



FSS

FACTORY STOCK SHOWDOWN

Designation: FSS (Factory Stock Showdown)

- Reserved for 2008 and newer:
 - Chevrolet COPO
 - Dodge Drag Pak
 - Ford Cobra Jet
- Must use factory production engine of the same make.
- Engine year is optional.
- Only eligible engines and/or bodies listed in this section are permitted in the IHRA Factory Stock Showdown.

Minimum Weight Requirements:

- Pre-2019 Chevrolet COPO and Ford Cobra Jet: 3,450 lbs
- Ford Cobra Jet with 2.3L Eaton supercharger: 3,275 lbs
- 2015 Dodge Drag Pak: 3,500 lbs
- 2021 Dodge Drag Pak: 3,525 lbs
- 2019, 2020, 2022, and 2023 Chevrolet COPO: 3,525 lbs
- 2019 Ford Cobra Jet: 3,525 lbs
- Maximum weight for all combinations: 3,600 lbs

Note: IHRA may adjust minimum weights, supercharger pulley ratios, or other factors at any time to regulate performance and maintain parity within the class.

All previously approved IHRA Factory Stock Showdown bodies are eligible to be used with the approved engine combinations listed below. Engine must be same make as body.

- 2017-2018 Camaro COPO 350 • 590 HP Supercharged 2.9L Whipple • Upper supercharger pulley (3.125) inches • Lower engine pulley (8.000) inches
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- Overdrive ratio 2.560 2019, 2020, 2022-2023 Camaro COPO 350 • 630 HP Supercharged 2.65L Magnuson • Upper supercharger pulley size: (3.625) inches • Supercharger rear jack shaft cog pulley 34 teeth • Supercharger rear cog pulley 32 teeth • Lower engine pulley (8.000) inches • Overdrive ratio 2.345
- 2015 Challenger Drag Pak 354 • 540 HP Supercharged 2.9L Whipple • Upper supercharger pulley size: (3.000) inches
- 2021 Challenger Drag Pak 354 • 630 HP Supercharged 3.0L Whipple • Upper supercharger pulley size: (3.625) inches • Lower engine pulley (8.000) inches • Overdrive ratio 2.207
- 2010 Mustang Cobra Jet 330 • 435 HP Supercharged 2.3L Eaton
- 2012 Mustang Cobra Jet 330 • 450 HP Supercharged 2.3L Eaton
- 2016 Mustang Cobra Jet 302 • 575 HP Supercharged 2.9L Whipple
- 2019 Mustang Cobra Jet 327 • 610 HP Supercharged 3.0L Whipple • Upper supercharger pulley size: (3.625) inches • Upper supercharger pulley size with iron block: (3.625) inches • Lower engine pulley 6.938 inches • Overdrive ratio aluminum block 1.914 • Overdrive ratio iron block 1.914
- 2019 Mustang Cobra Jet 351 • 570 HP Supercharged 2.9L Whipple • Upper supercharger pulley size: (3.500) inches

Air Inlet

- Optional.
- Must be OEM or retain OEM configuration if used.
- May be cut/trimmed; epoxying prohibited.
- Must be approved by IHRA Technical Services if using newer engine in older model.

Cylinder Heads

- Must have correct casting number per claimed year/engine combo and be IHRA-accepted.
- CNC porting of intake/exhaust runners and combustion chambers allowed.
- Combustion chamber shape changes prohibited.
- No welding or epoxying in intake/exhaust ports.
- Spark plug:
 - Must retain OEM location, size, and angle.
 - Adapters prohibited.
- Intake/exhaust manifold adapter plates prohibited.
- Valve guide centerlines must match OEM location.
- Valves must be original size and angle ($\pm 1^\circ$), and heads must maintain original volume per IHRA spec.
- Runner volumes must not exceed Super Stock limits.
- No external mods beyond normal repair.

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- Valve cover bolt holes must be unaltered and in original location.
- Allowed: polylocks, jam nuts, screw-in/pinned studs, bronze valve guides, head studs, valve spring umbrellas.
- Valve seats may be replaced.
- Any valve job permitted; O-ringing prohibited.

Engine

- Must be same make as car.
- IHRA-accepted aftermarket blocks allowed.
- No non-OEM equipment unless IHRA-approved.
- Engine must remain in stock location (height, setback, etc.).
- Cylinder bore limit: +.080" over stock.
- Stroke tolerance: $\pm .015"$.
- Normal balancing allowed (1 untouched piston/rod), no lightening of parts otherwise.
- Crankshaft must be OEM or IHRA-accepted aftermarket in OEM configuration.
- Crankshaft lightening beyond balance job prohibited.
- Cylinder blocks may be sleeved; O-ringing prohibited.
- SFI 18.1 harmonic balancer required.

Fan, Alternator, Water Pump

- Alternator optional and may be relocated.
- Aftermarket pulleys allowed.
- Electric fans and water pumps permitted.
- Remote water pumps allowed.
- Crankcase evacuation via smog/air pump prohibited.

Fuel Injection

- Electronic fuel injection (EFI) permitted.
- Larger injectors allowed without manifold modification.
- One injector per cylinder max.
- Must use IHRA-accepted ECU/software/firmware.
- Max rev limit: 10,200 RPM.

Fuel System

- Fuel cell (max 5 gallons) allowed, must be in trunk.
- Firewall (min .032" aluminum or .024" steel) required to separate driver and fuel cell.
- Only IHRA-specified VP gasoline allowed.
- Additives prohibited; fuel must match IHRA baseline dielectric constant.

Oil Containment & System

- Lower oil containment device mandatory.
- Dry-sump systems prohibited.
- External single-stage oil pump allowed; no multiple stages.

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- Remote-mounted oil filter allowed.

Radiator

- Must run full-size stock radiator for body used.
- Aluminum OK if stock dimensions retained.
- No remote coolant reservoir/expansion tank.
- No cutting/denting/eliminating body, fender, radiator, or grille panels.

Supercharger

- Must be correct year/make/model as accepted by IHRA.
- Blueprinting allowed per IHRA specs.
- Coating on supercharger case/rotors allowed.
- Rotor must retain OEM length, helix, and diameter.
- No rotor mods allowed.
- Drive system must remain IHRA-accepted and unaltered.

Supercharger, Intake Manifold, Intercooler

- Must be correct for engine as accepted by IHRA.
- No sandblasting, grinding, coating, or other mods allowed.

Valve Springs

- Any steel valve spring allowed if no head mods are needed.
- Titanium retainers permitted.
- Spring cups allowed only if no head mods are required.

Engine & Supercharger

- Correct year, make, and model of car must be specified and accepted for engine.
- Sandblasting, grinding, flash removal, or any other modification is prohibited.
- Supercharger case and rotors may be coated.
- Rotor assembly must remain OEM length, helix, and diameter as accepted by IHRA.
- Modifications to the rotor are prohibited.
- Coating of the rotor is permitted.
- Supercharger drive system must remain IHRA-accepted and unaltered.

Automatic Transmission

- Any model transmission, same make as car, maximum of three forward speeds.
- Transmission case must be OEM or aftermarket OEM replica from standard automotive applications listed in the Official IHRA Stock Car Classification Guide.
- Aftermarket case must meet SFI Spec 4.1.
- IHRA-accepted adapter plates are permitted.
- Shifting pattern modifications are allowed if full shift pattern is retained, including park and reverse.

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- Gear changes must occur through internal transmission function or direct driver action.
- Shifting via pneumatic, electric, hydraulic, etc. is prohibited.
- Lockup converters are prohibited.
- Wiring for trans brake, line lock, bump box, wheel speed, driveshaft speed, or GPS signal to transmission is prohibited.
- Deepened transmission pans are permitted.
- Functional neutral safety switch is mandatory.
- Transmission brake and starting line staging devices are prohibited.

Additional Transmission Requirements

- Tailshaft modifications for bushing replacement or IHRA-accepted aftermarket tailshafts are permitted.
- Transmission shield meeting SFI Spec 4.1 is mandatory.
- Cars running quicker than 9.99 must have:
 - SFI 29.1 automatic transmission flexplate
 - SFI 30.1 flexplate shield

Manual Transmission

- Manual transmissions are prohibited.

Driveline

- Driveline must meet SFI Spec 43.1; any material allowed.
- Driveline loop is mandatory.

BRAKES & SUSPENSION

Front Suspension

- Must retain complete stock front suspension system as produced by manufacturer for body used.
- Aftermarket tie rods with Heim joints are permitted.
- Travel limiters are permitted.
- Sway bar is optional.

Rear Suspension

- Must remain as produced by OEM or IHRA-accepted, with the following exceptions:
 - Coil springs may be changed, clamped, or spaced if stock mounting points are retained.
 - Solid bushings permitted.
 - Cars with coil springs may relocate rear upper control arms at rear-end attachment.
 - Rear trailing arms may be replaced with IHRA-accepted OEM-type aftermarket units.
 - Lower unit: Must be non-adjustable with bushed ends (no heims).
 - Upper unit: May be adjustable and use Heim joints.

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- Sway bars optional.
- OEM or aftermarket torque arm only if originally equipped.
- OEM torque-arm attachment points at rear end must be retained.

FRAME

Bumpers

- Complete stock bumpers, guards, and braces (front and rear) are mandatory and must match make, model, and year.
- Energy-absorbing structures may not be removed.
- Rear bumper cover or valance may be notched or slotted for wheelie-bar clearance only.
- Full-width trimming or removal of the rear bumper cover is prohibited.

Roll Cage

- Roll cage must meet SFI 25.5.

Weight

- Maximum vehicle weight for all combinations: 3,600 pounds.

Spoilers

- Rear spoiler must be OEM production for the body and year claimed.

Windshield & Windows

- All windows and windshields must be clear unless they are factory-tinted safety glass.
- Must be in good condition.
- Windows must be operational but kept closed during competition.
- Aftermarket pre-fitted and formed polycarbonate windows (e.g., Proglass, Optic Armor) are allowed.
 - Must be installed like OEM glass to maintain OEM appearance.
 - No visible rivets or fasteners.
- Construction-style Plexiglass is prohibited.

ELECTRICAL

Ignition

- Two-step systems are allowed.
 - Must be foot-activated via brake pedal or pressure switch.
 - Hand release is not permitted.
- All ignition wiring must be:
 - Fully visible,
 - Clearly labeled,

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- **Easily traceable.**

Master Cutoff

- **Mandatory for all vehicles.**

SUPPORT GROUP

Tow Vehicles

- **Tow vehicles are not allowed.**

Driver Credentials & Safety Equipment

- **Credentials**

- **IHRA competition license and FACTORY STOCK number required**
- **Must include license code 4B**
- **IHRA membership mandatory**

Head and Neck Restraint Device/System

- **An SFI 38.1-approved head and neck restraint system is mandatory.**
 - **Must display a valid SFI label.**
 - **Must be properly worn any time the driver is in the vehicle, from the ready line until on the return road.**
 - **Helmet must be connected to the device as required for full function.**
 - **Must be mounted, configured, maintained, and used according to the manufacturer's instructions.**
 - **Any modifications to the device are strictly prohibited.**

Protective Equipment

- **Jacket and Pants: Must meet SFI Spec 3.2A/5 or 3.4/5**
- **Gloves: Must meet SFI Spec 3.3/1**
- **Enhanced Requirements (if car is supercharged/turbocharged with alcohol, or if the automatic transmission is in the driver's compartment):**
 - **Jacket and pants or suit: SFI Spec 3.2A/15**
 - **Gloves: SFI Spec 3.3/5**
 - **Boots or shoes: SFI Spec 3.3/5**
 - **SFI 3.3 head sock or a skirted helmet is mandatory.**