



Dual By-Pass Filter Mounting Kit

INSTALLATION AND SERVICING INSTRUCTIONS

IMPORTANT NOTICE

Read installation instructions completely before attempting to install this unit. Installing the By-Pass Filter is not difficult, however, some mechanical ability is necessary. If you do not possess some mechanical ability, *do not attempt to install this unit*. Consult a mechanic or contact AMSOIL INC. for further information.

WARNING: This unit is not designed to replace the engine's normal full-flow oil filter. Do not attempt to install filters used with this unit on the regular full-flow filter mount, or use other than AMSOIL By-Pass Filter elements on this mount.

This unit was designed for heavy duty and industrial equipment. For automotive and light duty truck applications consult your AMSOIL dealer for the proper filter mount.

INSTALLATION INSTRUCTIONS

Read instructions completely. Since every engine may have a different preferred installation, hose and fittings are not included in this kit and must be acquired before starting the installation.

There are four steps in making this installation:

- A. Attach the filter mount.
- B. Connect the oil feed line.
- C. Connect the oil return line.
- D. Install filter elements and inspect.

A. Attaching the Mount

Inspect all kit parts for damage; check all parts against the parts list. Note special parts you will need to acquire for your particular installation.

1. Attach filter mount to solid existing structure in the engine compartment. Firewall, fender well, or radiator support are normal locations. Filters should be located as close to the engine as space allows. Use mounting template "A" and consult diagram "C" for minimum mounting clearances. Use the $\frac{7}{16}$ hex bolts, washers, and self-locking nuts provided.
2. The mount has four openings or ports. Two are labeled "IN" and two are labeled "OUT." This allows both the oil feed and oil return lines to be attached at either end, or one each at opposite ends. Select the arrangement to fit your installation, and plug the two unused ports with the hex plugs provided. Use a thread sealer or Teflon tape on the plug thread. Maximum torque on these fittings is 28 ft. lb. (38nm).
3. Since this mount is to be used as part of a by-pass or partial flow system, the restriction fitting (BP-134, with the wire tag attached) **MUST** be installed in the "OUT" port of the mount.
4. Because of the wide range of possible mounting configurations, hose and hose fittings are not provided with this mount. Hose should meet or exceed SAE-100R6 specifications, and have an inside diameter from $\frac{1}{4}$ " to $\frac{1}{2}$ ". The mount is tapped to accept $\frac{1}{2}$ " N.P.T. male thread fittings.

Read through instructions and determine which plumbing arrangement best fits your particular engine. Purchase hose and fittings accordingly.

B. Connect the Oil Feed Line

1. (a) Usable oil pressure sources are available on many engine blocks. There are openings into the oil channel through the side of the block. Make sure it is an oil pressure opening by replacing the plug with a gauge and turning the engine over; or by turning the engine over with the plug out and watching for increased flow. **DO NOT START ENGINE WITHOUT PREPARATION TO CONTROL THE OIL FLOW.** Install appropriate fitting to accept your hose fitting.
- (b) An alternate installation is to use the existing oil sending unit/oil gauge opening. Remove the oil sending unit, install a street tee, then re-install the oil sending unit to one arm of the tee.

Remove the plug and determine that it is an unrestricted passage to the oil pan. Install appropriate fitting to accept your hose fitting. Attach hose, then attach the other end to "OUT" port on filter mount where you have installed the restricting orifice.

2. Where an installation requires a new hole (in oil pan or valve cover), a self-tapping hollow bolt may be used. (The bolt is available from AMSOIL. Order BP-40 Bolt and BP-41 Sealing Gasket.) Use a punch to make a hole, enlarging it just enough to accept the tip of the fitting. (A drilled hole may leave metal filings in the interior; a punched hole gives more surface for threads to grasp.) Install hollow bolt and seal, taking care to **AVOID STRIPPING THREADS.**
 - (a) *Oil Pan Return:* Select a location above the base of the pan where the fitting (hollow bolt) will not interfere with the oil pump or other moving parts. Punch a hole and install fitting according to "2." above. Attach one end of hose to fitting and the other end to "OUT" port.
 - (b) *Valve Cover Return:* A hole should be made where it will not interfere with moving parts and should be near an oil return passage (generally located on both ends of the head; make sure you are not behind a Baffle Plate. Failure to check this could lead to increased oil consumption or mechanical problems). Install hollow bolt fitting and attach to one end of hose. Attach the other end to the "OUT" port.
3. *Other Possible Return Locations:* Use a hollow bolt to replace a cap screw holding the fuel pump, timing case, or an inspection cover. Also, you may use the AMSOIL oil filter cap return fitting, part number BP-89.

D. Install Filter Elements and Inspect

1. Select two filter elements from *Filter Selection* information below, lubricate gaskets with clean oil or grease. Fill elements as full as possible with engine oil. Spin to mount, tighten one full turn after gasket makes contact.
2. Check that all fittings and hoses are securely attached, and that hoses are routed properly.
3. Check oil level. Fill to full mark.
4. Start engine, run until warm, check for leaks. Shut engine off, re-check oil level and fill as necessary.
5. Record engine mileage/operating hours and date of installation.

Periodic Maintenance

Inspect all fittings and hoses from time to time. Follow above procedure for replacing filter elements. Use information below to determine change intervals.

Filter Selection and Servicing

If your crankcase oil sump capacity is:

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A. Attaching the Mount

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1. Attach filter mount to solid existing structure in the engine compartment. Firewall, fender well, or radiator support are normal locations. Filters should be located as close to the engine as space allows. Use mounting template "A" and consult diagram "C" for minimum mounting clearances. Use the $\frac{3}{16}$ hex bolts, washers, and self-locking nuts provided.
2. The mount has four openings or ports. Two are labeled "IN" and two are labeled "OUT." This allows both the oil feed and oil return lines to be attached at either end, or one each at opposite ends. Select the arrangement to fit your installation, and plug the two unused ports with the hex plugs provided. Use a thread sealer or Teflon tape on the plug thread. Maximum torque on these fittings is 28 ft. lb. (38nm).
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- (b) An alternate installation is to use the existing oil sending unit/oil gauge opening. Remove the oil sending unit, install a street tee, then re-install the oil sending unit to one arm of the tee.
Note: With this installation a slightly lower oil pressure reading may register, indicating oil flow to the by-pass filter. It has no significance.
2. Install hose from locations in either the block or the remaining arm of the tee to the "IN" port of the mount. Make sure hoses do not contact hot surfaces or moving parts (if necessary, use plastic ties to maintain distance). Hose should not be bent tighter than a 2½-inch radius for ¼-inch hose, or a 5-inch radius for ½-inch hose.

C. Connect the Oil Return Line

1. **Crankcase Wall Return:** Most engines have an oil return opening in the crankcase wall, usually on the same side as the oil channel pressure opening but somewhat lower.

Remove the plug and determine that it is an unrestricted passage to the oil pan. Install appropriate fitting to accept your hose fitting. Attach hose, then attach the other end to "OUT" port on filter mount where you have installed the restricting orifice.

2. Where an installation requires a new hole (in oil pan or valve cover), a self-tapping hollow bolt may be used. (The bolt is available from AMSOIL. Order BP-40 Bolt and BP-41 Sealing Gasket.) Use a punch to make a hole, enlarging it just enough to accept the tip of the fitting. (A drilled hole may leave metal filings in the interior; a punched hole gives more surface for threads to grasp.) Install hollow bolt and seal, taking care to **AVOID STRIPPING THREADS.**
 - (a) **Oil Pan Return:** Select a location above the base of the pan where the fitting (hollow bolt) will not interfere with the oil pump or other moving parts. Punch a hole and install fitting according to "2." above. Attach one end of hose to fitting and the other end to "OUT" port.
 - (b) **Valve Cover Return:** A hole should be made where it will not interfere with moving parts and should be near an oil return passage (generally located on both ends of the head; make sure you are not behind a Baffle Plate. Failure to check this could lead to increased oil consumption or mechanical problems). Install hollow bolt fitting and attach to one end of hose. Attach the other end to the "OUT" port.
3. **Other Possible Return Locations:** Use a hollow bolt to replace a cap screw holding the fuel pump, timing case, or an inspection cover. Also, you may use the AMSOIL oil filter cap return fitting, part number BP-89.

D. Install Filter Elements and Inspect

1. Select two filter elements from *Filter Selection* information below, lubricate gaskets with clean oil or grease. Fill elements as full as possible with engine oil. Spin to mount, tighten one full turn after gasket makes contact.
2. Check that all fittings and hoses are securely attached, and that hoses are routed properly.
3. Check oil level. Fill to full mark.
4. Start engine, run until warm, check for leaks. Shut engine off, re-check oil level and fill as necessary.
5. Record engine mileage/operating hours and date of installation.

Periodic Maintenance

Inspect all fittings and hoses from time to time. Follow above procedure for replacing filter elements. Use information below to determine change intervals.

Filter Selection and Servicing

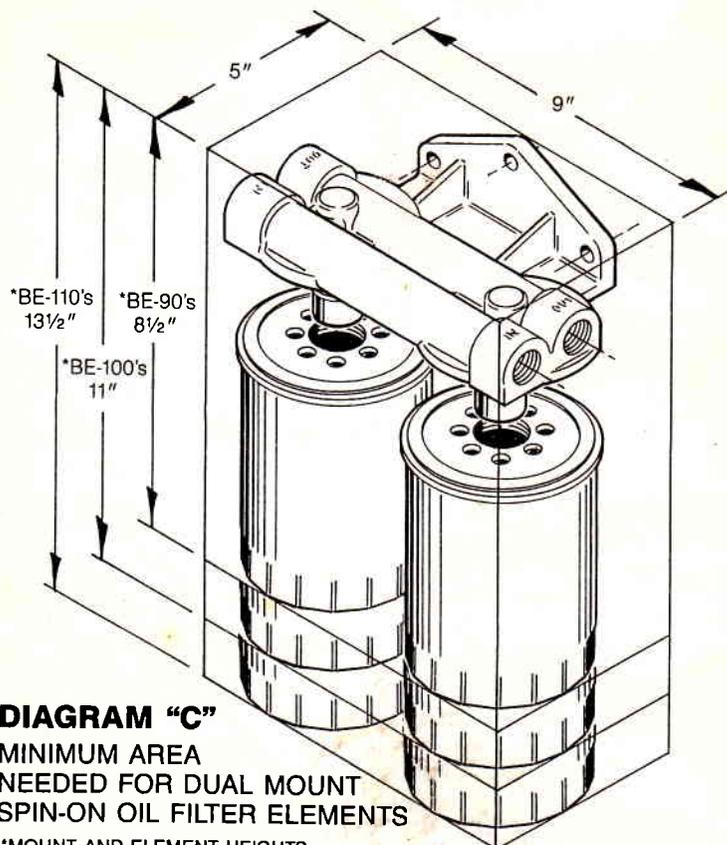
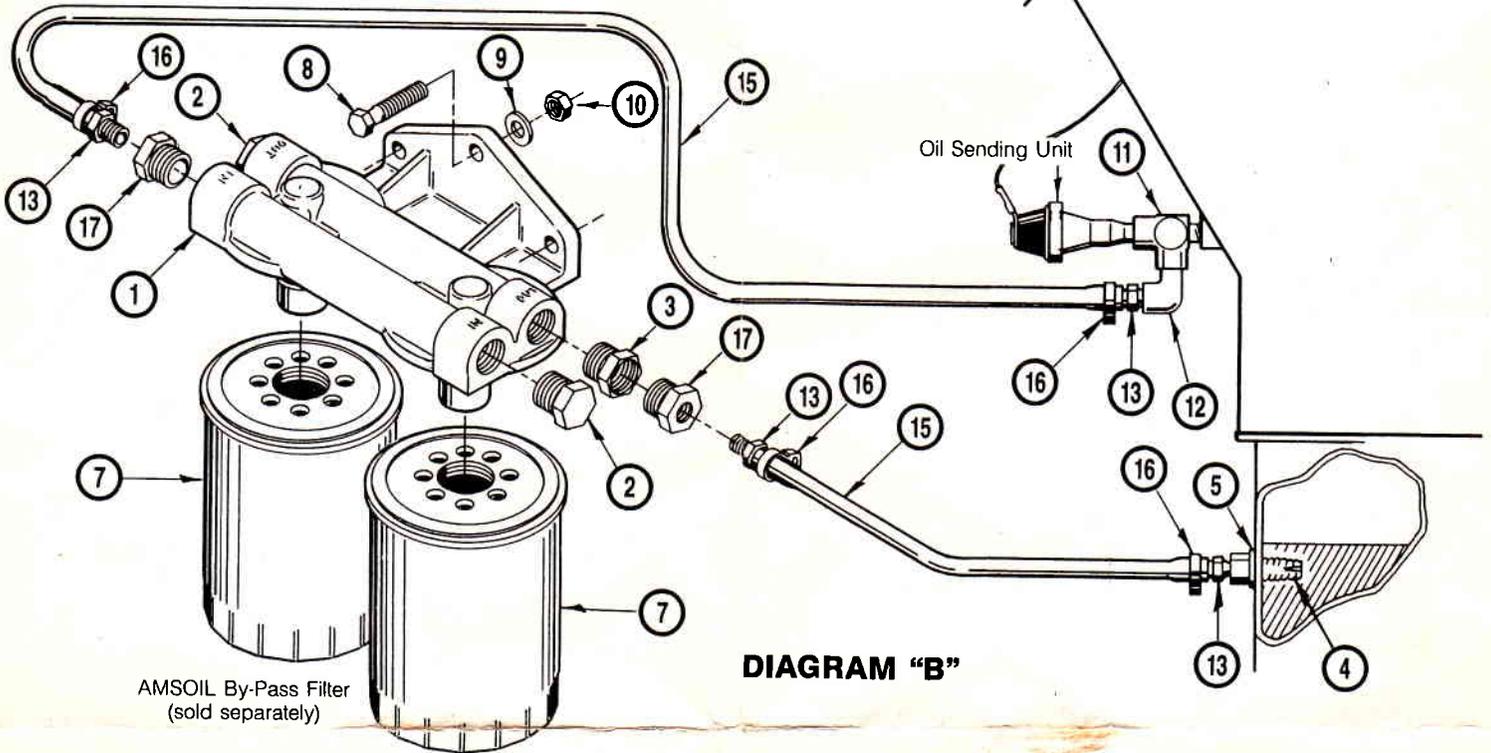
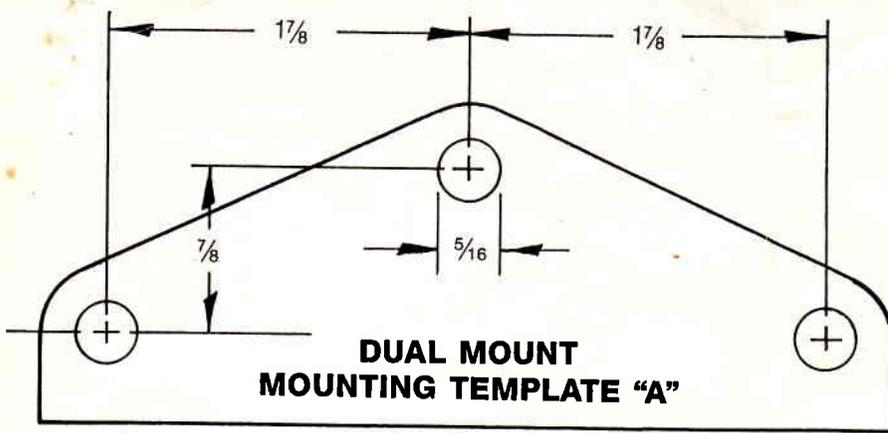
If your crankcase oil sump capacity is:

- 14 to 18 quarts, use 2 BE-90 filters . . .
- 14 to 30 quarts, use 2 BE-100 filters . . .
- 14 to 42 quarts, use 2 BE-110 filters . . .

Your AMSOIL By-Pass Filters will last twice as long as your regular full-flow filter. So change the By-Pass Filters only half as often as you change the regular engine filter.

If your crankcase capacity is larger than the above recommended filter size, or, because of space limitations, you must use a smaller filter than recommended above, change the By-Pass Filters when you change your regular full-flow engine filter.

Note: AMSOIL recommends using the largest filter that will fit in the engine compartment. AMSOIL also recommends truck operators change oil and filters on the basis of lab analysis. In the absence of oil analysis, use the guidelines above.



DUAL BY-PASS MOUNTING KIT PARTS LIST

QTY	DESCRIPTION	PART NUMBER	DIAGRAM NUMBER
		(CP=Canadian Part Number)	
1	Dual Mount	BP-132 CP-132	1
2	1/2" N.P.T. Hex Head Plug	BP-133 CP-133	2
1	Restriction Fitting	BP-134 CP-134	3
3	5/16" Hex Bolts	BP-122 CP-122	8
3	5/16" Flat Washers	BP-120 CP-120	9
3	5/16" Self-Locking Nuts	BP-121 CP-121	10
	Filter Elements (sold separately)		
2	Filter Elements	BE-90	7
2	Filter Elements	BE-100	7
2	Filter Elements	BE-110	7

OPTIONAL PARTS AVAILABLE FROM AMSOIL
(For use with AMSOIL 1/4" I.D. Hose*)

DESCRIPTION	PART NUMBER	DIAGRAM NUMBER
	(CP=Canadian Part Number)	
Hollow Bolt 1/8" FNPT	BP-40 CP-40	4
Sealing Gasket	BP-41 CP-41	5
Oil Return Swivel Fitting 1/8" FMPT	BP-89 CP-89	6
Street Tee 1/8 x 1/8 x 1/8" NPT	BP-33 CP-33	11
Street Elbow 90° 1/8" NPT	BP-52 CP-52	12

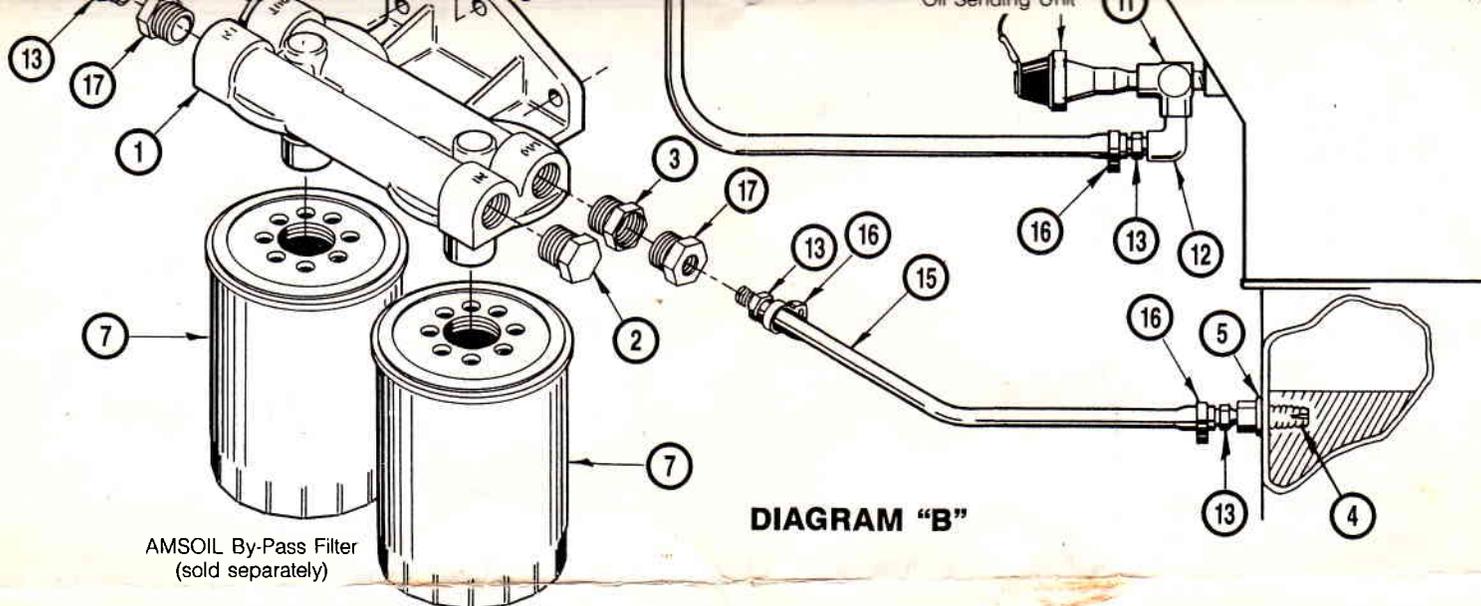


DIAGRAM "B"

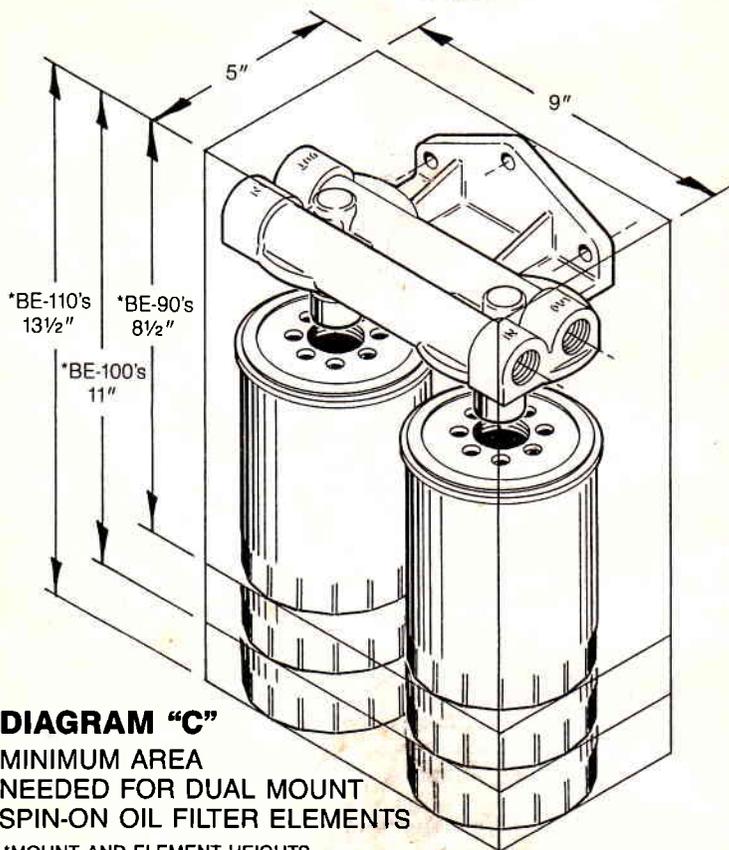
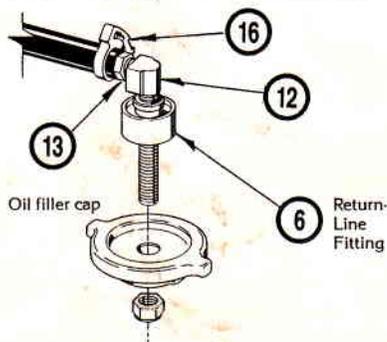


DIAGRAM "C"

MINIMUM AREA
NEEDED FOR DUAL MOUNT
SPIN-ON OIL FILTER ELEMENTS

*MOUNT AND ELEMENT HEIGHTS
PLUS 1-INCH REMOVAL CLEARANCE

**OPTIONAL
BY-PASS
OIL FILTER
RETURN-LINE
FITTING:**



DUAL BY-PASS MOUNTING KIT PARTS LIST

QTY	DESCRIPTION	PART NUMBER	DIAGRAM NUMBER
		(CP=Canadian Part Number)	
1	Dual Mount	BP-132 CP-132	1
2	1/2" N.P.T. Hex Head Plug	BP-133 CP-133	2
1	Restriction Fitting	BP-134 CP-134	3
3	5/16" Hex Bolts	BP-122 CP-122	8
3	5/16" Flat Washers	BP-120 CP-120	9
3	5/16" Self-Locking Nuts	BP-121 CP-121	10
	Filter Elements (sold separately)		
2	Filter Elements	BE-90	7
2	Filter Elements	BE-100	7
2	Filter Elements	BE-110	7

OPTIONAL PARTS AVAILABLE FROM AMSOIL

(For use with AMSOIL 1/4" I.D. Hose*)

DESCRIPTION	PART NUMBER	DIAGRAM NUMBER
	(CP=Canadian Part Number)	
Hollow Bolt 1/8" FNPT	BP-40 CP-40	4
Sealing Gasket	BP-41 CP-41	5
Oil Return Swivel Fitting 1/8" FMPT	BP-89 CP-89	6
Street Tee 1/8 x 1/8 x 1/8" NPT	BP-33 CP-33	11
Street Elbow 90° 1/8" NPT	BP-52 CP-52	12
Hose Fitting 1/8" MNPT x 1/4" Hose	BP-32 CP-32	13
Hose 1/4" x 8'	BP-31 CP-31	15
Hose Clamps for 1/4" Hose	BP-60 CP-60	16
Bushing 1/2" MNPT x 1/8" FNPT	BP-140 CP-140	17

*Hose produced by manufacturers other than AMSOIL can be used, but the hose must meet or exceed SAE 100E6 specifications; 1/4 to 1/2" I.D.

OTHER PARTS NEEDED

Top-Off Oil (amount depends on which filters are used with mount), Thread Sealer or Teflon® Tape