***** FOR COMPETITION USE ONLY as per US EPA regulations *****

Factory Pipe
Bill of Materials
SeaDoo 951XP Twin

Item	Qty	Part Number	Part Description
1	1	COMASM0851	951XP MAG Chamber assembly
2	1	COMASM0850	951XP PTO Chamber assembly
3	1	COMASM0852	951XP MAG HP assembly
4	1	COMASM0853	951XP PTO HP assembly
5	1	COMASM0854	951XP Collector assembly
6	1	COMTUB0008	951XP Stinger tube
-	1	COMASM0855	951 XP Hardware kit (includes items 7-40)
7	1	COMASM0845	951XP/RX PTO Mount assembly
8	1	COMASM0846	951XP/RX Case mount assembly
9	1	COMASM0847	951XP MAG/PTO Mount assembly
10	1	COMASM0848	951XP/RX Spool mount assembly
12	1	COMADH0001	MA-300 Epoxy adhesive
13	8	COMCLP0012	SS Hose clamp (1/2")
14	2	COMCLP0021	#250 High torque SS hose clamp (2")
15	1	COMFAS0020	8mm x 1.25 x 20mm Flanged head bolt
16	2	COMFAS0070	3/8" Ext. Tooth washer SS
17	8	COMFAS0085	3/8" Flat washer S.S. (.627" OD)
18	2	COMFAS0086	3/8" Flat washer w/1" OD S.S.
19	2	COMFAS0100	3/8"-16 x 3/4" Hex head bolt SS
20	8	COMFAS0260	10mm x 1.5 x 30mm SS Socket hd bolt
21	1	COMFTG0090	1/8" NPT Pipe plug
22	2	COMFTG0115	Side squirter (" hose)
23	2	COMGAS0235	337 Buna N o-ring
24	2	COMGAS0330	341 Buna N o-ring
25	2	COMGAS0340	334 Buna N o-ring
26	2	COMGAS0360	951 Cyclinder/manifold gasket
27	1	COMHOS0697	" x 14.5" Waterline
28	1	COMHOS0698	" x 11.5" Waterline
29	1	COMHOS0699	" x 3" Waterline
30	1	COMHOS0700	" x 2-3/4" Waterline
31	1	COMPLA0001	951 XP Oil block off plate
32	4	COMFTG0120	1/8" Vinyl cap
33	4	COMFAS0210	4" Plastic zip tie
35	1	COMFTG0130	" x " Hose mender
36	1	COMFTG0094	3/4" GHT Plastic plug
37	1	COMTOL0004	Modified 8mm allen wrench for 951XP
38	2	COMHOS0701	3-3/4" x 2" Silicone sleeve
39	1	COMFAS0090	3/8" –16 SS Nut
40	2	COMFAS0003	5mm x .8 x 12mm Socket head bolt SS

Required Parts Not Included in Kit: 1. Rev Limiter 2. Aftermarket Flame Arrestor(s)

- **Check contents against bill of materials. Report any shortages where you purchased your Factory Pipe.**
- **Read all instructions carefully before starting installation.**
- **This pipe system installation requires the removal of the oil injection system. Any fuel left in the tank must have oil added (32:1) prior to running the engine.**

PTO Chamber

Mag Chamber

PTO Headpipe

Mag Headpipe

Collector

Stinger

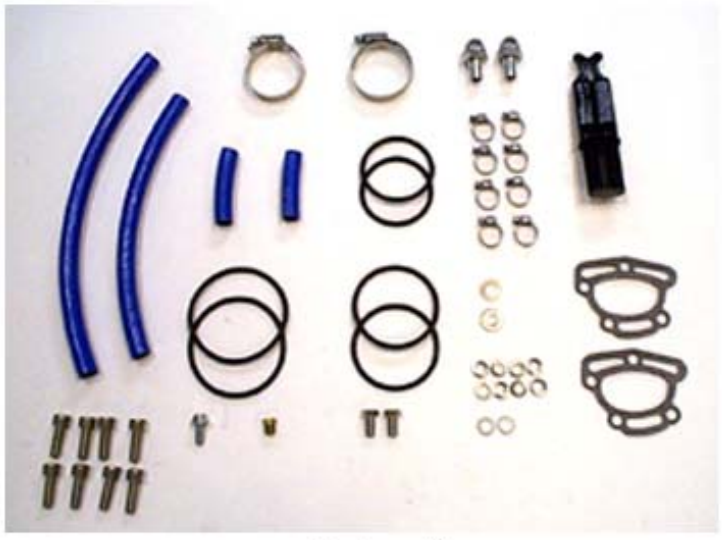
Mag Mount

Mag / PTO Mount

Case Mount

PTO Mount

Note: Parts shown are for identification only. Color of components may vary.



Hardware Kit

Factory Pipe
Instructions
SeaDoo 951XP Twin

Attention: Do not install twin pipes on a new SeaDoo 951XP. The engine must be run a minimum of 15 hours or you can hone the cylinders to provide .0045”-.005” piston/cylinder clearance. Data acquired shows that the clearance is insufficient on a new engine with the increased power of the twin pipe system and piston seizure could occur.

Disconnect the battery cables. Remove the stock exhaust system. You may need to remove the carburetors to access the headpipe bolts or you can remove the manifold and first section of pipe as a complete assembly. Remove the stock pipe brackets from the front of the cases and the right side of the cylinder. Remove the stock airbox from the carbs. Remove the stock stinger tube that connects the chamber and waterbox and retain the two stock 2.5" ID x 3.5" couplers and four clamps. Remove the oil tank and foam tray. Bend the two oil tank brackets in the hull down until they are almost flat (figure 1). Disconnect the oil pump cable from the oil pump and secure the cable to the throttle cable with a 4" zip tie (item # 33) to keep it out of the way. Remove the oil pump (leave pump and tank in hull at this time) and install the oil pump block off plate (item # 31).

Install the aftermarket rev limiter (not supplied) per the manufacturer’s instructions.

If you have not already done so, unbolt the carburetors from the intake manifolds. Disconnect the oil feed lines from the intake manifolds. You can now remove the oil pump and oil tank. Slide the two 1/8" vinyl caps (item # 32) over the intake manifold fittings where the oil lines were removed and secure each with a 4” zip tie (item # 33). Remove the fuel supply, return and pulse lines, and cables from the carbs and remove them from the boat. Leave carbs on bench at this time. You should now be ready to start installation of the pipes (figure 2).

Remove the stock 8mm bolt from the left rear motor mount. Install the PTO mount assembly (item # 7) with the 8mm x 20mm flanged head bolt (item # 15) but leave loose at this time (figure 3). Install the case mount assembly (item # 8) into the forward left hole where the stock pipe bracket was located (figure 4), using the supplied threadlocker.

Install the retained stock 2.5" ID x 3.5" couplers onto each end of the stinger tube (item # 6). Slide the couplers on about half way and secure with two of the retained stock clamps. Slide the stinger tube back into the stock location. Place the remaining two retained stock clamps loosely over each end of the stinger tube couplers. Now slide the stinger tube onto the waterbox connection but leave clamp loose at this time. Slide the collector assembly (item # 5) into the front stinger tube coupler but leave clamp loose at this time (figure 5).

Locate the PTO chamber body (item # 2) and install the three o-rings (item # 23,24,25) into the

flange (figure 6). Lightly coat the o-rings with grease prior to installation. Slide the PTO headpipe (item # 4) into the chamber body flange and push until the o-rings lock in place. There will be a small gap (approximately 1/8") between the headpipe and chamber flange when in stalled correctly.
Slide the " x 2-3/4" waterline (item # 30) onto the barbed fitting of the PTO chamber near the flange and secure with a ½" hose clamp (item # 13). Slide another #06 hose clamp over this waterline and rotate the PTO headpipe until the barbed fitting lines up with the waterline. Secure the remaining end of the waterline to this fitting and secure with the ½" clamp (figure 7).

Slide a #250 hose clamp (item # 14) over each coupler on the collector assembly and leave loose at this time. Clean the exhaust port gasket surfaces on your cylinder. Secure the PTO chamber assembly onto the rear cylinder using the manifold gasket, four 10mm x 30mm socket head bolts, and four 3/8" SS flat washers (item # 26,20,17). Use the supplied 8mm wrench (item # 37) to secure the bolts and use thread locker on all bolts. Rotate the PTO mount that was previously installed until it lines up with the PTO chamber bracket. Secure the chamber bracket to the mount with the assembly hardware. Secure the bolt that holds the PTO mount to the stock motor mount. Secure the end PTO chamber bracket to the case mount assemblies previously installed with a 3/8-16 x 3/4" bolt, lock washer, and flat washer (item # 19,16,18).

Locate the MAG/PTO mount assembly (item#9). Remove the 3/8"- 16 x 2-1/2" bolt, two piece rubber mount, flat washers, and lock washer. Leave the remaining rubber mount attached (figure 8). Slide the MAG/PTO mount assembly under the PTO chamber bracket near where the oil tank was located. Temporarily secure the MAG/PTO mount assembly to the chamber bracket using one of the 3/8"-16 x 3/4" bolts from the hardware kit (item # 19). With the mount secured to the chamber assembly, note the contact location on the hull (figure 9). Now remove the mount assembly from the chamber and rough up the contact area on the hull with some coarse sandpaper. Clean sanded surface with acetone or other solvent to make sure it is free of any oil or dirt. Reinstall mount assembly on chamber and mark contact area on hull with felt pen or marker. Remove the bolt and mount assembly from the chamber. Now secure the mount to hull using the supplied epoxy adhesive (item # 12). Squirt a small amount of epoxy onto a piece of scrap cardboard and mix thoroughly. Apply the epoxy to the bottom of the mount and secure in hull to the marked area. Allow at least one hour for the epoxy to fully cure before installing any hardware into mount.

Rejet the carburetors to the supplied specifications in these instructions. The supplied specs are for a stock carb, stock compression engine only. If you have other modifications you may need different jetting. This installation does not reconnect the stock choke cable but we highly recommend leaving the choke plates in place. Removal of the choke plates can cause possible detonation. Remove the stock choke cable bracket and pipe bracket from the carbs. Reinstall the carbs and reconnect all fuel lines and throttle cable.

The stock side squirter will not be used in this installation. In order to keep water from coming in

the squirter do the following. Locate the two 5/16" waterlines from the stock side squirter on the left side of the hull. Remove one of the waterlines from the side squirter (either one) and cut the remaining line to approximately 6". Then, attach the end of the remaining line back to the open end of the side squirter and secure with a 4" zip tie (item # 33).

Assemble the MAG headpipe (item # 3) and MAG chamber (item # 1) using the same procedure as the PTO pipe. Slide the " x 13”waterline (item # 29) onto the barbed fitting of the MAG chamber near the flange and secure with a ½” hose clamp (item # 13). Slide a ½” hose clamp over this waterline and rotate the MAG headpipe until the barbed fitting lines up with the waterline. Secure the remaining end of the waterline to this fitting and secure with the ½” clamp.

To install the MAG headpipe/chamber assembly, start with it positioned as shown in figure 10. Now rotate the headpipe over the PTO chamber and toward the cylinders (figure 11). Before rotating the chamber all the way to the cylinders, install the bottom piece of the two part rubber mount that was removed from the MAG/PTO mount assembly earlier, into the bottom of the chamber bracket (figure 12). Continue to rotate the chamber assembly until the flange lines up at the cylinder and the chamber bracket with the bottom piece of the rubber mount on top of the mount assembly installed in the hull. Secure the MAG headpipe/chamber onto the rear cylinder using a manifold gasket, four 10mm x 30mm socket head bolts, and four 3/8" SS flat washers (item # 26,20,17). Use the supplied 8mm wrench (item # 37) to secure the bolts and use thread locker on all bolts.

Locate one of the large flat washers that was removed from the MAG/PTO mount assembly and place it between the rubber Lord mount left in the MAG/PTO mount assembly and the bottom of the rubber mount in the chamber bracket. Install the remaining top part of the rubber mount on top of the chamber bracket. Loosely secure the complete mount assembly back together using the hardware removed earlier.

Locate the MAG (spool) mount assembly (item # 10) and slide it under the remaining bracket on the end of the MAG chamber. Temporarily bolt the mount assembly to the chamber bracket using a 3/8"-16 x 3/4" bolt from the hardware kit. With the MAG mount secured to the chamber assembly, note the contact location of the mount assembly to the hull. Remove the mount assembly from the chamber and install it with the supplied epoxy adhesive following the same procedure as used on the MAG/PTO mount assembly. Allow at least one hour for the epoxy to fully cure before installing any hardware into mount.

Fully secure the hardware left loose in the MAG/PTO mount assembly. Secure the end PTO chamber bracket to the PTO mount assembly using a 3/8"-16 x 3/4" hex head bolt, 3/8" flat washer, and 3/8" lock washer (item # 19, 18, 16). All the pipe brackets and mounts should be installed and secured at this time.

Slide the couplers on the collector assembly onto the ends of the MAG and PTO chambers and

secure with the hose clamps previously placed loose on the couplers. Secure the clamp that connects the collector assembly to the stinger tube. Secure the clamp that connects the rear of the stinger tube to the waterbox. All the pipe couplers and clamps should be secured at this time.

Locate the water regulator (RAVE valve) on the stock waterbox. Disconnect the black waterline from the regulator and remove the waterline from the boat (the other end was connected to the stock pipe). Follow the clear waterline from the regulator to the T fitting on the main incoming cooling line and disconnect it. Now disconnect the clear waterline from the water regulator and remove the waterline from the boat. Remove the complete water regulator assembly from the waterbox. Install the 1/8" NPT pipe plug (item # 21) into the hole where the regulator was removed and secure.

Remove the stock T in the main incoming waterline where the clear waterline from the water regulator was connected and retain the stock clamps. Install the " x " hose mender (item # 35) in place of the T and secure using the retained stock clamps.

Locate the " x 14.5" waterline (item # 27) and install it on the barbed fitting at the end of the PTO chamber. Locate the " x 11.5" waterline (item # 28) and install it on the barbed fitting at the end of the MAG chamber. Secure both waterlines with a ½" hose clamp (item # 13). Take the loose end of each of these waterlines and put them on the right side of the hull and note where they contact the foam/hull. This will be the location of your side squirters (figure 13). After marking the location, double check that the hoses will reach your desired location and that they are not kinked. Drill a 5/8" hole for each side squirter. Install the two " side squirters (item # 22) into the holes and secure using a small amount of silicone around the hole to seal them. Slide a ½" hose clamp over each of the waterlines and connect them to the side squirters. Secure the waterlines to the squirters.

Looking in the pump cavity from the rear of the boat, locate the 1-1/4" OD tube in the upper right corner. Install the 3/4"-16 plug (item # 36) in the threaded end of the tube and secure.

Double check that all hardware, hoses, clamps, and waterlines are secure. Reconnect the battery cables. Install your aftermarket flame arrestors at this time.

IMPORTANT NOTES

1. This installation removed the oil injection system so you must add oil to any existing fuel in your tank before running the engine.
2. You must run fuel with a minimum octane rating of 92 (premium pump fuel). Running a lower octane fuel can cause detonation and serious engine damage.
2. Always warm up the engine prior to full throttle/high speed operation.

CARBURETOR ADJUSTMENTS

These carburetor recommendations are for 730 feet above sea level. Factory Pipe testing was performed on a stock engine with aftermarket flame arrestors. No claims are made by Factory Pipe for the performance, reliability, or function of this exhaust system on a modified engine. Carburetor adjustments will vary depending on engine modifications, fuel, altitude, and other variables. Please consult a qualified technician if you are not familiar with tuning your carburetor(s). These carburetor adjustments MUST be done prior to running the engine with this exhaust system. High performance engines require precise jetting and damage can occur if the carburetors are not tuned properly.

1998-2000 951XP

Main jet : 182.5
Pilot Jet : 75 (Stock)
High speed screw : turn out from closed
Low speed screw : 2 turns out from closed
Needle: 2.0 (Stock)
Spring: 95 gram (Stock)
Notes: Stock compression with aftermarket flame arrestors

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

Fig. 7

Fig. 8

Fig. 9

Fig. 10

Fig. 11

Fig. 12

Fig. 13

OPTIONAL PERFORMANCE UPGRADE PARTS FOR 951XP

1. RX-X Cooling System (consists of following Sea Doo Part Numbers)
- 275 000 007, Hose 8mm, Qty. 2
- 293 710 066, Male connector, Qty.1
- 293 800 013, Loctite 56765 250ml, Qty. 1
- 293 700 023, Elbow fitting 90deg., Qty. 1
- 293 650 037, Tridon clamp, Qty. 8
- 276 000 001, Hose 12.5 mm, Qty. 2
- 293 650 038, Tridon clamp, Qty. 4
- 290 811 430, Channel Cover (Case Cooler), Qty. 1
- 290 931 880, Rubber ring (gasket for above part), Qty. 1
- 290 841 558, Taptite screw, Qty. 10

2. RX-X MPEM Ignition box, 289 100 003
3. RX-DI Waterbox, 289 100 025
4. RX-X Reed cages, xxx xxx xxx (no part number available at this time)

R&D Racing Products Flame Arrestor