



## General 120 Rules 2010 Racing Season

*The following classes are ISR affiliated specialty classes for KC PRO West. These classes have variations to equalize performance in competition for KC PRO West.*

**Age for 120's:** Any child between the ages of **4 and 14** as of November 1st is eligible to compete. (Example: If a racer turns 15 on October 1st, he or she can no longer race.)

**Beginners 120:** Recommended for 1<sup>st</sup> yr racers and children 4-5 yrs of age until they are 5 years old. *Must race beginners 120 only.*

**Amateur Stock:** Recommended for 1<sup>st</sup> year racers and children until they are 6 years old. *Must race amateur only.*

**Class advancement:** Any racer that has placed 1<sup>st</sup> three (3) times or finished in the finals (5) times and must be six years old; must advance to stock class.

**Stock:** Recommended for racers 6-12 years old. *May race Stock and Improved Stock, but not Amateur or Champ class.*

**Improved Stock:** Recommended for racers 6-12 years old. All first year racers must race at least one race in the stock class before moving to improved stock class.

**Champ 120:** Ages 6-14 and one-year experience in Improved Stock. **May not race Stock class.**

### General Competition & Safety Rules

1. It is recommended that 120/4 stroke sleds and Kitty Cats not compete against each other.
2. In the event that a driver is off his/her sled after an accident involving two or more sleds, the race will be red flagged.
3. Driver entry into an event is open to any qualified individual. The sanctioning body has the authority and responsibility to evaluate all drivers to determine their qualifications.
4. A driver must compete for a full year in Stock 120/4 Class or in Kitty Cat racing and be six years of age before competing in any of the other 120/4 classes.
5. Both the owner and driver are responsible to ensure that their snowmobile and driver safety equipment conform to all of the rules for the class in which they have entered. The applicable rules are published in this chapter, in the General Section (*ISR Rules Sled/Equipment Requirements & Regulations*) and, from time to time, in ISR bulletins. Any driver that does not meet the requirements listed will be subject to disqualification and forfeiture of any prizes or awards, plus eligibility for the next two (2) KC Pro West races and will lose all accumulated points.
6. **Three (3) laps** are recommended in heats and five (5) laps in the final heats.
7. Mandatory tech inspection of first place sleds.
8. The Race Director and/or Head Tech have the authority to determine structural integrity.
9. While driver is on the course, radio communication between driver and crew is not allowed.
10. If it isn't stated in this section that it can be done, consider that it cannot be done.
11. In the Stock Classes, if any engine modifications are found in the 120 class by the tech person, those parts or the motor may be confiscated forever by KC PRO West.
12. Lubrication for the track and suspension must be biodegradable and nontoxic.
13. **For restarts, the racer first jumping the line will be put ½ of a sled length back in his/her original position. If that same racer jumps a second time, they will be put in the second row behind another competitor. No warnings will be given.**

### Mandatory Driver Safety Equipment \*All Classes\*

1. Helmets which are 80% orange, **ISR approved upper body protection**, shin guards and above the ankle boots are required in all classes.
2. Mouth guard is mandatory in snow lemans and any other race over uneven terrain.
3. See General Competition Rules, Driver Safety Equipment for details.

### General Snowmobile Rules

1. All metal ski hoops must be padded.
2. If slide rail lubrication is used, it must be non-toxic and biodegradable.
3. **Battery operated tail lights are required on all sleds and the lights must be illuminated at all times when the sled is on the track, running or not.**
4. Data acquisition and data acquisition systems are allowed, (you may not drill holes in any portion of the sled to install sensors/probes.) This includes a tachometer.



## Beginners 120 Class Rules

1. Recommended for 1<sup>st</sup> year racers of 4 yrs old. May not move up to Amateur class until 5 yrs old or birthday mid-year.
2. Box Stock class governor intact and working. Governed 3800 rpm Max for Polaris and Ski Doo. **Arctic Cat governed to 3900 rpm max.**
3. Arctic Cats only; allowed to change to a 42 tooth sprocket.

## Stock 120 Class Rules

### General

1. The snowmobile must have original OEM (or factory designated replacement) engine, hood, track, skis, frame, cowl, gas tank, carburetion, air box, suspension and clutch supplied by the manufacturer for the particular model. Factory designated replacements allowed.
2. Engine RPM and vehicle speed may be monitored at the discretion of the Race Director.

### Engine

1. Unless otherwise stipulated in this section, all governor parts must be intact, in place and functional. Any governor spring may be used.
2. Replacing Arctic Cat, Polaris, Ski Doo (Bombardier) chain tensioner with commercially available aftermarket tensioner is allowed.
3. Blueprinting of engines is not allowed. **NO REMOVAL OF MATERIAL WHATSOEVER WILL BE ALLOWED.** This is to include polishing, port matching, deburring, glass or sand blasting surfaces or material removal for the purpose of engine balancing or other reasons. **No material may be removed from any part of the engine including the head.**
4. No Changes in engine dimensions can be made by gasket adjustments.
5. Spark plugs do not necessarily have to be OEM stock.
6. No carburetor/ air silencers changes allowed. Air box foam may be removed. No direct air ducting to carburetor. Airbox cover cannot be turned upside down and drilled to fit.
7. Jetting changes are allowed.
8. Remote adjustable main jet system allowed.
9. Exhaust must be OEM as produced for the model. The OEM exhaust system must be used in its entirety. **NO** internal or external modifications allowed. No welding allowed, even for repair. Muffler components and/or silencing material must be intact at all times.
10. In order to equalize performance between the manufacturers' models the following changes are allowed. Ski-Doo racers are allowed to change valve springs to Honda P/N 14751-2Z1-000. Arctic Cat 120 racers are allowed to upgrade to the 120 SnoPro kits consisting of valve springs and cam.
  - a. Valve Springs on Polaris are allowed to be stretched to the maximum spec of 30.5 mm but cannot exceed this Spec. All The Coils Of The Spring Must Remain Equally Spaced With Minimal Variance After Stretching! It Is Not Allowed To Manipulate Upper and Lower Two Spring Coils Closer Together While Stretching The Middle Section Of The Spring All Coils Must Be Stretched Equally.
11. To enhance durability. Plastic governor gears may be removed in classes, which allow governor to be disabled.
12. Governor gear may be removed on all brands.
13. Any governor spring may be used. No component of the engine (including head, valves, cam and valve springs) may be altered, changed or enlarged from the engine manufacturer's original stock specifications nor may any additional components be added to the engine.
14. There will be no more than one cylinder base gasket to a cylinder. No changes in engine dimensions can be made by gasket adjustments.
15. The OEM exhaust system for the model must be fully contained within the confines of the cowl or the chassis and direct exhaust emissions from the enclosed area. Muffler components and/or silencing material must be intact at all times. **There will not be any grinding of the exhaust system allowed at ALL**
16. Engine RPM and vehicle speed may be monitored at the discretion of the Race Director.
17. No alcohol allowed in fuel. Race gas ok if it does not contain alcohol.

### Drive

1. Brake must be functional and operational at all times.
2. OEM drive clutch must be used with no modifications.
3. Stock drive clutch engagement must be maintained.
4. No belt drives allowed.
5. Chain guard must be in place.
6. Rear drive gear must be 42 on Polaris & Arctic Cat; and 41 on Ski Doo.



7. Sprocket ratio changes may be allowed by circuits in order to equalize performance between the various brands/models.
8. Quick change hubs allowed in all 120 classes.
9. Arctic Cat must use a 420 chain, Polaris can use a 40 or 420 chain, Ski Doo can use a 40 chain
10. Replacing Arctic Cat, Polaris, Ski Doo (Bombardier) chain tensioner with commercially available aftermarket tensioner is allowed.

### **Ski Suspension & Steering**

1. Front suspension must be OEM stock on Polaris and Arctic Cat. Ski Doo may add functional front end.
2. Front suspension must remain in its stock location.
3. Ski widening devices and/or height adjustment devices are not allowed in stock classes unless furnished as OEM and properly filed.
4. Suspension travel may be limited by means of limit straps only. Minimal suspension travel must be maintained. No rigid suspensions allowed.
5. Commercially available after market shocks may be used.
6. Front suspension springs may be shortened or shimmed. You may also heat or drill front spring. All adjustments must be done in a manner that looks safe to tech people.
7. Reinforcement of trailing arms and shock towers allowed. **Must not change geometry.**
8. **Handlebar risers may be added or the handlebars may be modified to raise them up as long as stock cables are used. It must pass a safety check by the race director for strength and safety if you are using anything other than an OEM riser.**

### **Skis & Ski Runners**

1. Ski must be OEM for the model and year or a commercially available after market ski with a minimum overall length of 20 inches.
2. Ski suspension components must be OEM.
3. Ski tips must have ski loops. Steel ski loops must be padded.

### **Track Suspension**

1. The complete suspension must be used as furnished and filed by the manufacturer.
2. Seals may be removed from bearings in bogie wheels, rear idler wheels and/or rear idler sprockets.
3. Commercially available marginal snow wheels may be added to the slide rails. (Rear axle idler wheels must remain OEM for the model.)
4. Suspension travel may be limited by means of limit straps only. Minimal suspension travel must be maintained. No rigid suspension allowed.
5. Slide rail lubrication systems not allowed.
6. Rear suspension springs may be shortened or shimmed. You may also heat or drill rear spring. You may not increase suspension travel or move it from its stock position. All modifications must be in a manner that looks safe to tech people.
7. Placement of rear idler may be lowered 1" +/- 1/8 straight down to allow more room for studs.

### **Track & Traction**

1. Any commercially available molded rubber track may be used. Track must fit within frame and suspension without modification to frame, suspension or drive. Track must be used as produced by the molder. Hyfax allowed.
2. The track must be OEM for the model.
3. (Sno-Cross) Maximum two (2) traction points per track segment. (All other traction rules for ISR Sno-Cross racing apply. Refer to Snow-Lemans section- ISR Rules) No studs on outside belt. 60° studs on center of belt. No ice picks.

### **Frame & Body**

1. OEM hoods only. OEM hood may be painted any color except ORANGE.
2. Windshield may be removed, modified or replaced. Windshield must have safety trim.
3. Front and rear bumpers must be padded.
4. All sharp edges must be padded.

### **Ignition & Electrical**

1. An ignition tether switch must be installed and functional.
2. Headlight and taillight must be OEM stock and remain functional (visibly working).
3. Ignition and lighting systems must be OEM for the model. No modifications allowed
4. **Data acquisition and data acquisition systems are allowed, (you may not drill holes in any portion of the sled to install sensors/probes.) This includes a tachometer.**

### **Fuel**

1. No alcohol allowed. Race gas is ok if it does not contain alcohol. Some ethanol pump gas has too high a rate of alcohol. If you have questions on gas, it is your responsibility to have us test your gas before a race. We have a tester with ISR specs.



## Improved Stock 120 Class Rules

### General

1. Snowmobile must conform to Stock class rules unless stated otherwise in this section.
2. Slide rail lubrication systems not allowed.

### Drive

1. Gear ratio may be changed.
2. Brake band may be changed to fit clutch. Clutch may be replaced with after market clutch of the same basic centrifugal design. (No variable ratio systems allowed.) Brake band may be changed to fit clutch.
3. May use 35 chain.
4. **Air box must be intact with the cover (foam may be removed), no drilling, modifying or material removal of any kind to the airbox itself. NO VELOCITY STACK.**
5. Replacing Arctic Cat, Polaris, Ski Doo (Bombardier) chain tensioner with commercially available aftermarket tensioner is allowed.

## Champ 120 Class Rules

### General

1. Snowmobile must be an ISR designated 120/4-stroke model that complies with the GENERAL RULES AND REGULATIONS section. (ISR General Competition Rules and Fuel Rules Apply)
  2. Engine, tunnel, hood must be OEM for the model.
  3. Modifications allowed in other 120/4-stroke classes are allowed in Champ.
- NOTICE: Effective 07/08 Season, OEM for the model belly pan required.**

### Engine

1. Must be OEM for the model. Modification and/or replacement of parts is limited to items listed in this section.
2. Engine components allowed for modification of change for OEM.
  - a. Cam shaft – maximum .290 inch lift.
  - b. Valves and seats.
    - i. Maximum intake valve diameter 25.2 mm.
    - ii. Maximum exhaust valve diameter 24.2 mm.
    - iii. Minimum valve stem diameter 5.5 mm.
  - c. Valve springs and retainers.
  - d. Tappets and push rods.
  - e. Governors may be removed.
3. Engine overbore may not exceed .020" (.50 mm) of standard bore size for the model.
4. Engine stroke must be stock as manufacturers filed specifications.
5. Engine components allowed to be modified but must begin as OEM for engine model.
  - a. Bearings
  - b. Crankshaft
  - c. Connecting rod
  - d. Piston and rings
  - e. Gaskets
  - f. Cylinder head
  - g. Cylinder
  - h. Crankcase
  - i. Rocker arms
  - j. Intake manifold
6. Carburetor can be bored and modified, but must begin as OEM supplied for engine model.
7. A snowmobile type diaphragm fuel pump may be added. A pulse fitting may be added to the intake tract to be used to operate the diaphragm fuel pump.
8. Any functionally silenced exhaust system may be used. Outlet pipe must point downward and cannot protrude beyond machine width.
9. Ignition and flywheel must be OEM for model. Flywheel can be lightened; lighting coil can be removed.
10. Intake manifold may be modified.

### Drive

1. Clutching is open. CVT type transmission allowed. Drive components must be commercially available.
2. A metal clutch/chain cover must be in place all times during operation. It must cover clutches, gears, belts, chains, starter cups, and any other rotating components.
3. Brakes must be properly operable at all times.
4. Track drive sprockets may be modified or changed.



### **Ski Suspension & Steering**

1. Suspension must maintain OEM concept (i.e. trailing arm, “A” arm, etc.) Ski suspension and steering may be changed or modified. Materials and components must meet or exceed OEM strength and structural integrity. Must maintain suspension travel with driver seated. No rigid suspensions.
2. The structural integrity of the steering and suspension systems must be maintained.
3. Maximum ski stance is 34 inches (measured between ski runner cutting edges).

### **Skis & Ski Runners**

1. Skis may be changed to commercially available after market skis, but must be at least 20” in length. They must have 3” minimum diameter ski loops.
2. Ski runners must meet competition and safety requirements. Maximum 5/8 penetration and 60 carbide. In ISR Sno-cross completion ski runners must conform to sno-cross rules. See ISR Sno-cross section.)

### **Track Suspension**

1. Track suspension may be altered, relocated or replaced. Structural integrity must be maintained.
2. Suspension must maintain a minimum of 2 inches of useable, vertical travel with the driver seated.
3. Track and track suspension must fit and be mounted within the confines of the OEM for the model tunnel.
4. OEM track suspension must be maintained, but may be modified. Materials and components must meet or exceed OEM strength and suspension structural integrity. In addition, the Polaris 120 XCR rear suspension kit, part number 2874004, may be used by Polaris, Arctic Cat and Ski Doo Champ 120’s.
5. Suspension may be relocated in frame and suspension travel may be limited with limit straps.
6. Must maintain suspension travel with driver seated. No rigid suspensions.
7. Wheels may be added or removed.
8. Unless contrary to local laws, slide rail lubrication system allowed. Must use biodegradable, nontoxic lubrication.

### **Track & Traction**

1. Track may add clips and/or Guide Clips, Skidoo may run Polaris OEM track.
2. Track may not be reversed.
3. Traction control devices must conform to rules in Stock class.
4. Track must be OEM for a 120/4 stroke model from any snowmobile manufacturer.
5. Traction control devices must not extend more than 3/8 inch beyond the highest point of track.

### **Frame & Body**

1. Snowmobile length must not exceed OEM for the model length by more than 2 inches (ski loop to rear of tunnel).
2. Bumpers must be padded (no sharp edges exposed).
3. Belly pan required.
4. Bulkhead may be modified or replaced; it must remain within 1 inch of the length and 1 inch of the width of the OEM bulkhead.
5. **NOTICE: Effective 07/08 Season, on Arctic Cats, inside liner of belly pan may be removed. An opening may be cut to clear CVT clutch. Opening must be closed off with suitable material and fasteners to protect bystanders.**
6. Must retain OEM 120/4 frame.
7. Must be identifiable as OEM.
8. Hood and engine must match as OEM.
9. Length must not exceed 2” beyond OEM – ski loop to rear of tunnel.
10. Bumpers must be padded (no sharp edges exposed).
11. There can be **NO ORANGE** on the snowmobile per ISR Safety Rules.

### **Ignition & Electrical**

1. Ignition system must be OEM for model. Flywheel can be lightened. Lighting coil may be removed.
2. Any commercially available flywheel may be used.