MCS27K
27 PIECE MASTER RADIATOR PRESSURE TEST KIT

ITEM#	PART#	DESCRIPTION
0	43300-0	Needle Thermometer
1	43300-1	Handheld Pump
2	43300-2	Steel #2 Adapter
3	43300-3	Steel #3 Adapter
4	43300-4	Steel #4 Adapter
5	43301-PB	Blow Molded Case
6	43302-6	Aluminum #6 Adapter (brown)
7	43302-7	Aluminum #7 Adapter (blue)
8	43302-8	Aluminum #8 Adapter (cyan)
9	43302-9	Aluminum #9 Adapter (pink/red)
10	43302-10	Aluminum #10 Adapter (orange)
11	43302-11	Aluminum #11 Adapter (lime)
12	43302-12	Aluminum #12 Adapter (dark silver)
13	43302-13	Aluminum #13 Adapter (light gold)
14	43302-14	Aluminum #14 Adapter (purple)
15	43302-15	Aluminum #15 Adapter (black)
16	43302-16	Aluminum #16 Adapter (dark gold)
17	43302-17	Aluminum #17 Adapter (royal blue)
18	43302-22	Aluminum #22 Adapter (pink)
20	43302-23	Aluminum #23 Adapter (green)
22	43302-5A	Radiator Cap Test Connector #2 & #3 (Black)
24	43013-001	Vacuum Type Purge and Refill Tool
26	43301-24A	Coolant Hose with Adapter
28	43300-G	Gauge for Pump
19	43302-19	Aluminum #19 Adapter (red)
21	43302-21	Aluminum #21 Adapter (light green)
23	43302-5B	Radiator Cap Test Connector #2 & #4 (Blue)
25	43301-23	Universal Rubber Radiator Adapter
27	43301-24B	Coolant Hose
29	43300-H	Hose for Pump with Coupler

REPLACEMENT PARTS:

43300-2G	Gasket for #2 Steel Adapter	43300-3G	Gasket for #3 Steel Adapter
43300-4G	Gasket for #4 Steel Adapter	43302-6G	Gasket for #6 Aluminum Adpater
43302-7G	Gasket for #7 Aluminum Adapter	43302-8G	Gasket for #8 Aluminum Adapter
43302-9G	Gasket for #9 Aluminum Adapter	43302-10G	Gasket for #10 Aluminum Adapter
43302-11G	Gasket for #11 Aluminum Adapter	43302-12G	Gasket for #12 Aluminum Adapter
43302-13G	Gasket for #13 Aluminum Adapter	43302-14G	Gasket for #14 Aluminum Adapter
43302-15G	Gasket for #15 Aluminum Adapter	43302-16G	Gasket for #16 Aluminum Adapter
43302-17G	Gasket for #17 Aluminum Adapter	43302-22G	Gasket for #22 Aluminum Adapter
43302-19G	Gasket for #19 Aluminum Adapter	43302-23G	Gasket for #23 Aluminum Adapter
43302-21G	Gasket for #21 Aluminum Adapter	43300-SK	Seal Kit for Pump Handle

FEATURES:

- Detects and exposes external system leaks
- Detects internal engine leaks due to blown gaskets or cracked block
- Vacuum type cooling system
- Purge and refill for quick change of coolant
- Test Range: 0 – 35 psi
- Includes 1 blue radiator cap test connector R123/R125 and 1 black radiator cap test connector R123/R124
- Includes 1 thermometer, 1 universal radiator cap, 1 vacuum purge and refill tool and coolant hoseIncludes hand pump and 19 adapters to fit most popular domestic and import cars and trucks

SAFETY WARNING AND PRECAUTIONS:

WARNING: The instructions and warnings contained in this manual should be read and understood before using or operating this tool. Do not allow anyone to use or operate this tool until they have read this manual and have developed a thorough understanding of how this tool works. Failure to observe any of the following instructions could result in

severe personal injury to tool user and bystanders, or cause damage to the tool and property. Keep this manual for future reference.

NOTE: The warnings and cautions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

WARNING: Use safety equipment. User and bystanders should use safety goggles or safety glasses with side shields which comply with current national standards, or when needed, a face shield. Use an ANSI approved dust mask or respirator when working around metal, wood, and chemical dusts and mists. This applies to all persons in the work area. Also use non-skid safety shoes, hardhat, gloves, dust collection systems, and hearing protection when appropriate.

WARNING: Keep bystanders and children out of the work area while operating this tool.

WARNING: Always keep your work area clean, uncluttered, and well lit. Cluttered or dark areas invite accidents and injuries. DO NOT work on poor surfaces that are slippery.

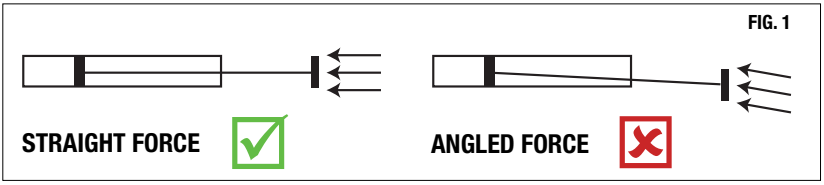
WARNING: Do not operate this tool if you are tired or under the influence of alcohol, drugs, or medications that could affect your ability to use the tool properly.

WARNING: Dress properly. Do not wear loose clothing or jewelery as they can be caught in moving parts. Wear restrictive hair covering to contain long hair.

WARNING: Do not reach over or across running machines. Keep proper footing and balance at all times. Non-skid footwear is recommended when working.

OPERATING INSTRUCTIONS

- Before performing the test on your cooling system, test the pump first by pumping few times to ensure the pump is working correctly. When testing, **DO NOT PUMP OVER 20 PSI.**
- During your inspection and during the test of your cooling system, when pumping the pump handle, always make sure that the force is applied straight into the pump rather than at an angle, or else it may cause the pump to leak. (See Figure 1)



TO TEST FOR LEAKS IN COOLING SYSTEM:

1. Refer to the vehicle's service manual for any specifc radiator pressure testing instructions.
2. Loosen the vehicle's radiator cap slowly to relieve any excess pressure before removing the cap completely. **NEVER OPEN THE SYSTEM WHILE HOT,** as this may cause personal injury.
3. Select the proper adapter and configuration of the stationary seat accessories. Securely attach the adapter to the filler neck of the radiator or expansion tank.
4. Attach the quick connector of the hand pump onto the adapter.
5. Rapidly pump the hand pump handle using straight force as shown in figure 1 while watching the pressure gauge. Pressurize the radiator up to the optimal pressure only - **DO NOT OVER PRESSURIZE THE RADIATOR.** Ideal readings should range between 15-20 PSI (1.03-1.37 BAR).
   - Needle holds steady – If gauge hand holds at the same pressure number for 2 minutes, there are no serious leaks in the system.

COOLING SYSTEM PUMP (FIG. 2)

CAUTION: MAX PRESSURE CAN NOT EXCEED 20 PSI (1.37BAR), OTHERWISE IT WILL DAMAGE THE RADIATOR.

- Needle drops slowly – Indicates the presence of the small leaks or seepage.
- Needle drops quickly – Indicates serious leakage is present.

6. Once the test is complete, release the air pressure by depressing the pressure release valve on the hand pump hose, then disconnect the quick coupler and adapter assembly.
7. Maintenance – After testing process in Radiator Test:
   - Keep the adaptor connected to the pump as you had set up while performing the actual test. Operate the pump several times to dissipate moisture and/or coolant that may have remained in the adaptor and pump.
   - Oil the hand pump in order to lubricate the piston and prevent corrosion and internal damage.
8. Store the radiator pressure tester kit in its carrying case and keep the kit in a clean, dry, safe location out of reach of children and other unauthorized persons.

TO TEST FOR LEAKS IN ORIGINAL RADIATOR CAP:

1. Choose the correct radiator cap connector (43302-5A or 43302-5B) and correct steel radiator cap (43300-2, 43300-3, or 43300-4) for the correct vehicle being tested from the test kit. Fasten the original radiator cap to the radiator cap connector (43302-5A or 43302-5B) and then fasten the steel radiator cap (43300-2, 43300-3, or 43300-4) from the test kit to the other end of the radiator cap connector (43302-5A or 43302-5B).
2. Remove the hand pump assembly (43300-1) from the test kit and fasten the quick coupler at the end of the hose to the radiator cap (43300-2, 43300-3, or 43300-4) securely. Operate the hand pump until reaching the pressure recommended by the vehicle manufacturer. - **DO NOT OVER PRESSURIZE.** Ideal readings should range between 15-20 PSI (1.03-1.37 BAR).
3. Check the pressure reading on the gauge immediately after reaching the vehicle manufacturer's recommended pressure. If the pressure drops, there is a leak in the radiator cap. After pressure testing is completed, press the release button on the quick coupler until the reading on the gauge reads 0. Remove quick coupler from radiator cap and then remove the original radiator cap from the original radiator cap connector.

Fig. 3

PURGING AND REFILLING COOLING SYSTEM

PURGE COOLING SYSTEM:

1. Drain coolant from radiator.
2. Remove the purge and refill tool from the test kit and hang the tool in a convenient location under the hood with the hook provided.
3. Choose the correct radiator cap for the vehicle being tested, or the universal rubber radiator adapter from the test kit and install the one of your choice on the cooling system opening. Fasten the quick coupler at the end of the hose on the purge and refill tool to the radiator cap.
4. Turn valve 1 to the open position and valve 2 to the closed position. (See fig. 4)
5. Connect air supply to the purge and refill tool and press ON/OFF until the pressure reaches 20-25 Hg (50-60 cm Hg). Turn valve 1 to the closed position and press ON/OFF off. (See fig. 5)

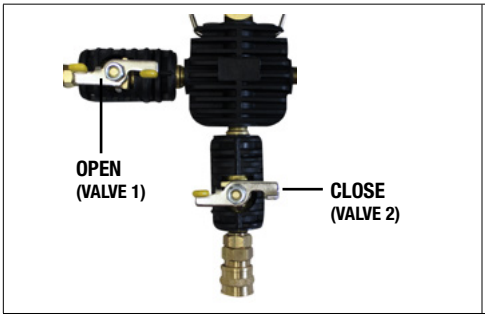


Fig. 4

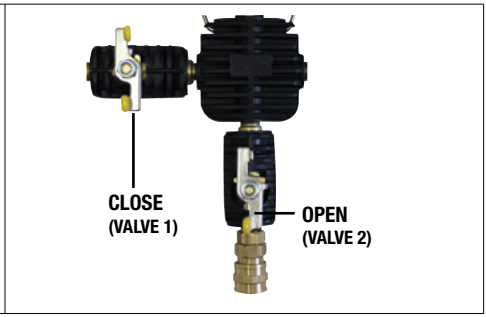


Fig. 5

REFILL COOLING SYSTEM:

1. Connect the coolant hose (43301-24A) to the coolant hose quick coupler and submerge in coolant.
2. Assure that valve 1 is in the closed position and that there is coolant in the coolant hose. (See fig. 5)
3. Turn valve 2 to the open position to allow the coolant to refill the cooling system. (See fig. 5)
4. The refill is complete when the gauge reads 0.

NOTE: CHECK THE COOLANT LEVEL AND ADD COOLANT AS NECESSARY TO THE PROPER LEVEL.

Vehicle Compatibility Chart	
ADAPTER #	MAKE & MODEL
NJ43300-2	**Mercedes Benz**, **GM** (Buick), **Jeep**
NJ43300-3	**Buick** (Lesabre: 1990-, Park Avenue: 1991-), **Chrysler** (Sebring: 1995-), **Chevrolet** (Venture: 1997-), **Dodge** (Caravan: 1989-, Dakota: 1989:, Stratus: 1995-), **Jeep**, **Mercedes** (W123, W124, W126, W201), **Oldsmobile** (Silhouette: 1990-), **Pontiac** (Bonneville: 1990-, Grand Prix: -2003)
NJ43300-4	**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: 1995-1995, 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, F150: 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, Sante Fe: 2002-2010, Scoupe: 1994, Sonata: 1989-2011, Tiburon: 1998-2008, Tuscon: 2005-2010, Veracruz: 2007-2010, XG 350: 2004) Infiniti: (FX35: 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), **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, Sorrento: 2003-2011, Soul: 2010-2011, Spectra: 2002-2009, Spectra5: 2005-2009, Sportage: 1995-2011), **Lexus** (ES300: 1996-2003, ES330: 2005, LS400: 1992, LX 450: 1996-1999, LX470: 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, Protege: 1993-2003, Protege 5: 2002-2003, RX-7: 1986-1995, RX-8: 2005-2009), **Mercury** (Capri: 1991-1994, Cougar: 1989-1992, Cougar w/V6: 1993-1997, 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), **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: 1993-2001, Justy: 1998-1993, 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), **Toyota** (4Runner: 1986-1995, Avalon: 1995-2004, Camry: 1983-1991, Camry 4cylinder: 1994-1999, 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)
NJ43302-6	**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-, Boxter: 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)
NJ43302-7	**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), **Citroen** (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/Chassis230: 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-, Escpace: 2002-), **Saab** (900-1978-1993, 9000: 1986-1998), **Sterling** (All: 1987-1991), **Jeep**, **Volvo** (Passenger vehicles w threaded neck)
NJ43302-8	**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)

NJ43302-9	**Audi** (A3: 2006-2012, A3-8P1: 2003, 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), **Skoda** (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 Estate: 3T5: 2009), **VW** (Beatle: 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, 521: 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-2DX0AE: 1996-2006, LT 28-46 II Platform/Chassis 2DX0FE: 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)
43302-10 NJ43302-10	**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-E-46: 1999, 3 Touring-E30: 1987-1994, 3 Touring-E36: 1995-1999, 3 Touring-E46: 1999-2005, 3 Touring-E91: 2005, 5-E28: 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 Coupe-E86: 2006, Z8-E53: 2000-2003, Brilliance 3 Series-E46: 2003-2005, Brilliance 3 Series-E90: 2004), **Landrover** (Freelander-LN: 1998, Range Rover III-LM: 2002)
43302-11 NJ43302-11	**Audi** (1975-1993: w/ male thread on expansion tank), **VW** (1975-1993: w/ male thread on expansion 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)
43302-12 NJ43302-12	**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, Fiesta Van 11: 1987-1989, Fiesta Van 111: 0989-1996, Fiesta Van 1V: 1995-2002, Fiesta Van V: 1999-2002, Fiesta Van V1: 2002-2008, Fiesta V1: 2002-2008, Focus 1: 1998-2005, Focus Wagon 1: 1998-2005, Fusion: 2002-2005, Granada Scorpio: 1985-1994, Ka 1: 1996-2005, Mondeo 1: 1993-1996, Mondeo 11: 1996-1998, Mondeo Wagon 1: 1993-1996, Mondeo Wagon 11: 1996-2000, Orion 11: 1986-1990, Orion 111: 1990-1993, P100 Sierra: 1989-1994, Puma 1: 1997-2002, Scorpio 1: 1984-1994, Scorpio 11: 1994-1998, Sierra Cosworth 11: 1987-1993, Sierra 1: 1984-1987, Sierra11: 1987-1993, Sierra Saphire 11: 1987-1993, Streetka 1: 2003-2005, Transit 100: 1994-1999, Transit 120: 1994-1999, Transit 150: 1994-1999, Transit 190: 1994-1999, Transit Connect: 2002-) , **Landrover, Mazda** (2: 2002-2007, 121: 1996-2002), **Opel** (Agila: 2000-2008, Ascona B: 1978-1981, Ascona C: 1981-1988, 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 0: 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), **Saab** (900 11: 1993-1998), **Skoda** (Favorit: 1989-1995, Favorit Forman:1993-1995, Felicia - 6U1: 1994-2000), **Ssangyong**, **Vauxhall** (Astra Cabrio 111: 1991-2001, Astra Cabrio 1V: 2001-2007, Astra Coupe 1V: 1999-2005, Astra 1: 1979-1984, Astra 11: 1984-1991, Astra 111: 1991-1998, Astra 1V: 1998-2005, Astra Van 111: 1991-1996, Astra Van 1V: 1998-2005, Astramax: 1985-1991, Astravan 1 1982-1984, Astravan 11 1984-1991, Belmont: 1986-1991, Calibra: 1990-1998, Carlton: 1983-1994, Cavalier 11: 1981-1988, Cavalier 111: 1988-1995, Combo: 1993-2004, Combo Crew Van: 2001-2006, Corsa 1: 1993-2000, Corsa 11: 2000-2006, Corsa Van 1: 1993-2001, Corsa Van 11: 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 1: 1999-2005, Zafira A: 1999-2005, Zafira B: 2005-2007)

43302-13 NJ43302-13	**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)
43302-14 NJ43302-14	**Ford** (Mondeo: 2000-2007, Focus: 2000-2005, C-MAX03, Contour: 1995-2000), **Mercury** (Cougar: 1999, Mystique: 1995-1999)
43302-15 NJ43302-15	**Ford International** (C-Max: 2007-2012, C-Max 11: 2010, Fiesta V JH, J0: 2001, Fiesta Van: 2009, Fiesta V1: 2009, Fiesta V1: 2008, Focus C-Max: 2003-2007, Focus 11 0A: 2004, Focus 11 Convertible: 2006, Focus 11 Estate 0AW: 2004, Focus Saloon 0A: 2005, Focus 11 Station Wagon 0AW: 2004, Focus 111: 2011, Focus 111 Saloon: 2011, Focus 111 Turnier: 2011, Galaxy: 2006, Grand C-Max: 2010, Kuga: 2008, Mondeo 1V: 2007, Mondeo 1V Saloon: 2007, Mondeo 1V Turnier: 2007, Rager: 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), **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 0E: 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: 2005-201, C70 11 Convertible: 2006, S40: 2004-2010, S40 11 MS 2004, S60: 2010-2013, S60 11: 2010, S80: 2006-201, S80 11 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: 20 7-2012, XC70 Cross Country: 2007-2011, XC70 11: 2007)
43302-16 NJ43302-16	**Mercedes** (A140: 19 7-2004, A150: 2004-2012, A160: 1997-2012, A170:1998-2012, A180: 220004-2012, A190: 1999-2004, A200:2004-2012, A21 AMG: 2002-2004, A210: 2002-2004, B150: 2009-2011, B160: 2009-2011, B170: 2005-2011, B180: 200 -2011, B200:2005-2011, Vaneo: 2001-2005, Vaneo 1.6: 2002, Vaneo 1.7: 2002, Vaneo 1.9: 2002, W168: 1997-2004)
43302-17 NJ43302-17	**BMW** (X5: 2000-2011, X5 M: 2009-2012, X5 x0rive 30i: 2008-2010, X5 x0rive 48i, X5 x0rive 50i: 2010-2012, X6: 2008-2012, ActiveHybrid X6: 2010, X6 M: 2009, X6 x0rive 35i: 2008-2013, X6 x0rive 50i: 2008, Z3: 1996-2002, Z4: 2003-2008, Z8:2000-2003)
43302-19 NJ43302-19	**Lexus** (GS460: 2008-2011, HS 250h: 2010, 1S 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)

43302-21 NJ43302-21	**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 H0: 2002-2007, Silverado 2500: 1999-2004, Silverado 2500 H0: 2001-2007, Silverado 3500: 2001-2007, Silverado 3500 H0: 2007, SSR: 2006, Suburban 1500: 2001-2007, Suburban 2500: 2001-2007, Tahoe: 2000-2007, Trailblazer: 2002-2007, Viva:2003-2008), **Fiat** (Croma: 2005-2013), **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 0uty: 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 0uty: 2004-2012, Edge: 2007-2012, Excursion: 2000-2005, Expedition: 1997-2008, Explorer: 2002-2012, F-150: 1997-2012, F-250 Super 0uty: 1999-2012, F-350 Super 0uty: 2005-2012, F-450 Super 0uty: 2005-2012, F-550 Super 0uty: 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 H0: 2001-2007, Sierra 2500: 1999-2004, Sierra 2500 H0: 2001-2007, Sierra 3500: 2001-2007, Sierra 3500 H0: 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 V111: 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 0: 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)
43302-22 NJ43302-22	**BMW** (550i 2010-2012, 550i Gran Turismo: 2012, 550i GT: 2010-2012, 550i GT x0rive: 2011-2012, 550i x0rive 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 x0rive Gran Coupe: 2012, 650iX Convertible: 2012, 650i X Coupe: 2012, 750i: 2009-2012, 750i Active Hybrid: 2011, 750i x0rive: 2010-2011, 750i X: 2010, 750Li: 2009-2012, 750 Li Active Hybrid: 2011, 750 LiX: 2010, 760i: 2010-2012, 760Li: 2010-2012, Alpi a B7: 2010-2012, Alpina B7 x0rive: 2011-2012, Alpina B7L: 2010-2012, Alpina B7L x0rive: 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 x0rive 48i: 2008-2010, X5 x0rive 50i: 2010, X6: 2008-2012, X6 50iX: 2008-2010, X6 Active Hybrid: 2010, X6 Hybrid: 2010-2011, X6 M: 2009-2010, X6 x0rive 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)
43302-23 NJ43302-23	**Ford** (Late Model), **GM** (Late Model)

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