



UNIVERSAL RADIATOR PRESSURE TEST KIT

(Nylon 6-6)



1. FEATURES

2. SAFETY PRECAUTIONS

3. SPECIFICATION

4. INSTRUCTION

5. APPLICATION LIST

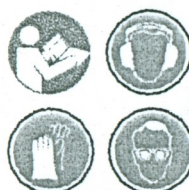
1. FEATURES

- ▶ Easy work for cooling system pressure test
- ▶ Suitable for domestic and import vehicles
- ▶ Pressure pump can test leaks in the cooling system by connecting an adapter to the radiator filler neck or recovery tank
- ▶ Test tubes (black and blue) test radiator cap condition
- ▶ Provided with a thermometer for helping determine the coolant temperature

2. SAFETY PRECAUTIONS

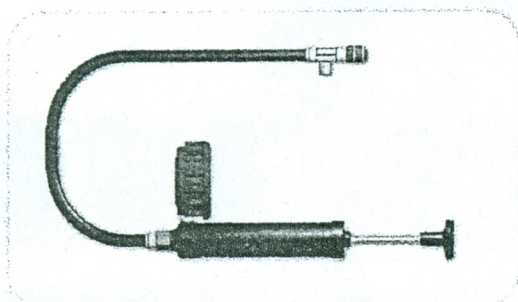


CAUTION

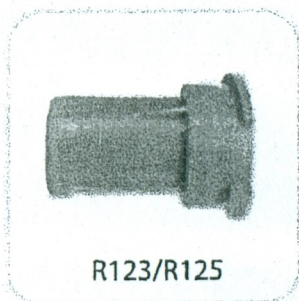


- Always read carefully the instructions before working
- This tool kit is for testing cooling system leaks **ONLY**
- Always ensure test cap installation on radiator filler neck is securely connected before testing
- **DO NOT** do the radiator pressure test when the engine is running
- **DO NOT** do the radiator pressure test when the engine is hot
- Ensure the working area has adequate lighting
- Keep children and unauthorized persons away from the working area
- Keep working area clean and tidy, dry and free from unrelated materials
- **DO NOT** allow untrained persons to use this tool kit
- Always wear eye protection that meets OSHA and ANSI Z87.1 standards
- Always wear hand gloves when work with the tool
- Always wear ear protection
- Disposal: Customers should follow local regulations or entrust local organization to handle used/wasted parts

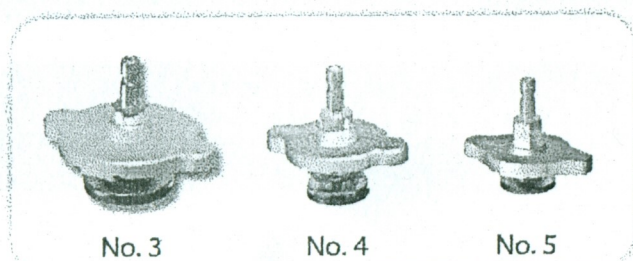
3. SPECIFICATION



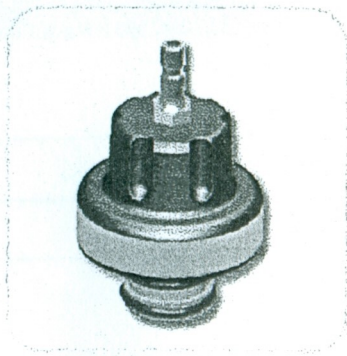
PRESSURE PUMP	
Pump material	Nylon 6-6
Gauge reading	0-2.5 kg / cm ² (35 psi)
Hose length	535mm
Max.Pressure for hose	200 psi



RADIATOR CAP TEST TUBES (in 7-pc set only)	
Description 1	R123/R124 (Black)
Description 2	R123/R125 (Blue)
Material	Nylon 6-6



STEEL TEST CAPS	
Number	No. 3, No. 4 & No.5
Color	Silver
Material	Steel
Surface finish	Chrome



NYLON TEST CAPS	
Number	No. 6 - No. 21
Material	Nylon 6-6
Coupling material	Free cutting copper
Surface finish	Chrome
O-ring material	NBR

4. INSTRUCTION

4.1 Cooling System Pressure Test

1. Remove the radiator cap when the engine is cold.
2. Connect the a suitable sized test cap to radiator or recovery tank.
3. Connect pressure pump to the test cap (Fig. 1).
4. Pump pressure to the range between 10-15 psi (or as specified by the auto manufacturer).
DO NOT pump the pressure to more than 35 psi.
5. Press pressure release button on the pressure pump hose end before disconnecting the pump from test cap.

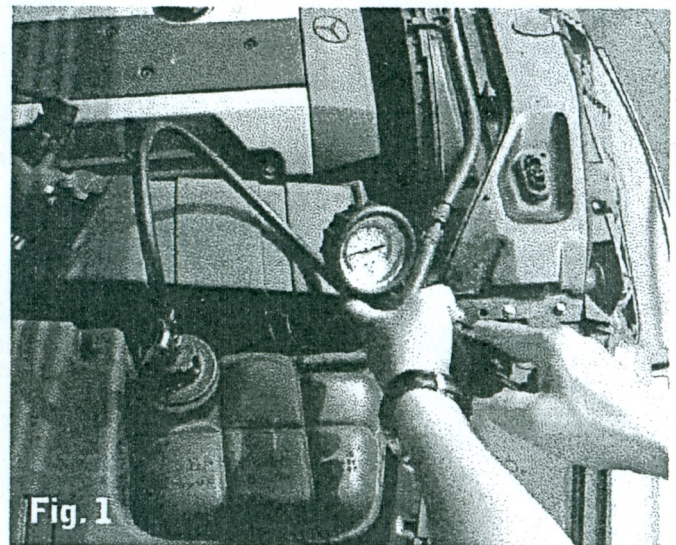


Fig. 1

PSI	kg/cm ²	Bar
10	0.70	0.69
12.8	0.90	0.88
15	1.06	1.04
15.6	1.10	1.08
35	2.46	2.42

4.2 Radiator Cap Test

1. Connect the original radiator cap to the test tube (black or blue).
2. Connect the steel test cap to the other side (Fig 2).
3. Connect pressure pump to the test cap.
4. Pump pressure to the specified pressure on the cap to test leaks.

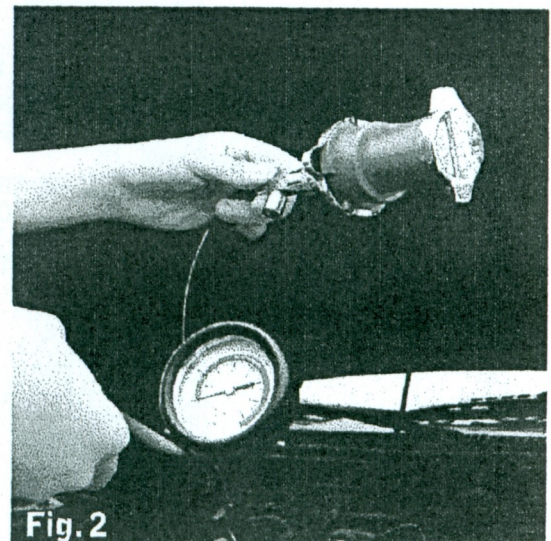


Fig. 2

5. APPLICATION LIST

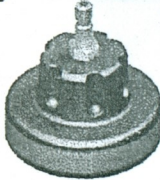
No.

0	Thermometer 	2A  Connector R123/R124 (Black)
1	Pressure Tester Pump with Gauge	2B  Connector R123/R125 (Blue)
3	 Buick (LeSabre: 1990-) (Park Avenue: 1991-) Chrysler (Sebring: 1995-) Chevrolet (Venture: 1997-) Dodge (Caravan: 1989-) (Dakota: 1989-) (Startus: 1995-) Jeep Mercedes (W123, W124, W126, W201) Oldsmobile (Silhouette: 1990-) Pontiac (Bonneville: 1990-) (Grand Prix: -2003)	
4	 Acura (Integra: 1991-1993)(Legend: 1989-1990)(NSX: 1995-2004)(SLX: 1997) (Vigor: 1992-1994) BMW (M6: 2008) Chevrolet (Nova: 1985-1998) (Spectrum: 1985-1988) (Sprint: 1986-1988) Chrysler (Laser: 1991-1998) (Sebring: 1996-1998) Dodge (Avenger: 1995-1999) (Colt: 1984-1991) (Ram 50: 1989-1992) (Stealth: 1993-1996) Eagle (Summit: 1989)(Talon: 1991-1998) Ford (Aspire: 1994-1997)(Escort: 1991-2002)(Expedition: 2009-2011) (Explorer: 1995-2001)(Explorer Sport Trac: 2001-2005)(F-150: 2009-2011) (Festiva: 1989-1993)(Mustang: 1997-2004)(Probe: 1989-1997) (Ranger: 1995-2011) (Tempo: 1992-1994)(Thunderbird: 1992-1995) (Windstar: 1996-1999) Geo (Metro: 1989-1993) (Prizm: 1989-1991)(Spectrum: 1989)(Storm: 1990-1993) (Tracker: 1989) GM (Nova, Spectrum, Sprint) Honda (Accord: 1990-1993) (Civic: 1988-1991)(CRX: 1989-1990)(Motorcycles: 1991-2004) (Passport: 1994-2002)(Prelude: 1990-1998) Hyundai (Accent: 1995-2010)(Azera: 2006-2010)(Elantra: 1992-2011)(Entourage: 2007-2008) (Excel: 1986-1994)(Genesis: 2009-2010)(Genesis Coupe: 2010)(Santa Fe: 2002-2010) (Scoupe: 1994)(Sonata: 1989-2011)(Tiburon: 1998-2008)(Tuscon: 2005-2010) (Veracruz: 2007-2010)(XG 350: 2004) Infiniti (FX 35: 2003-2007)(G20: 1991-2002)(G35: 2004-2007)(I30: 1997-2000) (I35: 2002-2004)(J30: 1996)(M30: 1990-1992)(M35: 2006-2009)(M45: 2003-2010) (Q45: 1990-2006)(QX4: 1998-2003) Isuzu (Amigo: 1989-2000)(Axiom: 2002-2004)(I-Mark: 1985-1989)(Impulse: 1985-1992) (Rodeo: 1991-1998)(Stylus: 1991-1992)(Trooper: 1986-2002)(VehiCROSS: 1999) Kia (Amanti: 2006-2009)(Borrego: 2009)(Forte: 2011)(Optima: 2002-2010) (Rio: 2002-2011)(Rio5: 2007-2011)(Rondo: 2009-2010)(Sedona: 2003-2011) (Sephia: 1994-2001)(Sorento: 2003-2011)(Soul: 2010-2011)(Spectra: 2000-2009) (Spectra5: 2005-2009)(Sportage: 1995-2011) Lexus (ES300: 1996-2003)(ES330: 2005)(LS400: 1992)(LX 450: 1996-1999) (LX 470: 1998-2005) (SC400: 1992) Lincoln (Navigator: 2009-2011) Mazda (323: 1986-1993)(626: 1985-1999)(929: 1990-1993)(B2000: 1986-1987) (B2200: 1988-1993)(B2300: 2005)(B2500: 1998-2000)(B2600: 1987-1993) (B3000: 1996-2007)(B4000: 1995-2006)(CX-9: 2007-2010)(Matia: 1991-2005) (Millenia: 1995-2002)(MPV: 1991-2006)(MX-5 Matia: 2006-2012) (MX-6: 1991-1997)(Protegé: 1993-2003)(Protegé 5: 2002-2003)(RX-7: 1986-1995) (RX-8: 2005-2009) Mercury (Capri: 1991-1994)(Cougar: 1989-1992)(Cougar: 1993-1997 w/V6) (Mountaineer: 1997-2000)(Topaz: 1992-1994)(Tracer: 1988-1999) (Villager: 1994-2002) Mitsubishi (3000GT: 1992-1996)(Cordia: 1986-1988)(Diamante: 1992-1995)(Eclipse: 1990-1999) (Galant: 1989-1993)(Mighty Max: 1987-1994)(Mirage: 1985-1992) (Montero: 1989-1998)(Outlander: 2003-2011)(Outlander Sport: 2011) (Precis: 1988-1992)(Starion: 1984-1986)(Tredia: 1986-1988) Mercedes-Benz Nissan (200SX: 1984-1988)(240SX: 1990-1994)(300ZX: 1984-1996)(Altima: 1993-2006) (Axxess: 1990)(Cube: 2009-2010)(D21: 1986-1994)(Frontier: 1998-2011) (Maxima: 1987-2008)(Murano: 2003-2007)(NX: 1991-1993)(Pathfinder: 1987-2004) (Pulsar NX: 1987-1989)(Quest: 1994-2009)(Rogue: 2009-2010)(Sentra: 1987-2011) (Stanza: 1987-1992)(Versa: 2007-2011)(Xterra: 2000-2012) Plymouth (Colt: 1984-1991)(Laser: 1993-1994) Subaru (Baja: 2004-2005)(Brat: 1983-1987)(DL: 1983-1989)(Forester: 1999-2011) (GL: 1983-1989)(GL-10: 1985-1989)(Impreza: 1993-2011)(Justy: 1988-1993) (Legacy: 1990-2011)(Loyale: 1990-1992)(Outback: 2000-2011)(RX: 1986) (SVX: 1994-1997)(XT: 1985-1991) Suzuki (Equator: 2009-2011)(Samurai: 1986)(Sidekick: 1989-1991)(Swift: 1990-1994) (XL-7: 2004-2006)	

4		Toyota	(4Runner:1986-1995)(Avalon 1995-2004)(Camry:1983-1991) (Camry: 1994-1999 4cylinder)(Celica:1983-1989)(Corolla:1983-1992) (Cressida:1985-1992)(Land Cruiser:1993-2007)(MR2: 1989-1995)(Previa: 1991-1997) (Sienna: 1998-2006)(Solara 1999-2008)(Starlet: 1983-1984)(Supra: 1987-1990) (T100:1995-1998)(Tacoma: 1996-2004)(Tercel: 1983-1990)
5		Acura	(CL: 1997-2002)(Integra: 1994-2000) (Legend: 1993-1995)(MDX: 2001-2011) (RDX: 2009-2012)(RL: 1996-2010)(RSX: 2002-2005)(TL:1996-2011)(TSX: 2007-2012)
		Chevrolet	(Metro: 1999-2000)(Prizm: 1998-2002)(Tracker: 1998-2004)
		Chrysler	(Sebring: 2001)
		Dodge	(Colt:1993-1994)(Stratus: 2001-2004)
		Eagle	(Summit:1992-1996)
		Geo	(Metro: 1995-1997) (Prizm: 1993-1997)(Tracker: 1997)
		Honda	(Accord: 1994-2011)(Civic: 1992-2010)(Civic del Sol: 1993-1997)(CR-V: 1997-2010) (CR-Z: 2011)(Element: 2003-2010)(Fit: 2008-2009)(Insight: 2001-2011) (Odyssey:1998-2010)(Pilot:2003-2011)(Prelude: 1999-2001)(Ridgeline: 2007-2011) (S2000: 2006-2009)
		Isuzu	(Oasis: 1997)(Rodeo: 1999-2000)(Rodeo Sport: 2003)
		Lexus	(ES250: 1990-1991)(ES350: 2008-2012)(GS300: 1993-2003)(GS350: 2007-2009) (GS430: 2004-2007)(GX470: 2004-2005)(IS300: 2003)(IS350: 2009-2012) (LS430: 2001-2003)(LX570: 2011-2013)(RX300: 1999-2006)(RX350: 2008-2010) (RX400h: 2006-2008)(SC300: 1992-2010)
		Mazda	(Mazda 2: 2011)(Mazda 5: 2008-2010)(Protegé: 1995-2003)
		Mercedes	(ML-class, W163, W164)
		Mitsubishi	(Diamante:1996-2004)(Eclipse: 2000-2010)(Endeavor: 2006-2011)(Expo: 1992-1995) (Expo LRV: 1992-1994)(Galant:1994-2011)(Mirage: 1993-2002) (Montero Sport: 1997-2003)
		Plymouth	(Colt: 1992-1994)
		Pontiac	(Vibe: 2003-2010)
		Scion	(FR-S: 2013)(iQ: 2012)(tC: 2005-2010)(xA: 2006)
		Subaru	(B9 Tribeca: 2006-2007)(Tribeca: 2008-2010)
		Suzuki	(Aerio: 2003-2007)(Esteem: 1995-2002)(Sidekick: 1991-1998)(Swift: 1999-2001) (SX4: 2007-2009)(Vitara: 1999-2003)(X-90: 1996-1998)(XL-7: 2002-2003)
		Toyota	(4Runner:1969-2011)(Avalon: 2005-2010)(Camry: 1990-1991 V6 w/ auto.trans.) (Camry:1992-2011)(Celica:1990-1999)(Corolla: 1993-2012)(Echo: 2001-2005) (FJ Cruiser: 2007-2010)(Highlander: 2001-2011)(Land Cruiser: 2009)(Matrix: 2003-2011) (Paseo: 1992-1998)(Prius: 2001-2009)(RAV4: 1996-2003)(Sequoia: 2001-2011) (Sienna: 2007-2011)(Supra: 1990-1998)(Tacoma: 2005-2011)(Tercel: 1991-1998) (Tundra: 2000-2011)(Venza: 2009-2011)(Yaris: 2008-2011)
		VW	(Touareg: 2004)
6		Cadillac	(Catera:1997-2001)
		Chevrolet	(Aveo: 2004-2011) (Aveo5: 2006-2011) (Epica: 2004)
		Daewoo	(Leganza: 1999-2002) (Lanos: 1999-2002) (Nubira: 1999-2002)
		Ford	(Contour:1995-2000) (Fiesta:1995-) (Focus:1998-) (Fusion:2006-)
		GM	(Achieva) (Skylark) (Grand Am: 1992-2002)
		Jaguar	(All:1990-1994) (XJ8: 1998-2001) (XJR: 1998-2001) (XK8: 1997-2006) (XKR: 2000-2006) (X-Type: 2002-2007)
		Jeep	
		Land Rover	(Discovery:1989-2004) (Range Rover:1988-1994)
		Mercedes-Benz	(ML-Class: 1997-2011)
		Mercury	(Mistique:1995-2000)
		Pontiac	(Le Mans:1988-1993) (G3: 2009) (Wave: 2005) (Wave5: 2005:)
		Porsche	(911:1999-) (Boxster:1997-)
		Saab	(900: 1994-1998) (9-3: 1999-2003) (9-5: 1999-2008)
		Saturn	(L100: 2001-2002) (L200: 2001-2003) (L300: 2001-2005) (L300-1: 2004) (L300-2: 2004) (L300-3: 2004) (LS: 2000) (LS1: 2000) (LS2: 2000) (LW1: 2000) (LW2: 2000) (LW200: 2001-2003) (LW300: 2001-2003) (Vue: 2002)
		Suzuki	(Forenza: 2004-2008) (Reno: 2005-2008) (Swift +: 2004) (Verona: 2004-2005)
7		Alfa Romeo	(145-930: 1994-2001) (146-930: 1994-2001) (164-164: 1987-1998) (166-936: 1998) (33-907A: 1990-1994) (33 sportwagon-907B: 1990-1994) (GTV-916C: 1994) (Spider-916S: 1994-2005)
		Citroën	(Jumper Box 230L: 1994-2002) (Jumper Bus 230P: 1994-2002) (Jumper Platform / Chassis 230: 1994-2002)
		Fiat	(Coupe FA/175: 1993-2000) (Croma-154: 1985-1996) (Ducato Box-230L: 1994-2002) (Ducato Box-244: 2002) (Ducato Bus-230: 1994-2002) (Ducato Bus-244Z: 2002) (Ducato Platform / Chassis 230: 1994-2002)
		Lancia	(Delta II-836: 1993-1999) (Kappa-938A: 1994-2001) (Kappa Coupe-838: 1996-2001) (Kappa SW-838B: 1996-2001)(Thema-834: 1984-1994)(Thema SW-834: 1987-1994)
		Mini Cooper	(S: 2002-)
		Peugeot	(206: 1999-) (307: 2004-) (406: 1999-) (407: 2004-) (807: 2004-) (Boxer Box-230L: 1994-2002) (Boxer Bus-230P: 1994-2002) (Boxer platform / Chassis-ZCT: 1994-2002)
		Renault	(All:1985-1987) (Avantime:2002-) (Espace:2002-)

No.	Image	Application
7		Saab (900:1978-1993) (9000:1986-1998) Sterling (All:1987-1991) Jeep Volvo (Passenger vehicles w/threaded neck)
8		VW (Vento) (T4) (Passat: 1990-1997) (Beetle) (Sharan) (Cabrio: 1995-2002) Corrado: 1990-1994) (Eurovan: 1993-2003) (Golf: 1990-1999) (1990-1998: with female thread on filler neck of expansion tank - except 1998 Passat & New Beetle) (Jetta: 1990-1999)
9		Audi (A3: 2006-2012) (A3-8P1: 2003) (A3 Convertible: 2008) (A3 Sportback-8PA: 2004) (A4: 1996-2012) (A4-8EC, B7: 2004-2008) (A4 Avant-8ED, B7: 2004-2008) (A4 Quattro: 1996-2012) (A5: 2011-2012) (A5 Quattro: 2008-2012) (A6: 1998-2012) (A6 Quattro: 1998-2011) (A7 Quattro: 2012) (A8 Quattro: 2004-2010) Allroad Quattro: 2001-2005) (Q5: 2009-2012) (Q7: 2007-2012) (R8: 2008-2012) RS4: 2007-2008) (RS6: 2003) (S4: 2000-2012) (S5: 2008-2012) (S6: 2002-2011) S8: 2007-2009) (TT: 2000-2009) (TT-8J3: 2006) (TT-8N3: 1998-2006) (TT Quattro: 2000-2013) (TT Roadster-8J9: 2007) (TT Roadster 8N9: 1999-2006) BMW (345) Porsche (Cayenne) SEAT (Altea-5P1: 2004) (Cordoba-6K2: 1999-2002) (Cordoba-6L2: 2002-2009) (Ibiza III-6K1: 1999-2002) (Ibiza IV-6L1: 2002-2009) (Leon-1M1: 199-2006) (Leon 1P1: 2005) (Toledo-1L: 1991-1999) (Toledo II-1M2: 1999-2006) Škoda (Fabia: 2006) (Fabia-6Y2: 1999-2008) (Fabia Combi: 2007) (Fabia Combi-6Y5: 2000-2007) (Fabia Praktik: 2001-2007) (Fabia Saloon-6Y3: 1999-2007) (Laura-1Z3: 2004) (Octavia 1U2: 1996-2010) (Octavia Combi-1U5: 1998-2010) (Octavia Combi-1Z5: 2004) (Roomster-5J: 2006) (Superb-3T4: 2008) (Superb-3U4: 2002-2008) (Superb Estate: 3T5: 2009) VW (Beetle: 1998-2012) (Caddy III Box-2KA, 2KH, 2CA, 2CH: 2004) (Caddy III Estate-2KB, 2KJ, 2CB, 2CJ: 2004) (CC: 2009-2013) (Crafter 30-35 Bus 2E: 2006) (Crafter 30-50 Box 2E: 2006) (Crafter 30-50 Platform / Chassis 2F) (Eos: 2007-2012) (Eos-1F7, 1F8: 2006) (Fox-5Z1, 5Z3: 2003) (Golf: 1999-2012) (Golf Plus-5M1, 5Z1: 2005) (Golf V-1K1: 2003-2009) (Golf V Variant (1K5: 2007) (GTI: 2006-2013) (Jetta: 1997-2012) (Jetta I Saloon-1K2: 2005-2010) (LT 28-35 II Bus-2DM: 1996-2006) (LT 28-46 II Box-2DXOAE: 1996-2006) (LT 28-46 II Platform / Chassis 2DXOFE: 1996-2006) (Multivan Mk V- 7HM, 7HN, 7EF, 7EM, 7EN: 2003) (New Beetle-9C1, 1C1: 1998) (New Beetle Convertible-1Y7: 2002-2010) (Passat: 1998-2012) (Passat-3B3: 2000-2005) (Passat-3C2: 2005) (Passat Variant-3B6: 2000-2005) (Passat Varian 3C5: 2005) (Polo-9N: 2001) (Polo Saloon: 2002) (R32: 2008) (Rabbit: 2006-2009) (Tiguan: 2009) (Touareg: 2004-2012) (Touran-1T1, 1T2, 1T3: 2003) (Transporter / Caravelle MK V Bus- 7HB, 7HJ, 7EB, 7EJ, 7EF: 2003) (Transporter MK V Box- 7HA, 7HH, 7EA, 7EH: 2003) (Transporter MK V Platform / Chassis- 7JD, 7JE, 7JL, 7JY, 7JZ: 2003)
10		BMW (3-E30: 1982-1992) (3-E36: 1990-1998) (3-E46: 1998-2005) (3-E90: 2005) (3 Compact - E36: 1994-2000) (3 Compact- E46: 2001-2005) (3 Convertible - E30: 1985-1993) (3 Convertible - E36: 1993-1999) (3 Convertible - E46: 2000) (3 Coupe - E36: 1992-1999) (3 Coupe - E46: 1999) (3 Touring - E30: 1987-1994) (3 Touring - E36: 1995-1999) (3 Touring - E46: 1999-2005) (3 Touring - E91: 2005) (5 - E 28: 1980-1990) (5 - E34: 1987-1995) (5 - E39: 1995-2003) (5 - E60: 2003) (5 Touring - E34: 1991-1997) (5 touring - E39: 1997-2004) (7 - E23: 1977-1986) (7 - E32: 1986-1994) (7 - E38: 1994-2001) (7 E65, E66: 2001) (8 - E31: 1990-1999) (X3 - E83: 2004) (X3 - E53: 2000) (Z3 - E36: 1995-2003) (Z3 Coupe - E36: 1997-2003) (Z4 - E85: 2003) (Z4 Copupe - E86: 2006) (Z8 - E53: 2000-2003) (Brilliance 3 Series - E46: 2003-2005) (Brilliance 3 Series - E90: 2004) Land Rover (Freelander - LN: 1998) (Range Rover III - LM: 2002)
11		Audi (1975-1993: w/male thread on expansion tank) VW (1975-1993: w/male thrd on exp.tank) (Golf:1983-1992) (Cabriolet: 1985-1993) (Dasher: 1980-1981) (Fox: 1987-1993) (Golf: 1985-1990) (Jetta: 1980-1990) (Quantum: 1980-1988) (Rabbit: 1975) (Rabbit Convertible: 1980-1984) (Scirocco: 1975-1988)
12		Caterham (Super Seven: 1990-1999) Ford (Cougar: 1998-2001) (Mondeo: 1996-2007) (Mondeo Estate Wagon: 1996-2007) (Transit 260: 2000-2006) (Transit 280: 2000-2006) (Transit 300: 2000-2006) (Transit 330: 2000-2006) (Transit 350: 2000-2006) (Transit 425: 2003-2006) (Transit 430: 2001-2006) (Transit Tourneo: 2000-2006) (Courier III: 1990-1995) (Courier IV: 1995-2001) (Escort 55 IV: 1986-1990) (Escort 55 VI: 1994-2000) (Escort 75 VI: 1994-2000) (Escort IV: 1986-1990) (Escort V: 1990-1996) (Escort VI: 1995-2000) (Fiesta Classic: 1987-1989) (Fiesta II: 1989-1989) (Fiesta III: 1989-1996) (Fiesta IV: 1995-1999) (Fiesta V: 1999-2002)

12		Ford (Fiesta Van II: 1987-1989) (Fiesta Van III: 0989-1996) (Fiesta Van IV: 1995-2002) (Fiesta Van V: 1999-2002) (Fiesta Van VI: 2002-2008) (Fiesta VI: 2002-2008) (Focus I: 1998-2005) (Focus Wagon I: 1998-2005) (Fusion: 2002-2005) (Granada Scoprío: 1985-1994) (Ka I: 1996-2005) (Mondeo I: 1993-1996) (Mondeo II: 1996-1998) (Mondeo Wagon I: 1993-1996) (Mondeo Wagon II: 1996-2000) (Orion II: 1986-1990) (Orion III: 1990-1993) (P100 Sierra: 1989-1994) (Puma I: 1997-2002) (Scopio I: 1984-1994) (Scopio II: 1994-1998) (Sierra Cosworth II: 1987-1993) (Sierra I: 1984-1987) (Sierrall: 1987-1993) (Sierra Sapphire II: 1987-1993) (Streetka I: 2003-2005) (Transit 100: 1994-1999) (Transit 120: 1994-1999) (Transit 150: 1994-1999) (Transit 190: 1994-1999) (Transit Connect: 2002-) Land Rover (2: 2002-2007) (121: 1996-2002) Mazda (Agila: 2000-2008) (Ascona B: 1978-1981) (Ascona C: 1981-1988) Opel (Astra Cabrio F: 1993-2001) (Astra Cabrio G: 2001-2005) (Astra Classic F: 1998-2002) (Astra Coupe G: 1999-2005) (Astra F: 1991-1998) (Astra G: 1998-2005) (Astra H: 2004-2005) (Astra Van F: 1991-1998) (Astra Van G: 1998-2004) (Calibra: 1989-1998) (Combo Corsa B: 1992-2001) (Combo Corsa C: 2001-2004) (Corsa A: 1982-1993) (Corsa B: 1993-2000) (Corsa C: 2000-2006) (Corsa Van A: 1982-1994) (Corsa Van B: 1994-2001) (Corsa Van C: 2000-2003) (Frontera A: 1991-1998) (Kadett D: 1979-1984) (Kadett E: 1984-1992) (Kadett Van E: 1984-1992) (Manta A: 1974-1975) (Manta B: 1975-1988) (Meriva: 2003-2005) (Monza: 1981-1987) (Omega A: 1986-1994) (Omega B: 1994-2003) (Senator A: 1981-1987) (Senator B: 1987-1993) (Tigra A: 1994-2001) (Tigra B: 2004) (Vectra A: 1988-1995) (Vectra B: 1995-2003) (Zafira A: 1999-2005) (Zafira Van: 2002-2003) (900 II: 1993-1998) Saab (Favorit: 1989-1995) (Favorit Forman: 1993-1995) (Felicia - 6U1: 1994-2000) Skoda (Astra Cabrio III: 1991-2001) (Astra Cabrio IV: 2001-2007) (Astra Coupe IV: 1999-2005) (Astra I: 1979-1984) (Astra II: 1984-1991) (Astra III: 1991-1998) (Astra IV: 1998-2005) (Astra Van III: 1991-1996) (Astra Van IV: 1998-2005) (Astramax: 1985-1991) (Astravan I 1982-1984) (Astravan II 1984-1991) (Belmont: 1986-1991) (Calibra: 1990-1998) (Carlton: 1983-1994) (Cavalier II: 1981-1988) (Cavalier III: 1988-1995) (Combo: 1993-2004) (Combo Crew Van: 2001-2006) (Corsa I: 1993-2000) (Corsa II: 2000-2006) (Corsa Van I: 1993-2001) (Corsa Van II: 2001-2006) (Frontera A: 1991-1998) (Meriva: 1982-1993) (Nova: 1982-1993) (Nova Van: 1990-1993) (Omega: 1994-2003) (Senator: 1987-1993) (Tigra: 1994-2004) (Vectra I: 1999-2005) (Zafira A: 1999-2005) (Zafira B: 2005-2007)
----	--	--

13		Chrysler (Crossfire: 2004-) Mercedes (w/ thread filler neck on expansion tank, except M-Class) (300SE: 1992-1993) (400SE: 1992) (400SEL: 1993) (500SEC: 1993) (500SEL: 1992-1993) (500SL: 1900-1993) (600SEC: 1993) (600SEL: 1992-1993) (600SL: 1993) (C230: 2002) (C240: 2001-2005) (C280: 1994-2007) (C300: 2008-2009) (C32 AMG: 2002-2004) (C320: 2001-2005) (C350: 2008) (C36 AMG: 1995-1997) (C43 AMG: 1998-2000) (CL500: 1998-2006) (CL55 AMG: 2001-2002) (CL600: 1998-2006) (CL65 AMG: 2005-2006) (CLK 320: 1998-2005) (CLK 430: 1999-2003) (CLK500: 2003-2005) (CLK55 AMG: 2001-2005) (E300: 1996-1997) (E320: 1996-2005) (E350: 2006-2009) (E420: 1997) (E430: 1998-2002) (E500: 2003-2006) (E55 AMG: 1999-2002) (E550: 2009) (G500: 2002-2005) (G55 AMG: 2003-2005) (GL450: 2007-2008) (ML350: 2006-2008) (ML500: 2006-2007) (ML550: 2008-2009) (S320: 1994-1999) (S350: 1994-2006) (S420: 1994-1999) (S500: 1994-2006) (S55 AMG: 2001-2006) (S600: 1994-2006) (S65 AMG: 2006) (SL320: 1994-1997) (SL500: 1994-1998) (SL600: 1994-2002) (SLK280: 2006-2008) (SLK32 AMG: 2002-2004) (SLK 320: 2001-2004) (SLK 350: 2006-2008) (SLK55 AMG: 2008)
----	---	--

14		Ford (Mondeo: 2000-2007) (Focus: 2000-2005) (C-MAX03) (Contour: 1995-2000) Mercury (Cougar: 1999) (Mystique: 1995-1999)
----	---	---

15		Ford (C-Max: 2007-2012) (C-Max II: 2010) (Fiesta V JH, JD: 2001) (Fiesta Van: 2009) International (Fiesta VI: 2009) (Fiesta VI: 2008) (Focus C-Max: 2003-2007) (Focus II DA: 2004) (Focus II Convertible: 2006) (Focus II Estate DAW: 2004) (Focus Saloon DA: 2005) (Focus II Station Wagon DAW: 2004) (Focus III: 2011) (Focus III Saloon: 2011) (Focus III Turnier: 2011) (Galaxy: 2006) (Grand C-Max: 2010) (Kuga: 2008) (Mondeo IV: 2007) (Mondeo IV Saloon: 2007) (Mondeo IV Turnier: 2007) (Ranger: 2011) (S-Max: 2006) (Transit Bus: 2006) (Transit Flatbed Chassis: 2006) (Transit Tourneo: 2006) Ford Asia & Oceania (Fiesta: 2002-2013) (Focus: 2004-2011) (Focus Estate Wagon: 2011) (Mondeo: 2007) (Ranger: 2011)
----	---	--

- 15
- Ford Europe (B-Max: 2012) (C-Max: 2007-2012) (Fiesta: 2001-2013) (Fiesta Van: 2008-2010) (Focus: 2004-2013) (Focus CC: 2006-2011) (Focus C-Max: 2003-2007) (Focus Estate Wagon: 2004-2013) (Focus Van: 2005-2013) (Galaxy: 2006-2011) (Galaxy Van: 2006-2010) (Grand C-Max: 2010-2012) (Kuga: 2008-2012) (Mondeo: 2007-2012) (Mondeo Estate Wagon: 2007-2011) (S-Max: 2006-2011) (Transit 250: 2011) (Transit 260: 2006) (Transit 280: 2006) (Transit 300: 2006) (Transit 330: 2006-2013) (Transit 350: 2006-2013) (Transit 370: 2006) (Transit 410: 2006) (Transit 430: 2006-2013) (Transit 460: 2006) (Transit Custom 250: 2012) (Transit Custom 270: 2012) (Transit Custom 290: 2012) (Transit Custom 300: 2012) (Transit Custom 310: 2012) (Transit Custom 330: 2012) (Transit Tourneo: 2012) (Transit Tourneo Custom: 2012)
- Ford USA (Ranger: 2011)
- Ford Australia (Fiesta WS: 2008) (Fiesta Hatchback WT: 2010) (Fiesta Saloon WT: 2010) (Focus Hatchback LT: 2005) (Focus Hatchback LV: 2009-2011) (Focus Hatchback LT: 2005) (Focus Saloon LS, LT: 2005) (Focus Saloon LV: 2009-2011) (Mondeo Hatchback MA, MB: 2007)
- Land Rover (Freelander 2 FA: 2006) (Range Rover Evoque: 2011) (Freelander: 2006-2013) (LR2: 2006)
- Mazda (2: 2007) (3: 2003-2013) (5: 2010) (2 DE: 2007) (3 BK: 2003) (3 BL: 2009) (3 Saloon BK: 2000-2009) (3 Saloon BL: 2009) (5 CW: 2010) (Axela: 2003) (BT50: 2011)
- Volvo (C30: 2006-2012) (C70: 2005-2011) (C70 II Convertible: 2006) (S40: 2004-2010) (S40 II MS: 2004) (S60: 2010-2013) (S60 II: 2010) (S80: 2006-2012) (S80 II AS: 2006) (V40: 2012) (V40 Cross Country: 2012) (V40 Hatchback: 2012) (V50: 2003-2012) (V50 NW: 2004) (V60: 2010-2013) (V70: 2007-2012) (V70 III Estate: 2007) (XC60: 2008) (XC70: 2007-2012) (XC70 Cross Country: 2007-2011) (XC70 II: 2007)

- 16
- Mercedes (A140: 1997-2004) (A150: 2004-2012) (A160: 1997-2012) (A170: 1998-2012) (A180: 2004-2012) (A190: 1999-2004) (A200: 2004-2012) (A21 AMG: 2002-2004) (A210: 2002-2004) (B150: 2009-2011) (B160: 2009-2011) (B170: 2005-2011) (B180: 2005-2011) (B200: 2005-2011) (Vaneo: 2001-2005) (Vaneo 1.6: 2002) (Vaneo 1.7: 2002) (Vaneo 1.9: 2002) (W168: 1997-2004)

- 17
- BMW (X5: 2000-2011) (X5 M: 2009-2012) (X5 xDrive 30i: 2008-2010) (X5 xDrive 48i) (X5 xDrive 50i: 2010-2012) (X6: 2008-2012) (ActiveHybrid X6: 2010) (X6 M: 2009) (X6 xDrive 35i: 2008-2013) (X6 xDrive 50i: 2008) (Z3: 1996-2002) (Z4: 2003-2008) (Z8: 2000-2003)

- 18
- Ford SEAT VW (Galaxy Van: 1995-2006) (Alhambra Van: 1996-2010) (Sharan Van: 1996-2010)

- 19
- Lexus (GS460: 2008-2011) (HS 250h: 2010) (IS F: 2008-2013) (LS460: 2007-2013) (LS 600h: 2008-2012)
- Scion (tC: 2011-2012) (xB: 2008-2012)
- Toyota (Celica: 2000-2005) (MR2 Spyder: 2000-2005) (Prius: 2010-2011) (RAV4: 2006-2012)

- 20
- Saab (EcoPower 9-3, 9-5)

- 21
- Buick (LaCrosse: 2005) (Rainier: 2005-2007)
- Cadillac (CTS: 2006) (Escalade: 2004-2007) (SRX: 2004-2007) (STS: 2005-2006) (BLS: 2007)
- Chevrolet (Avalanche 1500: 2002-2006) (Avalanche: 2007) (Cavalier: 1999-2005) (Classic: 2004) (Cobalt: 2007) (Colorado: 2004-2007) (Equinox: 2005-2007) (Express 1500: 2004-2007) (Express 2500: 2003-2007) (Express 3500: 2003-2007) (HHR: 2007) (Malibu: 2001-2007) (Silverado 1500: 1999-2007) (Silverado 1500 HD: 2002-2007) (Silverado 2500: 1999-2004) (Silverado 2500 HD: 2001-2007) (Silverado 3500: 2001-2007) (Silverado 3500 HD: 2007) (SSR: 2006) (Suburban 1500: 2001-2007) (Suburban 2500: 2001-2007) (Tahoe: 2000-2007) (Trailblazer: 2002-2007) (Viva: 2003-2008)
- Fiat (Croma: 2005-2013)

21

Ford

(Crown Victoria: 1993-2011)(E-150: 2003-2012)(E-150 Club Wagon: 2003-2005)
 (E-150 Econoline: 1992-2002)(E-150 Econoline Club Wagon: 1992-2012)
 (E-250 Econoline: 1992-2002)(E-250 Super Duty: 2004-2005)(E-350: 2003)
 (E-350 Club Wagon: 2003-2005)(E-350 Econoline: 1992-2002)
 (E-350 Econoline Club Wagon: 1992-2002)(E-350 Super Duty: 2004-2012)
 (Edge: 2007-2012)(Excursion: 2000-2005)(Expedition: 1997-2008)(Explorer: 2002-2012)
 (F-150: 1997-2012)(F-250 Super Duty: 1999-2012)(F-350 Super Duty: 2005-2012)
 (F-450 Super Duty: 2005-2012)(F-550 Super Duty: 2005-2012)
 (Five Hundred: 2005-2007)(Flex: 2009-2012)(Freestar: 2004-2007)(Fusion: 2006-2012)
 (Mustang: 1996-2012)(Ranger: 1998-2011)(Taurus: 1996-2012)
 (Thunderbird: 2002-2005)(Windstar: 1999-2003)

GMC

(Canyon: 2004-2007)(Envoy: 2003-2007)(K2500 Suburban: 1999)
 (Savana 1500: 2003-2007)(Savana 2500: 2003-2007)(Savana 3500: 2004-2007)
 (Sierra 1500: 1999-2007)(Sierra 1500 HD: 2001-2007)(Sierra 2500: 1999-2004)
 (Sierra 2500 HD: 2001-2007)(Sierra 3500: 2001-2007)(Sierra 3500 HD: 2007)
 (Sierra C3: 2001)(Yukon: 2000-2006)(Yukon XL 1500: 2000-2007)
 (Yukon XL 2500: 2001-2007)

Hummer

(H2: 2004-2006)(H3: 2006)

Isuzu

(Ascender: 2003-2006)(i-280: 2006)(i-290: 2007)

Lincoln

(Continental: 1995-2002)(Mark VIII: 1993-1998)(MKS: 2009-2012)(MKT: 2010-2012)
 (MKX: 2007-2012)(MKZ: 2007-2012)(Town Car: 1993-2011)(Zephyr: 2006)

Mazda

(Mazda 6: 2006)

Mercury

(Cougar: 1993-1997)(Grand Marquis: 1993-2011)(Milan: 2006-2011)
 (Monterey: 2004-2007)(Sable: 1996-2009)

Oldsmobile

(Alero: 1999-2004)(Cutlass: 1999)(Intrigue: 2002)

Opel

(Astra: 2004-2013)(Astra Cabrio: 2003-2006)(Astra Classic: 2006-2009)
 (Astra Coupe: 2003-2005)(Astra GTC: 2005-2011)(Astra H: 2004-2010)
 (Astra Van: 2004-2010)(Corsa: 2006-2013)(Corsa D: 2007-2011)
 (Corsa Van: 2006-2010)(Meriva: 2006-2010)(Signum: 2003-2008)
 (Vectra: 2002-2008)(Zafira: 2005)(Zafira B: 2005-2011)(Zafira Van: 2005)

Pontiac

(G5: 2007)(G6: 2006)(Grand Am: 199-2005)(Grand Prix: 2005-2006)
 (Pursuit: 2005-2006)(Solstice: 2006-2007)(Sunfire: 2005)

Saab

(9-3: 2003-2012)(9-3 Sport: 2002-2012)(9-3 X: 2009-2012)(9-7 X: 2007)

Saturn

(Aura: 2007)(Ion 1: 2003-2005)(Ion 2: 2003-2007)(Ion 3: 2003-2007)(Outlook: 2007)
 (Sky: 2007)(Vue: 2005-2007)

Suzuki

(XL-7: 2007)

Vauxhall

(Astra: 2002-2011)(Astra Cabrio: 2006-2011)(Astra Coupe: 2005-2008)
 (Astra GTC: 2004-2011)(Combo: 2005-2011)(Corsa: 2006-2012)(Meriva: 2006-2010)
 (Signum: 2003-2008)(Vectra: 2002-2008)(Zafira: 2005-2013)

22



BMW

(550i: 2010-2012)(550i Gran Turismo: 2012)(550i GT: 2010-2012)
 (550i GT xDrive: 2011-2012)(550i xDrive Gran Turismo: 2012)(550i X: 2011-2012)
 (550i XGT: 2010-2012)(650i: 2012)(650i Cabrio: 2012)(650i Convertible: 2011-2012)
 (650i Coupe: 2011-2012)(650i Gran Coupe: 2012)(650i xDrive Gran Coupe: 2012)
 (650iX Convertible: 2012)(650i X Coupe: 2012)(750i: 2009-2012)
 (750i Active Hybrid: 2011)(750i xDrive: 2010-2011)(750i X: 2010)(750Li: 2009-2012)
 (750 Li Active Hybrid: 2011)(750 LiX: 2010)(760i: 2010-2012)(760Li: 2010-2012)
 (Alpina B7: 2010-2012)(Alpina B7 xDrive: 2011-2012)(Alpina B7L: 2010-2012)
 (Alpina B7L xDrive: 2011-2012)(Alpina B7LX: 2011-2012)(Alpina B7X: 2011-2012)
 (Hybrid 5: 2012)(M5: 2012)(M6 Convertible: 2012)(X5: 2004-2012)(X5 50iX: 2011)
 (X5 M: 2009-2010)(X5 xDrive 48i: 2008-2010)(X5 xDrive 50i: 2010)(X6: 2008-2012)
 (X6 50iX: 2008-2010)(X6 Active Hybrid: 2010)(X6 Hybrid: 2010-2011)
 (X6 M: 2009-2010)(X6 xDrive 50i: 2008)

Land Rover

(Range Rover: 2003-2005)

Mini

(Cooper: 2008-2012)(Cooper Clubman: 2008-2012)(Cooper Countryman: 2011-2012)
 (Cooper Convertible: 2009-2012)(Cooper S Clubman: 2008-2012)
 (Cooper S Convertible: 2009-2012)(Cooper SX: 2011-2012)(Cooper Works: 2007-2012)
 (Cooper Works Clubman: 2008-2012)(Cooper Works Convertible: 2009-2012)
 (Cooper S: 2007-2012)(Mini Clubman: 2007-2013)(Mini Clubvan: 2010-2012)
 (Mini Cooper: 2006-2013)(Mini Countryman: 2010-2013)(Mini Coupe: 2011)
 (Mini One: 2009-2010)(Mini Roadster: 2012)