

Date: 6-27-2005

Model Year:

Sea-Way Marine is recognized as the manufacturer of record for this class. They are not considered a distributor.

### SST 45 Technical Standards

Max. Total Cu. In.	Minimum	Minimum
Displacement	Boat Length	Boat Weight
44.9 (740cc)	12'	700 Lbs.

Minimum Age Requirements 16

Total Cu. Ft. of Foam in Boat, Including Cockpit	Cu. Ft. of Foam in Reinforced Cockpit Structure, If So Equipped
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**SST 45      4.0 CF**

**2.0 CF**

#### **SST 45 Boat Standards** (see also Rule 18)

- (1) Any design of boat including bottom, deck, cockpit openings and seating arrangements shall be permissible so far as boat meets minimum length.
- (2) Power trim and/or adjustable spoilers shall be allowed in Super Stock classes, except up/down lift adjustable while boat is underway for the SST 45 class.
- (3) All cowling and engine graphics and colors shall be essentially the same as OEM, with updating to later models allowed only as a complete OEM design.
- (4) SST 45 drivers must be seated in a seat.

#### **SST 45 Motor Standards** (see also Rule 20)

- (1) SST 45 class to use one 12-volt (nominal) battery only.
- (2) The SST 45 class gear cases may have their outside surfaces refinished; however, they must meet the requirements of OPC Engine Specification sheets and the original design. The outside surfaces of the gearcases may be either painted or unpainted. If they are painted, the color of the paint must be the same as the original factory motor color. If the gearcases are unpainted, any surface finished is acceptable.
- (3) SST 45 class may use alternate plastic reeds - OMC part number 568427.
- (4) SST 45 class shall use only one propeller of three blades or less.

Date: 6-27-2005

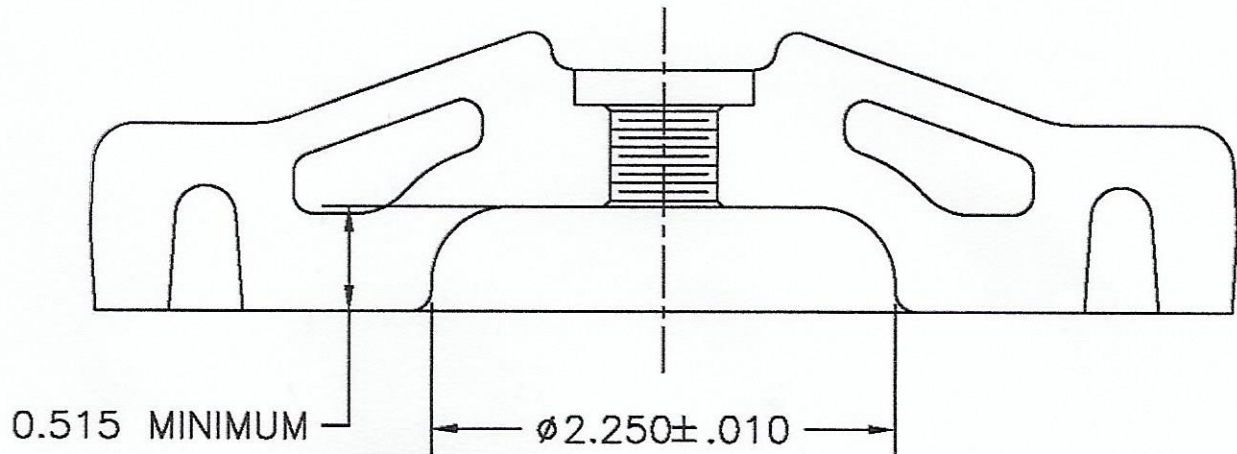
Model Year:

- (5) SST 45 engines may have a substitution of a maximum of 2 sleeves of any manufacturer with original porting specifications and the same material will be allowed for repair of damaged cylinders.



Date: 01-26-18  
Model Year:

## SST-45 NOTES

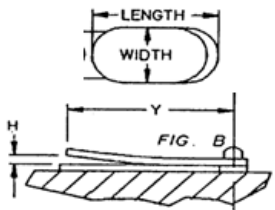
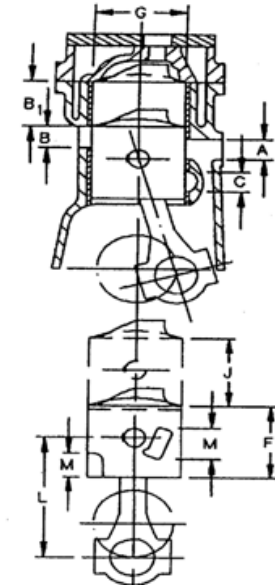


1. Incorporates .012 shims under one or both reed stops.
2.  $B_1$  dimension to top of chamfer = 1.624 minimum.
3. Standard SST 45 reed material is Steel .010 thick.  $H = .268$  maximum.  
Alternate reed for SST-45 may be used: OMC P/N 568427, bottom reed =  $.028 \pm .003$ ; top reed  $.017 \pm .003$ ,  $H = .290$  maximum.
4. Or per OMC P/N 561086 template, included in Kit P/N 568053.
5. Crankcase thickness (split line to reed gasket surface) 4.355" minimum.
6. Approved Replacement Ignition parts are: Rapair Parts, Stator **173-2926K1**, Charging Coil **173-1670**, Power Pack 113-2285, Rectifier 153-1778, Coil 183-2508, **Trigger** 133-3387
7. The Compression Volume is 35cc installed to top of plug hole.
8. The only legal Cylinder heads have casting numbers of 325602 or 325603
9. Head Gasket minimum thickness is .042
10. Standard SST 45 connecting rod has no oiling hole in the rod cap.  
Alternate connecting rod (fishing motor rod) for SST 45 may be used: this rod has an oiling hole in the rod cap. It is permissible to chamfer (radius) the edges of the oiling hole. (See Photo's Below)
11. The use of new larger spine cranks and Drive Shafts is permitted.
12. Port Measurements from Block Deck to top to Port. (See Table Below)
13. New design Upper Cowling, Lower Pan and Throttle Bracket as supplied by Sea-Way Marine are approved replacements. Throttle bracket may used with any cover/pan.
14. The electric start flywheel is the only legal flywheel, min. weight 9.1 lbs.
15. Brass bushings for the midsection as supplied by Sea-Way Marine are approved replacements. The bushing used in the top and bottom of the swivel bracket may be plastic (OMC) OR brass (Sea-Way Marine).
16. **Carburetor throttle shaft bore may be repaired by sleeving.**

Date: 02-25-2015

Model Year:

### RACE CLASS: SST-45

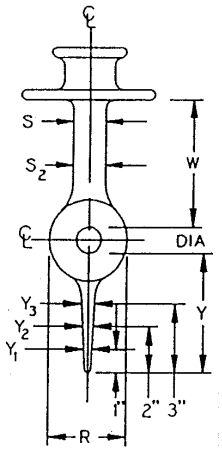
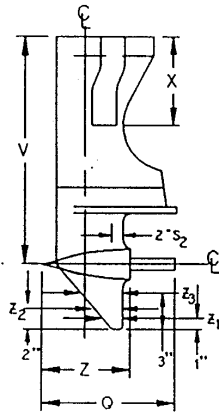


MANUFACTURER				OMC					
ADVERTISED SALES NAME				JOHNSON / EVINRUDE 45SS					
CLASS; DISPLACEMENT MAX			in <sup>3</sup>	SST-45; 44.9					
NUMBER OF CYLINDERS				2					
MIN. VOLUME OF COMBUSTION CHAMBER (INC'L SPARK PLUG HOLE)			cm <sup>3</sup>	35.0					
CARBURETOR	VENTURI	±.015	in	1.250					
	BORE	±.015	in	1.500					
	QUANTITY PER ENGINE			2					
POWERHEAD SPECIFICATIONS	G	CYLINDER BORE	±.005	in	3.187 +.035		OEM +.030 psiton is	Approved	
	J	PISTON STROKE	±.011	in	2.820				
	L	ROD LENGTH	±.006	in	4.750				
	K	DECK HEIGHT	±.012	in	7.575		7.563 Min.		
	F	PISTON LENGTH	±.030	in	2.973				
	M	PORT HEIGHT	±.030	in	2 @ .615				
	NUMBER OF PORTS PER CYLINER	A	TRANSFER		3				
		B	EXHAUST		1				
		C	PISTON		--				
	PORT HEIGHT	A	TRANSFER	±.035	in	2 @ 0.584; 1 @ .546			
		B	EXHAUST	±.035	in	1.107 (plus chamfer)		See note #2	
		B <sub>1</sub>	EXHAUST	±.035	in			See Table in Notes	
		C	PISTON	±.035	in	--			
	PORT TIMING	A	TRANSFER	±2°	ATC	2 @ 118°; 1 @ 120°			
		B	EXHAUST	±2°	ATC	92°			
		C	PISTON	±2°	ATC	--			
	REED BLOCK (ONE CYLINDER)	# OF PORTS			8				
		LENGTH x WIDTH SIZE OF PORTS			MAX	in	1.41x0.675		
		REED MAT'L			STAINLESS STEEL		See Note # 3		
		REED THICKNESS			±.001	in	.010		
		H	REED STOP HGT.	MAX	in	.268		See Notes # 1 & # 3	
		Y	CHECKING DIS.	±.030	in	1.427			
	WEIGHT (ONE SET)	FLYWHEEL		MIN	lbs	9.1			
		PISTONS, RINGS, ROD, WRIST PIN, SPACERS, BEARINGS		MIN	lbs	1.7			

WARNING! FOR INSPECTION ONLY! These specifications are not intended as a guide for modification or "blueprinting" and are subject to change as needed.

Date: 02-25-2015  
 Model Year:

### RACE CLASS: SST-45

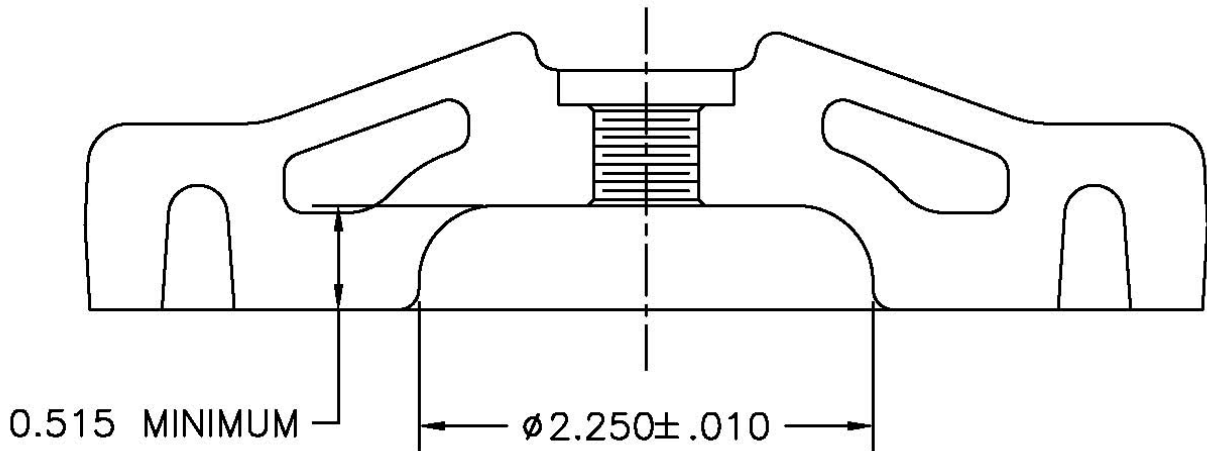


MANUFACTURER				OMC				
GEARCASE MODEL IDENTIFICATION				DR-39M				
ADVERTISED SALES NAME				JOHNSON / EVINRUDE 45SS				
GEARCASE SPECIFICATIONS	GEAR RATIO			18:18				
	X	EXHAUST TUBE LENGTH- POWERHEAD BASE TO PRIMARY TUBE END	±.25	in	9.37	Measurement does not include 3/8 plate. Pipe only		
	Q	TORPEDO LENGTH (W/ PROPSHAFT)	MAX	in	16.3			
	R	TORPEDO WIDTH	MIN	in	2.35			
	S	STRUT WIDTH	MIN	in	1.40			
	S <sub>2</sub>	STRUT WIDTH (2" FORWARD OF TRAILING EDGE)	MIN	in	--			
	W	DIS. FROM PROPSHAFT TO CAVITATION PLATE	±.2	in	4.16			
	Y	LENGTH OF SKEG FROM PROPSHAFT	±.2	in	4.54			
	Z	TORPEDO LENGTH	±.2	in	13.7			
	V	PROPSHAFT CENTERLINE TO POWERHEAD BASE	LONG SHAFT	±.2	in	--		
			SHORT SHAFT	±.2	in	17.1		
	Y <sub>1</sub>	SKEG THICKNESS	MIN	in	.21	See note # 4		
	Y <sub>2</sub>	SKEG THICKNESS	MIN	in	--			
	Y <sub>3</sub>	SKEG THICKNESS	MIN	in	.34	See note # 4		
	Z <sub>1</sub>	SKEG CORD LENGTH	±.2	in	3.950	See note # 4		
	Z <sub>2</sub>	SKEG CORD LENGTH	±.2	in	--			
	Z <sub>3</sub>	SKEG CORD LENGTH	±.2	in	5.700	See note # 4		
	DIA	PROPSHAFT DIA	±.01	in	.685			
	Adaptor Plate Water Outlet Hole (DIA)	±.01	In	.190				

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Date: 02-25-2015  
Model Year:

## SST-45 NOTES

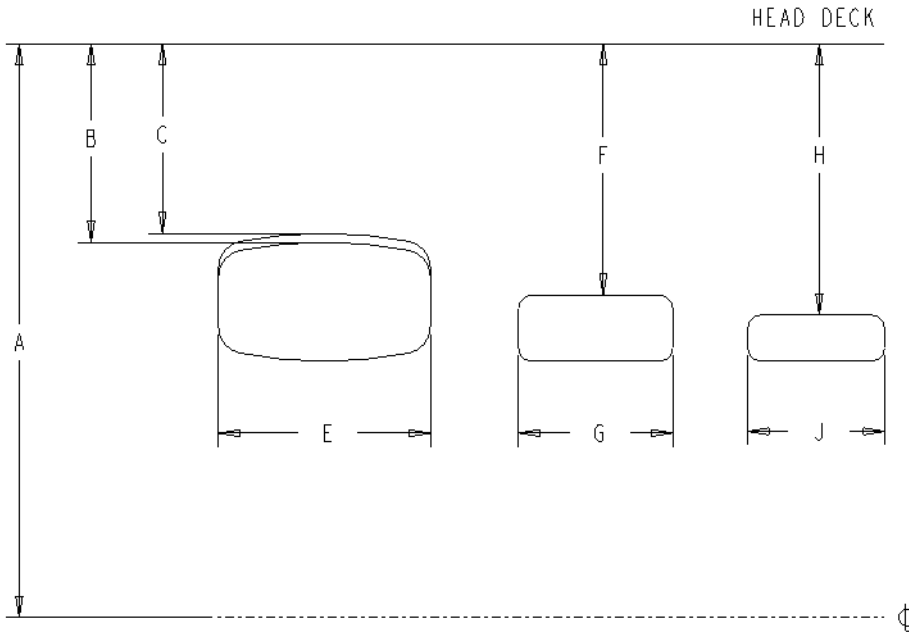


1. Incorporates .012 shims under one or both reed stops.
2.  $B_1$  dimension to top of chamfer = 1.624 minimum.
3. Standard SST 45 reed material is Steel .010 thick.  $H = .268$  maximum.  
Alternate reed for SST-45 may be used: OMC P/N 568427, bottom reed =  $.028 \pm .003$ ; top reed  $.017 \pm .003$ ,  $H = .290$  maximum.
4. Or per OMC P/N 561086 template, included in Kit P/N 568053.
5. Crankcase thickness (split line to reed gasket surface) 4.355" minimum.
6. Approve Replacement Ignition parts are: Rapair Parts, Stator **173-2926K1**, Charging Coil **173-1670**, Power Pack 113-2285, Rectifier 153-1778, Coil 183-2508, **Trigger** 133-3387
7. The Compression Volume is 35cc installed to top of plug hole.
8. The only legal Cylinder heads have casting numbers of 325602 or 325603
9. Head Gasket minimum thickness is .042
10. Standard SST 45 connecting rod has no oiling hole in the rod cap.  
Alternate connecting rod (fishing motor rod) for SST 45 may be used: this rod has an oiling hole in the rod cap. It is permissible to chamfer (radius) the edges of the oiling hole. (See Photo's Below)
11. The use of new larger spine cranks and Drive Shafts is permitted.
12. Port Measurements from Block Deck to top to Port. (See Table Below)
13. **New design Upper Cowling, Lower Pan and Throttle Bracket as supplied by Sea-Way Marine are approved replacements. Throttle bracket may used with any cover/pan.**
14. **The electric start flywheel is the only legal flywheel, min. weight 9.1 lbs.**
15. **Brass bushings for the midsection as supplied by Sea-Way Marine are approved replacements. The bushing used in the top and bottom of the swivel bracket may be plastic (OMC) OR brass (Sea-Way Marine).**

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Date: 02-25-2015  
 Model Year:

### SST 45 Ports



Port Measurements from Block Top Deck down to Top of Port				
	SST 45	Minimum	Maximum	
		Inches	Inches	
A	Deck Height	7.563	7.587	
B	Exhaust Port	1.730	1.765	
C	Exhaust Port Chamfer	1.624	1.720	
E	Exhaust Port Width		1.910	
F	Transfer Port	2.228	2.280	
G	Transfer Width		1.470	
H	Boost Port	2.250	2.325	
J	Boost Port Width		1.210	

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Date: 02-25-2015  
Model Year:



Standard SST45 Connecting Rod:



Alternate (fishing motor rod) Connecting Rod:

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Date: 02-25-2015

Model Year:

**Lower Pan PN 560500\***

**Lower pan is completely sealed at base and has three opening's.**

**Outlet Water Hose from PH – 13/16" (Note Sealed by outlet hose -reference)**

**3/8" Drain hole in back of pan. (Reference)**

**Opening for cable in front of pan (Approximately 1.4" – but may vary - reference)**

**\*These parts supplied by Sea-Way Marine, Inc.**



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Date: 02-25-2015

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### Upper cowling PN 560500\*

Vent in back of cover top - PN 560401\* (Hole Diameter 2" reference)

~~Vent in front of cover - PN 560402\* (Vented opening 3.55" x 2.4" reference)~~

~~Total size of vent plate 4.55" H x 5" W (Reference)~~

Louvered Vent front cover plate PN 560402\* total dimension 4.55" H x 5" W (Reference)

Rectangular opening behind front plate Maximum 4" W x 3.75" H - Minimum 3.25" W x 2.4" H

Opening for Throttle Cable (Approximately 1" W x 2.5" H reference)

Opening for Cables (Approximately 1.4" ~~But may vary~~ reference)

\*These parts supplied by Sea-Way Marine, Inc.



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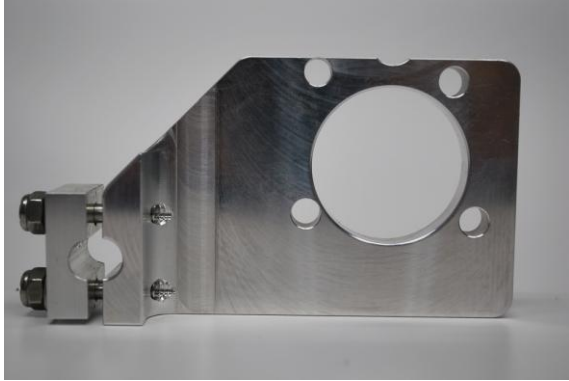
**Throttle Bracket PN 560330\***

**Thickness – 3.75" +/- .005" (Reference)**

**Opening – 1.500" +/- .010" (Reference)**

**(Note: 1/32 Edge on opening – otherwise straight in - reference)**

**\*These parts supplied by Sea-Way Marine, Inc.**



**Midsection Bushings**

**Upper Bushing**

**Lower Bushing (Lg)**

**Upper Cover**

**Lower Cover**

**Upper O'Ring**

**Complete Bushing Replacement Kit**

**Current PN**

**309967**

**332663**

**309966**

**397736**

**301917**

**New PN**

**560100\***

**560101\***

**309966**

**560102\***

**201875**

**560202\***

**(NO Photograph of bushing)**

**\*These parts supplied by Sea-Way Marine, Inc.**

Date: 02-25-2015  
Model Year:

Rev:04-10-13 Note #10 revised to allow use of alternate connecting rod (fishing motor rod).

**Rev:02.25.15 Note #6 revised to correct terminology and part numbers.**

**Note #13 added to allow new style upper cowling, lower pan and throttle bracket as supplied by Sea-Way Marine and approved by MTC & Commission April 1, 2014. Photo's included.**

**Note #14 added to update/correct specification: rope flywheel 8.1 lbs reference removed from chart. Only the electric start flywheel is allowed.**

**Note #15 added to allow use of brass bushings as supplied by Sea-Way Marine and approved by MTC in top and bottom location of swivel bracket. The OMC plastic parts are no longer available, this is a replacement. Either type or combination may be used.**

Date: 01/26/18  
OPC Class: SST45

## **OPC - SST 45 Reference Information**

**The SST45 Reference Information was put together by members of the OPC Motor Technical Committee as an aid to SST45 Drivers, Engine Builders, and Inspectors. It is included here, for that purpose, and is considered part of the SST45 Technical Specifications and may be used to dispute a technical issue.**

**Note: The SST45 is to be raced as homologated.**

### **Connecting Rod:**

The SST45 connecting rod was produced with no oiling hole in the rod cap. The hole was left out in an effort to produce a more durable part. New SST45 rods are no longer available and the OPC Motor Technical Committee and OPC Racing Commission have approved use of the production "fishing" rod. This rod has an oiling hole in the rod cap. It is permissible to chamfer (radius) the edges of this hole to remove any potential stress riser and improve durability. See Note #10 and photographs in technical specifications.

### **Crankshaft:**

The crankshaft for the SST45 was prepared for racing by hand grinding a radius on the top crankpin hole. The intent was to remove any potential stress riser to improve crankshaft durability. When using a replacement production "fishing" crankshaft it is advisable to duplicate this feature.

Newer Crankshafts have a larger diameter spline on the bottom. These may be used, however, you must use a new style matching driveshaft and cut it to fit the gearcase.

### **Cylinder Block:**

Since there are no new blocks, 40,50,55 and 60 hp production "fishing" blocks are being used to make SST45's. You must use an SST45 type spec sleeve which will not have an exhaust relief hole above the exhaust port. It is permissible to have the exhaust relief hole in the aluminum portion of the block. Sleeve suppliers include BRP, Advanced Sleeve and LA Sleeve. All can supply SST45 cylinder sleeves. The lost foam blocks never had any hand grinding in the block. NO grinding is allowed in these blocks. The permanent mold blocks did have grinding in them as they came from the factory. There may be casting flashing on the bottom side of the transfer ports. It is permissible to grind the flashing on the bottom side of the transfer to get the aluminum to line up with the cylinder liner instead of restricting the port. Grinding can only be done on the lower 50% of the port. NO grinding is permitted on the top of the port to improve flow. This grinding only refers to Transfer Ports, NOT Boost or Exhaust.

### **Pistons/Rings:**

There is only one model of SST45 piston available in standard bore and 0.030 oversize. This OEM cast piston uses a top Keystone ring and a rectangular lower ring. There is a newer part with different rings which is NOT legal. After market pistons are not legal. See information at the end of this document to aid in OEM piston identification.



Date: 01/26/18  
OPC Class: SST45

**Tuner/Pipe:**

New tuners are available from SeaWay Marine which have been reviewed and approved by the OPC Technical Committee. They have a black hard coating on them to prevent tampering.

**Carburetors:**

The original carburetors are wearing out, the throttle shaft bore wears but may be repaired by sleeving. (See SST45 Technical Specifications Note #16) Any three (3) jet style production "fishing" carburetor of the same bore and venturi specification is permissible. The production carburetors do not have full throttle plates which causes the engine to idle faster. If you decide to change the throttle plate take care not to damage or change the shaft. Screws and full throttle plates are available from SeaWay Marine. The throttle plate screw is no longer an inspectable item, however the throttle plate and shaft must remain as homologated. It is recommended to use the full throttle plate. The Choke arm may be removed. Carburetor linkage is a homologated part of the SST 45 and must remain as approved.

**Gaskets/Ignition/Misc.:**

Gaskets can be provided by any manufacture. Ignition parts can be BRP, Rapair, CDI, must function as intended, and must meet the same specification as OEM parts. Any bearings, seals, impellers, gaskets are allowed as long as they meet the same design intent and configuration of the OEM parts. (Must be of same design and thickness as OEM)

**Drive Shaft Housing:**

Driveshaft housings may be used from production "fishing" engines. The "fishing" housings need to be altered to exactly match the SST45 part. The exhaust outlet/relief must be the same as the SST45.

**Motor Cover Upper and Lower:**

New style upper and lower motor covers are available from SeaWay Marine and are approved. When using the new style motor covers a new throttle cable mount is required. This mount may also be used with Old style covers. Installation of the new lower motor cover requires drilling and tapping three 1/4x20 holes. Note #13.

**Swivel Bracket:**

The OMC plastic bushings used in the swivel bracket are no longer available. SeaWay Marine has produced brass replacements which are approved for use. Part numbers are located in the OPC SST45 Spec Sheets.

**OEM Piston - PN 396581 – Distinctive OMC/BRP lettering on the top.  
No Boss on the wrist pin area of casting**



**OEM Piston - PN 5006665 – Distinctive OMC/BRP lettering on the top.  
No Boss on the wrist pin area of casting**



**OEM Piston - PN 391417 – Distinctive OMC lettering on the top. No Boss on the wrist pin area of casting**





**Pro Marine Piston – Looks identical to the OEM Piston – Notable differences is the stamped lettering on the top of the piston (Extra dimensional number's and the fact that the sizing runs horizontal to the “UP” lettering). Secondly note casting Boss on the on the wrist pin area– RH side in photo**





**Weisco Piston – Distinctive lettering on top of piston**



**Revision:**

**02-25-15 Document Created.**

**01-26-18 Per OPC Commission Meeting January 2018, Information contained in this document is to be excepted as an extension of the SST45 Technical Specifications; Carburetor throttle plate screws are non-inspectable items. Note #16; OEM piston identification information added.**

# OPC - SST 45 Reference Information

## SST 45 EXHAUST HOUSING REPAIR:

The OPC Motor Technical Committee was made aware of an issue some drivers were experiencing with the rear boss in the exhaust housing cracking/breaking. This boss is required to remain in place for the exhaust housing to be legal. Competitors have had to weld the boss or in some cases replace the exhaust housing.

Sea-Way Marine has developed a replacement part, which has been approved by the OPC Motor Technical Committee, that serves as a legal, inexpensive repair.

1.The first photograph shows a stock (legal) SST45 Midsection rear boss.

2.The second photograph shows an (Illegal) SST45 Midsection where the boss for the rear Lower Unit bolt has been removed or broken off.

3.The third Photograph shows a SST45 Midsection with the Sea-Way Maine replacement part installed. This part is the exact diameter of the stock (cast) boss, is a legal repair and provides support for the lower unit.

4.The fourth (last) photograph shows the replacement parts available from SeaWay Marine. Depending on the nature of the failure there are two replacement parts available. The one on the left would be for an install where you still have threads in the remaining part of the original boss. This could be cut to length and the appropriate bolt would be provided. The one to the right would be used where there are no threads or not enough threads remaining to attach. This would also be cut to length and the stock bolt could be used.





2



3



**4**

**END**

**Rev:07.26.22 Clarification, Midsection, added to SST45 Reference Information.  
Exhaust housing repair kit available from Sea-Way Marine approved by Motor Technical  
Committee.**