



2014 / 2015 LOCAL OPTION ENGINE CLASS REGULATIONS

The 206 is designed and engineered exclusively for racing. Each engine is hand-built in Milwaukee, Wisconsin using dedicated tooling and dies to provide a level of consistency unmatched in the industry today.

The 206 engine platform is intended to simplify the steps needed to hit the track and the tech process needed to ensure a level playing field at the end of the day.

Briggs & Stratton (B&S) racing engines are manufactured for sanctioned racing only. B&S does not recommend the products referenced herein to be used for an application outside of sanctioned racing as serious injury or death could result.

This rule package has been prepared by Briggs & Stratton Racing and is intended to establish the basis for the technical control of the classes in which the LO206 engine is specified. For ALL other regulations, general safety, etc. please refer or contact your sanctioning body.

Unless these rules state that you can do it, you cannot do it.

THIS RULE PACKAGE COVERS ALL ENGINE RELATED TECHNICAL SPECIFICATIONS. FOR ALL OTHER REGULATIONS BEYOND THE ENGINE PLEASE REFER OR CONTACT YOUR SANCTIONING BODY.

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1. Briggs & Stratton Racing Class Structure

- a. Please refer to your sanctioning body for general rule class structure.

2. These Regulations Are the Only Regulations

- a. Only the B&S Racing Department in Milwaukee can make changes to the technical specifications herein.
- b. B&S dealers and their agents are not authorized to alter, verbally or otherwise, any technical specifications or competition rule herein.
- c. Should any B&S literature, catalogues, manuals, videos, etc. be different than these regulations, these regulations take precedence.
- d. Changes, corrections, addendums, etc. will be submitted to sanctioning bodies and posted at www.BriggsRacing.com for republication and will become effective on a date specified.

3. Briggs & Stratton LO206 Product Availability

The LO206 engine products and service parts are available only through the authorized Briggs & Stratton Racing dealers.

A list of authorized dealers can be found at www.BriggsRacing.com.

2. General Rules

- a. The terms stock, original equipment, OEM, unaltered, etc, refer to Original Equipment supplied by Briggs & Stratton.
- b. Only the original equipment Briggs & Stratton LO206 #124332-8201 race engine is allowed in the classes recommended herein.
- c. All parts must be unaltered Briggs & Stratton LO206 parts specifically made for this engine by Briggs & Stratton. No aftermarket parts to be used unless specified in these regulations.
- d. All parts are subject to comparison with a known stock part.

e. For ALL other regulations, general safety, etc., contact your sanctioning body. Example: Chain guards.

- f. The tech official, at their sole discretion, may at any time replace a competitor's sealed engine, carburetor, or head assembly with another sealed engine or known stock part. Failure to comply is grounds for disqualification.
- g. Briggs & Stratton 206 classes must have a serialized block. Exception: For early built engines without a block serial number the engine identification sticker must be in place and legible. If the sticker is illegible or missing the engine must be tagged with a suitable sticker or seal approved by the technical inspector.

3. Things That Are NOT Permitted

- a. Tampering of the factory installed engine seals (2).
- b. Addition or subtraction of material in any form or matter.
- a. Exception – Valve maintenance (valve job). Valve seats must remain factory specification with one 45 degree angle only. Multi-angle valve seats are not permitted. Grinding of valve stem or excessive material removal prohibited.
- c. "Blueprinting" unless stated herein.
- d. Modification to or the machining of any parts in order to bring them to stated minimum/maximum specification, (or for any reason).
- e. Machining or alteration of any kind to the engine or replacement parts unless specifically stated herein.
- f. Deburring, machining, honing, grinding, polishing, sanding, media blasting, etc.
- g. Sandblasting or glass-beading any interior engine surfaces.
- h. No device may be used that will impede, or appear to impede, airflow to the engine cooling system.

6. Engine Sealing

There are two custom, Homeland Security Tier III rated seals installed at the factory. Tampering of the seals is not permitted. Should the seals be tampered with, the engine is no longer eligible for competition. Should an engine require dismantling for any reason that requires breaking of the seals, contact Briggs & Stratton at: **Briggs & Stratton Racing – Email: Briggsracing@basco.com**



Seals can have either a black anodized or bare aluminum finish on both main body ends as shown.

7. Technical Inspection Tools

Briggs & Stratton have made available a number of tools for the convenience of technical checking of components when necessary. They are indicated throughout the rule thusly: **Tech Tool #**. See Section 38 for tool description. The tools are available from:

Sox Racing
2223 Platt Springs Rd
West Columbia, SC 29169
(803) 791-7050

8. Engine Ignition Switch

The B&S ignition switch and wires must remain functional but may be moved.

9. Engine Air Filter

The only air filter permitted, but not required, is the Briggs & Stratton Green Air Filter Part #555758. No modification to the filter element is permitted.



A protective shield may be attached for wet-weather competition. It is not permitted for the protective shield to create any ram-air effect. Filter adapters are allowed but must be of consistent inner dimension and cannot be tapered or rifled.

1. Engine Fuel

Briggs & Stratton recommends that premium gasoline no greater than 94 octane be used. The addition of fuel additives in any manner is not permitted. Event supplementary regulations may be provided by the sanctioning body to highlight fuel use and tech procedures.

2. Engine Oil

High-quality synthetic oil within a 10W-20 range recommended. No oil additives are permitted.

Example: Briggs & Stratton Synthetic 4T Racing Oil formulated by AMSOIL

3. Oil Breather

Oil breather must vent to a catch container.

4. Oil Catch Container

An oil overflow catch system is mandatory. Overflow tube must run from the crankcase breather to a catch container. The catch-container must be vented to atmosphere.

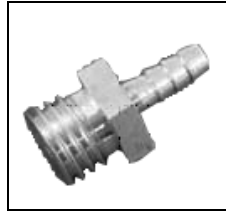
5. Carburetor Overflow

Carburetor overflow must be vented to the catch container.

6. Fuel Pump

It is recommended but not mandatory that Walbro fuel pump, B&S part number #557033 be used. Other pumps are permitted.

It is prohibited to pulse from the intake manifold.



The fuel pump must be pulsed from a pulse fitting mounted on the oil fill fitting located on the engine side cover. Aftermarket one-piece filler/pulse fittings such as shown on the right are permitted.

A fuel filter is HIGHLY RECOMMENDED to insure that dirt and contamination within your fuel system does not impact your carburetors performance. This is not a tech item.

7. Cooling Shrouds, Covers and Blower Housings

All pieces of the engine cooling shroud/blower housing and control panel must be stock B&S and properly installed.

Engine Shroud may be painted any color. Any bolt, with the exception of the head bolt, that is used to secure sheet metal shrouds and covers may be replaced with larger diameter bolts.

No taping or covering of the rewind shroud is permitted.

8. Use of Helicoils

It is permitted to use Helicoil thread inserts for shrouds, valve cover, oil drain, oil fill holes, blower housing, and exhaust pipe attachment studs on the head and lower brackets.

9. Carburetor & Intake Manifold

The B&S stock Walbro PZ22 carburetor part #555658 is the only carburetor permitted. No alterations allowed unless stated below. All parts will be compared to a stock known B&S part for eligibility. This includes the nozzle, emulsion tube, jets, float, float needle and all other carb parts. It will be allowed however to adjust the float height by means of bending the small tab on the float arm.

Slide must remain B&S stock unaltered. Slide cutaway to be measured on flat surface. .075 no go **Tech Tool A10**.

B&S stock unaltered aluminum needle is required part number 555602 marked #BGB. Needle to be inspected using **Tech Tool A4**. Needle, when placed in tool A4, should not protrude through the other side. If needle protrudes through the block it is out of specification.

Technical Item	Description	Tech Tool
a. Needle Jet C-clip	Needle Jet C-clip must be properly installed but may be installed at any of the 5 factory settings on the needle jet.	
b. Throttle cable cap	Throttle cable cap on the top of the carburetor must be used and properly installed in tight position.	
c. Choke	Choke: OEM unaltered, but lever may be fastened open with a spring, rubber band, wire, etc.	
d. Idle pilot jet	Idle pilot jet – size is OPEN but must retain stock appearance.	
e. Main jet	Main jet – Size is open but must remain stock appearance. Remote adjustable main jet system IS allowed.	
f. Main nozzle and Emulsion tube	Main nozzle – OEM stock unaltered – hole size = .101 min and .103 max inches. No drilling, reaming, slotting or oblonging of hole. Emulsion tube – OEM stock unaltered 4 small holes = .018 min inches to .020 max inches 4 big holes = .026 min inches to .029 max inches.	
g. Venturi Measurement	Venturi Measurement: Vertical: .792 max inches.	A8
	Horizontal: .615 max inches at widest part	A8
	Horizontal: .602 max inches at narrowest part.	A20
h. Air pick off hole	Air pick off hole - .057 go .061 no go	A9
i. Throttle bore	Throttle bore – Must be as cast and bore max diameter = .874 inches.	A7
j. Venturi idle fuel hole	Venturi idle fuel hole = .036 inches max	
k. Air filter	Air filter: Only GREEN air filter, part # 555729 is allowed but not required. Filter adapters are allowed but must be of consistent inner dimension and cannot be tapered or rifled.	
l. Carburetor overflow	Carburetor overflow: Must be vented to a catch container.	
m O-Ring	O-Ring part number B&S part # 555601 is required and must be unaltered.	
n. Intake manifold	Intake manifold – max length = 1.740 inches min to 1.760 inches max	A12
	Intake manifold – bore diameter = .885 inches min to .905 inches max	A11
o. Choke Bore	1.149	A7
p. Carb Slide Cutaway	.075 no go	A10
q. Widest part of Combustion Chamber	2.640	A30

10. Cylinder Head

- The ONLY head casting for the B&S LO206 herein is the '**RT-1**', cast into the head just off the head gasket surface (towards the rear of the engine, PTO side). The overall head minimum thickness is 2.430".
- Cylinder head must be "as cast". Factory machining marks left on the head gasket surface are a tech item.
- Hard Carbon may be scraped from head before measuring.
- Depth of shallow area of combustion chamber must be .030 inch minimum. This measurement to be taken with a depth gage on both the combustion side and spark plug side of cylinder head.
- Depth at floor of combustion chamber is .340 inch minimum.
- Inspect retainers for alterations that would increase valve spring pressure -.055 to .075 maximum flange thickness. Both intake and exhaust must have OE stock B&S valve keepers.
- Unaltered B&S part #555552 (exhaust) and #555551 (intake) can be checked for appearance, weight, and dimensions.
No machining, polishing, easing, or titanium valves allowed.
Valve surface must be unaltered factory ground and have one 45 degree sealing surface only.
There will be no other angles ground on any part of the valve. **Tech Tool A22.**
- Valve Guides: Replacement of valve guides with B&S part #555645 only is allowed. Maximum depth from the head gasket surface to the intake valve guide is 1.255".

11. Head Gasket

- Unaltered B&S part #555723 is the only head gasket allowed.
- Minimum gasket thickness between head bolt holes .049 inches. Measurements are to be made with a micrometer in four places between the head bolts, from the inside of the gasket.

12. Ports

- a. No de-burring, machining, honing, grinding, polishing, sanding, media blasting, etc.
- b. The transition from intake bowl to port must have factory defined machining burr at this junction.

No addition or subtraction of material in any form or matter.

No alterations of any kind may be made to the intake or exhaust ports.

- c. Intake Port: Maximum diameter measurement = .918 inches max. **Tech Tool A6.**
- d. Exhaust Port AS CAST. Exhaust Outlet -.980 – **Tech Tool A6.**
- e. Valve Seats. Intake and exhaust: Must remain factory specification with one 45 degree angle only. Multi-angle valve seats are not permitted.
- f. Intake valve seat diameter inside = maximum .972 inches. **Tech Tool A2.**
- g. Intake port pocket bowl (area just below valve seat) = .952 no go **Tech Tool A2**
- h. Exhaust valve seat diameter inside = maximum .850 inches. **Tech Tool A1.**

22. Valves

- a. Intake valve

Minimum Weight of Valve	29.26 grams
Diameter of valve stem	.246 to .247 inches
Diameter of valve head	1.055 to 1.065 inches Tech Tool A17
Diameter of valve seat	.972 inches ID maximum
Valve length	Minimum 3.3655 inches
Height from angle of valve face to top of the valve	.057 inches minimum Tech Tool A26

- b. Exhaust valve

Minimum Weight of Valve	28.62 grams
Diameter of valve stem	.246 to .247 inches
Diameter of valve head	.935 to .945 inches Tech Tool A18
Diameter of valve seat	.850 inches ID maximum
Valve length	Minimum 3.3655 inches
Height from angle of valve face to top of the valve	.060 inches minimum Tech Tool A27

23. Valve Springs

- a. Valve Springs are single coil stock, unaltered B&S part # 26826. Must be identical in appearance to factory part and have 4.25 to 4.75 coils in stack.
- b. Spring Wire Diameter: .103 to .107 inches
- c. Valve spring length: .930 max inches **Tech Tool A15**
- d. Inside diameter: .615 to .635 inches

24. Rocker Arms, Rocker Ball and Rocker Arm Studs

- a. Rocker arms must be unaltered stock B&S part #691230 (US) or #797443 (metric) and will not be altered in any way.
- b. Rocker studs must be stock, unaltered stock B&S part #694544 (US) or #797441 (metric) and in stock location.
- c. Rocker Ball must B&S stock. Diameter .590 inch min. to .610 inch maximum. **Tech Tool A16.**
- d. Rocker arm mounting positions may not be altered in any manner. No helicoiling of mounting holes. No bending of studs.
- e. Rocker arm stud plate must be bolted to the head with one, OEM stock B&S gasket only - no alterations. Maximum thickness of gasket is .060 inches.
- f. Rocker arm – overall length 2.850 inches minimum.

25. Push Rods

- a. Push rods must be unaltered stock B&S part #555531.
- b. Push rod length 5.638 minimum inches to 5.658 maximum inches. **Tech Tool A5.**
- c. Push rod diameter .185 minimum inches to .190 maximum inches.

26. Engine Block

- a. Engine block must be unaltered "as cast" B&S factory machined condition. There must be no addition or subtractions of metal or any substance to the inside or outside of the cylinder block.
- b. Both (2) B&S engine seals must be present with both the fastener and seal in "as shipped" from the factory location and condition. Any defined tampering with the fasteners or damage to the wire/seal itself (example: delaminated hologram) are grounds for disqualification.
- c. Deck gasket surface finish is not a tech item. Piston pop up can be .005 inches maximum. Piston pop-up to be checked with flat bar in center of piston parallel to piston pin and then again checked 90 degrees to piston pin. **Tech Tool A25.**
 Angle milling or peak decking is not allowed.
- d. Carbon build-up can be removed before pop-up is measured as long as material is not removed from the piston. Exception – Competitors can deburr the manufacturing part number/marks IF needed as long as:
 - Removal does not extend beyond the defined script area.
 - De-burring does not extend below the original piston surface area.
 - The original part numbers and script are still clearly visible.
- e. Cylinder bore will not be bored oversize
- f. Cylinder bore will not be re-sleeved.
- g. Cylinder bore position is not be moved or angled in any manner.
- h. Cylinder bore dimension: - Briggs & Stratton stock bore is 2.690". Allowance for wear is permitted up to 2.693" maximum for entire length, top to bottom.
- i. Maximum stroke is 2.204". Push piston down to take up rod play. Check stroke on BDC to TDC. **Tech Tool A21.**

27. Valve Lift

- a. Maximum valve lift is checked from the top of the valve spring retainer. Valves must be adjusted to zero clearance.
- b. Valve Lift: Camshaft check is taken at the valve spring retainers. With the lash set at zero, the movement of the valve spring retainers may not exceed the following: Intake and exhaust: .256 inches maximum.

28. Camshaft Profile Limits (measured at the push rod)

Push gently down on dial indicator stem to ensure that there is no lash when push rods are going down.

Intake lift	
0.006	59 to 49 BTDC
0.020	16 TO 12 BTDC
0.050	.5 TO 4.5 ATDC
0.100	17 TO 21 ATDC
0.150	33.5 TO 37.5 ATDC
0.175	43 TO 47 ATDC
0.200	54 TO 58 ATDC
0.225	68 TO 72 ATDC
MAX LIFT	0.257
MIN LIFT	0.252

Exhaust lift	
0.006	101 to 91 BBDC
0.020	59 TO 55 BBDC
0.050	43 TO 39 BBDC
0.100	26 TO 22 BBDC
0.150	9 TO 5 BBDC
0.175	1 TO 5 ABDC
0.200	11.5 TO 15.5 ABDC
0.225	25 TO 29 ABDC
MAX LIFT	0.259
MIN LIFT	0.252

Intake lift	
0.225	38 to 34 BBDC
0.200	24.5 TO 20.5 BBDC
0.175	14 TO 10 BBDC
0.150	4.5 TO .5 BBDC
0.100	12 TO 16 ABDC
0.050	29 TO 33 ABDC
0.020	45.5 TO 49.5 ABDC
0.006	81 TO 91 ABDC

Exhaust lift	
0.225	76 TO 72 BTDC
0.200	62.5 TO 58.5 BTDC
0.175	52 TO 48 BTDC
0.150	42 TO 38 BTDC
0.100	25.5 TO 21.5 BTDC
0.050	8.5 TO 4.5 BTDC
0.020	8 TO 12 ATDC

29. Flywheel

- a. No modifications are allowed to the flywheel.
- b. The minimum weight of the flywheel, fins and attachment bolts is 4 pounds 1 ounce.
- c. Stock B&S part #555683 only. No machining, glass beading, sand blasting, painting or coating of flywheel is allowed.
- d. A flywheel fan, B&S part #692592, with broken fins must be replaced.
- e. Stock, unaltered B&S flywheel key with the B&S logo is required. Width of the key allowed is .1825"-.1875". No offset keyways allowed.

30. Ignition System

- a. Unaltered B&S stock ignition part #555718 is mandatory. Only "GREEN" ignition module allowed. Maximum RPM: 6,150.
- b. Coil or its position, other than air gap may not be altered in any way. Coil mounting bolts must be stock and cannot be altered in any way to advance or retard timing. Attachment bolts and/or bolt holes may not be altered.
- c. **Spark plug:** Only the B&S unaltered factory spark plug part number #555737 -Champion RC12YC is permitted. Spark plug must have the Champion and Briggs & Stratton logo as well as the RC12YC identification on the insulator. Sealing washer must be in place as from factory.
- d. Magneto air gap is non-tech (recommended clearance .0140")
- e. Ignition timing: Maximum of 30 degrees BTDC
- f. Spark plug connector: Only the OEM B&S part #555714 is permitted.

31. Crankcase

Crankcase and cover must be B&S stock, unaltered, "as cast in factory" condition. No alterations or subtractions of metal or any other substance to crankcase cover.

32. Clutch

- a. Refer to your sanctioning body for general rules for mandatory chain guard guidelines and allowable clutch(es).

33. Starter

Recoil starter, B&S part # 695287, must be retained, as produced and intact. Starter maybe rotated and handle may be changed to part # 591519 for ease of starting with gloves.

34. Exhaust Header

- a. Header must be RLV Model TPRS 206 for all classes. (Contact 4cycle Central, Fastlane, Recreation Motorsports, Extreme performance - CA for availability and details)
- b. Gasket and/or silicone are allowed to seal header to head. (One gasket maximum)
- c. Studs or bolts are permitted to fasten head to head. Bolts or nuts must be safety wired.
- d. Header support brace and exhaust wrap from flange to silencer is mandatory.
- e. Helicoiling of the exhaust is allowed and recommended.

35. Exhaust Silencer

Silencer must be RLV B91XL (part number 4104) with round baffle holes only. Safety wiring of the silencer to header is recommended.

**36. Exhaust Protection**

The exhaust header and silencer must be wrapped with insulation material.

37. Torque Specification Guideline

DESCRIPTION	WRENCH / SOCKET SIZE	TORQUE
Air Guard	7mm	40-50 lb-in. (4.5-5.6 Nm)
Blower Housing	10mm & 3/8"	60-110 lb-in. (7-12.5 Nm)
Carburetor (to manifold)	10mm	80-110 lb-in. (9-12.4 Nm)
Connecting Rod	T27	115-120 lb-in.(13 Nm)
Cylinder Head Bolts	10mm	200-220 lb-in. (20-27 Nm)
Exhaust Brace Screws	10mm	95-125 lb-in. (11-14 Nm)
Exhaust Stud	10mm	95-125 lb-in. (11-14 Nm)
Flywheel Nut	15/16"	55-75 ft-lbs. (74.5-101 Nm)
Flywheel Fan	10mm	180-240 lb-in. (20-27 Nm)
Intake (to cylinder)	5mm Allen	70-90 lb-in. (8-10.2 Nm)
Oil Drain Plug	3/8"	100-125 lb-in. (11-14 Nm)

PVL Module	7mm	20-35 lb-in. (2.3-4 Nm)
Rocker Arm Stud	7/16"	90-120 lb-in. (10-14 Nm)
Rocker Arm Plate	10mm	70-90 lb-in. (7.9-10.1 Nm)
Rocker Arm Set Screw	1/8" Allen	50-70 lb-in. (5.6-7.9 Nm)
Spark Plug	5/8" Deep	95-145 lb-in. (11-16.4 Nm)
Side Cover	10mm	140-160 lb-in. (15-18 Nm)
Starter Gear	#2 Phillips	35-53 lb-in. (4-6 Nm)
Top Control Plate	10mm	70-90 lb-in.(8-10 Nm)
Valve Cover	10mm Lower & 3/8"	30-60 lb-in. (3.5-7 Nm)

38. Technical Inspection Tools

Refer to separate document illustrating the Technical Inspection Tools.

39. IMPORTANT online support resources

Please refer to www.Briggsracing.com for a host of resources. Due to the sealed nature of this engine we highly recommend reading and viewing important documents and videos to insure a great racing experience.

Located online:

- a. 206 Engine tips and guide supplement – A must to print out and read!
- b. Carburetor tuning guide – Understand your carburetor to get the most out of your 206.
- c. Videos:
 - a. Proper clutch installation – Properly installing your clutch will prevent the possibility of crankshaft damage.
 - b. Setting the float height – A simple video highlighting a necessary technique to insure a properly tuned carburetor.

Regional Classes

Certain Regional Specialty classes can be created from time to time that enhance the sport, serve as a test bed, or fulfill local requirements. These classes must be ISR approved before being ran. They do not have to be printed in the annual rulebook, to be raced, but must have approval before an event is conducted.

1. Slide rail lubrication systems may be allowed , depending upon local, state, and/or federal laws and must utilize non-toxic and biodegradable lubricants.

MMSRA-OPEN 206

GENERAL

1. The 206 Local Option Semi Pro class combines the rules for Champ Chassis and Drive with a spec engine rule. All chassis rules are the same as Champ 120 .
2. Snowmobile must be an ISR designated 120/4-stroke model that complies with the GENERAL RULES AND REGULATIONS section.
3. Unless otherwise specified, 120/4 Stroke Champ rules apply.

AGE LIMITS

1. Competitors must be 7 years of age. Drivers must have one full year 120/4 stroke race experience to enter this class. Drivers reaching the age of 14 during the season may finish the season in that class.

DRIVE

1. Champ 120/4 stroke rules apply.

SKI SUSPENSION AND STEERING

1. Oval - Champ 120/4 stroke rules apply.
2. Sno-cross and other rough terrain races – Champ 120/4 stroke rules apply with the exception that commercially available OEM or aftermarket shocks and springs allowed.

ENGINE

1. Refer to LO 206 Engine Section

ISR Rules Inplace for the 2015 / 2016 Race Season