

2022 RULEBOOK



Rules as of 5/1/2022

PRO STREET

CLASS DESCRIPTION: This class contests the ultimate in street-legal motorcycles. Created to legitimize illicit street racing, Pro Street is reserved for stock-appearing motorcycles with engine modifications. All bikes must be street legal and be powered by self-starting motorcycle engines.

DESIGNATION: The class designation is PST. All entrants must display this designation on both sides of their motorcycle by their bike number.

FORMAT: This is a 1/4 mile heads-up class run on a .400 pro tree. The class will qualify a 16-bike field and place them on a pro ladder. There will also be a "B Class" for riders that qualified 17th – 32nd and they will be placed on a separate pro ladder. No alternates will be used in either class if a rider is broken. The B class must have at least four bikes.

CHANGING BIKES: A racer can change his or her bike in qualifying if there is still another qualifying session for the class, however all previous qualifying data will be erased and the racer must re-qualify the new bike (You still need to notify the tower to change). The bike and rider that runs first round is the one that must be used for the remainder of eliminations, even if the class is completed on another weekend due to weather.

POINTS: This class will be a points class at all NHDRO events.

BIG-BORE BIKES: Production big-bore bikes are permitted a single power adder.

LITER-CLASS BIKES: Production liter-class bikes are permitted a single power adder. Only the latest lightweight, high-tech import offerings, with a maximum production size of 1000cc, will be permitted to race under this designation, and each model must be approved for use by NHDRO, XDA & MANCUP. Currently, the following 2001 or newer models are approved for use under the liter-class designation:

BMW:	S1000RR
HONDA:	CBR929RR, CBR954RR, and CBR1000RR
KAWASAKI:	ZX-9 and ZX-10
SUZUKI:	GSXR1000
YAMAHA:	YZF-R1

ENGINE: Only production-based motorcycle engines are permitted, and must utilize factory cases and cylinder heads, unless otherwise noted, Entrants running nitrous oxide are permitted to run aftermarket cylinder heads. Entrants running GS/KZ engine platform are permitted to run aftermarket cases. Aftermarket cylinder blocks are permitted. Any internal modifications are permitted. Nitrous oxide may not be used in conjunction with any turbocharged or supercharged entrants. Air or electric shifters permitted.

INTEGRAL ENGINE CASES: Big-bore bikes with 1-piece top case/cylinder block designs.

Combination	Max Displacement
Turbocharged – Big Bore	Up to 1370cc with no weight penalty. See chart at bottom of rulebook on weight penalty for 1371cc – 1451 max engine.
Supercharged – Big Bore	Up to 1450cc with no weight penalty. See chart at bottom of rulebook on weight penalty for 1452cc – 1660cc max engine.
Nitrous Injected – Big Bore (Roller Bearing)	1660cc max
Nitrous – Big Bore (Plain Bearing)	Unlimited
Turbocharged – Original Liter	Up to 1000cc with no penalty. See chart at bottom of rulebook for wheelbase penalties for 1001cc – 1125cc max engines.
Supercharged – Original Liter	Up to 1000cc with no penalty. See chart at bottom of rulebook for wheelbase penalties for 1001cc – 1125cc max engines.
Nitrous Injected – Original Liter	Unlimited

NITROUS OXIDE: Entrants running under the Nitrous injected category may use any style nitrous system with any number of solenoids or nozzles.

SUPERCHARGERS: Entrants are limited to a single centrifugal-style supercharger with a maximum inlet opening of 72.0mm. Wheel design limitations and measurement methods are identical to turbocharger rules. Any team desiring to compete with a supercharger of a design other than centrifugal (i.e., roots, screw, vane, etc.) must consult with the NHDRO, XDA & MANCUP technical department to determine appropriate rules and limitations at least 30 days prior to entering any NHDRO, XDA & MANCUP event.



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TURBOCHARGERS: Entrants are limited to one turbo with a maximum turbo inlet opening of 62.5mm. See chart at bottom of rulebook for turbo size restrictions for each combo. NHDRO, XDA & MANCUP defines maximum turbo size as the maximum allowable diameter of the inlet housing at the point where the leading edge of the compressor wheel meets the inlet housing. All air entering the turbo must pass through this opening. No stepped inducer wheels permitted, the contour from the inducer to the exducer must be continuous without steps. The leading edge of inducer wheel may not exceed 62.5mm, and must fit inside the 62.5mm area of the inlet housing. The use of restrictor plates or stepped inlet housings in an effort to limit compressors with inducers larger than 62.5mm is not acceptable.

INLET COOLING: Any type of inter-cooling permissible. Nitrous may not be used as a cryogenic cooling source.

INTERCOOLER MOUNTING: Any part of the turbo, supercharger or induction system may be mounted within the original bodywork/frame envelope in any available location. Components mounted outside of the bodywork are limited to an area no higher than 24 inches above the ground, 18 inches to either side of the bike centerline, and no more than 3 inches forward of the front axle. Only air-to-air intercooler components may be mounted outside of the bodywork. No tanks, pumps or heat exchangers part of a liquid-to-air intercooler may be mounted outside of the bodywork envelope. No tanks or heat exchangers part of a cryogenic system may be mounted outside of the bodywork envelope, with the exception of spray bars, hoses, and solenoids as part of an unsealed cryogenic spray bar mounted to an air-to-air intercooler. No ballast may be mounted to any part of the turbo, supercharger or induction system outside of the bodywork envelope. The use of "heavy" parts in the design of induction, supercharger or turbo system components mounted outside of the bodywork is prohibited. NHDRO, XDA & MANCUP tech has final determination on the legality of the design of any externally mounted components which could potentially be deemed "heavy" parts, and pre-approval of the design is highly recommended. Any design must allow the required access to both sides of the front axle for wheelbase measurements (see WHEELBASE MEASUREMENTS).

WATER INJECTION: Entrants utilizing water injection must have the tank mounted in a manner to allow tech to easily inspect its contents. Water or any legal fuel is permitted in tank and cannot be mixed.

CLUTCH ENGAGEMENT: The process of clutch engagement is defined as the act of moving the pressure plate from the fully disengaged, 100% slip (i.e. pressure plate out preventing clutch friction from occurring) position to the fully engaged (no disengagement force, pressure plate is fully sandwiching clutch stack) position. Clutch engagement should not be confused with clutch lockup assistance, which is the act of increasing the clutch clamping force after the clutch is fully engaged.

TURBOCHARGED & NON-SLIDER SUPERCHARGED BIKES: The act of clutch engagement and disengagement must be fully controlled by the clutch lever. No source of input other than the rider actuating the clutch lever may be used to control clutch engagement or disengagement. The use of any electronic, pneumatic, or hydraulic device to assist, limit, delay, or otherwise control the act of clutch engagement is prohibited. Air-assisted clutches may in no manner be used to reduce clutch clamping force below that of the static springs and centrifugal lockup for a given clutch speed. Under any and all conditions, when air pressure is applied to an air-assisted clutch, it must result in an increase in clutch lockup force. Any system that has the potential to reduce clutch force via an increase in air pressure is prohibited.

CLUTCH: All clutch systems must be approved by NHDRO, XDA & MANCUP for use in this class. Each interested manufacturer or team must submit sample parts for approval a minimum of 60-days prior to any event in which it desires approval eligibility. No pneumatic, electric, or hydraulic clutch engagement, release or activation systems are permitted. The use of any electric, or hydraulic force generation systems to assist or adjust clutch slippage or lockup is not allowed. Only pneumatic pressure or centrifugal force may be utilized to generate a force to assist in clutch lockup.

TURBOCHARGED BIKES: Slider clutches prohibited. Pneumatic lockup assist clutches are permitted. Clutch engagement and disengagement must be controlled by conventional cable or hydraulic-actuated clutch lever. With the engine off and the bike in gear, the clutch must have sufficient engagement force to prevent the bike from being rolled without either sliding the rear tire or rotating the engine. With the brakes locked or the bike otherwise blocked from rolling, the clutch system must have sufficient engagement force at idle to kill the engine if the clutch lever is released. Idle may be set between 1500-2000rpm for this test. Air-assisted clutches must perform this test with the air feed disconnected from the clutch system. A convenient disconnect point should be designed into the system to facilitate this test. The use of ECU mapping or electrical system functions to simulate the positive results of this test is not allowed, engine kill must be as a direct result of clutch engagement drag.



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NITROUS INJECTED BIKES: Any approved clutch system permitted. Slider clutches are permitted. Pneumatic lockups assist clutches are permitted.

SUPERCHARGED BIKES: Any approved clutch system permitted. Slider clutches are permitted.

TRANSMISSIONS: All entrants must utilize an OEM-style shift drum and transmission. Transmission must be installed in the original location engine cases.

AUTOMATIC TRANSMISSIONS: An automatic transmission is defined as any transmission designed in a manner that could allow override-style shifting. A transmission is considered to be an auto transmission if it utilizes any components designed to allow the transmission to be simultaneously engaged in more than one gear. This includes, but not exclusive to, windowed shift drums, split forks, split gears, split fork slider rings, gear or fork detent springs, etc.

1-2 AUTO: Bikes utilizing a 1-2 auto may utilize auto transmission components that allow override shifting from 1st gear to 2nd gear only. Check tables at bottom for weight penalties, and to see if your combo is permitted to run this auto transmission.

1-2-3 AUTO: Bikes utilizing a 1-2-3 auto may utilize auto transmission components that allow override shifting from 1st gear to 2nd gear, and from 2nd gear to 3rd gear. Check tables at bottom for weight penalties, and to see if your combo is permitted to run this auto transmission.

1-4 AUTO: Bikes utilizing a 1-2-3-4 auto may utilize auto transmission components that allow override shifting from 1st gear to 2nd gear, from 2nd gear to 3rd gear, and from 3rd gear to 4th gear. Check tables at bottom for weight penalties, and to see if your combo is permitted to run this auto transmission.

FULL AUTO: Bikes utilizing a full auto may utilize auto transmission components that allow override shifting in any or all gear change positions. Check tables at bottom for weight penalties, and to see if your combo is permitted to run this auto transmission.

TRIPLE CLAMPS: The steering stem offset on top and bottom triple clamps must be equal. Front axle offset may not be less than 1/2-inches. The use of triple clamps, steering stems, stem bearings, offset bearing races, or any other components designed to increase or decrease the rake is prohibited. Axle must be in the center of the forks. Triple clamps can be made of a material other than aluminum only after NHDRO, XDA & MANCUP approval of concept. Bottom of lower triple tree cannot be higher (must be flush or lower) than webbing of lower steering neck.

FRAME: Stock OEM frames required **on all boosted bikes and nitrous roller bearing bikes**. No modifications to any portion of frame permitted, unless specifically noted. Allowable Modifications Below:

ALL BIKES: Frames may be polished, chromed, painted, powder coated, or otherwise cosmetically altered, as long as such modifications do not remove substantial material or weaken the frame. No braces, gussets, or crossbars may be removed, unless specifically listed. Additional braces, gussets, or crossbars may be added, as long as they do not weaken the frame in any manner.

Small accessory brackets, tabs, mounts, etc., using fasteners no larger than 5/16" (8mm) may be removed, relocated, or modified. New accessory mounts may be installed, and new mounting holes may be drilled into the frame, as long as the hole size does not exceed 5/16" (8mm). An excessive number of mounting holes will be considered lightening of the frame, and is not permitted. Exhaust mounting brackets, center-stand, and side-stand brackets, regardless of fastener size, may be removed as long as doing so does not weaken the frame.

On turbocharged and supercharged entrants, steering heads must remain stock, with the exception of the lower steering stem bearing race area. The bottom of the steering head may be re-machined or removed and replaced in order to increase the clearance between the front tire and the bottom triple clamp, a technique commonly referred to as "short necking". If short necking has been performed, the new bearing race cup must be dimensioned to fit the factory bearing race and may not be located more than 1.00 inches above the original bottom webbing of the steering neck. Aftermarket steering stem bearing sets are allowed but must be a dimensional replacement for the OEM bearing being replace. Aftermarket stem bearings of either ball or roller design are allowed. The replaced or modified bearing race cup must be located along the same axis as the original location, i.e., the rake of the steering stem may not be altered during this modification. No other material beyond that reasonably necessary to perform the short-neck modification may be removed from the steering neck casting, with the exception of removal or modification of the steering stops and/or the headlight/fairing mount. For non-turbocharged entrants, frames may be altered in order to increase the rake. No de-raking of frames will be permitted. Location of bottom triple clamp must be in the same general location as the legal modifications permitted for turbocharged entrants.



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Seat rails/sub-frames may be modified or relocated. Mounting tabs or brackets for these items may be modified or relocated as well.

Rear suspension mounts including shock mount and rising rate linkage mounts may be relocated. However, due to the extreme loads and potential safety issues, modifications to these components will be heavily scrutinized.

On turbocharged entrants, swingarm pivot mounts may not be modified. Swingarm pivot centerline cannot be moved in any manner, including offset bushings, plates, etc. Proper design, welding, and bracing are crucial in these areas. Non-turbocharged entrants are permitted to relocate the swingarm pivot axle up to 2" from its factory location. Engine mounting tabs and brackets may not be modified. Bolt-on engine mounts may be replaced, but must maintain the same mounting dimensions as the factory mounts. Engine relocation in any manner is not permitted.

HONDA BLACKBIRD: The round tubular cross-brace, located directly behind the steering stem, may be removed. Upper rear sub-frame mount may be removed. It may be cut off flush with the top of the factory frame spar, but no farther.

KAWASAKI ZX-12, ZX-14: Airbox inlets may be welded shut, or modified for better sealing with turbo dump pipe, as long as these openings are not enlarged. Access panels for throttle body/airbox connectors may be modified, as well as the mounting area for the connectors. These modifications may not weaken the frame. Opening for turbo pop-off valve may be cut in airbox area of frame as needed, as well as mounts or bungs for air sensors.

SUZUKI GSXR (EARLY MODELS): 1986-1987 750 and 1986-1988 1100 models may remove the square tubular cross-brace located generally above the carburetors.

Late-model liquid-cooled models, factory-equipped with engine mounts connecting between the cylinder head and the upper frame spar, are not required to use these mounts. The mounting tabs for these mounts may be removed from the frame.

SUZUKI HAYABUSA: The round tubular cross-brace, located directly behind the steering stem, may be removed. Upper rear sub-frame mount may be removed and may be cut to lower than 1.5" below the original top surface of the OEM-cast fuel tank mounting flange.

SUZUKI GS & KAWASAKI KZ/Z1: Frames may be modified for a backbone fuel cell. **Drive side frame rails may be replaced/modified for chain clearance.**

NITROUS PLAIN BEARING BIKES: May run one of the following NHDRO approved aftermarket frames.

WHEELIE BARS: Wheelie bars are prohibited.

SEAT: All bikes are subject to a minimum seat height as listed in table at bottom of the rulebook. Seat height measurements will be taken at the lowest point of the seating area, with the rider sitting on the bike, and with any seat padding compressed. Seating areas will include any portion of the bike bodywork, gas tank/shell, frame/subframe, or any other components where it is reasonably likely that the rider may use as is as a seating area during the operation of the motorcycle.

Construction: Seats must be flat or slightly convexly curved, and this flat/convex area must maintain a minimum width of 6 inches along its entire length. Any attempt to utilize bumps, humps, ridges, excessively curved surfaces, concave surfaces, or deflectable or moveable panels/structures to circumvent seat height requirements will be grounds for disqualification. Tech has final determination and judgement on such rulings.

Padding: Seat padding, grip tape, etc may be applied, but may not exceed 1/4" in thickness. When tech performs seat height measurements, any padding will be fully compressed, therefore builders should take this into account when setting seat height.

TIRES: DOT-approved motorcycle street tires only. Slicks are prohibited.

FUEL: Any type fuel is permitted for all combos but cannot exceed .799 specific gravity.





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BODY: All main body parts including upper fairing, side fairings, fuel tank, and tail section must have stock appearance and shape (i.e., no one piece bodies or tank shell, unless originally equipped). Front fenders are required and must be manufactured of plastic, fiberglass, or carbon composite. All bodywork must match the type of frame being used (i.e., you cannot put GSXR bodywork on a GS frame, or ZX-14 bodywork on a ZX-10). Bodywork may be updated or backdated to later or earlier model bodywork if it is on the same model bike. Tail section or rear fender must extend past the rear axle. Replacement parts are permitted, but must retain the shape of the stock parts they replace. Altering of stock body shapes must be approved by NHDRO, XDA & MANCUP. To allow access to nitrous bottles, all nitrous bikes must have thumb (butterfly) body fasteners on any aftermarket body pieces that cover bottle to allow removal of panel or section by hand without the use of tools.

FUEL TANKS: Entrants using an aftermarket tank are required to run either a functioning fuel tank from the approved list, or a tank shell version of a tank from the approved list. Modifications to the aftermarket tank/shell are permitted in order to achieve minimum seat height requirement. Aftermarket fuel tanks and tank shells are limited to NHDRO, XDA & MANCUP approved manufacturers and part numbers only. In order for a tank to be legal, it must be commercially available, at a fair market price, to anyone desiring to purchase one. Manufacturer or distributor must be able to maintain availability at all times, and must be able to make delivery within 30 days of order. Manufacturer or distributor has the right to demand full pre-payment, including any shipping charges, before considering an order to be completed. Companies desiring to produce production tanks for this application may submit tank designs for approval. For further questions or inquiries, contact NHDRO, XDA & MANCUP technical department.

NON-FUNCTIONING TANK SHELLS: Fuel cells may be mounted anywhere on the motorcycle within the bodywork.

DUAL FUEL TANKS: Any bikes using both methanol and gasoline, as fuels must maintain fuels in separate containment systems in order to allow fuel inspections.

CURRENT APPROVED AFTERMARKET TANKS (For Boosted Bikes):

Manufacturer	Model Bike	Part Number
Catalyst Racing Composites	Hayabusa	BUSOTK99, BUPSTK99, BUPS2TK99, BUPS3TK08, BUPS4TK08, VELOCITYTANK06, VELOCITYTANK08, BUPS4-SC, BULTK01, BUG2TK99
Montgomery Motorsports	Hayabusa	BUSA-GEN2-PROSTREETCOMPLETE
Del's Performance Cycles	Hayabusa	DPCBUSTSHELL
TM Motorsports	Hayabusa	TM13PSTK
MBF Motorsports	Hayabusa	Busa-pst99-21
Catalyst Racing Composites	GSXR 1000	GSXR1LTK05, GSXR1SOTK05, GSXR1LTK07, GSXR1GTT07, GSXR1SOTT05
Catalyst Racing Composites	GSXR 1100	GSXR11LTK89
Montgomery Motorsports	GSXR 1100	GSXR 1000 05-06 PROSTREETCOMPLETE
Catalyst Racing Composites	ZX-14	ZX14PSTK06, ZX14SOTK06
Catalyst Racing Composites	ZX-12	ZX12PSTK02
Catalyst Racing Composites	ZX-10	ZX10LTK04, ZX10GTK04
Air-Tech Streamlining	CBR 1100XX	CBRXX10S2
Air-Tech Streamlining	CBR 1000 RR	2CBR17M
Catalyst Racing Composites	BMW S1000RR	#S1RRLTK10
Montgomery Motorsports	GS 1100	GS1100 PROSTREETCOMPLETE

CURRENT APPROVED AFTERMARKET TANKS (For Nitrous Bikes):

Manufacturer	Model Bike	Part Number
Any	Any	Any commercially available tank shell

FRONT FAIRING: No portion of the front fairing or headlight may be mounted farther forward than 3 inches past the forward most part of the front tire. Access to the front axle for wheelbase measurements must be maintained (see WHEELBASE MEASUREMENTS).





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AFTERMARKET FAIRINGS: Due to potential rider safety hazards created by high terminal speeds, bikes originally produced with no front fairing or windscreens are allowed the use of aftermarket fairings, screens, and/or wind deflectors. Components should be of a professional design and implementation, and they should be of a size and style appropriate for the particular motorcycle. All designs must be pre-approved by NHDRO, XDA & MANCUP. The NHDRO, XDA & MANCUP technical staff has final decision on what is deemed a safe and appropriate design.

TAIL SECTIONS: Seat location will be determined by a minimum distance of 29.5-inches measured from the centerline of the steering stem to the back of the seat, including padding, at the bottom most point measured at a 90 degree angle to the ground. Approval of all parts will be limited to 30-days prior to an event. Photos of parts installed on the exact bike must be submitted for approval.

STARTING SYSTEMS: All engines must be self-starting and utilize OEM-style starting systems. No push or roller starts. All systems must be on-board, no external devices may be used to assist the batteries or starter systems.

BOOSTED BIKES: All engines must be self-starting and utilize OEM-style starting systems. No push or roller starts. All systems must be on-board, no external devices may be used to assist the batteries or starter systems.

NITROUS BIKES: Any style starter system is permitted (self-starting, battery assist or starter cart). No push or roller starts.

LAUNCH CONTROL: The use of 2-steps and other launch control devices are legal for all entrants, as long as such devices do not violate any other equipment rules.

ENGINE MANAGEMENT SYSTEMS: Engine management systems (EMS), also known as Engine Control Units (ECU) may be either factory or aftermarket units. Factory ECUs may be swapped from other makes or models of bikes.

TECH INSPECTION: NHDRO, XDA & MANCUP tech may, at any time, on any motorcycle in competition, examine the maps, settings, data downloads, or any function of any factory or aftermarket EMS, piggyback or inline fuel injection controller, ignition system, data acquisition system, or any other electronic device on the motorcycle. Tech officials may conduct this examination in any manner, including performing the examination with a team representative as an observer only. It is the responsibility of the competitor to have ready, at all times, the required components to submit to this examination. This can include a laptop or PC, software, passwords, download cables, etc. It is also necessary that the competitor, or someone within the competitor's team, is knowledgeable in the system being used, and is capable of assisting tech officials in navigating through any and all portions of the software. NHDRO, XDA & MANCUP tech may also impound any component of an ECU or data recording system for further examination either on-site or off-site. Refusal to submit to any examination or failure to supply the required components for examination is grounds for disqualification and/or suspension.

DATA ACQUISITION: Any sensors, including infrared or ultrasonic, that measure the track Christmas tree or timing system are permitted. Third wheel sensors, which is the use of any wheel or rolling device other than the normal front steering or rear drive wheel/tire or transmission shaft to measure speed, distance, or track position, is prohibited.

RIDE HEIGHT SENSORS: Ride height sensors are defined as any device capable of measuring the distance between any fixed point on the motorcycle and the track surface. Ride height sensors may be mounted on any component of the front suspension.

ELECTRICAL: Headlight and taillight ~~with brake light~~, and kill switch required. Headlight and taillight must be retained in stock locations. ~~Turn indicators optional~~. Headlight and taillight are required to be on during all qualifying and eliminations runs. In the event of failure of the lighting system, the tech department will allow repairs to be made prior to the next round of competition. This courtesy repair opportunity is only allowed once per event. Failure by the rider or crew member to activate the lighting system is considered to be a system failure. Any failure for the second time in the same event will result in an automatic disqualification.

HEADLIGHTS (For Boosted Bikes): Factory headlight systems matching the bike model must be used. All of the original factory glass or plastic lenses must be used, may not be painted or wrapped (reasonably transparent tinting permitted) and must be mounted in the original location in the front fairing (or headlight bucket on non-faired bikes). Non-fairing bikes must have the headlight bucket mounted in factory location. All components which are part of the original beam generating and reflecting system, and are visible from the outside of the bodywork, must be retained, and may





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not be modified in any manner visible from the outside. These components include reflectors, secondary lenses, diffusers, bulb sockets, and bulbs. All such components of both the low-beam and high-beam systems must be retained, even if that system is not in use. Required components may be mounted in any suitable manner. Any modification of the mounts, housing, or non-visible areas of the lenses, reflectors, and other required components is permitted. However, lighting system must be enclosed to prevent the escape of light from behind the fairing or bucket. At least one bulb from either the low-beam or high-beam system must be on during competition. Unused bulbs do not need to be electrically functional, and a high/low switching system is not required.

HEADLIGHTS (For Nitrous Bikes): A headlight decal may be used instead of a factory headlight. Decal must be the exact dimensions of the factory headlight for model bike. Decal must be visually look like a headlight. You must also have some type of bulb or even a single LED light that protrudes through the front of the headlight decal that is on during competition.

TAILLIGHTS: All entrants must have a functioning taillight system, with operational taillights. Factory taillights are highly recommended. Non-factory taillights may emit any color light and must be sufficiently bright to be reasonably visible.

BALLAST: Ballast is defined as any component attached to any part of the motorcycle, whose purpose is to add weight to the motorcycle. Any component, regardless of weight, which serves a structural, mechanical and/or performance enhancing function, is not considered to be ballast. (i.e., as a general reference, if the component in question can be removed without affecting any functions of the motorcycle, or decreasing structural integrity of the motorcycle, it is considered ballast). NHDRO, XDA & MANCUP does, however, reserve the right to deem any non-ballast component to be illegal, if its excessive weight or design creates a safety hazard, or if its construction or implementation is of an unprofessional appearance. Ballast may not be mounted to any bodywork or other plastic or composite components, nor may it be mounted to any part of the riders' body or equipment. Liquid or loose ballast (i.e., water, sand, rock, shot bags, etc.) is prohibited.

BALLAST MOUNTING: Ballast may be mounted to any portion of the frame, swingarm, seat mounts, rear sub-frame, fairing brackets, or any suitable structural component with sufficient strength to safely support the weight of the ballast during the run. Ballast mounting must be sufficiently strong to support the weight of the ballast, as determined by the tech director. All ballast must be mounted within the outer dimensions of the frame, rear sub-frame, swingarm, or bodywork. Ballast may not be mounted to any spring-mounted exhaust system components. If any exhaust or turbo system components are utilized to mount ballast, these components must have additional braces or struts to reduce the load on the exhaust or turbo system components. These supports must connect the ballast and/or exhaust/turbo components to rigid point(s) on an engine or chassis component, and the supports, mounts, and rigid mounting points must be of sufficient strength to support the ballast/exhaust/turbo assembly weight in race conditions.

CAPTURED BALLAST: Captured ballast is any material or component captured or contained within or around another component without the use of mounting fasteners. This form of attachment is still considered to be "mounted". This would include pourable ballast, such as epoxy or melted lead, inside of a tube or cavity. It would also include, but not be limited to, other ballast material contained within welded, clamped, or mechanically fastened components such as inside welded frame or swingarm components, inside a fork assembly, or press-fit into a fork slider tube.

FRONT SUSPENSION BALLAST: No ballast may be mounted to any portion of the front suspension, brake system, fender system, or rotating assembly. Unless specified otherwise, no parts of the front suspension, brake system, or fender system may be remanufactured from exotic heavy materials, including tungsten steel, HD-17, or Mallory metal [see EXOTIC HEAVY MATERIALS]. Front suspension components other than the fork leg assemblies, front axle assemblies, and front wheel assembly (this includes triple clamps, clip-on's, fender mounts, brake calipers and hangers, etc.) may be remanufactured from any legal materials, but must be constructed to dimensions reasonable for the application, with hardware reasonably-sized for the application. Whenever possible, OEM components will be used as a reference when determining what are appropriate sizes and dimensions. Lightening holes, gun-drilling, and other weight-saving techniques utilized on the OEM components may be deleted. Pre-approval of custom or aftermarket components is highly recommended. The tech staff has final decision on all front suspension component matters, and will be closely monitoring the use of these components.

EXOTIC HEAVY MATERIALS: NHDRO, XDA & MANCUP defines an exotic heavy material as any material with a density higher than 8.1 grams per cubic centimeter. With the exception of components considered to be part of the fork, axle, or front wheel assemblies, no front end components may be manufactured from an exotic material.





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WHEELS: Wheels 7.00 inches wide or wider must have bead-locks. Bead-lock highly recommended on all rear wheels. 16-inch minimum diameter front wheels are permitted.

MAXIMUM FRONT WHEEL WEIGHT: Front wheel and brake rotor components may be manufactured from any material. Total weight of front wheel rotating assembly, including tire, rotor, bearings, etc. cannot exceed 29 lbs. Inner bearing spacers and any axle spacers not removable without the use of tools are included in the wheel weight. Any bearing or axle spacers removable by hand will be included in the front axle weight [see FRONT AXLES]. No aftermarket or remanufactured components of the bearing or axle spacer assembly outside of the wheel may be larger than 1.5" in diameter. Bearing spacers contained completely within the wheel and retained by the wheel bearings may be of any dimension. Unmodified OEM parts larger than 1.50" are acceptable.

FRONT AXLES: Front axle assemblies may be remanufactured or replaced with aftermarket components. Any aftermarket axle must have a dimple or hole in the center of the axle on each side to aid in wheelbase measurements (see WHEELBASE MEASUREMENTS). No part of the axle or nut may protrude more than .75" beyond the outside of the fork legs. No remanufactured or replacement part of the axle, axle nut, or external bearing spacers may exceed 1.50" in diameter. Unmodified OEM parts larger than 1.50" are acceptable. If lead or other materials are used to ballast the front axle assembly, all ballast material must be captured inside a hollow axle tube, and the ballast material must be positively retained by welded or threaded caps, or by some other positive mechanical retention system. The total weight of the front axle assembly, including spacers, nuts, washers, etc. may not exceed 4 lbs total weight. This weight shall include all OEM and non-OEM parts.

FRONT SUSPENSION: Rigid forks prohibited. Hydraulic-dampened tube type only, with a minimum tube diameter of 34mm. Front suspension must have sufficient hydraulic damping to allow safe operation. Modifications to existing OEM or aftermarket forks which completely remove or otherwise defeat the function of the damping systems is not acceptable. The design of custom forks must include sufficient damping for the safe operation of the motorcycle under race conditions. A minimum of 1" travel in the front forks is recommended, with sufficient clearance around the fender, fairing, headlight, exhaust, etc. to allow the forks, fender, and wheel/brake assembly to safely move across the full range of fork travel at any steering angle. No more than 1.5" of upper tube (2" on inverted forks) may be exposed above top triple clamp or clip-on, whichever is higher.

FRONT STRAPS: Front straps or travel limiters of nylon, cable, or any other flexible material designed to limit fork extension are not allowed.

MAXIMUM FORK WEIGHT: Fork components may be manufactured of any materials. Fork weight includes all internal and external components of the fork, including the fork oil. Weight does not include axles, axle spacers or hardware, brakes, brake brackets or hardware, fenders, fender mounts or hardware, or any other components mounted external of the fork. Applicable fork weight is determined by the year model of the frame and not the year model of the forks.

Maximum Weight per Side:

1999 & Newer Models:	9.0 lbs
1998 & Older Models:	12.50 lbs

REAR SUSPENSION: On turbocharged and supercharged bikes, the use of any active suspension components is prohibited. Active suspension components include, but are not limited to, electronic, pneumatic, or air-operated shocks, forks, springs, dampers, or ride height adjustments.

BRAKES: Operational front and rear brakes are mandatory and must be in safe operating condition. Brake lines must be OEM type or braided steel hose or stainless steel line. Braided steel hose is highly recommended. Brake lines are to be routed and mounted properly to insure no contact with moving parts. Carbon fiber brake pads or disks are prohibited. Braking forces must be generated and controlled solely by the rider. The use of any electrical or mechanical device to apply braking force at any point during the run is prohibited.

ABS BRAKES: ABS systems must be removed from motorcycles OEM-equipped with such systems.

WHEELBASE MEASUREMENTS: In order to aid in performing wheelbase measurements, all entrants must have axles with either dimples or holes located in the center of the axles. These holes or dimples must be at least ¼" in diameter and at least ¼" deep, and must be located on both sides of the front and rear axles. All components must be mounted in a fashion to allow an unobstructed access to the axles from both sides of the motorcycle. With the front wheel straight and standing from a perpendicular side view on both sides, there must be a direct line of sight to both





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axles large enough to allow a wheelbase measurement tool of up to 1.5" in diameter to access the axles. No components of the bodywork, fender, turbo, exhaust, or any other components may block this view. Fabrication and design should take into consideration these requirements.

ENGINE CONTAINMENT SYSTEM: An engine containment diaper with pigmat is not requirement.

GROUND CLEARANCE: All ground clearances are to be measured with the amount of air present in the rear tire at the conclusion of the run with rider sitting on bike, straight up perpendicular to the ground. No rider or team member is allowed to alter the pressure, measure the pressure, or otherwise make any contact with either tire valve stem until the conclusion of the post-run technical inspection. If an entrant fails the ground clearance inspection and their rear tire pressure has dropped below 8lbs they will be allowed, upon the tech director's approval, to raise the rear tire to 8lbs and reattempt the ground clearance test. See charts at bottom of rulebook for ground clearance minimums.

RIDER WEIGHT: All riders claiming a combination with rider weight requirements must weigh-in at tech inspection. Riders will only be allowed to wear one pair of underwear, one pair of shorts, one short-sleeved shirt, and one pair of socks while being weighed in (Shoes, jewelry, hats, watches, etc. must be removed, and all pockets must be empty). Riders will only be given one chance to weigh-in at tech inspection and will be required to run the wheelbase placed for that weight. Any rider caught attempting to hide ballast on their person will be disqualified from the event and will face a one-year suspension from NHDRO, XDA & MANCUP.

GENERAL SAFETY: All riders must have full leathers (zipped together leathers are recommended and may be mandatory in future). All riders must have a SNELL 10 or higher full-face helmet with shield, leathers gloves, and shoes above the ankle. All motorcycles and riders must pass NHRA safety inspection. Ballistic blankets are recommended but are not required. Tether kill switches required on all entrants. Kill switch, when activated, must disable ignition, fuel pump(s) and nitrous system solenoids.

RULE REVISIONS: NHDRO, XDA & MANCUP reserve the right to step in and adjust rules to maintain parity amongst different combination when deemed necessary. No rule will be changed solely based on one run or even one race. Instead a body of data will be collected and a thorough investigation will be conducted over a series of races among the different race organizations. NHDRO, XDA & MANCUP will make every attempt to keep each combination competitive. Any rule revisions deemed necessary by NHDRO, XDA & MANCUP would be officially posted on the NHDRO, XDA & MANCUP website a minimum of 14 days prior to the event in which they become effective (the rulebook on the NHDRO, XDA & MANCUP website on the day of the event is in full effect). Any rule revision deemed necessary for the reasons of safety may be made at any time, even after the start of an event, and may be made effective immediately.

TECHNICAL INSPECTIONS: NHDRO, XDA & MANCUP has the right to inspect any competition vehicle or competitor at any time during the event, and at any location on the track premises. For the purposes of collecting information in an effort to maintain class parity and verify the effectiveness of the current rules, these inspections may include the measurement, weight, and design of components not specifically restricted by the rule book. All efforts will be made to respect the concerns of competitors over issues of intellectual property and proprietary designs. If a competitor feels that a specific requested inspection will unduly reveal proprietary information, they may appeal to the race director. However, if the race director deems these inspections to be warranted and reasonably justified by the technical director, then the competitor must submit to the inspection or be immediately disqualified from the event.

MINIMUM WEIGHT: All weights include both the bike and rider, and will be taken at the conclusion of the run.





Turbocharged - Big Bore (with separate block/engine cases)

0-164# Minimum Rider Base Weight 650# 2.75" ground clearance 22" set height 70" wheelbase 62.5mm Max Turbo	165# Minimum Rider Base Weight 650# 2.75" ground clearance 22" set height 71" wheelbase 62.5mm Max Turbo	175# Minimum Rider Base Weight 650# 2.75" ground clearance 22" set height 72" wheelbase 62.5mm Max Turbo	185# Minimum Rider Base Weight 650# 2.75" ground clearance 22" set height 73" wheelbase 62.5mm Max Turbo	195# Minimum Rider Base Weight 650# 2.75" ground clearance 22" set height 74" wheelbase 62.5mm Max Turbo	205# Minimum Rider Base Weight 650# 2.75" ground clearance 22" set height 75" wheelbase 62.5mm Max Turbo
1371-1450cc Engine +15#	1371-1450cc Engine +15#	1371-1450cc Engine +15#	1371-1450cc Engine +15#	1371-1450cc Engine +15#	1371-1450cc Engine +15#
Intercooler permitted +0#	Intercooler permitted +0#	Intercooler permitted +0#	Intercooler permitted +0#	Intercooler permitted +0#	Intercooler permitted +0#
1-2 Auto permitted +0#	1-2 Auto permitted +0#	1-2 Auto permitted +0#	1-2 Auto permitted +0#	1-2 Auto permitted +0#	1-2 Auto permitted +0#
1-4 Auto permitted +10#	1-4 Auto permitted +0#	1-4 Auto permitted +0#	1-4 Auto permitted +0#	1-4 Auto permitted +0#	1-4 Auto permitted +0#
Full Auto permitted +20#	Full Auto permitted +10#	Full Auto permitted +0#	Full Auto permitted +0#	Full Auto permitted +0#	Full Auto permitted +0#

Turbocharged - Big Bore (with Integral engines cases, i.e., ZX-14)

0-164# Minimum Rider Base Weight 650# 2.75" ground clearance 22" seat height 74" wheelbase 62.5mm Max Turbo	165# Minimum Rider Base Weight 650# 2.75" ground clearance 22" seat height 75" wheelbase 62.5mm Max Turbo	175# Minimum Rider Base Weight 650# 2.75" ground clearance 22" seat height 76" wheelbase 62.5mm Max Turbo	185# Minimum Rider Base Weight 650# 2.75" ground clearance 22" seat height 77" wheelbase 62.5mm Max Turbo	195# Minimum Rider Base Weight 650# 2.75" ground clearance 22" seat height 78" wheelbase 62.5mm Max Turbo	205# Minimum Rider Base Weight 650# 2.75" ground clearance 22" seat height 79" wheelbase 62.5mm Max Turbo
1371-1450cc Engine +15#	1371-1450cc Engine +15#	1371-1450cc Engine +15#	1371-1450cc Engine +15#	1371-1450cc Engine +15#	1371-1450cc Engine +15#
Intercooler permitted +0#	Intercooler permitted +0#	Intercooler permitted +0#	Intercooler permitted +0#	Intercooler permitted +0#	Intercooler permitted +0#
1-2 Auto permitted +0#	1-2 Auto permitted +0#	1-2 Auto permitted +0#	1-2 Auto permitted +0#	1-2 Auto permitted +0#	1-2 Auto permitted +0#
1-4 Auto permitted +0#	1-4 Auto permitted +0#	1-4 Auto permitted +0#	1-4 Auto permitted +0#	1-4 Auto permitted +0#	1-4 Auto permitted +0#
Full Auto permitted +20#	Full Auto permitted +10#	Full Auto permitted +0#	Full Auto permitted +0#	Full Auto permitted +0#	Full Auto permitted +0#

Turbo – Liter

0-164# Minimum Rider Base Weight 575# 2.75" ground clearance 22" seat height 70" Wheelbase 62.5mm Max Turbo	165# Minimum Rider Base Weight 575# 2.75" ground clearance 22" seat height 71" Wheelbase 62.5mm Max Turbo	175# Minimum Rider Base Weight 575# 2.75" ground clearance 22" seat height 72" Wheelbase 62.5mm Max Turbo	185# Minimum Rider Base Weight 575# 2.75" ground clearance 22" seat height 73" Wheelbase 62.5mm Max Turbo	195# Minimum Rider Base Weight 575# 2.75" ground clearance 22" seat height 74" Wheelbase 62.5mm Max Turbo	205# Minimum Rider Base Weight 575# 2.75" ground clearance 22" seat height 75" Wheelbase 62.5mm Max Turbo
1001cc – 1075cc deduct .5"	1001cc – 1075cc deduct .5"	1001cc – 1075cc deduct .5"	1001cc – 1075cc deduct .5"	1001cc – 1075cc deduct .5"	1001cc – 1075cc deduct .5"
1076cc – 1125cc deduct 1"	1076cc – 1125cc deduct 1"	1076cc – 1125cc deduct 1"	1076cc – 1125cc deduct 1"	1076cc – 1125cc deduct 1"	1076cc – 1125cc deduct 1"
Intercooler permitted +0#	Intercooler permitted +0#	Intercooler permitted +0#	Intercooler permitted +0#	Intercooler permitted +0#	Intercooler permitted +0#
1-2 Auto permitted +0#	1-2 Auto permitted +0#	1-2 Auto permitted +0#	1-2 Auto permitted +0#	1-2 Auto permitted +0#	1-2 Auto permitted +0#
1-4 Auto permitted +10#	1-4 Auto permitted +0#	1-4 Auto permitted +0#	1-4 Auto permitted +0#	1-4 Auto permitted +0#	1-4 Auto permitted +0#
Full Auto permitted +20#	Full Auto permitted +10#	Full Auto permitted +0#	Full Auto permitted +0#	Full Auto permitted +0#	Full Auto permitted +0#





Supercharged - Big Bore

Any Size Rider Base Weight 650# 2" ground clearance 20" seat height 73" Wheelbase
1451-1600cc +15#
Integral Engine Cases -15#
Intercooler permitted +0#
1-2 Auto permitted +0#
1-2-3 Auto permitted +0#
Full Auto permitted +0#

Supercharged - Liter

Any Size Rider Base Weight 575# 2" ground clearance 20" seat height 75" Wheelbase
1001cc - 1075cc deduct 1"
Intercooler permitted +0#
1-2 Auto permitted +0#
1-4 Auto permitted +0#
Full Auto permitted +0#

Nitrous – Big Bore (roller bearings)

Any Size Rider Base Weight 600# 2" ground clearance 20" seat height 74" Wheelbase
Full Auto permitted +0#

Nitrous – Big Bore (plain bearings)

Any Size Rider No Minimum Weight 2" ground clearance 20" seat height No Wheelbase restrictions
Full Auto permitted +0#

Nitrous – Liter

Any Size Rider No Minimum Weight 2" ground clearance 20" seat height No Wheelbase restrictions
Full Auto permitted +0#

