaft duration and lift are unrestricted.
 - vii. The tensioning device(s) for the cam chain or cam belt is unrestricted.
- j. Crankshaft
 - i. The homologated crankshafts may be modified or replaced.
 - ii. The primary gear must remain as homologated.
- k. Connecting Rod/Piston/Piston Rings, Pins and Clips
 - i. The original connecting rod, piston, piston rings, pins and clips may be modified or replaced from those fitted to the homologated motorcycle.
- l. Piston
 - i. The original piston may be modified or replaced from those fitted to the homologated motorcycle.
- m. Oil Pumps and Water Pumps
 - i. Original equipment oil pumps are required with the following modifications:
 - 1. Blueprinting.
 - 2. Changing the pressure relief spring.

- 3. Reducing gear and housing thickness.
- ii. The internal parts of the water pump may be changed or modified. The drive ratio may be changed.
- iii. Water lines may be modified or replaced.
- n. Clutch
 - i. Clutch type (wet or dry) must remain as homologated.
 - ii. Aftermarket, modified or stock-type clutches with back-torque limiting capabilities are mandatory. The clutch mechanism must provide a decoupling capability in the event of a catastrophic engine failure, and be designed to prevent the rear wheel from locking up if the engine stops turning unexpectedly. Approved products include slipper clutches or anti-stalling centripetal mechanisms from OEM or aftermarket manufacturers such as Rekluse, Hinson, STM and others. All decoupling clutch assemblies must be pre-approved by AMA Pro Racing prior to use in competition.
- o. Transmissions and Primary Drive
 - i. Motorcycles must be driven by rear-wheel-transmitted power only.
 - ii. Primary drive method must remain the same as the homologated model.
 - iii. The primary drive must be completely enclosed by a cover or guard.
 - iv. The maximum number of speeds in the gearbox is six.
 - v. Number of transmission gears must be the same as the homologated model

6.3 Engine Control System/Electronics/Traction Control

- a. The Engine Control Unit (ECU) that comes on the homologated motorcycle or engine may be used. The use of non-standard/aftermarket ECUs must be approved in writing by AMA Pro Racing. Approved non-standard/aftermarket ECUs will be listed on the Approved Engine Controller List on the AMA Pro Racing website.
- b. Only OEM engine sensors may be used to provide input to the ECU unless otherwise specified.
- c. The software in ECUs may only be modified to affect spark and fuel table control, as well as data logging.
- d. AMA Pro Racing reserves the right to download and inspect ECU information from any competitor at any time. Teams are required to provide any and all available download cables and operating software upon request.
- e. Wheel speed sensors, countershaft speed sensors, transmission speed sensors or any other type of speed sensor that transmits information to the ECU is expressly forbidden.

6.4 Carburetors and Fuel Injection

- a. Fuel injection is permitted only if it is standard equipment on the homologated model.
- b. It is permissible to replace fuel injection with a carburetor.
- c. There are no restrictions on carburetor or throttle body bore size.
- d. Although the throttle body bore size may be changed, the casting must remain as homologated.
- e. Boring the stock throttle body is allowed however it MAY NOT be bored to the extent that the stock casting is breeched or eliminated.
- f. Welding, epoxy or other methods MAY NOT be used to increase the bore diameter above and beyond what the stock casting will facilitate. The final decision will be made by AMA Pro Racing technical staff at the event.
- g. The original throttle body may be replaced with any other homologated throttle body. See above for applicable over boring allowances.
- h. If fuel injection is utilized, secondary butterflies must be removed.
- i. Any type of electronic throttle control or "fly-by-wire," OEM or aftermarket, is prohibited. The rider must have direct mechanical connection with the induction components.

6.5 Exhaust System

- a. Exhaust pipes and mufflers must be used and be securely attached together and bolted to the frame. Mufflers must have sound absorption mechanisms or packed baffling.
- b. The discharge end of the exhaust pipe may not extend beyond the rear edge of the rear tire. For safety reasons, the exposed edge(s) of the exhaust pipe outlet(s) must be rounded to eliminate any sharp edges.
- c. The inside of the exhaust discharge end must be a maximum of five inches from the outside edge of the tire or frame in order to prevent another rider's wheel or leg from becoming trapped.

6.6 Frame and Swingarm

- a. Frame
 - i. Cracked or broken frames are not permitted.
 - ii. All stands must be removed.
 - iii. The main frame must be the same as an originally homologated model of the same manufacturer. All motorcycles must have a unique 17-digit Vehicle Identification Number (VIN) that was assigned to it in production. It must be displayed in a legible fashion. If a frame is destroyed, the replacement frame must carry the original VIN in its entirety.
 - iv. OEM aluminum frames and swing arms are permitted if equipped on the originally homologated model.

- v. Strengthening gussets or tubes may be added, but none may be removed.
 - vi. Accessory brackets (for radiator, coil, shock reservoir, etc.) may be changed, relocated or removed, however the radiator must remain in the same location as homologated model.
 - vii. Fork stops must be installed of sufficient size and strength to prevent fork tubes or other components from contacting the fuel tank in a crash.
 - viii. Engine mount location, steering head, swingarm pivot point and rear suspension linkage point must be used in the same fashion as the homologated model.
 - ix. Subframes may be replaced with aftermarket units of steel or aluminum provided that they are similar in design to the production part and utilize original mounting points.
- b. Swingarm
- i. Swingarm must be the same as an originally homologated model of the same manufacturer.
 - ii. Strengthening gussets or tubes may be added, but none may be removed.
 - iii. Chain guides may be removed or relocated.
 - iv. Modifications are permitted for aftermarket brake components, spacers and axle adjusters.
 - v. Modifications are not allowed to alter the fore and aft axle adjustment dimensions.
 - vi. Aftermarket linkage system and linkage arm may be replaced, provided pivot and linkage locations from the homologated model are retained.

6.7 Forks and Shocks

- a. Any homologated inner and outer fork tubes and axle lugs may be used. Modifications are permitted. All other fork parts may be replaced.
- b. A steering damper may be installed; however, it may not be used as a steering lock limiting device.
- c. Rear suspension unit can be changed but a similar unit must be used (i.e. dual or single shock).
- d. The original attachments to the frame and swingarm must be used for the rear suspension linkage.

6.8 Brakes

- a. Aluminum or titanium rear brake discs are prohibited.
- b. In Mile, Half Mile, and Short Track races, all motorcycles must be equipped with adequate and operating rear wheel brakes. Operating front wheel brakes are not allowed.
- c. In TT races, all motorcycles must be equipped with adequate and operating front and rear wheel brakes.

- d. Foot-operated, solid, non-folding brake levers must be rubber-covered.

6.9 Wheels

- a. All Flat Track motorcycles must use 19-inch diameter wheels, front and rear.
- b. Maximum wheel rim width is 3.5 inches, as measured at the inside, bead to bead.
- c. Carbon fiber wheels are prohibited from use in AFT Singles.
- d. Wheel axles must be ferrous metal (i.e. steel) or stainless steel. Titanium or aluminum is not permitted.
- e. Maximum wheel assembly weight must not exceed 40 lbs. The wheel will be weighed as it comes off of the race track. Removal of dirt and track debris is permitted.
- f. A wheel assembly consists of a tire, a single standard inner tube, approved rim tape or tube protector (located between rim and tube), rim, spokes, hub, wheel spacers, rotor, sprocket (and associated fasteners), and whatever minimum weight is required to balance the wheel assembly. The minimum amount of balancing wheel weights must be located in a single radial position for the sole purpose of legitimate static wheel balancing. AMA Pro Racing will make the final determination if any component or affixed balancing weights meet these criteria.
- g. No ballast can be added to the wheel assembly.

6.10 Footrests

- a. Both footrests must fold backward to a 45-degree angle.
- b. The top of the right footrest may be serrated.
- c. A rubber encased foot peg must be fitted on the left side of the motorcycle.
- d. The edge of both footrests must be covered with at least 0.25-inch of rubber or soft plastic (not tape) and must present no cutting hazard.
- e. The maximum length of the footrest from the pivot point is five inches.
- f. Shift lever ends must be rubber covered.

6.11 Handlebar and Controls

- a. Cracked or broken handlebars are prohibited.
- b. Handlebars, hand controls and cables are unrestricted.
- c. Control levers must have minimum 0.25-inch diameter ball ends.
- d. Bar ends must be covered with a grip or fitted with a plug so as not to present a cutting hazard.
- e. Motorcycles must be equipped with a functional ignition cut-off switch or button, mounted on the handlebar and within reach of the rider's hand when placed on the grip. Momentary-off style switches are recommended and preferred.

- f. Throttles must be self-closing. If the original throttle bodies or carburetors came with a push/pull dual cable arrangement, it must be utilized.

6.12 Fuel Tanks

- a. Replacement tanks may be utilized in place of originals provided their weight and capacity are no less than the approved production tanks they replace.
- b. The same size fuel tank used on a motorcycle in qualifying must be retained for the entire event.
- c. Fuel tank vent lines must have a device which prevents the escape of gasoline, i.e. a one-way valve.
- d. On carbureted machines, fuel shut off valves must be installed between the tank and carbs.
- e. Tip over switches are highly recommended on fuel injected machines.
- f. Shut-off valves are required on all fuel lines coming from the fuel tank, except for fuel-injected models not originally equipped with shut-off valves.

6.13 Items That May Be Replaced

- a. Wheels.
- b. Brake disc/rotors.
- c. Steering head races and bearings.
- d. Brake Calipers.
- e. Triple Clamps.
- f. Seat base and foam.
- g. Radiator shrouds, side panels and rear fender with stock appearing replacements.