2007 catalog

APPLE HYDRAULICS 1610 Middle Road Calverton, NY 11933



Automotive Hydraulics Specialists since 1973 rebuilding:

- SHOCK ABSORBERS: Lever type shocks ("shocks with arms")
- BRAKE and CLUTCH cylinders (master, slave, wheel) and calipers, resleeving and complete rebuilding
- CARBURETORS, British SU and Zenith-Stromberg carbs

Toll Free

USA, Canada, Puerto Rico

1-800-882-7753

(631)369-9515 Fax (631)369-9516 http://www.applehydraulics.com info@applehydraulics.com

ORDERING INSTRUCTIONS

THREE METHODS OF ORDERING

EXCHANGE - WE SHIP FIRST To order, add core deposit to rebuilt price listed and phone in, fax in, or e-mail your order for same day shipping. Return your old cores within 90 days and we will return the core deposit.

EXCHANGE - YOU SHIP FIRST Send in your parts and we will ship you rebuilt replacement from stock. No core charges involved. Shipping - the day we receive your cores.

REBUILD & RETURN (R&R) Send us the parts and we will rebuild them and ship back to you. Turnaround time - 5 working days for most jobs.

TERMS

Payments should be made before Apple ships the order. We accept:

- o Visa, MasterCard, Discover charged on the day of shipping,
- o checks personal checks must clear our bank before we ship,
- o PayPal payment to info@applehydraulics.com must reference our invoice number and be exact amount agreed
 - o COD orders please add \$8.50 COD fee.
 - o New York State residents must add sales tax.

SHIPPING TO APPLE

When sending cores to us, send what you received from us (if sending for core refund), or what you see on pictures in this catalog (exchange, R&R). Parts need not be cleaned.

To avoid delays and loses, please include necessary paperwork: invoice copy for core refund, completed purchase order form (see inside back cover), or a brief note with your name, address, phone number, listing of what is sent, etc.

Use carrier of your choice.

SHIPPING FROM APPLE

Continental USA: Please add \$9.95 per item for Fedex Ground or Priority Mail shipping. Exceptions: any number of smaller parts that fit in Priority Mail Flat Rate Box (8.5x11x5.5) count as one item (for example, brake master cyl and four wheel cyls), pair of carbs \$19.90, heavy parts (over 20 lbs each) actual charges. Next Day, Second Day, and 3 Day available upon request.

Outside Continental USA: Shipping & handling charges are actual Fedex or Postal Service charges.

CORE ACCEPTANCE

Only rebuildable cores are accepted for core charge refund, exchange, or R&R. In the past, less than 5% of the cores were rejected. Many of the cores rejected receive partial credit depending on the condition.

Rebuildable cores:

- o No physical damage such as cracks, bent or broken parts
 - o Mounting holes not broken or excessively worn
- o Threads and splines not stripped
- o Not "frozen": Internal movable parts should move

Welcome to Apple Hydraulics, largest USA rebuilder of lever shock absorbers

Lever action type shock absorbers were used on most cars until early 1950s and on some sports cars as late as 1980s (MGB, for example). Pistons in these shocks are connected to a shaft, one end of an arm (or a pair of arms) is attached to the shaft and the other end is connected to the suspension spring. Spring oscillation causes back and forth movement of the arm, which on its other end induces rotary movement of the shaft, causing pistons to move and force the fluid through the valve ..., and spring oscillation is dampened. (Compare to modern "direct action" tubular shocks where piston and spring are attached to a single rod.)

Always check shock absorbers!

INOPERATIVE OR WORN OUT SHOCK ABSORBERS CAN CAUSE

UNDUE TIRE WEAR
HARD STEERING
LOSS OF CAR CONTROL
SHORT BRAKE LIFE
PREMATURE FRONT-END WEAR

Two levels of shock rebuilding services:

STANDARD

ONE YEAR GUARANTEE

Apple Hydraulics long standing reputation for precision workmanship started with these fine rebuilt shock absorbers.

Externally cleaned to bare metal. Housings rebushed with bronze bushings, shafts reground and polished. Cylinders and pistons are align honed and polished. To aid dirt and water exclusion highest quality double-lip seals are used, which outlast originals. Valving is properly calibrated for correct jounce and rebound specs. Painted with a gun-metal gray primer.

All rebuilt shocks come filled with fluid and ready for installation on the car.

Prices listed in this catalog are for Standard Rebuild.

HEAVY DUTY

Two Year Guarantee

Ever since introduction of our Heavy Duty shock line we have been selling them 2 to 1 over standard units.

Designed for our customers who enjoy driving their cars with performance in mind. Rebuilt to same high quality as our standard units, but with larger bronze bushing where main shaft rides. Shock valving is upgraded, 15% stiffer than standard shock, but a longer lasting unit. Highly recommended for many Armstrong aluminum body shocks, esp. Big Healey front, Midget/Sprite front and TR-6 rear shocks, and also for Delco double arm front shocks.

Please add \$10 per shock for Heavy Duty Rebuild.

DELCO LEVER ACTION SHOCK ABSORBERS

DELCO PART NUMBERS EXPLAINED

Almost all Delco lever shock absorbers have, somewhere on the casting, inscription "Delco, Made In Dayton, U.S.A" (on some word "Delco" is replaced with "Delco-Lovejoy" or "Lovejoy").

Part number is a four-digit number with a letter or two (e.g. 1948A, 1430CA, ...); letter portion is used to distinguish between left and right or between shocks with identical bodies and different arms. The part number can be found on most shocks:

- on shocks with screw-on caps on each end of the body, the number is usually on the cap on the arm side of the body;
- on shocks with cover plate (held on the body with ordinary screws), the number is usually on the plate;
- some shocks have number stamped on the valve cover (looks like large, approx. 1/2 inch diameter screw or nut).

Part # RANGE	Typical Applications	Sample picture (not to scale)	Еасн
(1928-3 linking s the sprin part num	early shocks 0, with straps hock arm and g) do not have ber in the form ibed above	Dalco Langey	\$225
1200-99	Chevrolet Crosley	Concession of the Concession o	\$165
1300-99	Buick Chrysler		\$185
1400-99	Chevrolet De Soto Dodge GMC Truck International Plymouth Pontiac		\$165
1500-99 except	Buick		\$165
1570-79	Buick Cadillac Duesenberg LaSalle		\$315 to \$345
1600-99	Buick GMC Truck International Packard Pierce Arrow Reo White Yellow	with ride control (most) \$245 if without ride control	\$285

1700-99	Auburn Buick Cadillac Chrysler Dodge Packard	without ride control (most) \$195 if with ride control	\$165
1800-99	Cadillac Cord		\$245
1900-99 except	Buick Cadillac Packard Pontiac Olds		\$195
1900, 1902	Buick		\$365
1950	Cadillac		\$365
1951, 1952	Cadillac Packard		\$285
2000-99	Cadillac GMC Truck International Packard		\$245
2100-99	Buick Chevrolet Olds		\$165
2200-99	Chevrolet Packard		\$195
Dubonnet Knee	Chevrolet Pontiac		\$445

POPULAR DELCO SHOCKS

Rebuilt: \$195 Front, \$165 Rear

BUICK	Front	Rear
1941-42 Ser. 80, 90 1941-53 Ser. 40, 50, 60, 70	1948A	1757A/B 2105C/D
1954-55 All	n/a	2105X/Y

CADILLAC

1941-49 Ser. 60S, 61, 62 1941-48 Ser. 75 Commercial	1946G/H	1754N/P 1751V/W
1941-48 Ser. 75 Passenger	1946G/H	2007N/P (\$245 ea.)

CHEVROLET

1934-38 Master - with knee action	Dubonnet (\$445 ea.)	1400-99 (various)
1939-40 De Luxe, 1941-48 All Pass.	2200A/B	2100A/B
1937-48 ½ Ton Truck 1937-48 ¾ and 1 Ton Truck	1430DA/CA (\$165 ea.)	1430LA/MA 1431X/Y

OLDSMOBILE

1941-48 Ser. 66 68 1941-48 Ser. 76 78 96 98 1949 Ser. 98 1950 Ser. 98 1951 Ser. 98	1947C/D	2105G/H 2105E/F 2105R/S n/a
1949 Ser. 76 88 1950 Ser, 76 88 1951 Ser. 88 1952-54 All	1947J/K	2105N/P 2105T/U n/a

PACKARD

.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
1940 110, 1800-01-03	2206A/B	n/a
1941 110, 120, 160, 180 1942 2004-05-07-08	1966D/C	n/a
1941 Clipper 1942 Ser. 2000-01-03-06-10-11 1946-50 All	1946J/K	n/a

PONTIAC

1 011111110		
1934-36 with knee action	Dubonnet (\$445 ea.)	1400-99 (various)
1937-38 6 and 8 Cyl.	1947A/B	n/a
1939-48 6 and 8 Cyl.	1947C/D	n/a

Many of Delco shocks are kept in stock, already rebuilt, please contact us for current availability and core charge.

SHOCK LINKS

Shock links should be tight and wobble free.

New links available for 1941-55 Buick (go with 2105C/D and 2105X/Y), \$35 each. Most others available R&R (rebuild and return yours).

HOUDAILLE SHOCK ABSORBERS (Rotary type)

This is a rotary shock absorber (as opposed to the more common Delco piston shock; an easy way to identify a Houdaille shock is by its round clocklike housing) A very labor intensive shock to rebuild, especially if frozen (arm doesn't move); they must be rebuilt on an individual basis.



FORD - MERCURY - LINCOLN, \$145.00 ea.

1928-48 Ford and Ford Truck

1936-48 Lincoln-Zephyr

1939-48 Mercury

New shock links available for 1935-48 Ford and Mercury, \$25 each



OTHER CARS WITH ROTARY SHOCKS PACKARD

Most pre 1930 models have Houdaille shocks. Please call for pricing,

Some 1938 Packard models have Houdaille rotary shocks: front with two arms (\$195 to rebuild) and rear with single arm (\$145).

Rear stabilizer ("fifth shock"): \$225.

STUDEBAKER

1937 and later: \$145 each. Call for pricing for pre-1937.

CHRYSLER, PIERCE ARROW, CORD

before 1932: please call for pricing.

FERRARI

Early post WWII: \$265 each

MG

some MGTA, TB, PA, PB, YA, YT, YB - \$225 each

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JAGUAR

\$265 each





FERRARI



ARMSTRONG REBUILT SHOCKS

for British and Other imports



(E) = Exchange for already rebuilt shocks we have in stock. **Rebuild and return** yours is also available, please add \$10.00 per shock.

(R) = Rebuild yours only (Saab and Sunbeam)



All our rebuilt shock absorbers are available as **Standard or Heavy Duty Rebuilds**. Prices listed are for Standard Rebuilds (for Heavy Duty Upgrade add \$10.00 per shock).

Please add \$45 core deposit per shock if your unit is not sent with order.

FRONT SHOCKS ONLY

Highly Recommended (only for Austin Healey, Sprite/Midget, and MGB): Always replace rubber bushings between front shock and kingpin. These critically overlooked bushings are almost always worn out. Please request these bushings with every front shock you order. \$4.50 ea. (2 required per shock)

REAR SHOCKS ONLY

Please Check: A rebuilt shock won't compensate for a connecting link with worn or loose bushings. They should be tight and wobble free. \$20-\$55 per link (outright, except 1953-62 Austin Healey exchange only).

VINTAGE REBUILT SHOCKS (Rebuild Yours Only)

	Front	Rear
ASTON MARTIN Armstrong - Single Arm Dual Valve Selectaride - Electrically Adjustable Dampening Rotary - with Clocklike Round Housing	\$225 \$315 \$325	\$315
AUSTIN MARINAI - Armstrong - Single Arm	\$85	n/a
AUSTIN PRINCESS - Armstrong, Cast Iron Housings	\$295	\$120
BMW - Lever Action	\$165	\$165
FERRARI - Houdaille Rotary Unit	\$265	\$265
GABRIEL Piston Lever Type Rotary Type	\$145 \$225	, ,



JAGUAR Girling or Luvax - Single Arm [XK120 & others] Rotary Style - Round Housing [SS 100 & others]		\$185 \$265
MERCEDES - Lever Action	\$165	\$165
MGTA, TB, PA, PB, YA, YT, YB Girling PV5, PR5 Piston Type Rotary Style Luvax Unit		\$185 \$225
MGTC - Girling / Luvax Single Arm Piston Type	\$165	\$165



MGTD, TF 1950-52 Girling - Cast Iron Housing 1952-56 Armstrong - Aluminum Housing Already rebuilt units usually in stock. Call and ask for availability and current core deposits.	\$185 \$185	\$85 \$85
MONROE (ESSEX) - Single Arm Lever	\$165	\$165
MORGAN Armstrong Single Arm Girling Single Arm	n/a n/a	\$80 \$165
MORRIS / MORRIS MINOR Armstrong Single Arm Girling Single Arm	\$100 \$165	\$80 \$165
ROLLS BENTLEY S-1, S-2, S-3 Pre-War Units	\$295 \$325	\$295 \$325
WAHL - Single Arm Lever	\$165	\$165

BRAKE CYLINDERS & CALIPERS (American)

Buick - Cadillac/LaSalle - Chevrolet - Corvette - Camaro - Chrysler - Dodge/DeSoto - Ford - Mustang

- Thunderbird - Lincoln/Mercury - Oldsmobile - Packard - Plymouth - Pontiac - Studebaker



SLEEVING ONLY: Send us empty casting (all fittings, bleeders, etc. removed) and we will clean it, resleeve with brass to standard size and return, so you can reassemble using kit you provide

COMPLETE REBUILDING: Send us complete cyl (as it came off the car) and we will return it cleaned, sleeved and assembled with new rebuild kit, ready to install back on the car.

MASTER & WHEEL CYLINDERS	Sleeving only	Complete rebuild
Master cyl., single circuit (most pre 1967) Master cyl., dual circuit (most 1967 & later) Master cylinder, 1956 Buick Wheel cyl., straight bore Wheel cyl., step bore	\$75 \$90 \$50 \$90	\$165 \$225 \$325 \$85 \$145

Prices listed above are for 1½ inch or smaller bore sizes (call for a quote on larger cylinders)

FOUR PISTON CALIPERS

DELCO-MORAINE \$245

Buick - Camaro - Chevrolet -Oldsmobile - Pontiac

Disassembled, cleaned, stainless steel sleeved, and reassembled using OEM rebuild kit - Resleeving only, \$180 per caliper



Chrysler - Dodge - Plymouth

Disassembled, cleaned, stainless steel sleeved, and reassembled using OEM rebuild kit - Resleeving only, \$180 per caliper



Ford - Lincoln - Mercury - Mustang -Thunderbird

Disassembled, cleaned, and reassembled with new pistons and OEM rebuild kit. New bridge pipes optional.





BRAKE CYLINDERS & CALIPERS (British)

BRAKE CYLINDERS SLEEVED - prices are same as for American cylinders, except: metric bore - add 20%, tandem masters - \$135 (for two sleeves, MGA and similar), wheel cyls with a slot for hand brake arm - \$60, cyls. with tin-can reservoir - \$125.

BRAKE CYLINDERS REBUILT BRAKE MASTERS

Austin Healey 100-4	\$175
Austin Healey 100-6, 3000	\$95
Jaguar XK120-150 (standard)	\$125
Jaguar XK120 (tandem)	\$375
Jaguar XKE (1964-74)	\$225
MGA (clutch & brake tandem)	\$195
MGB (1968-80)	\$125
MGTD, TF	\$125
Midget/Sprite (tandem)	\$195
Midget/Sprite (1968-79)	\$125
Rolls/Bentley (each of two)	\$245
TR-2,3 (tandem, 1953-56)	\$195
TR-3, 4, 4A	\$95
TR-6, 7, 8	\$125
TR Spitfire (1962-67/1975-80)	\$125
TR Spitfire (1968-75)	\$175

Masters that use removable plastic reservoirs are supplied without said reservoirs (new under reservoir seals are included). When sending cores for rebuild or exchange, please send without the reservoir.



BRAKE BOOSTERS

\$395
\$395
\$415
\$175



GIRLING BRAKE CALIPERS

(rebuilt, incl. new pistons)

Austin Healey	\$105
Jaguar XKE after 1968	, XJ6/12
	\$125-\$145
MGA	\$155
MGB	\$85
Midget/Sprite	\$85



DUNLOP CALIPER CYLS (each) (Jaguar, Alfa Romeo, Avanti, etc.)

\$105-\$125

sleeved only (all except 21/2") \$55

rebuilt (all except 21/2") \$85 21/2" bore cyls. \$call



CLUTCH CYLINDERS

Triumph, MGC

Clutch master (aluminum) \$95 Clutch master (cast iron) \$125 Clutch master (tin-can reservoir) \$165 Clutch slave \$55-\$95



WHEEL CYLINDERS \$85-\$125

CARBURETORS SU and Zenith-Stromberg

- Are you content with erratic idling? Resigned yourself to fiddling with your carbs each weekend?
- Chances are good that the carburetors on your sports car have never been rebuilt.
- Worn out needles and jets can cause too rich mixture or flooding condition. Result: Fouled plugs and premature wear on rings and bearings
- Worn throttle shafts allow vacuum leaks which can cause a lean gas mixture and increased combustion temperatures. Result: premature valve failure
- Worn float bowl needles can cause flooding out the overflow tubes. Result: increased danger of engine compartment fires
- Any combination of the above conditions can spell disaster for even an apparently good running or rebuilt motor.

COMPLETE REBUILDING

\$425/pair*

Carburetors completely disassembled and cleaned
Carburetor throttle bodies rebushed
New standard size shafts installed
New jets, new needles, new float valves
New gaskets and O-rings
Individually flow bench tested
5 day turnaround time

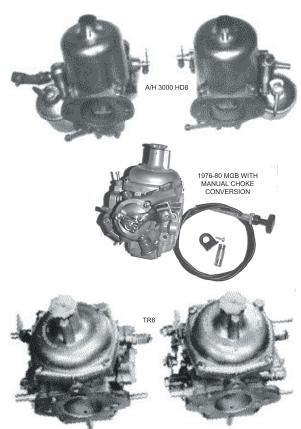
*) Triple carburetors (XKE, Austtn Healey Tri-Carb) \$637.50 Single carburetor \$265.00

Automatic choke assemblies not covered under rebuild - please remove prior to shipping. Manual choke conversion available for most automatic chokes, ie. for 1976-80 MGB (add \$150)

REBUSHING, WITH NEW SHAFTS \$75/each

Carburetor throttle bodies rebushed New standard size shafts installed

	Carb Type	
1953-68 Austin Healey	H4, H6, HD6, HS4, HS6, HD8	
1958-79 A/H Sprite & MG Midget	H1, HS2 ZS150	
1966-72 Datsun 1600, 2000, 240Z	Hitachi (SU)	
1953-77 Jaguar XK120 to XJ6/12	H6, HD6, HD8 ZS175	
1946-55 MG TC, TD, TF	H2, H4	
1955-62 MGA, MGA TwinCam	H4, H6	
1963-80 MGB	HS4, HIF ZS175	
1953-67 Triumph TR2-4A	H4, H6, HS6 ZS175	
1968-80 Triumph TR250, TR6, TR7	ZS175	
1964-80 Triumph Spitfire	HS2 ZS150	



WE ALSO REBUILD CARBS ON

Aston Martin
Austin A-55, 850, 1800
Bugeye Sprite 948
Austin Healey TRI-CARB
Jensen Healey
Morris MM, II, 1000, Oxford, Mini Minor, MG 1100, Magnette
Sunbeam
Triumph Herald
Rolls/Bentley
Rover 3 Litre, 2000
Volvo B14-A, B16-B, B18-B, B20

REBUILD & RETURN ONLY

- For complete rebuilding send complete carburetors, but without manifold or air cleaners. Do not send gas line, vacuum line or overflow tubes. Disconnect linkage and wrap each carburetor individually.
- For rebushing send just carb throttle bodies with old shafts, butterflies, and throttle stops.

NEEDLES & JETS

- Individually available for Stromberg and S.U. carburetors. For racing, emissions tests, rich and lean applications.
 - Most needles \$15 each

REBUILT KINGPINS Austin Healey - Midget/Sprite - MGA - MGB - MGTD/TF

KINGPINS, easily overlooked, are one of the most important components of your front suspension. You may be familiar with the symptoms of worn kingpins: steering wheel vibrations, erratic tracking and wandering, and uneven tire wear.

COMPLETE REBUILDING (Labor only) \$160/pair

Send us your kingpins, along with the major suspension kit, and we will disassemble and pressure clean, install new grease fittings, new O rings and seals, press fit new bushings, and properly align ream the bushings for correct clearance. (If you don't already have the kit, we can supply one; call for price)

Please remove front suspension components (brake assembly, backing plate, A-arm, shock absorber) and ship only the kingpin assembly. Tape nut on the spindle to prevent thread damage during shipping

REBUSHING ONLY

Austin Healey, Midget/Sprite, MGB MGTD/TF, MGA

\$40 per swivel axle \$30 per trunion

Send us swivel axle or trunion castings (remove kingpin prior to shipping) and new upper and lower bushings from the kit and we will return with bushings installed and properly align reamed.

LOWER CONTROL ARMS Midget/Sprite

REBUILDING \$95 each CORE DEPOSIT \$45 each

New bushings are manufactured to original specifications and brazed into the control arm in the same manner as factory units. In addition, each control arm is realigned and completely derusted. The end user can overhaul his front suspension by simply fitting these control arms with new fulcrum pins and rubber bushings.



ONE YEAR I IMITED WARRANTY

Our rebuilt parts have one year warranty. We will, at our discretion and up to one year after date of purchase, replace or repair our rebuilt parts that malfunction due to defects in materials or workmanship. Monetary damages are limited to amount paid for rebuilding and will not cover any labor charges or other damages, incidental or consequential with use of our product.

Warranty does not cover damages caused by incorrect installation, abuse incl. use with improper fluids, mishandling, accidents or normal wear. Rebuilt shocks are supplied filled with proper fluid, rebuilt brake cylinders should be used with fluid originally approved for the application - usually DOT 3 and DOT 4, but not DOT 5 (silicone fluid).

Warranty is voided after product is used for racing or other timed event or in a commercial application.

New items carry original manufacturers warranty.

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All prices indicated in this catalog are subject to change without notice.

PURCHASE ORDER FORM



APPLE HYDRAULICS, INC. 1610 Middle Road Calverton, NY 11933

1-800-882-7753 (631)369-9515 Fax (631)369-9516 info@applehydraulics.com

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Shipping: See "Shipping from Apple" on inside front cover		☐ Visa/Mastercard/Discover No.		
For fastest delivery, send a certified check or money order. We wait for all checks to clear our bank. No exceptions.		EXP. DATE:		
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