

# OIL RX•3000

Dynamic Cleaning  
Oil Lubrication Systems

Reference Manual

# OIL SYSTEM SERVICE

TOPIC	PAGE
SAFETY INFORMATION.....	3
INTRODUCTION.....	4
FIRST TIME OPERATION.....	5
FEATURES AND CONTROLS.....	6
CLEANING THE OILING SYSTEM.....	9
TROUBLESHOOTING GUIDE.....	12
SYSTEM MAINTENANCE.....	14
OIL FILTER ADAPTER & PARTS.....	15
WARRANTY AND OWNER REGISTRATION.....	17

# SAFETY INFORMATION

This equipment is to be operated by qualified personnel. It should only be operated after reading the instruction manual and understanding the safety information contained therein.

- Wear safety glasses when operating
- Do not smoke near the machine
- Do not inhale or breathe the fumes from the machine or the exhaust fumes from the engine.
- Use in a well ventilated area
- Read and understand the material safety data sheet
- Immediately repair any leaks in the machine or adapters
- Immediately clean up any spills Keep a fire extinguisher handy
- Keep the lines (hoses) from moving parts & hot objects
- Do not exceed the pressure for which the machine was set. To do so could cause engine damage, possible personnel injury and void the warranty.
- Do not use any cleaning solvent in this machine unless it is recommended by the manufacturer

# INTRODUCTION

Simple and easy to operate, the OIL RX-3000, when used with authorized cleaning solutions, removes carbon, sludge, varnish, gum, and other contaminants from the engine's oiling systems and related surfaces. This is accomplished by a connect the machine's oil inlet and return lines to the engine's oil filter port.

The machine is powered by compressed air and the vehicle's oil pump.

The engine's oil is not required to be drained until after the cleaning process has been completed.

While the engine is run at idle, a mixture of cleaning solution and motor oil is circulated through the engine's entire lubricating system, including the engine valve covers, valve train and crankcase side walls and all oil-wetted surfaces. Sludge and contaminants are removed from the engine by the machine's 5-micron filter. This filter is replaced after each service is performed.

An air flush feature is used to remove any leftover motor oil and cleaning solution via the oil pan's drain plug opening. The OIL RX-3000 series machines can also measure the engine's oil pump flow and oil pump pressure via a flow meter and a pressure gauge. The OIL 3000 has a 64 ounce (1 LITER) reservoir for cleaning solution.

NOTE: The machines new fluid tube is used as a gauge to meter the precise amount of cleaning solution into the oiling system's oil stream.

When the timer has gone to zero the service is finished.

Two (2) filter bowls are available:

A 5" bowl for cleaning gasoline engines and a 10" bowl for cleaning diesel engines.

The gas and diesel cleaning solution and filter kits are sold separately.

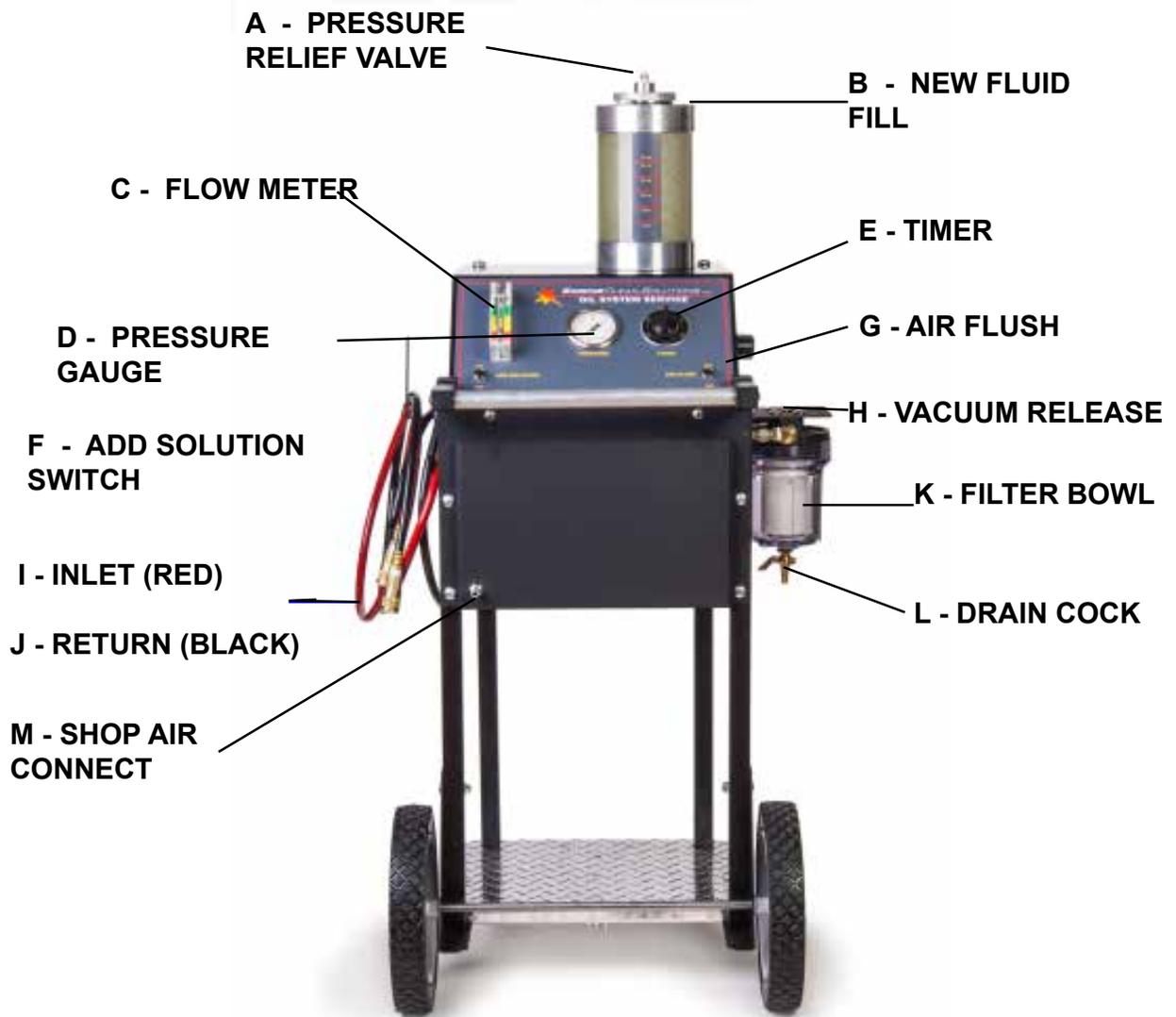
# FIRST TIME OPERATION

## REFER TO FIGURES A, B, C, D, AND E

Read the safety instructions and this entire manual

1. Pour 32 or 64 ounces of cleaning solution in the oil solution reservoir (B) through the fill spout
2. The Oil RX - 3000 operates on a minimum of 50 psi of compressed air. Connect air line to the port marked "air inlet" (2). Note the reading on the air pressure gauge attached to the air pressure regulator. It should read no more than 35 psi. If an adjustment is needed, pull down on the black knob and adjust accordingly. Push up on the adjusting knob to re-lock the regulator in position.
3. Make sure the pet cock located on the oil filter bowl is closed.
4. The Oil 3000 machine is now ready for service.

# FIGURE 3000

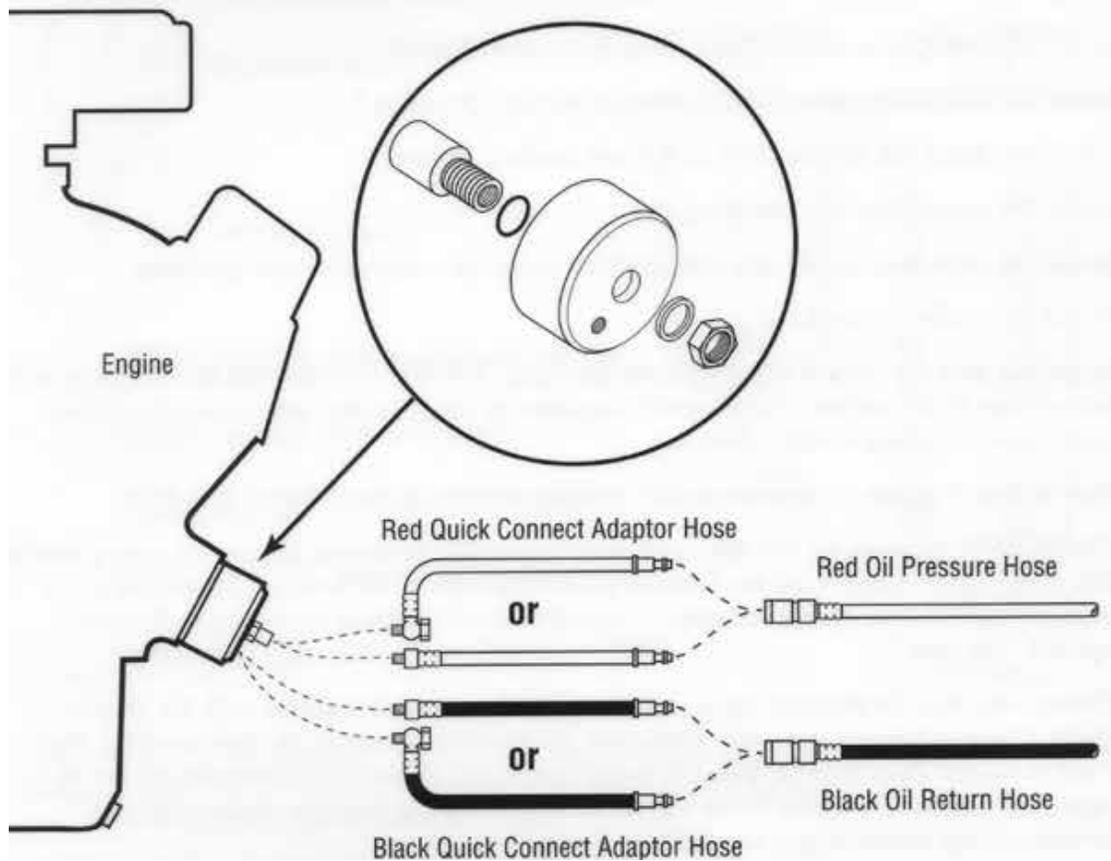


MODEL OIL RX - 3000

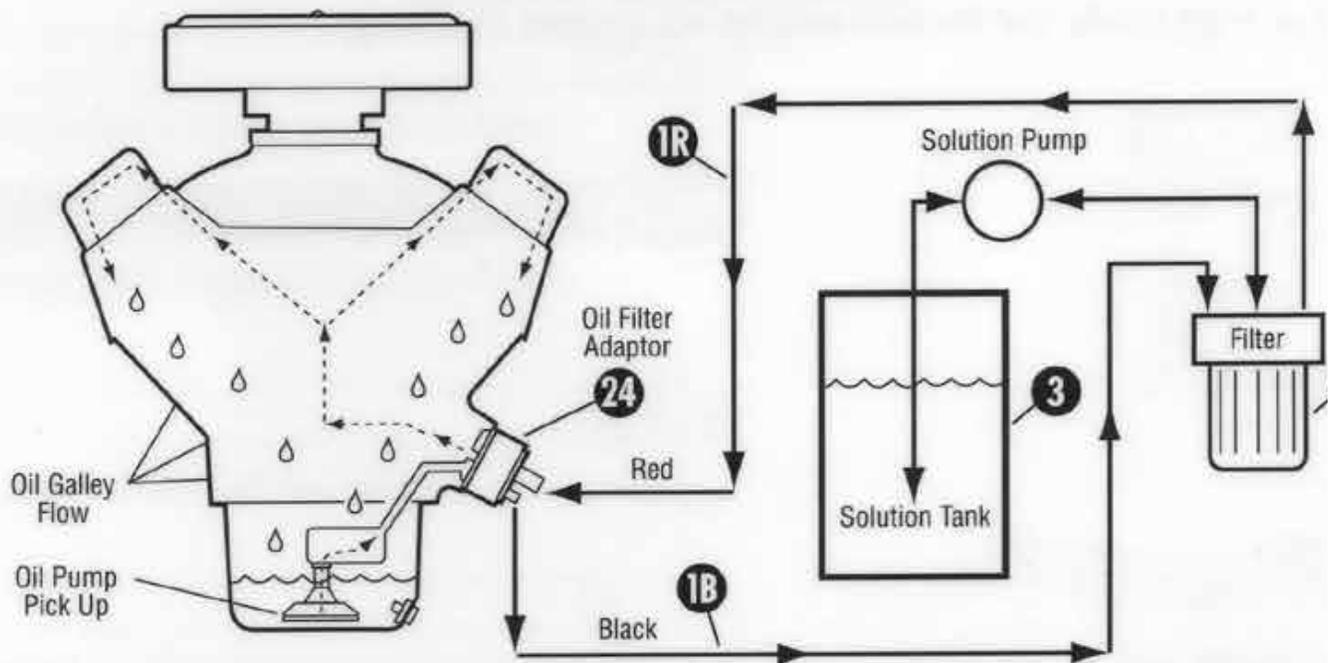
# SYSTEM FEATURES

- (A) **Pressure Relief Valve** - Add solution.
- (B) **New Fluid Fill** - add up to 64 ounces (about 1 liter) cleaning solution
- (C) **Oil Flow Meter** shows how much oil the engine's oil pump is delivering back to the Oil 3000 filtering system.
- (D) **Oil Pressure Gauge** shows how much oil pressure the engine's oil pump is producing at idle.
- (E) **Timer**, when elapses to zero, "O", sounds a buzzer.
- (F) **Oil Solution Pump** – Toggle switch transfers the EFX-601 cleaning solution to the oil filter bowl.
- (G) **Air Flush-Switch** allows air into the engine's oil galleys to remove any residual oil/solution from the engine.
- (H) **Vacuum Breaker** at the top of the filter bowl housing is pressed when the filter bowl is to be removed.
- (I-J) **Inlet & Return Lines** are color coded - red for inlet and black for return.
- (K) **Filter Bowl** - with 5-micron sediment filter.
- (L) **Drain Cock** - Open to drain fluid prior to removing filter.
- (M) **Shop Air Connect** - Connect to shop air

# OIL FILTER ADAPTOR ASSEMBLY AND CONNECTIONS



# FLOW DIAGRAM



# CLEANING THE OIL SYSTEM

## Overview

When cleaning the oiling system set engine speed at idle, or slightly above idle. This is the most efficient and thorough method for cleaning the complete inside of the engine's oiling system including the hydraulic lifters, valve train, gear train, oil pump, valve cover, crankcase sidewalls, oil galleys, and oil pan and any other "oil-wetted" surfaces located inside the engine. Engines that are burning oil or have other symptoms of low compression or poor mechanical condition should not be cleaned.

- The machine's filter must be replaced at each cleaning.
- The engine's oil filter must be replaced at each cleaning.
- The engine's oil must be changed after each cleaning.

The engine must be warm when starting the procedure. Since the engine is running during the procedure, an auxiliary heater is not required. The engine will provide its own heat to insure a more thorough cleaning.

The cleaning cycle must be at least 10 minutes. The normal cleaning time is between 10 and 20 minutes, although some engines, including diesel, may require longer times to completely clean the oil system.

During the cleaning process, cleaning solution mixes with the engine's oil, as the oil passes thru the oil filter mounted on the Oil 3000. The engine's oil provides lubrication for the engine and is the carrier for the cleaning compounds located in the cleaning solution.

The cleaning solution/oil will circulate thru the machine, and the machine's filter, about 4 or 5 times per minute (average gasoline engine). The cleaning solution will dissolve the sludge, varnish and tar inside the engine using the churning action of the internal moving engine parts. The heavier contaminants, such as wear metals and gasket particles, are flushed into the oil pan where they are picked up by the engine's oil pump and filtered out by the 5-micron filter located on the machine.

At the end of the cleaning cycle, the oil is drained, and the engine is air flushed to remove excess cleaning solution/oil that may be in the oil galleys, etc. Leaving a small amount of cleaning solution in the engine is beneficial, as it contains a seal rejuvenating and oil conditioner.

Dispose of the old drain oil as you would regular drain oil.

# CLEANING THE OIL SYSTEM

Step 1: Make sure the oil level in the engine is at least at the low mark. Make sure that the engine is warm. Pour EFX cleaning solution into the machine's tube reservoir. Empty the filter bowl and install a new filter. Make sure the pet cock is closed.

Step 2: Remove the oil filter from the engine and replace it with the correct oil filter adapter, using appendix "b" as a guide.

Note: the adapters will spin-on-easily – do not force them. Hand tight only.

Attach the red oil line (1r) to the center port on the oil filter adapter and the black line (1b) to the side port.

Note: the center port is threaded 12mm for the red adapter lead (24a) and the side port is threaded 10mm for the black adapter lead (24b).

Make sure all the control buttons are in the off position; that is, they are in the "down" position. Attach an air line to the port marked "air inlet" located on the side or back of the machine.

Step 3: Flip up the red switch (4) until the desired quantity of cleaning solution is injected into the oil filter port. Start the engine and let it idle. Observe that there is oil flow thru the flow meter (5) and that the oil pressure gauge (7) shows pressure. Set the timer from between 10 and 20 minutes and turn on the buzzer switch (9). check for leaks.

Step 4: When the timer goes back to zero, turn off the buzzer and shut off the engine. **Drain out the old oil and cleaning solution.** While the drain plug is out, flip the (6) air flush switch. This will flush out any excess oil/solution from the engine. About 30 seconds is sufficient. Install the drain plug, remove the oil filter adapter, install a new oil filter and fill the crankcase with motor oil. Start the engine, check for leaks and recheck the oil level.

# CLEANING THE OIL SYSTEM

Drain the oil filter bowl by opening the pet cock and pressing the vacuum breaker button (10) located on the top of the oil filter bracket. Once the oil level has dropped enough to remove the bowl without spilling oil, remove it and drain it. Install a new 5-micron filter element and replace the bowl. Use the wrench provided to tighten the filter bowl.

Shop Notes: the oil flow meter float should be at the top of the meter anytime the engine is running. If it is not, it could be an indication of a plugged oil pump pick-up screen, a weak oil pump or a plugged filter on the machine. To determine which problem is present, slightly increase the idle speed. If the flow meter goes to the top, then the oil pump is weak (at Least at idle speed). If the flow meter does not go to the top at increased idle speed, turn off the engine and replace the 5-micron filter. If the problem persists, then the oil pump pick-up screen is plugged.

If there is no flow, stop the Engine and repair the problem. If there is some flow, the cleaning process will probably clean the screen, unless there is a substantial amount of gasket material or silicone sealer in the oil pan.

Do not rely on the oil pressure gauge by itself to determine the condition of the oil pump and the pick-up screen. The oil flow meter is a more reliable indicator.

Warning: use only genuine engine clean filters. Other filters will not fit and can result in engine damage. Under no Circumstances can you use a "string wound" filter in this machine.

Reorder filters by using these numbers:

Gasoline engines – no. 50022 (5" 5-Micron gradient rated)

Diesel engines – no. 50023 (10" 5-Micron gradient rated)

# TROUBLE SHOOTING GUIDE

## **Solution pump does not function:**

1. Low inlet air pressure - machine requires at least 50 psi to operate.
2. If no air pressure - check air line connection.
3. Check air pressure on gauge located inside machine. Psi should read 30 to 35 psi. If low pressure, adjust the gauge accordingly.
4. If air pressure check is OK, then check air inlet to machines air pump by removing air line going into pump. Turn on solution pump switch and check for air flow. If flow is OK, replace pump.

## **No oil pressure and no oil flow:**

1. Kinked return or pressure hose.
2. Check oil level in engine. Engine oil level must be to the low level mark on the dipstick.
3. Check for oil coming from inside machine at the hole in the bottom of the machine housing.
4. Wrong adapter being used. Check for proper adapter in adapter application guide

## **Low oil pressure and low oil flow:**

1. Partially kinked return and/or pressure hose.
2. Dirty filter - change machines filter before each cleaning.
3. Dirty screen in the machine filter head. Remove vent valve and blow air thru the screen with the filter and bowl removed from the machine.
4. Weak engine oil pump - increase engine rpm and observe if the flow and pressure increase. If flow and pressure increase the engines oil pump is weak at idle. If flow pressure does not increase go to step 5.
5. Partially plugged engine oil pump pickup screen - let screen hot soak in the cleaning solution for 15 minutes with the engine off. Then retry.
6. Engine oil is very thick and engine is cold. Disconnect machine and run engine until the engine block is warm to the touch. Re-connect the machine and retry.

# SYSTEM MAINTENANCE

The Oil-3000 is designed to give many years of trouble-free operation and there is virtually no maintenance required.

Periodically check for loose fittings and chafed lines and hoses. Replace any damaged hoses or components.

Replace the oil filter O-ring, when needed. Avoid using pliers on the filter bowl. Use the wrench provided.

Do not overtighten the oil filter adapters and leads. They are designed to be hand tightened only.

The air pressure regulator, located on the side of the cabinet, is to be set at 30 to 35 psi. Periodically check the air pressure gauge, mounted on the air pressure regulator, to insure the air pressure is 30 – 35 psi. (Adjust the air pressure regulator by pulling out the adjusting knob to adjust the air pressure). Do not exceed the 30-35 psi which is the factory recommended setting.

# LIMITED WARRANTY

This product is warranted by ENGINE CLEAN SOLUTIONS, INC. to be free of defects in workmanship and materials for a period of one year from date of purchase by original purchaser. If the product fails within this period, it will be repaired or replaced at seller's option; provided (1) the product is submitted with proof of purchase date and (2) transportation charges are prepaid to the nearest Service Center. Liability under this warranty is expressly limited to repairing or replacing the product or parts thereof. This warranty does not apply to product or parts broken by accident, negligence, overload, abuse, or if they have been tampered with in any way. This warranty does not apply to service hoses and adapters that may need replacing do to normal wear. If this warranty does not apply, then the purchaser shall pay all costs for labor, material and transportation. Note: The use of this apparatus for any purpose other than the services described will render this warranty null and void. No other warranties are expressed or implied.

# STANDARD ADAPTER PARTS



#	Part No.	Description
1	52310	3.5" / 4.0" Adapter Housing W/52311 Seal Ring
2	52300	3" Adapter Housing W/52301 Seal Ring
3	52320	22-1.5mm Threaded Adapter, Silver, W/Nut & Seal Rings
4	52330	20-1.5mm Threaded Adapter, Blue, W/Nut & Seal Rings
5	52340	18-1.5mm Threaded Adapter, Red, W/Nut & Seal Rings
6	52350	3/4-16" Threaded Adapter, Black, W/Nut & Seal Rings
7	52360	13/16-16" Threaded Adapter, Green, W/Nut & Seal Rings
8	52221	Adapter Lead, Red, 12mm Banjo, W/Large Plug End, 6"
9	52231	Adapter Lead, Black, 10mm Banjo, W/Large Plug End, 6"
10	52276	Adapter Lead, Red, 12mm Straight, W/Large Plug E RXnd, 18"
11	52286	Adapter Lead, Black, 10mm Straight, W/Large Plug End, 18"
12	80761	Open End Adapter w/3/8" Plug End
13	80941	Double End Connector W/3/8" Plug End
14	81370	1/4 male air chuck
15	20430	1/4 X 1/4 90-degree street elbow
16	20350	1/4 male air chuck
17	50301	O-Ring for filter housing (viton)
18	52301	Seal Ring for 3" Adapter (52300)
19	52311	Seal Ring for 3.5"-4" Adapter (52310)
20	52305	2.5" Adapter Housing W/52374 Seal Ring
21	52374	Seal Ring For 2.5" Adapter Housing (52305)



# OIL FLUSH MACHINE ADAPTERS

## CANISTER TYPE ADAPTERS (CLM)

**PRICE LIST - 09/01/17**

MFG	APPLICATION	P/N	
ACURA	LEGEND & SPORT COUPE (1986 & 87)	52400	
AUDI	AUDI-- 3.2L TT	52464	
	AUDI--S4, 8A, All TERRAIN	52467	
BMW	BMW--IL6, 2.5 & 2.8L. IL4, 2.8L	52410	
	BMW--L6 3.0, 3.2 & 3.5L -Two Adapters	52411	
	BMW--IL4 1.8 & 1.9L	52412	
	BMW--V8 3.0 & 4.0L. V12 5.0 & 5.6L	52413	
	BMW--V8 4.0 & 4.4L. V12, 5.4L	52414	
	BMW--3L DOHC 16 (330i)	52461	
CITROEN	CITROEN	52512	
FORD	FORD 6.0 DIESEL	52460	
GM	CADILLAC / SATURN 3.0L V6	52403	
	CHEVROLET/BUICK/OLDS 2.5L - FILTER IN PAN	52406	
	CADILLAC CTS 3.2 L	52510	
HYUNDAI	HYUNDI 3.3 L	52570	
	OLDS 3.5 V6 INTRIGUE	52418	
LEXUS	LEXUS-IS 250/350	52458	
	LEXUS- GS 300	52459	
MBZ	MBZ--IL4, 2.2 & 2.3L. IL6, 2.8, 3.0, 3.2 & 3.6L	52380	
	MBZ--V6, 2.8 & 3.2L. V8, 4.3 & 5.5L	52383	
	MBZ--V8, 4.2L, 5.6L	52386	
	MBZ--V8, 5.0L, 8.2L & E-Class 4.3L	52390	
	MBZ DIESEL--L4, L5, L6	52384	
	MBZ DIESEL--L4 & L5	52412	
	MBZ DIESEL--V6	52417	
MAZDA	MAZDA 6	52466	
MINI	MINI-COOPER/COOPER S	52465	
PORSCHE	PORSCHE--H6 3.2 & 3.6L	52388	
LAND ROVER	RANGE ROVER--V8-4.4L	52474	
SATURN	SATURN--L SERIES, V6-3.0L (2000 UP)	52403	
	SATURN--L4 2.2L	52449	
TOYOTA	AVALON	52468	
	TOYOTA 4 CYL	52475	
	TOYOTA 4-6 CYL	52476	
	TOYOTA 8 CYL	52477	
	TOYOTA 6 CYL INTL	52478	
VOLVO	VOLVO--ALL WITH FILTER IN OIL PAN	52389	
	VOLVO--2004 LATER	52462	
VW	VW--DIESEL, L4 1.9L GAS L4 1.8L	52379	
	VW--V6 2.8L (2000 & Older)	52402	
	VW-- 3.6L PASSAT (06/07)	52463	
	VW--2.5BTLE/JETA2.0LGOLF/GTI-R-32/JETA/PAS	52464	
	VW--V8 4.2 L 6.0L PHAETON	52467	

PRICES ARE FOB BALDWIN PARK, CA