

# Whatcom Demo Derby Club

## Rule book disclaimer

The rules and/or regulations set forth herein are designed to provide for the orderly conduct of racing events and to establish minimum acceptable requirements for such events. These rules shall govern the condition of all events, and by participating in these events, all participants are deemed to have complied with these rules. No expressed or implied warranty of safety shall result from the publication of or compliance with these rules and regulations. They are intended as a guide for the conduct of the sport and are in no way a guarantee against injury or death to a participant, spectator, or official.

The race director shall be empowered to permit reasonable and appropriate deviation from any of the specifications herein or impose any further restrictions that in his/her opinion does not alter the minimum acceptable requirements. No expressed or implied warranty of safety shall result from such alteration of specifications. Any interpretation or deviation of these rules is left to the discretion of the officials. Their decision is final.

## ~~Big Car Full Build~~

## Small Car Full Build

### Cars

1. Any north american passenger car is eligible
2. No 1973 or older Chrysler Imperials (This includes any form of Imperial body or frames)
3. No pickups, panels, carryalls, vans, four wheel drives, ambulances, or convertibles
4. Small cars maximum wheel base is 107.9"
5. 80's and newer class is considered any metric car ('77 and newer gm, '80 and newer Fords, '80 and newer chrysler)
6. Hearse, El Camino and Ranchero are allowed to run. No vote needed.

### Car Preparation

1. All glass must be removed. No glass removal allowed at the track
2. All light covers and bulbs, side mirrors, hub caps, grills, side chrome, plastic, door handles, locks, wheel weights, pot metal, gas tanks, and plastic inner fenders must be removed.
3. All flammable materials must be removed from inside the vehicle. This includes carpet, rear and passenger seat, all interior trim, door panels, roof liner, trash, leaves and other flammable debris.
4. Trunks must be free of debris
5. Inside of the doors must be free of debris including leaves and glass.

6. All trailer hitches, related brackets, reinforcements and hardware must be removed.
7. Wagons must remove rear seat covers.
8. Aftermarket parts that are allowed: metal gas tank, transmission cooler, brake and gas pedal, shifter, battery box, steering column up to the steering box, drive line, pinion brake, lower saddle cradle with front plate up to the heads, motor, rear ends (any 5 lug ok), seat and seat belts, distributor protector with halo (per the rules), and aluminum transmission bell housings.

## Fuel System

1. A metal fuel cell tank is required with a 6 gallon max fuel capacity
2. You must solidly mount the tank in the center of the rear seat area in front of the rear axle.
3. Gas tank may not be bolted to the frame.
4. No plastic tanks or boat tanks allowed.
5. All gas lines and fittings must be free from leaks no exceptions
6. All rubber fuel lines must be run in the center of the car, and must be run in through a larger hose where it goes through the fire wall or cab holes.
7. Each tank must have a vent hose that coils above the tank and goes through a hole in the floor in case of a roll over.
8. Electric fuel pumps are ok.
9. Gasoline only no alcohol, nitrous, or propane.
10. Gravity or bottom fed tanks must have a  $\frac{1}{4}$  turn shut off valve accessible to the officials.

## Batteries

1. Batteries must be relocated inside of the car and placed in a battery box made out of metal. Fully enclosed or open top clamp style ok.
2. Batteries must have an insulating barrier between the top of the battery and the lid.
3. 3 batteries max
4. Switches or wires used to power the car must be in the reach of the driver while harnessed in. There will be no acceptable excuse for not being able to shut your car off in an emergency.

## Radiator and Coolers

1. Radiators must remain in the stock location
2. Radiators and/or fans may be removed.
3. An expansion tank may be used instead of a radiator. It must be made of metal, and be no larger than 1 gallon. (the size of a milk jug) 1 gallon is equal to 231 cubic inches, multiply the length in inches times the width in inches times the height in inches, if this

is more than 231 it is to big. It must be bolted in place using max 4  $\frac{3}{8}$  bolts, and cannot touch the frame in any way.

4. Transmission coolers may be mounted in the engine compartment or inside the car. You must use high pressure lines and they must be free from leaks.
5. Transmission coolers cannot be bolt to the frame in anyway.
6. **Nothing in the interior of the car may be bolted or attached to the frame.**

## Seats and Seat Belts

1. A lap and shoulder belt is mandatory, they must be securely mounted and have a minimum 2" diameter flat washer where it is mounted through sheet metal.
2. A 4 point harness is recommended
3. Seat can be OEM stock of any make/model car
  - a. Place a padded headrest on the upright behind the seat if the seat was not equipped with a headrest mandatory.
4. No fiberglass or plastic racing style seat will be allowed

## Exhaust and Carburetors

1. Stacks are allowed
2. Any stock exhaust is allowed
3. No stack protectors
4. Any gasoline carburetor is allowed
5. Air cleaner or suitable flame arrestor is required.
6. No alternative starting methods allowed. (I.E. starting fluid)
7. Stack holes must be a minimum 6"x6" for fire access
8. If you are running stock exhaust under the car you must cut 2 6"x6" minimum holes in your hood one on each side of the carburetor for fire extinguisher access.

## Suspension, Steering and Brakes

1. '03 and newer crown vics and Lincoln must use the stock aluminum engine cradle.
2. A-arms may be welded down using (2) 3"x4"x1/4" flat strap per a-arm. This strap must weld to the a-arm and the frame and cannot extend farther forward or backward than 1" past the widest part of the a-arm. (this is not the bolt in the a-arm)
3. No other welding/bolting of the front springs, shocks or a-arms is allowed
4. No coil to leaf conversions or vice versa
5. Rear leaf springs must be made of stock spring material, with a 1" stagger on the front and back of each spring and no spring can be as long as the main leaf. You can have a max of 9 leafs. The main leaf must be the top leaf and go down in descending order. (measured from the end of the spring)
6. You must use the OEM stock spring shackles for the car that you are running
7. Spring shackle must remain in the stock location for the car you are running
8. You can re-clamp leaf springs, (4) clamps per spring pack, 2" x1/2" thick flat bar with

- (2) 3/8 bolts per clamp
- 9. Rear upper/lower control arms may be lengthened or shortened to achieve pinion angle.
- 10. You may not reinforce the control arms in any way.
- 11. Watts link brackets are ok but they have to be bolted in place. Uppers max is 6"x8"x1/4" mounting plate with (4) 1/2" bolts max. Lowers 4"x6" mounting plate with (4) 1/2" bolts max.
- 12. You may double or change the coil springs to a stiffer spring.
- 13. No welding, bolting or solid rear shocks are allowed.
- 14. You may use a 3/8 chain around your axle to the frame hump with one wrap in the center of the hump. You may not weld the links together or to the frame.
- 15. Front and rear bumper height is 15" minimum to the bottom of the bumper and a max of 22" at the bottom of the bumper.
- 16. All cars must have working brakes and demonstrate the ability to stop for the Tech officials
- 17. Only OEM ball joints, center link and idler arm for a passenger car will be allowed
- 18. Must use stock passenger car spindles
- 19. Sway bar cannot be welded period.
- 20. Aftermarket Tie-Rods are Allowed

## Wheels and Tires

- 1. No split rims.
- 2. Any tire may be used, doubled, foam filled or implement.
- 3. Any wheel may be used, wheel centers, bead locks, valve stem protectors (except split rims)

## Bumpers

- 1. Bumper swaps are allowed from any passenger car.
- 2. Only one set of bumper brackets may be used.
- 3. If not using the brackets that are stock to the car you will be allowed a 10" long 4" wide 3/8" thick bracket with a 4" (L) on one end to help mount the bumper to that may be located on the top, side, or bottom of the frame (NOT INSIDE the frame), or you may cut a stock bumper shock down to 10" and mount to the frame the same as above. This is for the front bumper only. And it will be measured from the front of the frame to 10" back
- 4. Front and rear bumpers may be welded solid bumper to bumper, bumper to shock/bracket, shock/bracket to frame no add metal.
- 5. Bumper cannot be welded to the body except if you are using any welds that are securing the trunk lid. (any questions call the head tech official)
- 6. Absolutely no stuffed or loaded bumpers will be allowed.

7. If you do not have a bumper you may use a max 5"x5"x1/4" square tube, it must remain open ended and straight. It cannot extend more than 10" from the outside of the frame. Only one Tube allowed, You cannot weld two tubes together to achieve 5"x5"
8. Aluminum bumpers may secured with (1) 1" all thread per side, with only a standard 1" all thread flat washer per side, or (2) 1/2" all thread with a 2" inch flat washer per side of the all thread.
9. If running an aluminum bumper it also must have a single wrap of 3/8 chain around each end to the core support.
10. No bumper straps allowed

## Frame

1. No welding of the frame other than what is stated below. If you are caught to have welding done on the frame that is outside of the rules you will not be allowed to compete.
2. You may weld the frame seems top, bottom and sides from the front of the a-arms forward. (if it bolts onto the frame that is not a seam and cannot be welded)
3. Absolutely no painting or fresh undercoating of the frame, your car will not even be inspected.
4. You may tilt the frame by cold/heat at the transmission crossmember only. You are not allowed to cut the crush boxes loose and reweld the seams.
5. You may use a 2"x2"x1/4" square tube for a transmission crossmember, it may be welded in place to the frame rails only (I.E. Fords and Cadillacs must trim the ears if they are touching the tube crossmember 2" of clearance) If you are using tubing for the crossmember you may not use the old one as well.
  - a. To help with the mounting of the Tranny crossmember you may use a 2"x 2"x 1/4" angle iron 8" long so that you can weld or bolt the transmission crossmember in place if bolting (2) 1/2" bolts one on each end.

## Body

1. No welding to the body other than what is specified in the rules below.
2. Doors may be secured shut by either welding, bolting or chaining. You may use any combination of welds, bolts or chains. **May not touch the frame or go around the frame**
  - a. You may weld the outer door seams with 2"x1/8" flat bar or 3/8 rebar or equivalent.
  - b. If you only bolt the doors shut you must use a minimum of (6) 1/2" bolts per door.
  - c. If you only use chain you must use a minimum (6) loops of chain no larger than 3/8 thick per door.
3. You may weld the outer door panel to the inner door panel, on the passenger doors using a 2"x1/8" flat bar.

4. Hoods can be secured in a maximum of 6 places other than stock only 2 of the 6 can be secured to the frame. You may use bolts or chains.
  - a. Bolt size must be a minimum of  $\frac{1}{2}$ " and a maximum of 1" in diameter. The only bolts that can attach to the frame are one on either side of the radiator. Bolts may only extend 4" above the surface of the hood. Max plate size is 6"x6" diameter  $\frac{1}{4}$ " thick.
  - b. You may use a 3"x3"x6" long angle iron or flat bar to the fender and 1 to the hood and bolt them together. 2-  $\frac{1}{2}$ " bolts max per connection
  - c. Chains must be a minimum  $\frac{3}{8}$ " or max 1/2" chain. Single loop and bolted together with a minimum  $\frac{3}{8}$ " max 1/2" bolt.
5. Hoods must be opened for tech.
6. Must bring hood with you to tech if you are running one.
7. You may re-bolt the hood skins together. You are allowed (15)  $\frac{3}{8}$ " diameter bolts with a max 1" flat washer on each side of the bolt
8. Trunks may be secured in a maximum of 6 places other than stock, only 2 of the 6 can be secured to the frame. You may use any combination of welds, bolts or chains.
  - a. welds must not exceed 6" in length. You may use filler no larger than 2"x1/8" flat bar or  $\frac{3}{8}$ " rebar or equivalent.
  - b. (2) 1" bolts/all thread are allowed to secure to the frame, with a max plate of 6"x6" in diameter  $\frac{1}{4}$ " thick, plates cannot be welded to the body or the frame.
  - c. All other bolts will be no larger than  $\frac{1}{2}$ " in diameter with a max 2" flat washer.
  - d. Chains must be min  $\frac{3}{8}$ " or max 1/2" weld type chain with a single loop fastened to itself with a min  $\frac{3}{8}$ " or max 1/2" diameter bolt.
9. You are allowed (5)  $\frac{3}{8}$ " diameter bolts with 1" flat washer per corner of the car to re-bolt outer and inner body skins together. (5) in each fender, (5) in each quarter panel. These bolts cannot touch the frame, be used to secure the hood, trunk, doors, or bumper to the body.
10. Body bushings may be removed, if you are replacing the bolts you may use  $\frac{1}{2}$ " diameter bolts. Body bolts must remain in the stock location. Washers must not cover the body mount hole on the exterior of the frame. If the body bolt passes through the body you may use a 2" diameter flat washer.
11. You may also add 2 body bolts between the firewall and the flat part of the rear seat area in front of the rear axle. Max bolt size is  $\frac{3}{4}$ " with a max washer size of 3"x3"x1/4". These bolts can in no way touch the cage or go into the rear arches. (any questions call your head tech official)
12. You may use a body spacer no larger than 10" tall 2" diameter max. This spacer may not be welded to the body/frame (I.E. top of frame to bottom of the core support.)
13. You may repair floor pans only in the front passenger area to allow you to mount your seat, battery box, or trans cooler. You may only use sheet metal and it must stop where the firewall starts to go up, and no further back than the flat part of the rear seat area in front of the rear axle. This is the only way to repair a rusty floor. The rust repair must be cut out completely, and you are only allowed to overlap the new panel 2"
14. You may cut a hole in the firewall for distributor clearance, but the hole must be covered by tin or a rubber mat. (duct tape is not acceptable for covering holes).

15. You may have 2 chains, or 2 flat bar 3"x3/16", or (2) 1"x1"x1/8" pipe down the center of the windshield from top to bottom. Window bars may be connected together in no more than 3 places like a ladder. Window bars must be bolted in place with a min.  $\frac{3}{8}$ " or max  $\frac{1}{2}$ " diameter bolts. 2 bolts max per end. Bars may only extend onto the firewall 6" and 12" onto the roof from the front edge. Max 6"x6"x1/4" mounting plate at the end of each bar.

16. No rear window bars

## Safety Bracing

1. A single front cross brace must be installed above the steering column from window post to window post. (in the former position of the dashboard) This front cross brace must be 5" minimum away from the firewall and distributor protector. All attachments must be 6" off of the floor and 4" off of the transmission tunnel. It must be made of a minimum 2" diameter pipe or square tubing and securely fastened into place. ( the dash bar is a single bar that has nothing sticking off of it other than a flag holder.)
2. All cars must have a door bar on the drivers and passenger doors. They must be securely fastened to the car so that they do not come off.
  - a. Outside door bars minimum 8" wide 3/16 thick, max of 14" wide  $\frac{1}{2}$  " thick, and no longer than 6'. Each door bar must be securely fastened to the car using a minimum of (3) 3/4 bolts that extend through the inner panels of the door, with a 4"x4" backing plate. Door bars may be welded to the sheet metal, and they cannot extend any further forward than 6" in front of the front door seam. With a 45 degree bevel on each end.
  - b. door bars may be ran on the inside of the car instead of the outside. They must be a minimum of 4"x4"x1/4 tube or a minimum 8" wide 3/16 channel iron, or a max of 14" wide 1/2 thick channel iron. The door bars must be 6" off the floor minimum and cannot be further forward than 6" in front of the front inside door seam and no more than 6' in length. The inside door bars must be securely fastened in place to keep them in place(either by welding them to the body or by bolting), Door bars are straight pieces with no down bars they must be 6" off the floor. If Running a inside cage you must have a door skin on the outside of the drivers door  $\frac{1}{8}$ " thickness welded to the door. Drivers door only.
3. Every car must have a single rear cross brace that goes from door to door, as close to the door post as possible, and at least halfway up the door from the floor. (you may use a max of 2 crossbars but they must be vertical of each other) the rear crossbar must be a minimum of 3" diameter  $\frac{1}{8}$  wall tubing with end plates welded on either end. End plates cannot be extended further back than the door bars.
4. All cars must have 1 upright (vertical post) for rollover protection, having 2 uprights is highly recommended. The upright must be attached to the crossbars.
  - a. -A halo will count as your upright, it must be attached to the crossbar, it can be welded to the sheet metal but cannot be attached to the frame.
  - b. If just running a single upright it must be placed directly behind the drivers seat from floor to roof. Optional you may run a second one on the passenger side.

5. Gas tank protector/mount. (is everything that comes off of the rear crossbar) -The gas tank protector must be 4" off of all sheet metal period and can be a max of 36" wide, with a max height of 16" from the bottom of the protector and must be centered in the car.
  - a. You cannot remove/bend the sheet metal to achieve clearance.
6. No kickers will be allowed

## Motors and Transmissions

1. Engine and transmission swaps are allowed.
2. All engines can only be mounted to the engine k-member. (cannot be mounted to the frame rails)
3. A lower saddle cradle or lower saddle cradle with front plate may be used.(an engine cradle is any metal device that connects the motor mounts together underneath the engine. Engine cradle may not be taller than the lowest point of the valve cover.  
(engine cradle cannot touch the dp in any way (6" gap min.))
4. A front pulley protector may be used. It may not be connected to the frame in any way and can only stick past the front of the crank pulley by 4" max. (a pulley protector is for the crank pulley only)
5. Only 1 mount per side of the engine, each mount can be no larger than 6"x6"
6. Distributor protectors are allowed, and can have a mid plate that it attaches too. The distributor protector can be a max of 12"x12", mid plate must be no taller than the valve cover and max 3" wider than the engine at its widest point and no lower than the bottom of the oil pan. The mid plate or distributor protector cannot be attached to the frame or firewall or window bars in any way.
7. You may have a halo (carburetor hoop) it may attach to the distributor protector and to the intake, it may not stick past the water pump on the front of the engine and may not be wider than the valve covers. It can be no larger than 1.75" O.D. tubing and it can only be 1" above the air cleaner.
8. You may also chain the engine in place with 1 chain on each side of the engine max  $\frac{3}{8}$  chain. Chain may only be attached to the front of the head and 1 link to the top of the frame. You may weld the 1 link to the top of the frame. You may not weld any other links of the chain together.
9. Absolutely no transmission braces.
10. Absolutely no stack protectors.

## Roof signs

1. All cars must have a roof sign with your number in contrasting colors.(black numbers on a white sign)
2. Numbers must be 18" high and minimum 2" thick

3. If the roof sign is unreadable you will not run until corrected.
4. You must not use the roof sign to strengthen the car in any way (this will be up to the techs. discretion.)

## Misc. and Repairing of pre-ran cars

1. Fire extinguishers are not mandatory but are ok to have. They must be securely mounted within reach of the driver while buckled in.
2. Frame repairs are only allowed on pre-ran cars and can only be done in the following way.
  - a. If the frame seam is torn or separated you may weld the seam/tear only where it is torn.
  - b. You will be allowed 2 frame repair plates per corner of the car. Repair plates are max 4"x6"x1/4" thick flat plate. The plate can be bent or cut to fit the frame but if you cut it you will not be allowed to use the cut pieces. You may weld all 4 sides of the plate but there must be a hole put in the center of the plate to check for thickness.
3. If the body panels are separated or torn you may stitch weld them back together 2" on 2" off. No adding extra metal.
4. Cannot weld the body of the car to the frame no exceptions.
5. You will be able to repair bent tie rods with a 1" max piece of pipe must use the stock ends.
6. No re-stubing or replacing the front or rear frame on a pre-ran car.
7. No #9 wire
8. All of the repairs will be inspected and anything outside of the guidelines will not be allowed to run. So if there is a question ask one of the tech officials.

## Race Procedures

1. Drivers doors hits may result in loss of placing, payout and/or the ability to race in the next event if they are deemed by the officials that you could have avoided it.
2. All of the drivers body parts must remain in the vehicle at all times while the event is going.
3. Do not build your car in the pits
4. You must make an aggressive hit every 2 minutes or you will be timed out
5. You are allowed 2 fires, if you have a 3rd fire your time will stop and that will be your placing based on your time.
6. After you pass tech your vehicle must be lined up in the heat that you are placed in. (do not go back to your pits)
7. You must wear a helmet, safety glasses, long sleeve shirt, long pants and closed toed shoes.