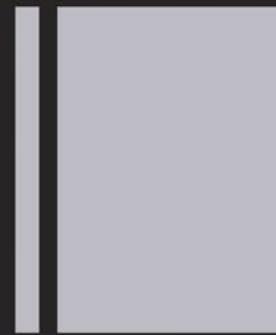
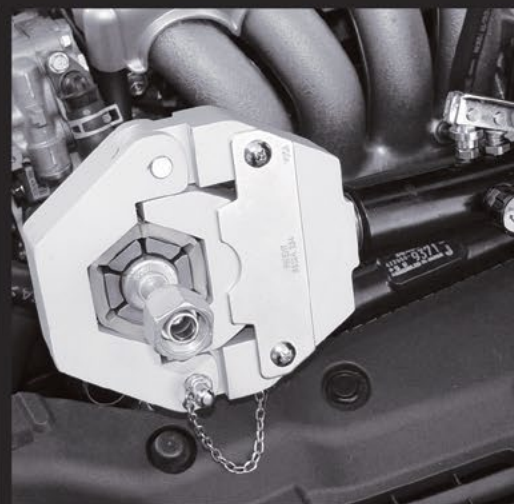


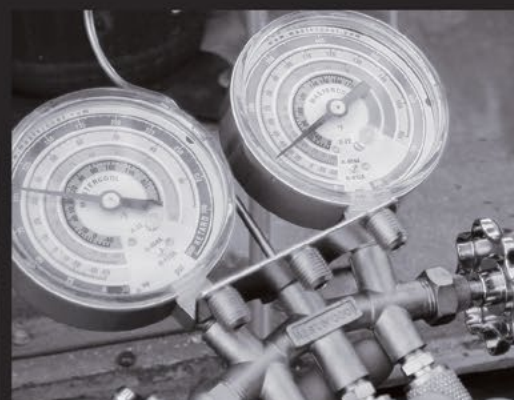
AUTO



Mastercool® Inc.
"World Class Quality"



AIR CONDITIONING,
SERVICE TOOLS
& EQUIPMENT



For over 30 years Mastercool has been supplying professional quality air conditioning service tools and equipment. As one of the fastest growing companies in this market, our primary goal is to drive New Product Innovation and Technologies to make the every day work of the HVAC/R technician easier!

With our never-ending focus on innovation and new technology, Mastercool has been awarded many patents worldwide. Our products are currently being distributed in over 76 countries and growing everyday!

MASTERCOOL LOCATIONS:

**Corporate Office,
Manufacturing and USA Warehouse**
1 Aspen Drive, Randolph, NJ 07869
USA

European Sales Office and Warehouse
Industriezone TTS
Laagstraat 19
9140 Temse, Belgium

Brazil Sales Office and Warehouse
R. Ver. Eurípedes Rama Pardal, 157
07756-595 – Cajamar – SP
Brazil

Australian Sales Office
82a Chinchin St
Islington NSW
2296
Australia

Corporate Office
Manufacturing and USA Warehouse



European Sales Office and Warehouse



Brazil Sales Office and Warehouse





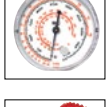



Australian Sales Office










CONTENTS



MANIFOLDS

	R134a DIGITAL MANIFOLD	6
	ALUMINUM 4-WAY MANIFOLD GAUGE SETS	7
	ALUMINUM 2-WAY MANIFOLD GAUGE SETS	8
	BRASS 2-WAY MANIFOLD GAUGE SETS	10
	REPLACEMENT GAUGES	11
	MANIFOLD REPLACEMENT PARTS	12







HOSES, ADAPTERS & ACCESSORIES

	HOSES	14
	AUTOMATIC AND MANUAL SHUT-OFF VALVES / RETROFIT ADAPTERS	16
	CHARGING ADAPTERS, REPLACEMENT GASKETS & DEPRESSORS	17
	COUPLERS & CONNECTORS	18
	A/C CHARGING ADAPTER REPAIR KITS	20
	VALVE CORE REMOVER/INSTALLERS	22
	SERVICE TOOLS AND ACCESSORIES	23




VACUUM PUMPS

	VACUUM PUMPS	26
	DIGITAL VACUUM GAUGE, BLOWER FANS	30

CHARGING & RECOVERY EQUIPMENT

	RECOVERY/RECYCLE/RECHARGE	32
	REFRIGERANT RECOVERY EQUIPMENT	35
	RECOVERY CYLINDERS	38
	CHARGING STATIONS	39
	CHARGING SCALES & EQUIPMENT	40
	REFRIGERANT IDENTIFIERS	42



LEAK DETECTION

	ELECTRONIC LEAK DETECTION	44
	UV LIGHTS	47
	UV LEAK LOCATOR KITS	48
	OIL INJECTORS	49
	UV DYES	50





SERVICE ACCESSORIES & CONSUMABLES

	NITROGEN REGULATORS	52
	FLUSH, SOLVENTS	53
	OILS & ACCESSORIES	54

MEASURE AND TEST INSTRUMENTS

	PRESSURE TESTING	56
	TEMPERATURE MEASUREMENT	58

TUBE AND HOSE FORMING

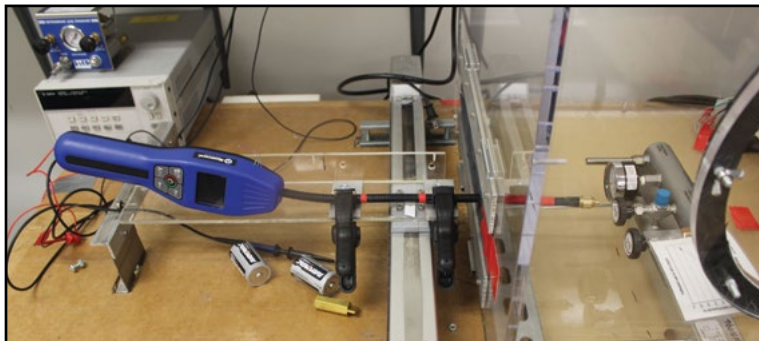
	SPECIALTY HYDRAULIC TOOLS	62
	HOSE CRIMPING TOOLS	66
	TUBING TOOLS	67
	COMPRESSOR SERVICE TOOLS	68
	PRESSURE TESTING ADAPTER CHART	71
	NUMERICAL INDEX	73

MASTERCool PRODUCTS ARE
MADE/ASSEMBLED IN THE USA



Mastercool manufactures all of its products with the highest quality components and management systems. All products are checked and tested directly at Mastercool headquarters in Randolph, New Jersey, USA.

Our products comply in every respect with the requirements set forth by SAE and EPA Standards as well as ARI Standard 740-98, EU Directives and PROP 65 guidelines.



MANIFOLDS



ALL THE INFORMATION YOU NEED IN THE PALM OF YOUR HAND!

Patent Pending



Heavy-Duty Hook Folds Back Into Unit For Compact Storage

Protective Rubber Boot

Large Easy-To-Read LCD Screen

Keypad Control

Rugged ABS Case

USB Connector Port for Software Upgrades

Aluminum Block Manifold With Double O-Ring Free Floating Piston Valves



This manifold offers a large easy to read LCD that displays temperature, pressure and vacuum readings for R134a. The unit easily allows the technician to obtain refrigerant and oil capacity readings for many popular automobile manufacturers. This unit also performs systems leak check at the conclusion of the evacuation process. To insure lasting performance and durability the manifold case is constructed of ABS material and protected by a rugged rubber boot. The technician now has a fully functional manifold with the intelligence to quickly access and deliver the accurate information needed to do the job right!

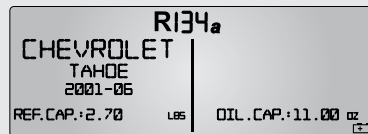


SPECIFICATIONS

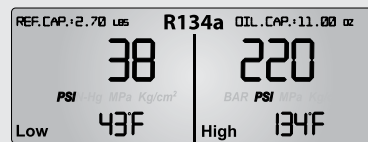
- Refrigerant: R134a
- Pressure & Vacuum Display: Low Side - PSI, Bar, MPa, Kg/cm² & IN-Hg
High Side - PSI, Bar, MPa, Kg/cm²
- Temperature Display: -40 to 200°F (-4 to 93°C)
- Response Time: 250 mSec.
- Connection: 1/2" acme
- Operating Temperature: 32 to 122°F (0 to 45°C)
- Power: 9V DC battery
- Battery Life: 50-60 hours continuous use
- Low Battery Indicator: Special ICON on LCD
- Auto-Off: 15 min. with disabling capability

MANUFACTURERS INCLUDE:

Acura	Hummer	Mercury	Saab
Audi	Hyundai	Mini	Saturn
BMW	Infiniti	Mitsubishi	Scion
Buick	Isuzu	Mercedes Benz	Smart
Cadillac	Jaguar	Nissan	Subaru
Chevrolet	Jeep	Oldsmobile	Suzuki
Chrysler	Kia	Peugeot	Toyota
Dodge	Lancia	Plymouth	Volkswagen
Fiat	Land Rover	Pontiac	Volvo
Ford	Lexus	Porsche	
GMC	Lincoln	Renault	
Honda	Mazda	Rover	



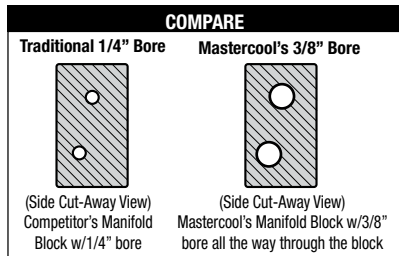
MANUFACTURER/MODEL/YEAR REFRIGERANT (LB/KG) & OIL CAPACITY (OZ/ML) DISPLAY



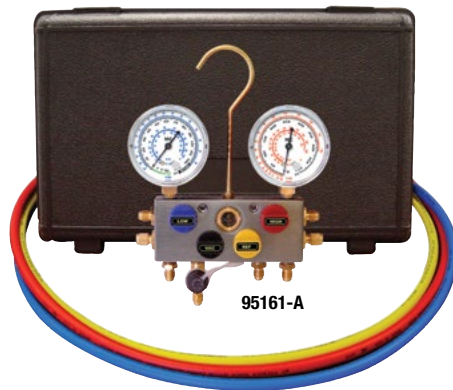
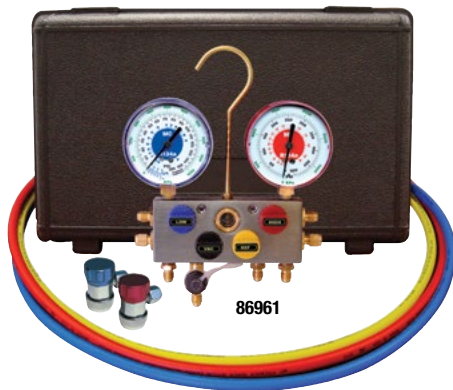
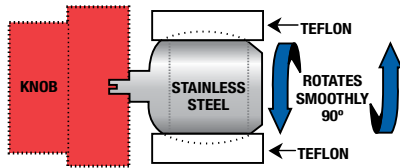
TEMPERATURE/PRESSURE DISPLAY

- 99134-A** Manifold only
- 99860-A** Complete Kit in a blow molded case includes: manifold with a set of 3-60" hoses and a set of manual couplers (82834 & 82934).
- 99872-A** Complete Kit in a blow molded case includes: manifold with a set of 3-72" hoses and a set of manual couplers (82834 & 82934).

3/8" BORE 4-WAY BALL VALVE MANIFOLD



Mastercool's Aluminum 4-Way Manifolds feature PREMIER SERIES BALL VALVE DESIGN.



Mastercool is the leading manufacturer of professional quality A/C manifold gauge sets. Our manifold gauge sets are constructed of the finest materials and machined with precision to the highest quality standards. At Mastercool, every manifold we build is built to last.

All Mastercool Gauges are Color Coordinated for Easy Refrigerant Recognition.

- Full 3/8" bore through the block increases flow considerably, faster charging & recovery
- Ball valve rotates 90° between two teflon washers requiring little effort to turn, even under pressure
- Opens and closes quickly with only a quarter turn
- Knob position shows whether valves are open or closed (Vertical = OPEN, Horizontal = CLOSED)

R134a AUTO A/C 4-WAY MANIFOLD GAUGE SETS

with hoses packaged in blow molded cases. Hose connections for blue and red are 14mm-M. Yellow hose is 1/2" ACME-F with auto shut-off valve. Gauges are 3 1/8" in PSI/Kpa & °F.

HOSE LENGTH	W/O COUPLERS	W/MANUAL COUPLERS	W/E-Z SNAP™ COUPLERS
36"	86536	86936	86436
60"	86561	86961	86461
72"	86572	86972	86472

R12, R22 AND R502 4-WAY MANIFOLD GAUGE SETS

with hoses packaged in blow molded cases. Hose connections are 1/4" SAE and gauges are 2 1/2" in PSI & °F.

HOSE LENGTH	STANDARD HOSES STANDARD FITTINGS	STANDARD HOSES AUTO SHUT-OFF VALVES	NYLON BARRIER HOSES STANDARD FITTINGS	NYLON BARRIER HOSES AUTO SHUT-OFF VALVES
36"	95136-A	95336-A	95236-A	95436-A
60"	95161-A	95361-A	95261-A	95461-A
72"	95172-A	95372-A	95272-A	95472-A

To order manifolds with shock-resistant gauge protectors, simply place a "-G" after the part number.

4-WAY MANIFOLDS WITH GAUGES ONLY

86103	R134a (3 1/8" Gauges) 1/2" Acme-M
95103-A	R12, R22 & R502 (2 1/2" Gauges) 1/4" MFL

PARTS FOR 4 WAY BALL VALVE MANIFOLDS



95102-R-KIT O-Ring Repair Kit for 4 Way Ball Valve Manifold

R134a AUTO A/C 2-WAY MANIFOLD GAUGE SETS WITH HOSES PACKAGED IN CLAMSHELLS



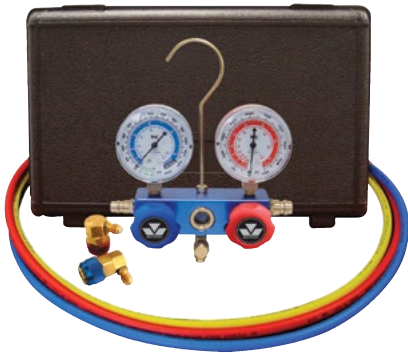
- Hose connections for blue and red are 14mm-M
- Yellow hose is 1/2" ACME-F with auto shut-off valve.
- Gauges are 2 1/2" in PSI/F, 3 1/8" in PSI/Kpa & °F.

HOSE LENGTH (SET OF 3)	W/MANUAL COUPLERS		W/E-Z SNAP™ COUPLERS		W/O COUPLERS	
	2 1/2"	3 1/8"	2 1/2"	3 1/8"	2 1/2"	3 1/8"
36"	89636	89136	88436	88136	85636	85136
60"	89661	89161	88461	88161	85661	85161
72"	89772	89172	88472	88172	85772	85172

To order manifolds with shock-resistant gauge protectors, simply place a "-G" after the part no. (2 1/2" only)

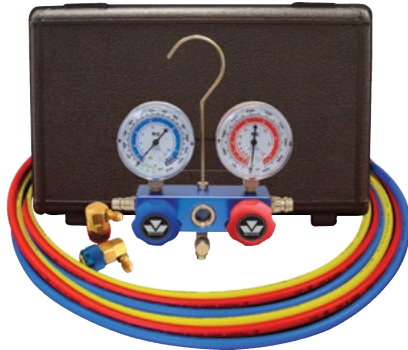
89660 AUTOMOTIVE R134a MANIFOLD GAUGE SET

>>POPULAR<<



- Professional Extruded Aluminum Block
- Silicone Dampened, Recalibrateable Gauges
- 3 - SAE Approved Nylon Barrier Hoses
- Professional R134a Couplers
- Custom Molded Carrying Case

98660 DUAL R134a/R12 MANIFOLD GAUGE SET



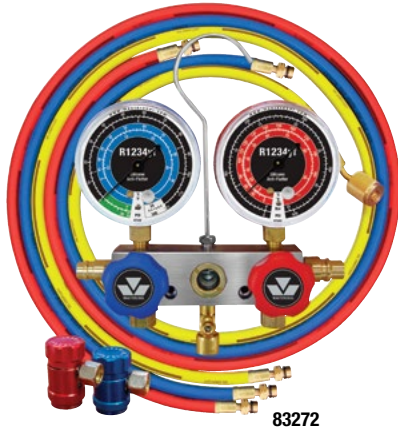
- Professional Extruded Aluminum Block
- Silicone Dampened, Recalibrateable Gauges
- Set of 3 - R134a Nylon Barrier Hoses
- Set of 3 - R12 Nylon Barrier Hoses
- Professional R134a Couplers
- Custom Molded Carrying Case

98661 DUAL R134a/R12 MANIFOLD GAUGE SET



- Professional Extruded Aluminum Block
- Silicone Dampened, Recalibrateable Gauges
- Set of 3 - R134a Nylon Barrier Hoses
- Set of 3 - R12 Nylon Barrier Hoses
- Manual Couplers
- Custom Molded Carrying Case

R1234yf 2-WAY PISTON VALVE MANIFOLD FOR AUTOMOTIVE A/C



- Manifold block assembled with (3) 12mm-F fittings per SAE J2888
- Red & Blue nylon barrier hoses with 12mm-M fittings on both sides meets SAE J2888, EPA, SAE & UL standards
- Yellow hose 12mm fitting on one side and 1/2 x 16 acme LH on the other meets SAE J2888
- R1234yf high and low side couplers with extended disconnect protection sleeve meets SAE J639 & J2888
- Piston type free-floating valves reduce o-ring wear
- Extra large sight glass for visual checks of refrigerant
- Easy to recalibrate 3 1/8" gauges to ensure accuracy



Unit	Bar/PSI
Gauge p/n (HP/LP)	87500-87350
Manifold with gauges, 3 x 12 mm-F fittings	83102
Manifold with 3 – 72" hoses and R1234yf couplers packaged in a clam shell	83272

R12, R22 AND R502 2-WAY ALUMINUM MANIFOLD GAUGE SETS WITH HOSES PACKAGED IN CLAMSHELLS



- Hose connections are 1/4" SAE
- Gauges are 2 1/2" in PSI & °F

HOSE LENGTH (SET OF 3)	STANDARD HOSES STANDARD FITTINGS	STANDARD HOSES AUTO SHUT-OFF VALVES	NYLON BARRIER HOSES STANDARD FITTINGS	NYLON BARRIER HOSES AUTO SHUT-OFF VALVES	NYLON BARRIER HOSES MANUAL BALL VALVES
36"	93636	95636	96636	97636	92636
60"	93661	95661	96661	97661	92661
72"	93772	95772	96772	97772	92772

To order manifolds with shock-resistant gauge protectors, simply place a "-G" after the part no. (2 1/2" only)

2-WAY ALUMINUM MANIFOLDS WITH GAUGES ONLY

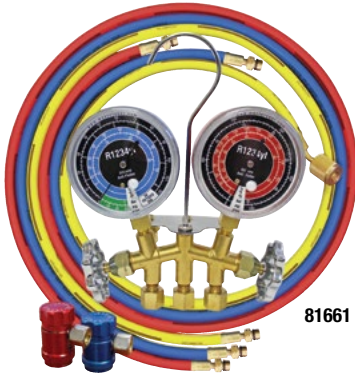
93103	R12, R22 & R502 (2 1/2" gauges) 1/4" MFL
85103	R134a (2 1/2" gauges) 1/2" Acme-M
85113	R134a (3 1/8" gauges) 1/2" Acme-M

PARTS FOR 2-WAY ALUMINUM MANIFOLDS

85215	O-rings for Al. Manifold (4 pcs)
85216	Seal & Seat Assembly (2 pcs)

BRASS 2-WAY MANIFOLD GAUGE SETS

R1234yf 2-WAY BRASS MANIFOLD FOR AUTOMOTIVE A/C



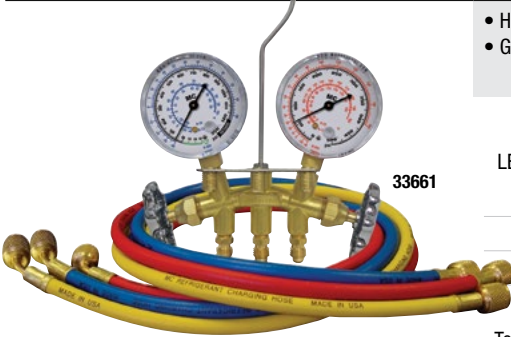
81661

- Manifold assembled with (3) 12mm-F fittings per SAE J2888
- Red & blue nylon barrier hoses with 12mm-M fittings on both sides meets SAE J2888, EPA, SAE & UL standards
- Yellow hose 12mm fitting on one side and 1/2 x 16 acme LH on the other meets SAE J2888
- R1234yf high and low side couplers with extended disconnect protection sleeve meets SAE J639 & J2888
- Easy to recalibrate 3 1/8" gauges to ensure accuracy



Unit	Bar/PSI
Gauge p/n (HP/LP)	87500-87350
Manifold with gauges, 3 x 12 mm-F fittings	81102
Manifold with 3 – 60" hoses and R1234yf couplers packaged in a clam shell	81661

R12, R22 AND R502 2-WAY BRASS MANIFOLD GAUGE SETS WITH HOSES PACKAGED IN CLAMSHELLS



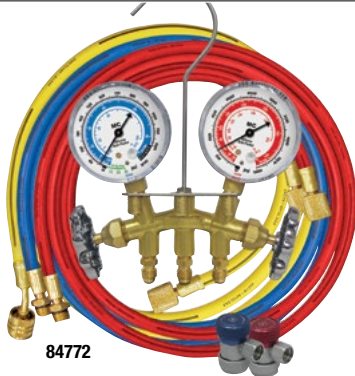
33661

- Hose connections are 1/4" SAE
- Gauges are 2 1/2" in PSI & °F.

HOSE LENGTH (SET OF 3)	STANDARD HOSES STANDARD FITTINGS	STANDARD HOSES AUTO SHUT-OFF VALVES	NYLON BARRIER HOSES STANDARD FITTINGS	NYLON BARRIER HOSES AUTO SHUT-OFF VALVES	NYLON BARRIER HOSES MANUAL BALL VALVES
36"	33636	35636	36636	37636	32636
60"	33661	35661	36661	37661	32661
72"	33772	35772	36772	37772	32772

To order manifolds with shock-resistant gauge protectors, simply place a "-G" after the part number. (2 1/2" only)

R134a AUTO A/C 2-WAY BRASS MANIFOLD GAUGE SETS WITH HOSES PACKAGED IN CLAMSHELLS



84772

- Hose connections for blue and red are 14mm-M
- Yellow hose is 1/2" ACME-F with auto shut-off valve.
- Gauges are 2 1/2" in PSI & °F.

HOSE LENGTH (SET OF 3)	W/MANUAL COUPLERS		W/E-Z SNAP™ COUPLERS		W/O COUPLERS	
	2 1/2"	3 1/8"	2 1/2"	3 1/8"	2 1/2"	3 1/8"
GAUGE SIZE						
36"	84636	84136	83436	83136	80636	80136
60"	84661	84161	83461	83161	80661	80161
72"	84772 >>POPULAR<<	84172	83472	83172	80772	80172

To order manifolds with shock-resistant gauge protectors, simply place a "-G" after the part number. (2 1/2" only)

AUTOMOTIVE R134a MANIFOLD GAUGE SETS WITH ECONOMY COUPLERS



66660 Brass R134a Manifold Gauge Set comes complete with 1 – 60" hose, 2 – 36" hoses and economy couplers. Packaged in a clamshell.

66661 Brass R134a Manifold Gauge Set comes complete with 3 – 60" hoses and economy couplers. Packaged in a clamshell.

2-WAY BRASS MANIFOLDS WITH GAUGES ONLY


- 80103** R134a (2 1/2" gauges) 1/2" Acme-M
- 81113** R134a (3 1/8" gauges) 1/2" Acme-M
- 33103** R12, R22, R502 (2 1/2" gauges) 1/4" MFL

PARTS FOR 2-WAY BRASS MANIFOLD

- 34215** O-rings for Brass Manifolds
- 34216** Seal & seat assembly for Brass Manifolds

REPLACEMENT GAUGES

Mastercool offers one of the most extensive lines of high quality replacement gauges. Our wide variety of gauge scales are available in different sizes and styles. All of our gauges are designed with the **ANTI-FLUTTER** feature that reduces needle fluctuation and increases reading accuracy.

	High pressure p/n	Low pressure p/n	Gauge Diameter	Units	Refrigerant Scales
	93500	93350	2 1/2"	PSI/F	R12 R22 R502
	85500	85350	2 1/2"	PSI/F	R134a R12
	86500	86350	3 1/8"	PSI/Kpa/F	R134a
	87500	87350	3 1/8"	Bar/PSI °F/°C	R1234yf

GAUGE PROTECTORS



Mastercool gauge protectors are built to cushion shock due to rough handling. The unique ribbing deadens bumps and deflects shocks. Snug fitting. Color coded. All Mastercool manifold gauge sets are available with gauge protectors installed. To order, simply place a “-G” after any gauge set number.

2 1/2" (63 MM) GAUGE PROTECTORS

93253-E 2 1/2" (63 mm) Blue Gauge Protector

93503-E 2 1/2" (63 mm) Red Gauge Protector

93553-E 2 1/2" (63 mm) Set (Red & Blue)

3 1/8" (80 MM) GAUGE PROTECTORS

91253-EE 3 1/8" (80 mm) Red Gauge Protector

91503-EE 3 1/8" (80 mm) Blue Gauge Protector

91553-EE 3 1/8" (80 mm) Set (Red & Blue)

LENS



85253-E 2 1/2" (63 mm) Lens

98251-E 3 1/8" (80 mm) Lens

4-WAY MANIFOLD REPLACEMENT KNOBS



58211 Blue Knob

58212 Red Knob

58213 Yellow Knob

58214 Black Knob

2-WAY MANIFOLD REPLACEMENT KNOBS

85212-R / 85211-R



85211 Blue Knob

85212 Red Knob

93211 Black Knob

85211-R Blue Knob

85212-R Red Knob

93211-R Black Knob

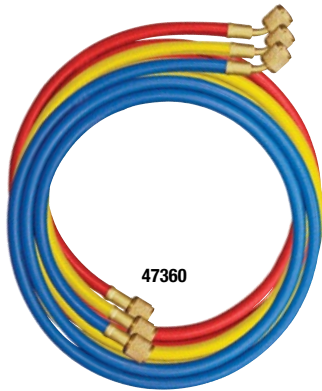
85212 / 85211

HOSES, ADAPTERS AND ACCESSORIES



Mastercool uses only **(GRADE 5 HOSE)** with a selection of Standard and Nylon Barrier for high pressure applications. Knurled brass nuts make finger tightening easy. **Crimped with 8 segment dies for secure fit and maximum durability.** Hoses are available in sets and a variety of lengths to meet all EPA, SAE and UL requirements for containment of refrigerant. **Sets include one blue, one red and one yellow hose.**

STANDARD & HIGH PRESSURE HOSES W/STANDARD FITTINGS (1/4" SAE)



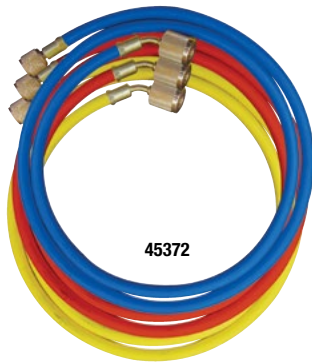
Standard Hoses, Working Pressure 600 PSI, Burst 3000 PSI

HOSE LENGTH	36"	60"	72"	96"
Blue 1/4" x 1/4"	41361	41601	41721	41961
Yellow 1/4" x 1/4"	41362	41602	41722	41962
Red 1/4" x 1/4"	41363	41603	41723	41963
SETS 1/4" x 1/4"	40336	40360	40372	40396

Nylon Barrier Hoses, Working Pressure 800 PSI, Burst 4000 PSI

Blue 1/4" x 1/4"	47361	47601	47721	47961
Yellow 1/4" x 1/4"	47362	47602	47722	47962
Red 1/4" x 1/4"	47363	47603	47723	47963
Black 1/4" x 1/4"	47364	47604	47724	47964
SETS 1/4" x 1/4"	47336	47360	47372	47396
Black 1/4" hose w/(3/8" x 3/8" fitting)	48364	48604	48724	48964

STANDARD & HIGH PRESSURE HOSES W/AUTOMATIC SHUT-OFF VALVE FITTINGS (1/4" SAE)



Standard Hoses, Working Pressure 600 PSI, Burst 3000 PSI

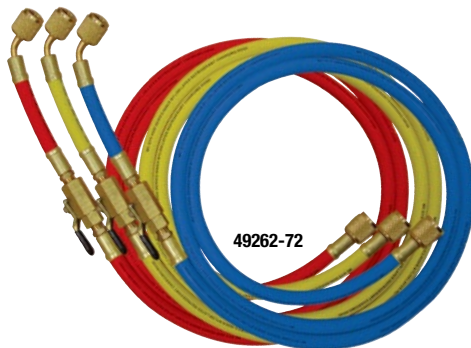
HOSE LENGTH	36"	60"	72"	96"
Blue 1/4" x 1/4"	45361	45601	45721	45961
Yellow 1/4" x 1/4"	45362	45602	45722	45962
Red 1/4" x 1/4"	45363	45603	45723	45963
SETS 1/4" x 1/4"	45336	45360	45372	45396

Nylon Barrier Hoses, Working Pressure 800 PSI, Burst 4000 PSI

Blue 1/4" x 1/4"	46361	46601	46721	46961
Yellow 1/4" x 1/4"	46362	46602	46722	46962
Red 1/4" x 1/4"	46363	46603	46723	46963
Black 1/4" x 1/4"	46364	46604	46724	46964
SETS 1/4" x 1/4"	46336	46360	46372	46396

Auto shut-off valves automatically retain refrigerant in the service hose when they are removed from the system, meets EPA, SAE and UL standards for containment of refrigerant.

STANDARD & HIGH PRESSURE HOSES W/MANUAL SHUT-OFF VALVE FITTINGS (1/4" SAE)



Standard Hoses, Working Pressure 600 PSI, Burst 3000 PSI

HOSE LENGTH	36"	60"	72"
Blue 1/4" x 1/4"	90263-36	90263-60	90263-72
Yellow 1/4" x 1/4"	90264-36	90264-60	90264-72
Red 1/4" x 1/4"	90265-36	90265-60	90265-72
SETS 1/4" x 1/4"	90262-36	90262-60	90262-72

Nylon Barrier Hoses, Working Pressure 800 PSI, Burst 4000 PSI

Blue 1/4" x 1/4"	49263-36	49263-60	49263-72
Yellow 1/4" x 1/4"	49264-36	49264-60	49264-72
Red 1/4" x 1/4"	49265-36	49265-60	49265-72
SETS 1/4" x 1/4"	49262-36	49262-60	49262-72

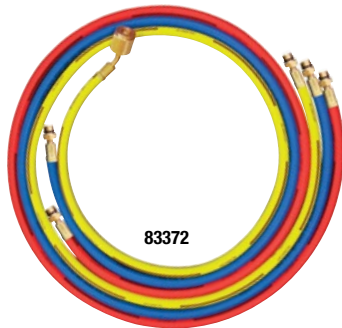
R134a HOSES WITH 1/2" ACME-F AND 14 MM-M AUTO A/C FITTINGS



HOSE LENGTH	36"	60"	72"	96"
Blue-14 mm-M x 1/2" ACME-F	84361	84601	84721	84961
Yellow w/Shut-off Valve 1/2" ACME-F x 1/2" ACME-F	84362	84602	84722	84962
Red-14 mm-M x 1/2" ACME-F	84363	84603	84723	84963
Black-1/2" ACME-F x 1/2" ACME-F	84364	84604	84724	84964
Black Conversion Hose 1/2" ACME-F x 1/4" FL-F	98364	98604	98724	98964
Yellow w/o Shut-off Valve 1/2" ACME-F x 1/2" ACME-F	84365	84605	84725	84965
SETS Blue/Red 14 mm-M x 1/2" ACME-F and Yellow w/Shut-off Valve 1/2" ACME-F x 1/2" ACME-F	84336	84360	84372	84396

Mastercool R134a charging hoses meet SAE J2196 specifications and are UL tested. Tested for working pressure of 600 PSI and burst pressure of 3000 PSI.

R1234yf HOSES (Meets J2888, EPA, SAE & UL Standards)



Nylon Barrier Hoses, Working Pressure 800 PSI, Burst 4000 PSI

HOSE LENGTH	60"	72"
Blue-12mm-M x 12mm-M	83601	83721
Yellow-12mm fitting x 1/2 x 16 ACME LH	83602	83722
Red-12mm-M x 12mm-M	83603	83723
SET Blue/Red 12mm-M x 12mm-M and Yellow 12mm fitting x 1/2 x 16 ACME LH	83360	83372

SERVICE HOSE REPLACEMENT PARTS



	1/4" SAE		1/2" ACME		14 mm-M O-RING	UNF 1/2 - 20"	
	GASKET	DEPRESSOR	GASKET	DEPRESSOR		GASKET	DEPRESSOR
Charging Hoses	42010-10	42014-10	82010-10	42014-10	83341-10	42010-10	42014-10
Shut-Off Valve	90336-10	N/A	82336-10	N/A	N/A	N/A	N/A

AUTOMATIC & MANUAL SHUT-OFF VALVES / RETROFIT ADAPTERS

Mastercool manufactures a complete line of shut-off valves for containment of refrigerant. EPA requires shut-off valves within 12 inches of the charging hose ends to prevent unnecessary venting of refrigerant. Using shut-off valves is much safer than allowing refrigerant to blow out during service.

90259 90° MANUAL SHUT-OFF VALVE SET



Needle valve design with flexible hose controls refrigerant with a twist of a knob. Meets SAE, EPA and UL requirements for containment of refrigerant. Screws onto charging hose end.

90° Manual Shut-Off Valve Set Includes:

- 90269** Blue 1/4" x 1/4"
- 90279** Yellow 1/4" x 1/4"
- 90289** Red 1/4" x 1/4"

Also Available:

- 90389** Red 1/4" x 3/16" (Automotive)

90262 STRAIGHT MANUAL SHUT-OFF VALVE SET



Ball valve design with flexible hose controls refrigerant with a quarter turn of the valve handle. Meets SAE, EPA and UL requirements for containment of refrigerant. One hand operation. Screws onto charging hose end.

Straight and Manual Shut-Off Valve Set includes:

- 90263** Blue 1/4" x 1/4"
- 90264** Yellow 1/4" x 1/4"
- 90265** Red 1/4" x 1/4"

Also Available:

- 90365** Red 1/4" x 3/16"

AUTOMATIC SHUT-OFF VALVES



Valve simply screws onto hose end. Available in straight and 90° models. Meets SAE, EPA and UL requirements for containment of refrigerant.

<< QUICK DISCONNECT : NO LOSS OF REFRIGERANT >>

- 90333-R** 90° 1/4 FL-M x 1/4 FL-F
- 90333-UV** 90° 1/4" FFL x 13 mm
- 90335-R** Straight 1/4 FL-M x 1/4 FL-F
- 90337** Straight 1/4 FL-M x 3/16 FL-F

CONTROL VALVE

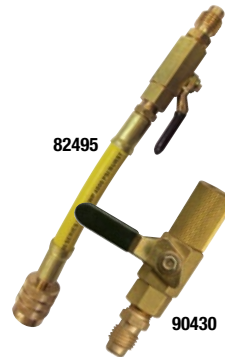


Ideal for use on charged systems. Eliminates refrigerant, oil or dye from spraying during connections.



- 90328** 1/4" FFL x 1/4" MFL
- 90328-5/16** 5/16" FFL x 5/16" MFL

MANUAL SHUT-OFF BALL VALVES



For custom application, Mastercool offers swivel ball valves without the hoses. This valve may be used to add shut-off valves to recycling equipment, manifold sets, flushing equipment, etc.

- 90430** 1/4 FL-F x 1/4 FL-M Swivel Ball Valve (less hose)
- 82495** 1/2" ACME x 1/2" ACME R134a Ball Valve

RETROFIT ADAPTERS

INDIVIDUAL TERMINATION (BLOCK OFF) CAPS



- 81297** 1/4 (7/16" - 20) alum.
- 81379** 3/16 (3/8" - 24) alum.
- 82297** Low Side R134a blue cap
- 82379** High Side R134a red cap

STRAIGHT ADAPTERS W/VALVE CORE & SERVICE PORT CAPS



- 82274** Low Side, 1/4 (7/16" - 20) x 13 mm
- 82332** High Side, 1/4 (7/16" - 20) x 16 mm
- 82358** High Side, 3/16 (3/8" - 24) x 16 mm

90° ADAPTERS W/VALVE CORE & SERVICE PORT CAPS




- 82275** Low Side, 1/4 (7/16" - 20) x 13 mm
- 82333** High Side, 1/4 (7/16" - 20) x 16 mm
- 82354** High Side, 3/16 (3/8" - 24) x 16 mm

82357 GM HIGH FLOW ADAPTER W/ VALVE CORE & SERVICE PORT CAPS



GM High Flow Adapter










90° ADAPTERS

		REPLACEMENT	GASKET/O-RING	DEPRESSOR	
	A	90333-R	Shut-Off Valve 1/4" MFL x 1/4" FFL	90336	-
	B	90314*	1/4" MFL x 1/4" FFL	42010	42014
	B	90340*	1/4" MFL x 1/8" FFL (High Side) Ford 1977-1980	90341	90368
	B	90354*	1/4" MFL x 3/16" FFL (High Side) GM 1976 & Later	90369	90368

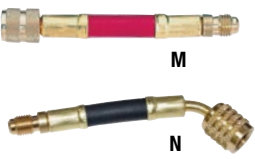
45° ADAPTERS

	C	90924	1/4" MFL x 1/4" FFL	42010	42014
	C	90927*	1/4" MFL x 3/16" FFL (High-Side)	90369	90368


STRAIGHT ADAPTERS

	D	82272*	R134a 1/2" ACME-F x 13 mm R134a (Low-Side)	85511	-
	E	82335	R134a Shut-Off Valve 1/2" ACME-M x 1/2" ACME-F	90336	-
	E	90335-R	Shut-Off Valve 1/4" MFL x 1/4" FFL	90336	-
	E	90337	Shut-Off Valve 1/4" MFL x 3/16" FFL	90331	-
	F	82634*	1/4" FFL x 1/2" ACME-M	80234	-
	F	82634-M	1/4" FFL x 1/2" ACME-M Without Core Valve	80234	-
	G	82734	14 mm-M x 1/4" MFL	83341	-
	H	90358*	1/4" MFL x 3/16" FFL (High-Side)	42010	42014
	I	90274	1/4" MFL x 1/4" FFL Swivel	42010	42014
	I	90332**	1/4" MFL x 1/4" FFL Anti-Blowback Fitting	42010	42014
	I	90357	1/4" MFL x 3/16" FFL (High-Side) Swivel	90369	90368
	I	91084*	1/4" MFL x 3/16" FFL (High-Side) Swivel Adapter GM 1976 & Later, Ford 1981 & Later	90369	90368
	J	90338*	GM 1991 & Later Service Adapter	90339	-
	K	90637	3/4" NPSF x 1/4" MFL Refrigeration Tank Adapter	90638	-
	L	90633	1/4" MFL x 1/4" MFL Union	-	-
	L	82633	1/2" ACME-M x 1/2" ACME-M Union	-	-
	L				

FLEX ADAPTERS

	M	90355*	1/4" MFL x 3/16" FFL (High-Side) GM 1976 & Later, Ford 1981 & Later	90369	90368
	M	90356*	1/4" MFL x 1/4" FFL	42010	42014
	M	90373*	1/4" MFL x 1/8" FFL (High-Side) Ford 1977-1980	90341	90368
	N	90410	Convert 1/4 SAE Hose Into 5/16 SAE, Swivel Connection	82010	-

ACCESS SERVICE TOOLS

	O	90296*	1/4" MFL x 1/8" NPT	-	-
	O	80296*	1/2" ACME-M x 1/8" NPT	-	-

* Includes Access Valve Core (0377-001) – (90-110 PSI Opening) / ** Includes Check Valve Core (0332-002) – (8-12 PSI Opening)

MANUAL COUPLERS

>>POPULAR<<



Patented manual couplers adjust easily to R134a service ports with varying dimensions. All metal construction for extra durability. Patented, spring loaded depressor will not damage service valves. Can be removed from service ports regardless of knob position without losing refrigerant. Meets SAE, UL and EPA requirements for containment of refrigerant. Color coded.

PATENT# 5,370,359

82834 High-Side Manual R134a 14 mm-F x 16 mm Quick Coupler

82934 Low-Side Manual R134a 14 mm-F x 13 mm Quick Coupler

82834-E High-Side Manual R134a 1/4" FL-M x 16 mm Quick Coupler

82934-E Low-Side Manual R134a 1/4" FL-M x 13 mm Quick Coupler

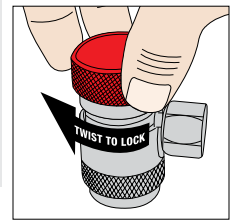
80034 O-ring for 16 mm Quick Coupler (10 pcs)

80134 O-ring for 13 mm Quick Coupler (10 pcs)

SAFETY-LOCK MANUAL COUPLERS



Mastercool's new safety-lock manual couplers are designed for use on all R134a systems. This unique design allows the technician to work on the system without the worry of accidentally disconnecting the hose regardless of movement. Once the coupler is connected to the system, the safety-lock sleeve slides into place guaranteeing that the coupler cannot be taken off without unscrewing the manual valve. Meets all SAE, UL and EPA requirements for containment of refrigerant. Color coded.



82834-SL High Side Manual R134a Safety Lock Coupler 14 mm-F x 16 mm

82934-SL Low Side Manual R134a Safety Lock Coupler 14 mm-F x 13 mm

82834-SL-E High Side Manual R134a Safety Lock Coupler 1/4" FL-M x 16 mm

82934-SL-E Low Side Manual R134a Safety Lock Coupler 1/4" FL-M x 13 mm

80034 O-ring for 16 mm Quick Coupler (10 pcs)

80134 O-ring for 13 mm Quick Coupler (10 pcs)

E-Z SNAP™ COUPLERS



This unique patented design easily snaps on and off the A/C systems service ports under any pressure. The E-Z Snap™ automatically adjusts to various service port dimensions allowing fast and immediate access into the A/C system. The swivel feature enables the user to easily access all service ports, even in the tightest quarters. Meets SAE, UL, and EPA requirements for containment of refrigerant.

PATENT# 5,244,010

82214 High-Side E-Z Snap R134a 14 mm-F x 16 mm Quick Coupler

82224 Low-Side E-Z Snap R134a 14 mm-F x 13 mm Quick Coupler

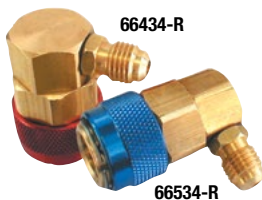
82214-E High-Side E-Z Snap R134a 1/4" FL-M x 16 mm Quick Coupler

82224-E Low-Side E-Z Snap R134a 1/4" FL-M x 13 mm Quick Coupler

80034 O-ring for 16 mm Quick Coupler (10 pcs)

80134 O-ring for 13 mm Quick Coupler (10 pcs)

ECONOMY COUPLERS



Specially designed to work in the tightest quarters. Snaps easily to A/C service ports.

66434-R High Side R134a 1/4" FL-M x 16 mm Economy Coupler

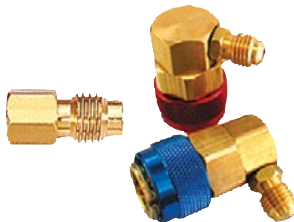
66534-R Low Side R134a 1/4" FL-M x 13 mm Economy Coupler

60034-10 O-ring for 66434 (10 pcs)

60134-10 O-ring for 66534 (10 pcs)



98370 R134a CONVERSION KIT



Includes High and Low Side R134a Couplers and R134a Tank Adapter.

R1234yf COUPLERS



- High and low couplers with extended disconnect protection sleeve
- Meets SAE J639 & J2888
- Allows recovery of entire refrigerant, including the space between the coupler and fitting.



83834	High Side R1234yf Coupler 12 mm-F x 17 mm
83934	Low Side R1234yf Coupler 12 mm-F x 14 mm

R134a EXTRA LONG COUPLERS



Extra Long High Side R134a coupler used on BMW E60 (2003-2009 5 series), Volvo and Renault models. This extra long high side coupler can easily reach the service port.

82836	High Side Extra Long 14 mm-F x 16 mm
82836-E	High Side Extra Long 1/4" SAE-M x 16 mm

MALE x MALE CONNECTORS



82734	14 mm-M x 1/4" FL-M (7/16-20") Connector
82735	14 mm-M x M10 x 1.5-M Connector
82736	14 mm-M x M12 x 1.75-M Connector
82738	14 mm-M x 3/8" FL-M Connector
83341	O-Ring for 82733, 82734, 82735 and 82736
80234	O-Ring for 82634, 82634-M, 90364 and 90365

FEMALE x MALE CONNECTORS



82635	1/2" ACME-F x 1/4" FL (7/16-20")-M R134a Adapter Coupler
82733	14 mm-F x 1/2" ACME-M Connector
90364	1/4" (7/16-20")-F x M10 x 1.5-M Adapter
90363	5/16" (1/2-20 UNF)-F x 1/4" FL-M Connector
82634	1/4" FL-F (7/16-20") x 1/2" ACME-M Connector
82634-M	1/4" FL-F (7/16-20") x 1/2" ACME-M R134a Connector

93000 SPRING LOCK COUPLING TOOL SET



Four sizes 3/8" (#6), 1/2" (#8), 5/8" (#10) and 3/4" (#12) used on Fords and Chryslers. Durable spring loaded design for long life and reliable fit.

Set includes:

93098	3/8" (#6) Red	93100	5/8" (#10) Black
93099	1/2" (#8) Blue	93101	3/4" (#12) Beige

91207 CHARGING AND DEPRESSOR ASSORTMENT



Replacement gaskets, o-rings and depressors for charging hoses and adapters.

Consists of:

42010	1/4" Gasket (3 pcs)
42014	1/4" Depressor (3 pcs)
90368	3/16" Depressor (3 pcs)
90369	3/16" Gasket (3 pcs)
90341	1/8" O-ring (3 pcs)

91334 CHARGING ADAPTER REPAIR KIT



55 piece assortment of replacement gaskets, o-rings and depressors for charging hoses and adapters.

Consists of:

42010	1/4" Gasket (10 pcs)
42014	1/4" Depressor (10 pcs)
90368	3/16" Depressor (10 pcs)
90369	3/16" Gasket (10 pcs)
90341	1/8" O-ring (10 pcs)
92107	Quick Disconnect Gasket (5 pcs)

91334-A R12/R134a CHARGING HOSE REPLACEMENT PARTS ASSORTMENT



Consists of:

42010	1/4" FL Gasket (10 pcs)
42014	1/4" FL Depressor (5 pcs)
42016	Screw Type Depressor (5 pcs)
90336	Gasket for 90335 (5 pcs)
82010	Black Gasket for R134a Hose (10 pcs)
83341	O-Ring for R134a Hose (5 pcs)
80034-2	Black O-Ring for High Side (5 pcs)
80134-2	Black O-Ring for Low Side (5 pcs)

85200 DELUXE A/C SERVICE REPAIR KIT



Replacement gaskets, depressors, o-rings and nylon guides for charging hoses and adapters.

Consists of:

42010	1/4" Gasket (10 pcs)
42014	1/4" Depressor (10 pcs)
80034	O-ring for 82834 (10 pcs)
80034-1	High Side Nylon Guide (5 pcs)
80134	O-ring for 82934 (10 pcs)
80134-1	Low Side Nylon Guide (5 pcs)
82010	Gasket for R134a Hose (10 pcs)
82336	Gasket for 82335 (10 pcs)
83341	O-ring for R134a Hose (10 pcs)
90336	Gasket for 90335 Shut-off Valve (10 pcs)

91335 MASTER A/C CHARGING ADAPTER REPAIR KIT



126 piece assortment of replacement gaskets, o-rings and depressors for charging hoses and adapters. Also includes valve core removal tool and replacement valve cores.

Consists of:

42010	1/4" Gasket (20 pcs)
42014	1/4" Depressor (20 pcs)
90368	3/16" Depressor (20 pcs)
90369	3/16" Gasket (20 pcs)
90341	1/8" O-ring (20 pcs)
92107	Quick Disconnect Gasket (10 pcs)
0377-001	Refrigeration Valve Core (10 pcs)
90378	GM Large Bore Valve Core (5 pcs)

91336 FORD SPRING LOCK REPLACEMENT O-RING AND GARTER SPRING ASSORTMENT



Compatible with R12 and R134a systems.

Consists of:

1336-006	#6 O-ring (10 pcs)
1336-008	#8 O-ring (10 pcs)
1336-010	#10 O-ring (10 pcs)
1336-012	#12 O-ring (10 pcs)
1336-016	#6 Garter Spring (5 pcs)
1336-018	#8 Garter Spring (5 pcs)
1336-110	#10 Garter Spring (5 pcs)
1336-112	#12 Garter Spring (5 pcs)

91337 R12/R134a VALVE CORE REPAIR KIT



Replacement valve cores for valve core removers & installers.

Consists of:

0377-001	Access Valve Core (20 pcs)
0378-001	Valve Core (10 pcs)
0531-001	R134a JRA High/Low Import Valve Core (10 pcs)
0768-001	R134a Domestic High Flow Valve Core M8 (5 pcs)
0769-001	R134a Domestic High Flow Valve Core M10 (5 pcs)
81290	R12/R134a Valve Core Remover/Installer (1 pc)

91339 AUTOMOTIVE R12 & R134a O-RING ASSORTMENT (270 PIECE HNBR)



Consists of:

91339-01	7/32" x 1/16" (5.29 x 1.78 mm) (20 pcs)	91339-10	11 x 2 mm (15 pcs)
91339-02	1/4" x 1/16" (6.07 x 1.78 mm) (20 pcs)	91339-11	12 x 2 mm (15 pcs)
91339-03	6.8 x 1.9 mm (20 pcs)	91339-12	13.9 x 1.8 mm (10 pcs)
91339-04	5/16" x 1/16" (7.65 x 1.78 mm) (20 pcs)	91339-13	9/16" x 3/32" (13.95 x 2.62 mm) (10 pcs)
91339-05	7.8 x 1.9 mm (20 pcs)	91339-14	14 x 2 mm (10 pcs)
91339-06	8 x 2 mm (20 pcs)	91339-15	15 x 2 (10 pcs)
91339-07	8.8 x 1.9 mm (20 pcs)	91339-16	17 x 2 (10 pcs)
91339-08	7/16" x 1/16" (10.82 x 1.78 mm) (15 pcs)	91339-17	11/16" x 1/16" (17.17 x 1.78 mm) (10 pcs)
91339-09	7/16" x 3/32" (10.77 x 2.62 mm) (15 pcs)	91339-18	11/16" x 1/8" (17.04 x 3.53 mm) (10 pcs)

58490 UNIVERSAL R12/R134a MASTER KIT

>>POPULAR<<



Kit covers all R12 & R134a system valve cores for Standard, JRA, Eaton and GM Large Bore.
PATENT# 6,253,436



58531 R134a STANDARD & JRA (M6) VALVE CORE KIT



Kit covers the most popular R134a valve cores.

58560 R134a EATON (M8 & M10) VALVE CORE KIT



Kit covers the Eaton style R134a valve cores.

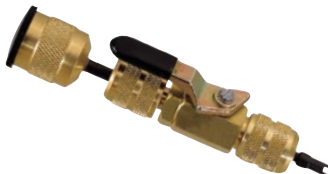
90376 VALVE CORE REMOVER W/VALVE CORES FOR R12



Quickly removes valve cores. Storage area includes six replacement access valve cores.

90377 Replacement Standard Valve Cores for 90376 (6 pcs of 0377-001)

91490 STANDARD VALVE CORE REMOVER/INSTALLER



VALVE CORE REMOVERS/INSTALLERS AUTOMOTIVE/HVAC (1/4" FL)

Sturdy ball valve design controls refrigerant flow with 1/4 turn of the valve lever. Lever position also gives visual indication of whether valve is opened or closed.



81490 R134a VALVE CORE REMOVER AND INSTALLER



- For 13 mm and 16 mm high and low service port standard type valve
- Built-in ball valve retains charge and allows access to A/C system
- Excellent for replacing Valve Cores without discharging the system and for speeding recovery and recharging large systems

81290 R134a UNIVERSAL LARGE BORE REMOVER



Used on R12/R134a Standard and JRA/EATON Large Bore R134a Valve Cores.

91290 UNIVERSAL VALVE CORE REMOVER



Double ended for easy replacement of Standard and GM R12 Large Bore Valve Cores.

SERVICE TOOLS

80011 HEAVY DUTY RATCHET HOSE CUTTER



Ratcheted action makes this cutter extremely easy to operate resulting in quick, clean cuts. Cutting blade is made of special alloy, heat treated steel for long life. Cuts all rubber hoses and PVC pipe up to 1 1/2" (38mm) O.D. (Not recommended for PVC200)

80111 Replacement blade for 80011

80013 AUTOMOTIVE REFRIGERANT HOSE CUTTER



Makes quick, clean cuts. Cuts rubber automotive refrigerant hoses up to 1 1/2" O.D.

80113 Replacement blade for 80013

90925 CONDENSER FIN COMB



Cleans and straightens condenser and evaporator fins. Six sided head for 8, 9, 10, 12, 14 and 15 fins per inch applications.

HOSSES, ADAPTERS AND ACCESSORIES

85530 3-IN-1 SIDE MOUNT CAN TAP VALVE



This unique design covers 2 7/8" (R134a), 2 1/2" and 2" (OIL) charge cans. Includes 1/2" ACME-M and 1/4" FL-M ports. Internal safety check valve prevents system back flow.

85510 R134a CAN TAP VALVE - SCREW-ON



- 1/2" ACME-M
- Screw-on design for R134a ACME male can taps
- Exclusive "full grip" valve knob
- Gasket assures leak proof operation
- Built-in safety check

85510-YF R1234yf CAN TAP VALVE - SCREW-ON



- 1/2" ACME-LH thread for use with R1234yf pierce designed cans
- Exclusive "full grip" valve knob
- All metal construction provides durability
- Gasket assures leak proof operation
- Built-in safety check
- Works with SAE J2844 fittings



85512-YF R1234yf CAN TAP VALVE - DEPRESSOR



- 1/2" ACME-LH thread for use with R1234yf self-sealing/reusable designed cans
- All metal construction provides durability
- Gasket assures leak proof operation
- Built-in safety check
- Works with SAE J2844 fittings



85525 R134a RECHARGE KIT



Charge A/C systems using R134a cans with 1/2" ACME fitting

85525-YF R1234yf RECHARGE KIT - SCREW-ON



Charge A/C systems using R1234yf pierce designed cans

Consists of:

- 85510-YF** R1234yf Can Tap Valve - Screw-On
- 67534** R1234yf Low Side Quick Coupler 12 mm-F x 14 mm
- 83181** R1234yf 18" Blue Hose



85535-YF R1234yf RECHARGE KIT - DEPRESSOR



Charge A/C systems using R1234yf self-sealing/reusable designed cans

Consists of:

- 85512-YF** R1234yf Can Tap Valve - Depressor
- 67534** R1234yf Low Side Quick Coupler 12 mm-F x 14 mm
- 83181** R1234yf 18" Blue Hose



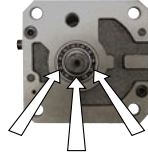
VACUUM PUMPS



2 STAGE ELITE BALL BEARING DESIGN VACUUM PUMPS

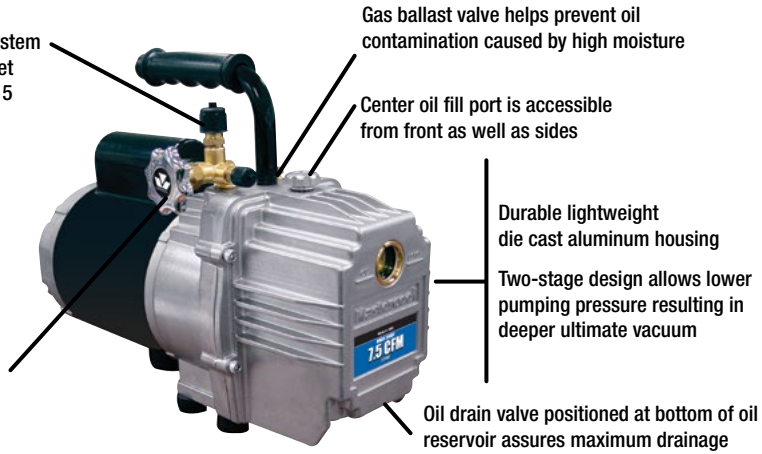


A good quality vacuum pump is an integral tool for complete A/C service. Mastercool vacuum pumps are durable and time tested. They stand up to the most grueling conditions and will provide years of reliable service. Mastercool offers a complete selection of pumps. Regardless of your service requirements, Mastercool has a model for your application.



Ball Bearing Cartridge Design
reduces running temperatures by 30% and extends the life of the pump.

Manifold valve isolates pump from the system when testing for leaks. Includes three inlet ports – 1/4", 3/8" SAE and 1/2" ACME on 5 and 7.5 CFM models



Gas ballast valve helps prevent oil contamination caused by high moisture

Center oil fill port is accessible from front as well as sides

Durable lightweight die cast aluminum housing

Two-stage design allows lower pumping pressure resulting in deeper ultimate vacuum

Internal check valve stops oil blowout in case of accidental power loss

Oil drain valve positioned at bottom of oil reservoir assures maximum drainage

5 CFM VACUUM PUMP

>>POPULAR<<



MODEL	90065
NO. OF STAGES	2
FREE AIR DISPLACEMENT	5 CFM
ULTIMATE VACUUM	25 Microns
MOTOR	1/3 HP
PUMP SPEED	1425 RPM 1725 RPM
ELECTRICAL SPECS	110 V / 60 HZ
WEIGHT	29 lbs
DIMENSIONS	14.5 x 6 x 11 x 9.5"

7 CFM VACUUM PUMP



MODEL	90067
NO. OF STAGES	2
FREE AIR DISPLACEMENT	7.5 CFM
ULTIMATE VACUUM	25 Microns
MOTOR	1/2 HP
PUMP SPEED	1425 RPM 1725 RPM
ELECTRICAL SPECS	110 V / 60 HZ
WEIGHT	35.5 lbs
DIMENSIONS IN CM	16 x 6 x 11 x 9.5"

2 STAGE DUAL VOLTAGE VACUUM PUMPS

- New U.S. Design
- Stronger Motor
- Field Serviceable



3 CFM DUAL VOLTAGE VACUUM PUMP



MODEL	90063-2V-110-B
NO. OF STAGES	2
FREE AIR DISPLACEMENT	3 CFM
ULTIMATE VACUUM	15 Microns
MOTOR	1/3 HP
PUMP SPEED	1720 RPM
ELECTRICAL SPECS	110/120 V, 60 HZ
POWER CORD	110 V Cable (US Standard)
WEIGHT	15.43 lbs
DIMENSIONS	11 x 6 x 10

6 CFM DUAL VOLTAGE VACUUM PUMP

>>POPULAR<<



MODEL	90066-2V-110-B
NO. OF STAGES	2
FREE AIR DISPLACEMENT	6 CFM
ULTIMATE VACUUM	15 Microns
MOTOR	1/2 HP
PUMP SPEED	1720 RPM
ELECTRICAL SPECS	110/120 V, 60 HZ
POWER CORD	110 V Cable (US Standard)
WEIGHT	24.25 lbs
DIMENSIONS	15 x 6.5 x 11

8 CFM DUAL VOLTAGE VACUUM PUMP



MODEL	90068-2V-110-B
NO. OF STAGES	2
FREE AIR DISPLACEMENT	8 CFM
ULTIMATE VACUUM	15 Microns
MOTOR	3/4 HP
PUMP SPEED	1720 RPM
ELECTRICAL SPECS	110/120 V, 60 HZ
POWER CORD	110 V Cable (US Standard)
WEIGHT	34 lbs
DIMENSIONS	15 x 7 x 11

12 CFM DUAL VOLTAGE VACUUM PUMP



MODEL	90612-2V-110-B
NO. OF STAGES	2
FREE AIR DISPLACEMENT	12 CFM
ULTIMATE VACUUM	15 Microns
MOTOR	1 HP
PUMP SPEED	1720 RPM
ELECTRICAL SPECS	110/120 V, 60 HZ
POWER CORD	110 V Cable (US Standard)
WEIGHT	35 lbs
DIMENSIONS	15 x 7 x 11

VACUUM PUMPS



SINGLE STAGE VACUUM PUMPS



1.8 CFM SINGLE STAGE VACUUM PUMP



MODEL	90059-B
NO. OF STAGES	1
FREE AIR DISPLACEMENT	1.8 CFM
ULTIMATE VACUUM	80 Microns
MOTOR	1/4 HP
PUMP SPEED	1720 RPM
ELECTRICAL SPECS	110/120 V, 60 HZ
WEIGHT	13.6 lbs
DIMENSIONS	12 x 6 x 10"

3 CFM SINGLE STAGE VACUUM PUMP



MODEL	90062-B
NO. OF STAGES	1
FREE AIR DISPLACEMENT	3 CFM
ULTIMATE VACUUM	80 Microns
MOTOR	1/4 HP
PUMP SPEED	1720 RPM
ELECTRICAL SPECS	110/120 V, 60 HZ
WEIGHT	14 lbs
DIMENSIONS	12 x 6 x 10.5"

6 CFM SINGLE STAGE VACUUM PUMP



MODEL	90066-B	90066-B-SF <i>Spark Free</i>
NO. OF STAGES	1	1
FREE AIR DISPLACEMENT	6 CFM	6 CFM
ULTIMATE VACUUM	80 Microns	80 Microns
MOTOR	1/3 HP	1/3 HP
PUMP SPEED	1720 RPM	1720 RPM
ELECTRICAL SPECS	110/120 V, 60 HZ	110/120 V, 60 HZ
WEIGHT	20.5 lbs	9.3 kg (20.5 lbs)
DIMENSIONS	15 x 6.5 x 11"	38 x 17 x 27.5

* PLEASE NOTE:
The micron readings on all vacuum pumps represent optimal laboratory conditions. Field conditions may vary from these readings.

91200 AIR OPERATED LIGHT DUTY VACUUM PUMP



Requires 4.5 CFM/90 PSI shop air. No moving parts, no oil required, 1.3 CFM air displacement venturi type pump will pull up to 29 inches of vacuum (Hg.) at sea level. Includes 1/4" flare (R12) connection and 1/2" ACME (R134a) connection.

82031 VACUUM PUMP SWIVEL ADAPTER



"T" style adapter screws onto existing 1/4" flare fitting and converts to 1/4"-FL and 1/2" ACME

83634 VACUUM PUMP ADAPTER FITTING



1/4 FL-F x 1/2 ACME LH male vacuum pump adapter fitting for R1234yf systems

SERVICE INFORMATION

	90065	90067	90063-2V-110-B	90066-2V-110-B	90068-2V-110-B	90612-2V-110-B	90059-B	90066-B
OIL CAPACITY	531 ml / 18 oz	708 ml / 24 oz	250 ml / 8.5 oz	440 ml / 15 oz	570 ml / 19 oz	536 ml / 18 oz	342 ml / 12 oz	536 ml / 18 oz
REPLACEMENT CARTRIDGE	90165-R	90167-R	-	90166-B	90168-B	90112-B	-	-
SEAL SERVICE KIT	90062-11-SEAL	90062-11-SEAL	-	-	-	-	-	-

VACUUM PUMP OIL



90010-6	(Six) - 10 oz bottles (90063-2V-B)
90018-6	(Six) - 18 oz bottles (90065, 90066-2V-B, 90612-2V-B, 90066-B)
90024-6	(Six) - 24 oz bottles (90067, 90068-2V-B)
90061-8	8 oz bottle
90016-6	16 oz bottles (90059-B, 90066-2V-220-A)
90032-6	(Six) - 32 oz bottles
90128-4	(Four) - 1 gallon bottles

VACUUM PUMPS

98061 DIGITAL VACUUM GAUGE in blow molded case
98061-C DIGITAL VACUUM GAUGE in a clamshell



SPECIFICATIONS:

- Response Time: 250 mSec.
- Sensor Cable: Spiral cable extended to 6.5 feet (2.6 meter)
- Sensor: Thermocouple sensor
- Connection Fitting: 1/4" flare female adapter
- Operating Temperature: 32 to 120°F (0 to 45°C)
- Power: 9V DC battery (AC/DC Adapter optional)
- Battery Life: 36 hours
- Low Battery Indicator: Special ICON on LCD
- Vacuum Units: Micron, Torr, mTorr, mmHg, mBar, Pa
- Range: 20,000 to 1 micron
- Accuracy Range*: ATM-1000 Microns: ±10% of reading
 1000 - 100 Microns: ±7% of reading,
 100 - 1 Micron: ±5% of reading

* Unit accuracy refers to sensor specifications and is based on optimal laboratory conditions. Field operations may greatly deviate from these levels.

Optional Accessories

98061-SENSOR	Replacement Sensor
99334-110	110 V AC/DC Adapter
99333	1/4 FL-M x 1/4 FL-M x 1/4 FL-F Tee

BLOWER FANS



- 120 Volts, 60 Hz
- Rated Power: 2.0 Amp
- For indoor or outdoor use
- Variable Speed Switch Controls Motor Speed: 950-1650 RPM
- Built-in Overload Protection
- (2 pcs) 11 Amp Built-In Grounded Receptacles
- Housing Material: Impact Resistant ABS
- 8.5 ft Cord Length, SJTW 14 AWG
- 4-position adjustment feet

21200	1200 CFM BLOWER FAN • Moves air up to: 1200 CFM • Unit weight: 15.9 lbs
20300	300 CFM BLOWER FAN • Moves air up to: 300 CFM • Unit weight: 11.5 lbs

20300-HTR HEATER ATTACHMENT FOR 300 CFM BLOWER FAN



- 1320 Watts, 120 Volts
- 11 Amps, 5000 BTU
- Converts Blower into a Heater
- Clips Securely onto the Front of the Blower and Plugs into one of the Outlets on the Side of the Blower
- 16 AWG SJT Cord, Grounded Plug

CHARGING AND RECOVERY EQUIPMENT



ARCTIC COMMANDER



Mastercool introduces its new ARCTIC COMMANDER line of R/R/R machines. Equipped with the latest technology, all models come standard with an 8" command center. The graphic user interface (GUI) will enable navigation through all functions and features with the greatest of ease. There is no longer a need to read any external instructions or paper manuals, simply sit back, watch and learn how to use your machines. All machines are also equipped with Wi-Fi capabilities; allowing for real-time, interactive communication and troubleshooting. *It's about time somebody introduced R/R/R machines for the 21st century!*



COMMANDER4000



COMMANDER3000



COMMANDER2000



COMMANDER1000

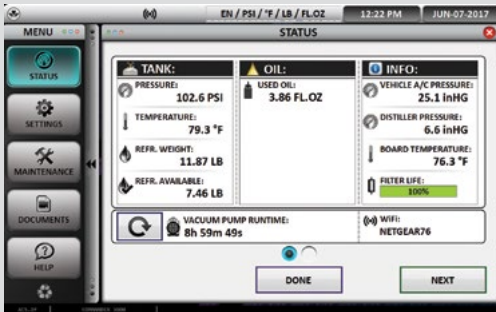
	COMMANDER4000 (110V) R1234yf & HYBRID	COMMANDER3000 (110V) R134A & HYBRID	COMMANDER2000 (110V) R134A FULLY AUTOMATIC	COMMANDER1000 (110V) R134A SEMI-AUTOMATIC
8" Color Command Center with Touch Screen	X	X	X	X
Automatic and Manual Procedures	X	X	X	Manual procedures only
Refrigerant Database	X	X	X	Optional
Automatic Vacuum Leak Test: Programmable	X	X	X	X
Auto Oil Discharge	X	X	X	X
Auto and Manual Air Purge	X	X	X	X
Auto Filter and Full Tank Alarm	X	X	X	X
Low Refrigerant Alarm	X	X	X	X
Auto Oil Injection	N/A	N/A	X	N/A
Thermal Printer	X	X	Optional	Optional
Hose Flushing	X	X	N/A	N/A
Vehicle A/C System Flushing	X	X	N/A	N/A
Tank Heater	X	X	X	X
6 CFM Vacuum Pump	X	X	X	N/A
3 CFM Vacuum Pump	N/A	N/A	N/A	X
Refrigerant Identifier	X	N/A	N/A	N/A
On-board Instruction Manual	X	X	X	X
Multiple Languages	X	X	X	X
On-board Unit Conversion Calculator	X	X	X	X
New Cabinet Design for Increased Air Flow	X	X	X	X
Large Analog Gauges	X	X	X	X
Hard Wired Power Cord	X	X	X	X
Hose Coupler Storage	X	X	X	X
Solid Durable Wheels with Locking Casters	X	X	X	X
Multi-colored LED Status Bar	X	X	X	N/A
Self-Diagnostic Check	X	X	X	X
Wi-Fi Capable	X	X	X	X
Dimensions (mm): 1150 (h) x 600 (w) x 770 (d)	X	X	X	X

For a R1234yf machine without a refrigerant identifier, please use part number COMMANDER4000-X (for 110V model)

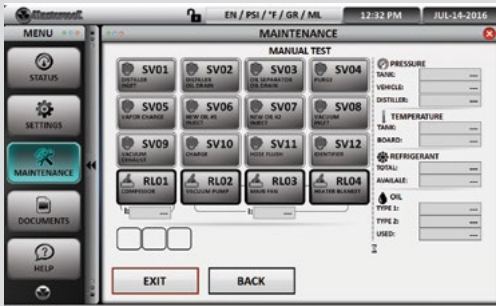
8" COLOR TABLET WITH TOUCH SCREEN FEATURES:



Home Screen
allows for quick touch selection of options



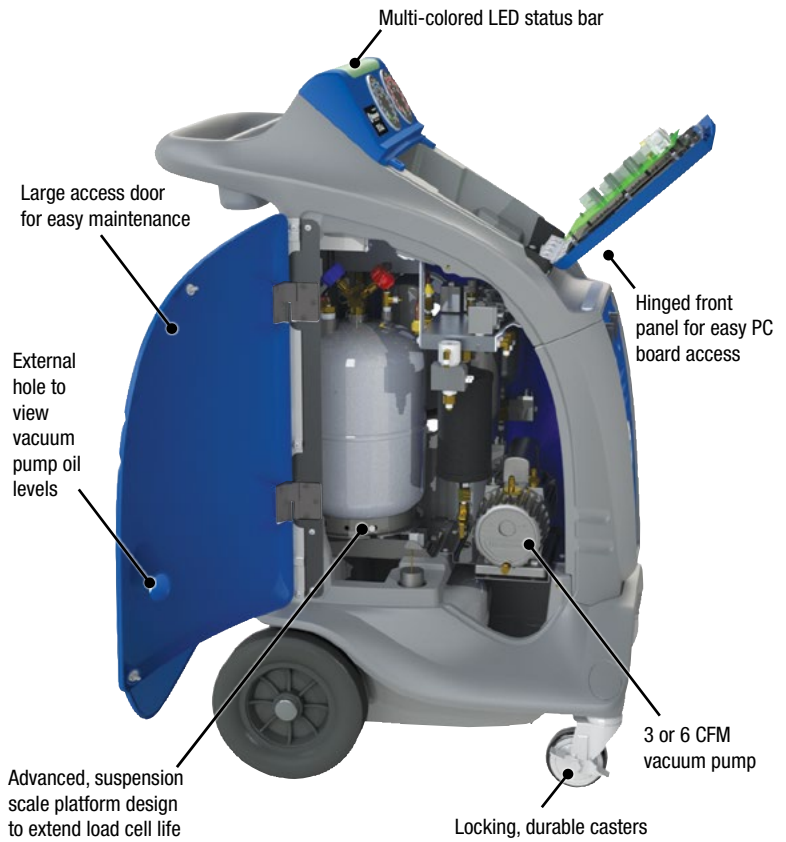
Status Screen
for quick reference of resources



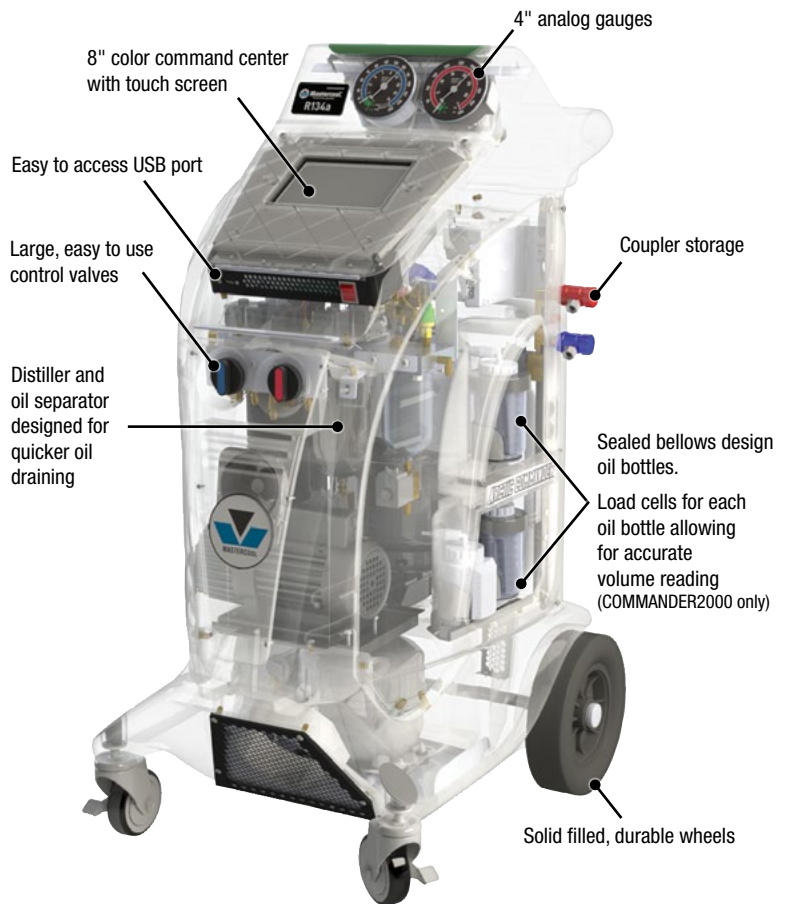
Maintenance Screen
offered only to authorized service technicians allowing for quick and easy diagnosis



Maintenance Screen
offered only to authorized service technicians allowing for quick and easy diagnosis



CHARGING AND RECOVERY EQUIPMENT



THE TWIN TURBO SERIES IS THE MOST COMPLETE SOLUTION TO YOUR RECOVERY NEEDS!

TWIN TURBO
REFRIGERANT RECOVERY MACHINE



69300



69370

Mastercool's newest addition to the recovery machine lineup takes the reliability of the 69000 series machines and enhances those features to allow for maximum recovery capacity while at the same time decreasing size and weight. The design of the new double piston compressor and cooling by the largest fan and condenser in the market makes the 69300 series the most complete solution to your recovery needs!



FEATURES & BENEFITS:

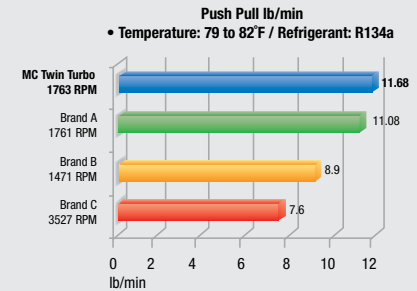
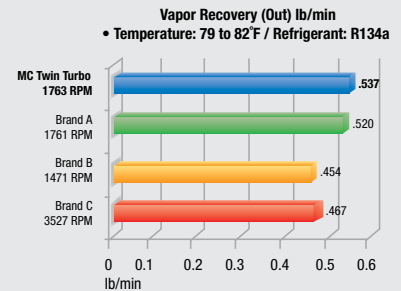
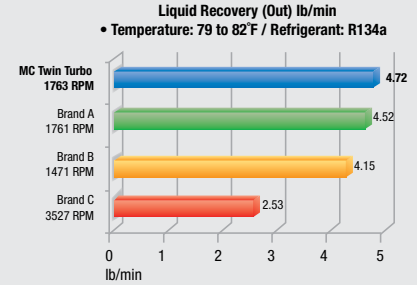
- Revolutionary double piston oil-less compressor
- Safety high pressure switch
- Simple internal structure for field service
- Largest volume recovery rate in market
- For use with all refrigerants including R410A
- Injection molded high density polyethylene case for maximum durability
- Front cover has bumper guards built in to reduce damage to the control knobs

SPECIFICATIONS:

- 1/2 hp oil less compressor
- Recovery Rate:

R134a	• Direct vapor up to .537 lb/min
	• Direct liquid up to 4.72 lb/min
	• Push pull up to 11.68 lb/min
R22	• Direct vapor up to .63 lb/min
	• Direct liquid up to 7.56 lb/min
	• Push pull up to 18.3 lb/min
R410A	• Direct vapor up to .70 lb/min
	• Direct liquid up to 7.7 lb/min
	• Push pull up to 20.2 lb/min

- Operating Temperature: 32 to 122°F
- Weight: 28.3 lbs
- Dimensions: 18" (l) x 10" (w) x 14" (h)
- Case Material is HDPE (High Density Polyethylene)
- Compatible refrigerants: All CFC, HCFC, and HFC's



69300 115 V - 60 Hz

69370 115 V - 60 Hz
This unit offers all the same functions and features as the 69300. In addition it has a 6' 3 pole female float switch cable



3 pole female float switch cable

TWIN TURBO REFRIGERANT RECOVERY MACHINE



This unit offers all the same functions and features as the 69300 in addition it has an oil separation module, filter dryer and sight glass.

- 69360** 115 V - 60 Hz with 30 lb DOT Tank
- 69365** 115 V - 60 Hz Heavy Duty Recovery Machine with 50 lb DOT Tank for Buses and Fleet Applications
- 69500-DR** Replacement Filter Dryer



*Spark Free**
TWIN TURBO
REFRIGERANT RECOVERY MACHINE



COMPATIBLE WITH COMBUSTIBLE GASES

**FOR CONTAMINATED MOBILE A/C SYSTEMS
DESIGNED FOR R1234yf**

This unit offers all the same functions and features as the 69300.

In addition:

- Meets all requirements of SAE J2851, contaminated recovery only device
- Comes equipped with overflow protection switch cutting off at 80% tank capacity (Recovery tanks must have floats using 3 pin Brad Harris plug)
- 60" R1234yf blue hose and low side (1/4 FL-M x 13 mm) coupler
- 60" yellow transfer hose



- 69390** 115 V - 60 Hz
- 69391** 115 V - 60 Hz with 30 lb DOT Tank

CHARGING AND RECOVERY EQUIPMENT



69000 REFRIGERANT RECOVERY SYSTEM (115 V - 60 Hz)

>>POPULAR<<



These recovery systems are compact, lightweight and work with all refrigerants. They're ideal for commercial, residential or industrial appliance applications. Our recovery systems offer a state-of-the-art 1/2 HP oil-less compressor with a built-in high volume cooling fan. This innovative design delivers maximum cooling efficiency which keeps the compressor working at high capacities in even the hottest climates. The compressor is also protected by an automatic low pressure cut-off switch that shuts off the unit once the recovery is complete. This AUTO SHUT-OFF feature eliminates the risk of compressor failure and reduces the user's need to monitor the entire recovery system. All of our recovery systems offer our color-coded gauges with pressure readings in PSI, BAR and MPa. Our stainless steel ball valve designed manifold, controls the flow smoothly and quickly with only a 1/4 turn. With all of this protected by a reinforced hard plastic case, Mastercool's recovery systems will meet all your refrigerant recovery needs.

FEATURES:

- High performance oil-less compressor
- High volume cooling fan design
- Automatic low pressure Cut-Off Switch
- Liquid compatible head-valve system
- Safety high pressure Cut-Off Switch
- Fully reinforced hard plastic casing

SPECIFICATIONS:

- 1/2 HP oil-less compressor
- Recovery Rate:
Direct vapor up to .44 lb/min
Direct liquid up to 2.6 lb/min
Push-pull up to 11.9 lb
- Operating Temp. Range: 32 to 122°F
- Weight: 38 lbs / Dimensions: 17" (l) x 10" (w) x 12" (h)
- Refrigerants: CFC's, HCFC's, HFC's

69100 COMPLETE A/C RECOVERY SYSTEM (115 V - 60 Hz)

>>POPULAR<<



- Compact, lightweight and works with all refrigerants.
- State of the art 1/2 hp oil-less compressor with built-in high volume cooling fan. Delivers maximum cooling efficiency which keeps compressor working at high capacities in even the warmest climates. Compressor is protected by an automatic low pressure cut-off switch that shuts off unit once the recovery is complete. This feature eliminates the risk of compressor failure and reduces user's need to monitor entire recovery process.
- Includes an oil separator and filter dryer to cleanse the refrigerant during the recovery process.
- Color-coded gauges with pressure readings in PSI, BAR and MPA.
- Stainless steel ball valve designed manifold controls the refrigerant flow smoothly and quickly with only a 1/4 turn.
- Internal components have been arranged and isolated to ensure a smooth and quiet performance.
- Protected by a reinforced hard plastic case

FEATURES & BENEFITS:

- High performance oil-less compressor
- High volume cooling fan design
- Automatic low pressure cut-off switch
- Liquid compatible head-valve system
- Safety high pressure cut-off switch
- Fully reinforced hard plastic casing

SPECIFICATIONS:

- 1/2 HP oil-less compressor
- Recovery Rate:
Direct vapor up to .44 lb/min
Direct liquid up to 2.62 lb/min
Push pull up to 12 lb/min
- Operating temp. range: 32 to 122°F
- Weight: 38 lbs / Dim.: 17" L x 10" W x 12" H
- Refrigerants: all



69110 AUTOMOTIVE A/C RECOVERY SYSTEM**Design Certified to Meet SAE J2810**

- Includes Recovery Unit, 30 lb DOT Tank, 60" Yellow Service Hose, 72" Blue and Red Conversion Hoses, UL Approved High and Low Side R134a Manual Couplers and Oil Purge Bottle
- Designed to meet SAE J2810 and works with all refrigerants.
- Recovers and removes oil from refrigerant.
- All internal components have been arranged and isolated to ensure smooth and quiet performance.
- State of the art 1/2 hp oil-less compressor with built-in high volume cooling fan.
- Delivers maximum cooling efficiency, keeping compressor working at high capacities even in warmest climates.
- Compressor protected by automatic low pressure cut-off switch eliminating risk of compressor failure and reducing need to monitor entire recovery process.
- Stainless steel ball valve design manifold controls refrigerant flow smoothly and quickly with only 1/4 turn.
- Gauges provide pressure readings in PSI, BAR and MPA.

SPECIFICATIONS:

- Refrigerant R134a
- 115 Volts AC
- High Side Design Pressure 500 psig
- Low Side Design Pressure 174 psig
- 1 PH, 60 HZ., 8.6 Amps, 1.25 S/F
- Service Factor 10.75 AMP

69500 RECOVERYMATE

Speed up the recovery process! Remove unwanted moisture and separate oil from Recovered Refrigerant. (Use with any Recovery Machine.)

SPECIFICATIONS:

- Lightweight and easy to carry
- 4-Way Ball Valve Manifold controls the flow smoothly and quickly with only 1/4 turn
- Large capacity oil separator
- High Performance Dryer eliminates moisture from recovered refrigerant
- Extra large sight glass monitors refrigerant flow and changes color when a dryer change is necessary
- Rugged carrying case can stand on its own or be mounted on a wall or bench
- Length: 15" / Width: 4" / Height: 17"
- Weight: 12.25 lbs



DOT-APPROVED RECOVERY CYLINDERS

Features:

- Powder coated cylinder for high gloss, durable finish
- Pre-charged cylinder provides a clean, dry interior
- 3/4" NPT opening accepts 80% fill float switch shut-off device
- Reusable and conforms to DOT-4BA400 specs and ARI guidelines
- Collar design for ease of handling
- Storage and transport of recovered refrigerant gases
- Y-valve for liquid/vapor
- AUS Approved and TC Canadian Approved
- 1/4" opening for air purge valve
- Valve & Float Switch UL Listed



30 LB. DOT-APPROVED RECOVERY CYLINDERS



62010

67010

67011

- Size (w x h): 9.125" x 17.52"
- Standard Spec.: DOT - 4BA400
- Service Pressure: 400 PSI / 2.7 MPa
- Tare Weight: 17.99 LB
- Body Material: HP295
- Relief Valve Pressure: 600 PSI / 4.1 MPa
- Nominal Water Capacity: >26.2 LB / 11.9 L
- Tank Test Pressure: 800 PSI / 5.5 MPa
- Air Tightness Test Pressure: 400 PSI / 2.7 MPa

Model	62010 without float switch	62011 with float switch	62012 with float switch & NCG Port	64010 without float switch	67010 with float switch	67011 with float switch
Connection	1/4" FL-M (7/16-20)			1/2" ACME		
Color	yellow/gray			blue		yellow/blue

50 LB. DOT-APPROVED RECOVERY CYLINDERS



63010

66010

63010-AUS

- Size (w x h): 12.25" x 18.78"
- Standard Spec.: DOT - 4BA400
- Service Pressure: 400 PSI / 2.7 MPa
- Tare Weight: 28.71 LB
- Body Material: HP325 or HP345
- Relief Valve Pressure: 600 PSI / 4.1 MPa
- Nominal Water Capacity: >47.7 LB / 21.6 L
- Tank Test Pressure: 800 PSI / 5.5 MPa
- Air Tightness Test Pressure: 400 PSI / 2.7 MPa

Model	63010 without float switch	65010 with float switch	66010 without float switch	66011 with float switch	66012 with float switch & NCG Port	63010-AUS without float switch (Australian standard)
Connection	1/4" FL-M (7/16-20)			1/2" ACME		1/2" ACME
Color	yellow/gray			yellow/gray		white

100 LB. DOT-APPROVED RECOVERY CYLINDERS



68010

- Size (w x h): 11.25" x 31.81"
- Standard Spec.: DOT - 4BW400
- Service Pressure: 400 PSI / 2.7 MPa
- Tare Weight: 50.5 LB
- Body Material: HP325
- Relief Valve Pressure: 600 PSI / 4.1 MPa
- Nominal Water Capacity: >92.5 LB / 41.9 L
- Tank Test Pressure: 800 PSI / 5.5 MPa
- Air Tightness Test Pressure: >87 PSI / 0.6 MPa

Model	68010 without float switch
Connection	1/4" FL-M (7/16-20)
Color	yellow/gray

ENVIRO TANK (REFILLABLE CYLINDER)

30 LB. REFILLABLE CYLINDER



62020-W

- Size (w x h): 8.39" x 20"
- Standard Spec.: DOT - 4BA400
- Service Pressure: 400 PSI / 2.7 MPa
- Tare Weight: 19.9 LB
- Body Material: HP295
- Relief Valve Pressure: 600 PSI / 4.1 MPa
- Nominal Water Capacity: >30 LB / 13.6 L
- Tank Test Pressure: 800 PSI / 5.5 MPa
- Air Tightness Test Pressure: >87 PSI / 0.6 MPa

Model	62020-W
Connection	1/4" FL-M (7/16-20)
Color	white



MOBILE ELECTRONIC CHARGING STATION



91685

Keeping the same ideals in mind as the Portable Electronic Charging Station, the mobile unit is directed towards the garage technician. With an enlarged carry cart and larger wheels, this unit can get around the shop with the greatest of ease!

- Dimensions: 45" x 18" x 16.5"

VACUUM PUMP	5 CFM
MANIFOLD	110 V
2 Way Alum Block	91685
4 Way Alum Block	91686
VACUUM PUMP	7.5 CFM
MANIFOLD	110 V
2 Way Alum Block	91687
4 Way Alum Block	91688

PORTABLE ELECTRONIC CHARGING STATION



91585

A lightweight, durable, steel frame cart that contains all the necessary tools to quickly and conveniently charge the A/C system. No need for different sized charging cylinders with Mastercool's rugged die cast electronic scale. Simply place the refrigerant cylinder on the scale and charge.

FEATURES:

- A rugged, lightweight steel cart with wheels and convenient storage pocket for scale and hoses allows this portable charging station to be taken almost anywhere
- 240 lb capacity scale with long lasting 9V battery (60 hrs)
- Deep micron, rotary vane vacuum pumps.
- Extruded aluminum manifold with long lasting valve design

2 STAGE PORTABLE ELECTRONIC CHARGING STATION

- Large 3 1/8" gauges make it easy to read the pressure and temperature scales
- Deep micron, rotary vane vacuum pumps available in 5 and 7.5 CFM
- Includes set of 72" hoses

Also available:

- Refrigerant tank heater blanket #98250
- D.O.T. cylinder #62010-R12 w/o float
- * R134a Automotive Service Couplers not included

VACUUM PUMP	5 CFM	7.5 CFM
MANIFOLD	110 V	110 V
2 Way Alum Block	91585	91587
4 Way Alum Block	91586	91588



91585-B

SINGLE STAGE PORTABLE ELECTRONIC CHARGING STATION

- R134a 2-way Manifold with 2 1/2" gauges
- Electronic Charging Scale, Manual Couplers, Set of Hoses
- Deep micron, rotary vane vacuum pumps available in 1.8, 3 and 6 CFM

Also available:

1.8 CFM Single Stage Vacuum Pump	91580-A
3 CFM Single Stage Vacuum Pump	91580-B
6 CFM Single Stage Vacuum Pump	91585-B

CHARGING AND RECOVERY EQUIPMENT

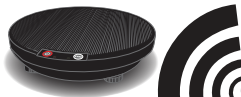
98310 WIRELESS REFRIGERANT CHARGING SCALE

98315 WIRELESS REFRIGERANT CHARGING SCALE WITH SOLENOID

98315-AUT WIRELESS REFRIGERANT CHARGING SCALE WITH SOLENOID (includes 1/4" F-FL x 1/2 ACME-M fitting without valve core (82634-M))



98315 with solenoid



REMOTE RANGE:
100 FEET (30 M),
LINE OF SIGHT



FEATURES:

- Wireless unit prevents unwanted tangles in wires
- Easily store the remote in the body of the platform
- Keypad provides synchronization and zeroing
- Extremely accurate weight sensor
- Magnet on remote allows easy placement on fixtures
- Battery life symbol for platform and remote constantly displayed on LCD
- Wireless signal strength indicator conveniently displays on remote



When remote is out of range the unit will automatically pause. This pause mechanism allows unit to restart when remote is back in range.

FUNCTIONS:

CHARGE PROGRAMMING:

Allows user to program desired quantities. Before charge is complete, an alarm will sound allowing ample time to turn off refrigerant supply.

PAUSE/CHARGE (98315 model only):

This feature allows user to stop and continue charging.

TANK CAPACITY PROGRAMMING:

EMPTY/FULL tank feature allows user to know the amount of refrigerant in the tank at any time.

REPEAT (98315 model only):

Allows user to charge previously stored amount.

SPECIFICATIONS:

- Capacity: 243 lbs (110 kg)
- Accuracy: $\leq \pm 0.05\%$ of reading
- Resolution: 0.05 lb / 0.5 oz / 0.01 kg
- 3 hrs Auto Off Function
- Operating Temperature: 32°F to 120°F (0°C to 49°C)
- Battery Life: approximately 20 hours
- 31 cm Platform
- Accepts all US & EU standard cylinders

98210-A ACCU-CHARGE II

>>>POPULAR<<<



Mastercool's ACCU-CHARGE II is the most advanced electronic refrigerant scale in the market today. Constructed with a rugged aluminum cast body, the ACCU-CHARGE II now offers programming capabilities.



FUNCTIONS:

CHARGE PROGRAMMING:

Allows user to program desired quantities. Before charge is complete, an alarm will sound allowing user ample time to turn off refrigerant supply.

TANK CAPACITY PROGRAMMING:

Allows user to know the amount of refrigerant that is left in the tank at any time.

REPEAT:

Allows user to charge previously stored amount.

SPECIFICATIONS:

- Capacity: 243 lbs (110 kg)
- Accuracy: $\leq \pm 0.05\%$ of reading
- Resolution: 0.05 lb / 0.5 oz / 0.01 kg
- 3 hrs Auto Off Function
- Operating Temperature is 32 to 120°F (0 to 49°C)
- Battery Life (approximately 40 hrs)
- Works w/110 or 220V Transformer (part no. 99334-110)
- 9 x 9" (22 x 22 cm) Platform

98211-A ACCU-CHARGE III CERTIFIED REFRIGERANT SCALE (OIML & CE Approved, Legal for Trade)



FUNCTIONS:

CHARGE PROGRAMMING:
Allows user to program desired quantities. Before charge is complete, an alarm will sound allowing user ample time to turn off refrigerant supply.

PAUSE/CHARGE:
(Using the 98230 Charging Solenoid Module)

TANK CAPACITY PROGRAMMING:
Allows user to know the amount of refrigerant that is left in the tank at any time.

REPEAT:
Allows user to charge previously stored amount.

SPECIFICATIONS:

- Complies with European (OIML) Standards
- Accuracy: ±50 g
- 3 hrs AUTO OFF Function
- Battery Life (approximately 40 hrs)
- Capacity: 110 lbs (50 kg)
- Resolution: 0.05 kg
- Operating Temperature is 32 to 120°F (0 to 49°C)
- 9 x 9" (22 x 22 cm) Platform



98230 CHARGING SOLENOID MODULE



The 98230 Charging Solenoid Module turns the 98210-A ACCU-CHARGE II & 98211-A ACCU-CHARGE III into Automatic Programmable Scales!

This module allows the user to control the exact amount of refrigerant transferring to and from the A/C System. The compact design is battery powered (9V), lightweight, portable and works with all types of refrigerant. 98230 includes a short hose for tank connection, USB cord and 1/4"FL - 1/2" ACME adapters.



98250 ELECTRONIC TANK HEATER BLANKET



The Mastercool Refrigerant Tank Heater Blanket speeds up recharging time.

- Assures total discharge of refrigerant from 30 lb and 50 lb tanks. Heats tanks to 125°F resulting in maximum pressure of 185 psi for R134a and 170 psi for R12.
- Quick working 300W heater element
- An excellent complement to all Mastercool Refrigerant Scales

98100 AIR CONTENT ANALYZER



When an A/C system leaks, refrigerant is lost and air enters the system. Your refrigerant recycler cannot tell the difference between refrigerant and air - it recycles both from partially filled systems. You end up with an unknown quantity of efficiency robbing air in your supply tank. Excess actual pressure in your supply tank, indicates the pressure of air also called "non-condensable gases" or NCG's. When you release the excess pressure, you are releasing air. The result is purer refrigerant, which will work more efficiently.

The Mastercool Air Content Analyzer is more accurate than most automatic purging systems. It can be left on your supply tank for regular monitoring or it can be removed to check all your tanks. (R12/R134a)



CHARGING AND RECOVERY EQUIPMENT

691234YF ULTIMA ID R1234yf REFRIGERANT ANALYZER



The Ultima ID 1234yf refrigerant analyzer is certified to the SAE J2912 Refrigerant Analyzer Standard. Its portability and USB integration with the R/R/R machine, provides a versatile and efficient method of validating the refrigerant purity during service.



SPECIFICATIONS:

- Refrigerant Measured: R1234yf, R134a
- Accuracy: Better than $\pm 1.0\%$
- Refrigerant % Displayed: R1234yf, R134a, R22, HC, Air
- Ambient Operating Temperature Range: 50° to 120°F
- Power: 110/220V 50/60Hz
- Communication Protocols: USB 2.0
- User Interface: LCD + 3 switches
- Approvals: CE, UL, SAE
- Integral Pressure/Flow Control: Yes
- Integral Calibration Pump: Yes
- Oil Contamination: User Replaceable Oil Trap
- Filtration: User Replaceable
- Displays % air in pure R1234yf and R134a
- Built-in rechargeable power pack
- Built-in printer to easily print test results
- Connects directly to SAE J2843 R/R/R machine

Comes with complete kit:

- R134a adapter fitting for ACME ported cylinders
- Identifier and accessories housed in a portable case
- R1234yf adapter for cylinders
- R1234yf and R134a sample hoses

69134-A REFRIGERANT IDENTIFIER FOR R134a



- Keeps Equipment Safe
- Prevents Contamination
- Detects Air Contamination

The Refrigerant Identifier helps confirm the presence and quality of R134a refrigerant in vehicle air conditioning systems. This process will help avoid potential damage from refrigerant contamination. This unit delivers quick and precise refrigerant analysis in a rugged, compact and portable package. The refrigerant identifier automatically provides step-by-step indication of the gas sampling process.

SPECIFICATIONS:

- Weight: 0.8 kg
- Refrigerant Detected: R134a (Tetrafluoroethane)
- Accuracy: PASS/FAIL - 95% Pure R134a
- Power Requirements: 12 VDC
- User Interface: Membrane type with visual indicators and function key
- Calibration Method: Manual pump aspirator
- Minimum Input Pressure: 1.38 Bar (20 Psig)
- Maximum Input Pressure: 20.70 Bar (300 Psig)
- Storage Temperature: -10° to 50°C
- Operating Temperature: 10 to 45°C
- Construction Material: Molded ABS housing/molded rubber sleeve



LEAK DETECTION



SENSITIVITY: L M H



VOLUME MUTE

H M L

PEAK

55900 *IntellaSense II*
REFRIGERANT LEAK DETECTOR



At the heart of this leak detector is a new low power metal oxide gas sensor with superior performance properties such as lower current consumption and sensor longevity. The new sensor is characterized by high sensitivity and fast response upon detecting the presence of extremely small levels of chlorofluorocarbon gases. For this reason, this sensor was selected and integrated into the 55900 Leak Detector. In addition, a powerful microprocessor was integrated into the design that automatically selects the best operating condition for the sensor to ensure optimum performance throughout its life.

This unit comes packaged in a blow molded case with 2 "C" batteries, leak test vial and replacement filters.

<< DESIGN CERTIFIED BY INTERTEK TO MEET J2791 (R134A), J2913 (R1234yf) AND EN 14624 >>

SPECIFICATIONS:

SENSITIVITY*:

- HIGH ≥ 0.15 oz/yr (4 g/yr)
- MEDIUM ≥ 0.25 oz/yr (7 g/yr)
- LOW ≥ 0.50 oz/yr (14 g/yr)

* based on optimal laboratory conditions

PROBE:

- Intelligent tip design that senses the condition of the environment, to eliminate the potential of false alarms.
- Flexible 15.5" probe for difficult to reach locations

DISPLAY:

Six vertical LED's (red, yellow or green) display the following information to the user such as:

- Relative signal level of the detected leak
- Selected sensitivity range (low/medium or high) of the unit
- Diagnostic information: low battery, interference/wait, contaminated atmosphere, readiness of the unit or fault conditions of the unit

REFRIGERANTS: Detects all refrigerants (CFC's, HCFC's, & HFC's and blends)

SENSOR LIFE: 2000 hours

SENSING ELEMENT: Heated tin oxide

OPERATING TEMPERATURE RANGE: 0 to 120°F

RESPONSE TIME: Less than 1 second

POWER: 2 C Alkaline 6000 mAh batteries

BATTERY LIFE: 30 hours

WEIGHT: 1.08 lbs

"SUPER SENSITIVE FUNCTION" allows the unit further sensitizing beyond the standard settings for locating small leaks with gases such as R1234yf and R407C

KEYPAD FUNCTIONS:

ON/OFF: Press the ON/OFF button to turn the unit on or off.

VOLUME/MUTE: Press the VOLUME/MUTE button to control the volume of the unit.

H M L SENSITIVITY: Press the H M L SENSITIVITY button to select the desired sensitivity level.

PEAK/HR/LR: The PEAK/HR/LR key serves a dual purpose:

- (1) To assist the user in locating the "largest leak" in a system with multiple leaks present.
- (2) To enable the user to switch between HR (high range) and LR (low range) modes.



Display



Keypad

55975

IntellaSense III

COMBUSTIBLE GAS LEAK DETECTOR



COMPATIBLE WITH COMBUSTIBLE GASES

Intella Sense III Combustible Gas Leak Detector is packaged in a blow molded case with 2 "C" batteries, leak test vial and replacement filters



SPECIFICATIONS

- Sensing Element: Heated Tin Oxide
- Sensor Life: 2000 hours
- Refrigerants: Detects all refrigerants
- Response Time: less than 1 second
- Battery: 2 "C" Alkaline 6000 mAh batteries
- Operating Temperature Range: 0°F to 120°F
- Ultimate Sensitivity: 50 – 1000 ppm

PROBE:

- Intelligent tip, with environment sensing element to eliminate the potential of false alarms.
- Flexible 15.5 inch probe length for difficult to reach locations.

DISPLAY:

Six vertical LED's enabled selectively (red, yellow or green) to display the following information to the user such as:

- The relative signal level of the detected leak
- The selected sensitivity range (low/medium or high) of the unit
- Diagnostic information : low battery, interference/wait, contaminated atmosphere readiness of the unit or fault conditions of the unit

KEYPAD CONTROLS:

- ON/OFF, Volume/Mute, Sensitivity for high, medium and low level selection, Peak button when multiple leaks are suspected

DETECTS: Acetone, Acetylene, Ammonia, Benzene, Butane, Butanol, Chlorine, Ethane, Ethanol, Gasoline, Hexane, Hydrogen, Hydrogen Sulfide, Isobutane, Methane (natural gas), Methanol, Methyl Acetate, Methyl Chloride, Methyl Ether, Naptha, N-Butane, Pentane, Propane, Propanol, Sulfur Dioxide and Trichloroethane



Mastercool[®]
"World Class Quality"

56100



>>POPULAR<<



The *Raptor Refrigerant Leak Detector* offers state-of-the-art features and micro-processing technology while the design sensor delivers an accurate and instantaneous response. Packaged in a blow molded case with 2 “C” batteries and sensor tip.

FEATURES:

- Digital Signal Micro Processor
- Visual Leak Level Indicator
- Reset Function and Keypad Control
- Sensitivity Level Adjustment
- Battery Test Function
- Variable Frequency Audible Alarm
- Meets and exceeds SAE J1627

SPECIFICATIONS:

- 3 Levels of Sensitivity (5 Levels of Detection)
- Detects leaks as small as 1/10 oz per year*
*based on optimal laboratory conditions
- Detects all refrigerants (CFC's, HCFC's, HFC's)
- Power: 2 “C” Batteries
- Probe: Flexible 16” (43 cm)



56200



with UV Blue Light



>>POPULAR<<



The *Raptor Refrigerant Leak Detector with UV Blue Light* offers state-of-the-art features and micro-processing technology while the design sensor delivers an accurate and instantaneous response. An ultra bright UV light is built into the end of the probe allowing for both electronic and UV leak detection of even the toughest leaks. Packaged in a blow molded case with UV glasses, 2 “C” batteries and sensor tip.

FEATURES:

- Digital Signal Micro Processor
- Mute Function
- Visual Leak Level Indicator
- Reset Function and Keypad Control
- Battery Test Function
- Sensitivity Level Adjustment
- Ultra Bright UV/Blue LED Light
- Variable Frequency Audible Alarm
- Meets and exceeds SAE J1627

SPECIFICATIONS:

- 6 Levels of Sensitivity (15 Levels of Detection)
- Detects leaks as small as 1/10 oz per year*
*based on optimal laboratory conditions
- Detects all refrigerants (CFC's, HCFC's, HFC's)
- Power: 2 “C” Batteries
- Probe: Flexible 16” (43 cm)



COMPLETE ELECTRONIC & UV LEAK DETECTION KITS



56300

The ultimate solution for all your A/C leak detection needs.



56300 Kit Includes: 56200 “Raptor” Electronic Leak Detector with UV Blue Light, UV Dye Injector w/25 Application Dye Cartridge, Dye Injector Connection Hose w/R12 Adapter, Dye Cleaner & UV Safety Glasses, Comes In A Custom Molded Carrying Case

56310 Kit Includes: 56200 “Raptor” Electronic Leak Detector with UV Blue Light, UV Dye Injector w/10 Application Dye Cartridge, Dye Injector Connection Hose w/R12 Adapter, Dye Cleaner & UV Safety Glasses, Comes In A Custom Molded Carrying Case

56400 Kit Includes: 56200 “Raptor” Electronic Leak Detector with UV Blue Light, Refillable Dye Injector, Dye Injector Connection Hose w/R12 Adapter, 2 oz Bottle of Concentrated Universal Dye, UV Safety Glasses & Dye Cleaner, Comes In A Custom Molded Carrying Case



53518-UV RECHARGEABLE 110 V UV FLASHLIGHT (LED)



- Twist the handle to zoom the UV light in or out
- AAA battery holder provides backup power to flashlight (3 AAA batteries included)
- Battery Life: 3 to 5 hours continuous leak detection
- Includes safety glasses

SPECIFICATIONS:

- High Intensity LED
- 154 - 170 $\mu\text{W}/\text{cm}^2$ which is compatible to a 50 watt UV flashlight
- 2 Illumination Modes: super bright and battery conservation
- Battery: Lithium Li-Ion, full discharge and cut-off discharge of 4.2V and 2.75V
- 53518-UV includes 110V, 53518-UV-220 includes 220V charger



53512-UV MINI UV FLASHLIGHT (LED)



- 12 LED Bulb UV Illumination
- Aluminum body with Type III anodized finish
- 25,000 hour bulb life
- Includes safety glasses
- Battery Life: 5 hours continuous leak detection
- Easy grip texture
- 3 AAA batteries

53517-UV COMPACT UV FLASHLIGHT (LED)



- 17 LED Bulb UV Illumination
- Aluminum body with Type III anodized finish
- 25,000 hour bulb life
- Includes safety glasses
- Battery Life: 4 hours continuous leak detection
- Easy grip texture
- 3 AAA batteries

53515 MACH IV FLEXIBLE UV LIGHT (LED)



The Mach IV flexible UV light has **4 TRUE UV LEDS** delivering a brilliant fluorescent glow.

- Gets into tight areas easily.
- Includes UV Enhancing Safety Glasses

PATENT NO. 6,647,761

- 53515-B** Light Bulb
- 53515-BAT-2** CR2 Lithium Battery

53012 UV SWIVEL HEAD LIGHT (12 V/100 WATTS)



- 180° Swivel Heads Get Into Tight Places
- Heavy Duty Metal Construction
- Instant ON
- Includes UV Enhancing Safety Glasses

- 53012-B** Light Bulb
- 53012-L** Lens

53312 UV MINI LIGHT (12 V/50 WATTS)



- High Intensity
- 16ft. (5m) Cord
- Compact & Lightweight
- Instant ON
- Includes UV Enhancing Safety Glasses



- 53312-B** Light Bulb
- 53312-L** Lens

LEAK DETECTION

COMPACT UV LEAK LOCATOR KITS

Leading the way in UV LEAK DETECTION, Mastercool offers a variety of compact UV Leak Locator Kits. Each kit offers a powerful inspection lamp, a "Refillable" or "Cartridge Type" Dye Injector and accessories. All kits are packaged in a clamshell or custom molded carrying case.



KIT PART#	INJECTOR / LIGHT	CONTENTS OF EACH KIT	VOLTAGE/WATT
53451-110	53123/ 53518-UV	Rechargeable UV light, Batteries, Rechargeable Batteries, Battery Holder, Refillable 2 oz Dye Injector, 2 oz Concentrated Universal A/C Fluorescent Dye (25 Application), 4 oz Dye Remover, 25 Service Information Labels, UV Enhancing Safety Glasses	LED
53451-C-110	53223/ 53518-UV	Same as 53451-110 but with Replaceable 2 oz Dye Cartridge (25 Applications)	LED
53582	53809/ 53512-UV	53512-UV Mini UV Flashlight (12 LED), "Cartridge Type" 1 oz die injector with replaceable die cartridge, Low side hose, R12 adapter, UV safety glasses, Service info. labels	LED
53587	53809/ 53517-UV	Compact UV Flashlight (53517-UV), 1 oz die injector with replaceable 1 oz die cartridge (10 application), Low Side Hose, R12 adapter, UV Enhancing Safety Glasses, Service Information Labels, Packaged in a clam shell	LED
53580	53809/ 53515	MACH IV Flexible LED UV Light w/1 oz (30 ml) Dye Injector, w/Replaceable 1 oz (30 ml) Dye Cartridge (10 Appl.), Low-Side Hose w/R134a Coupler, R12 Adapter, 10 Serv. Info. Lbls. & UV Enhancing Safety Glasses	LED
53585	53809/ 53515	Same as above, but w/1 oz OIL/ATF/Gas (53610) & Diesel Fluorescent Dye and 1oz (30ml) Engine Coolant Fluorescent Dye (53609)	LED
53100	53123/ 53012	High Intensity Swivel Head Light, w/ Refillable 2 oz (60 ml) Dye Injector, 2 oz (60 ml) Concentrated Universal A/C Fluorescent Dye (25 Appl.), 4 oz (1200 ml) Dye Remover, 25 Serv. Info. Lbls. & UV Enhancing Safety Glasses	12 V/100 WATT
53100-C	53223/ 53012	Same as 53100, but with Replaceable 2 oz (60 ml) Dye Cartridge (25 Appl.)	12 V/100 WATT
53500	53123/ 53312	High Intensity Mini Light w/Refillable 2 oz (60 ml) Dye Injector, 2 oz (60 ml) Concentrated Universal A/C Fluorescent Dye (25 Appl.), 4 oz (120 ml) Dye Remover, 25 Serv. Info. Lbls. & UV Enhancing Safety Glasses	12 V/50 WATT
53500-C	53223/ 53312	Same as 53500, but with Replaceable 2 oz (60 ml) Dye Cartridge (25 Appl.)	12 V/50 WATT
53351	53809/ 53312	High Intensity, 12V/50 Watt, Mini Light (53312, Replaceable 1 oz (10 application) Dye Cartridge (53809), A/C Connection Hose w/R134a Coupler, R12 Adapter, 1 oz OIL/ATF/Gas and Diesel Fluorescent Dye, 1 oz Engine Coolant Dye, 4 oz Dye Remover, 25 Service Information Labels, UV Enhancing Safety Glasses	12 V/50 WATT

REFILLABLE UNIVERSAL OIL/DYE INJECTOR



To inject the oil or dye, simply connect the injector to the low side of the A/C system and twist the handle until you reach the desired amount.

- 53123** Refillable Universal Dye Injector with auto shut-off valve adapter and 2 oz (60 ml) Bottle of Concentrated A/C Dye (25 Apps)
- 53123-A** Refillable Universal Dye/Oil Injector (w/o dye) with auto shut-off valve adapter
- 53134** Refillable Oil/Dye Injector with (R134a 13 mm Connection) and 2 oz (60 ml) Bottle of Concentrated A/C Dye (25 Applications)
- 53322** Refillable Dye Injector with (1/4" Auto Shut-off Valve Connection) and 2 oz (60 ml) Bottle of Concentrated A/C Dye (25 Apps)

53123-YF REFILLABLE R1234yf OIL/DYE INJECTOR



To inject the oil or dye, simply connect the injector to the low side of the A/C system and twist the handle until you reach the desired amount. The injector hose comes complete with a R1234yf coupler.

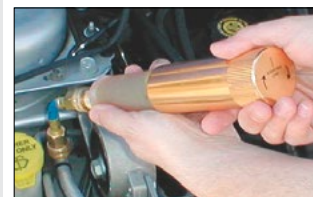
- Heavy duty, anodized aluminum 2 oz. container with dye scales represented in 1/10 ounce, 1/4 ounce and milliliters
- Nylon barrier blue hose meets J2888, EPA, SAE and UL standards
- R1234yf low side coupler with extended disconnect sleeve and meets SAEJ639 and J2888



53223 "CARTRIDGE TYPE" UNIVERSAL DYE INJECTOR



Adding dye with the 53223 is fast and easy, simply connect the injector to the low side of the A/C system and twist the handle to the next application line. The replaceable cartridge provides 25 applications of universal dye that is compatible with all systems. The injector hose comes complete with an auto shut-off valve adapter for 1/4" FL systems.



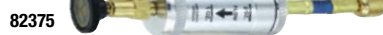
LEAK DETECTION

53809 MINI DYE INJECTOR



"Cartridge Type" Dye Injector (10 Applications) Concentrated Dye.

OIL INJECTOR



Excellent method for adding refrigerant oil or large amounts of UV leak detection dye to the A/C system. Add oil by allowing vacuum to pull it in after the evacuation process, or use refrigerant to push it in using the recharge system. Rugged all metal 2 oz canister. Available in standard or "easy connect" design. The standard models use a needle style valve attached between the manifold gauge set or charging equipment and A/C hose. The "easy connect" models use a ball valve design attached directly onto the end of the A/C hose. Model 82374 includes a low-side coupler on the outlet hose. Model 92376 includes auto shut-off valve on the outside hose.

STANDARD

- 90375** Standard 1/4" FFL x 1/4" MFL
- 82375** ACME 1/2" FFL x 1/2" MFL

EASY CONNECT

- 82374** 13mm-M x 13mm-F Low-Side Coupler (R134a)
- 92376** 1/4" FFL x 1/4" MFL

STANDARD UNIVERSAL ULTRAVIOLET A/C DYES



- 92699** Standard Universal Dye - Six 1/4 oz Packs (6 pcs)
Pack 1/4 oz (7.5 ml) - 1 Application
- 92708** Standard Universal Dye
8 oz (240 ml) Bottle - 32 Applications
- 92732** Standard Universal Dye
32 oz (1 L) Bottle - 128 Applications

CONCENTRATED UNIVERSAL ULTRAVIOLET A/C DYES



- 53825** Concentrated Universal Dye Cartridge
Replaceable Cartridge - 25 Applications
- 53810** Concentrated Universal Dye Cartridge
Replaceable Cartridge - 10 Applications
- 53625** Concentrated Universal Dye
2 oz (60 ml) Bottle - 25 Applications

FLUORESCENT DYE



- 53609** Engine Coolant (1 oz. (30 ml) bottle)
• 1 oz for 1 vehicle application per 16 quarts (15 L) of fluid
- 53610** Engine Oil (1 oz. (30 ml) bottle)
• Engine Oil (Gas & Diesel) - 1 vehicle application per 4-5 quarts (4 L-5 L) of oil
• Automatic Transmission Fluid - 1 vehicle application per 4-5 quarts (4 L-5 L) of fluid
• Gasoline & Diesel Fuel - 1 vehicle application per 2 gallons (8 L) of fuel



- Lubricates system and helps prevent leaks
- Seals small leaks in evaporator, condenser, hoses, o-rings and gaskets
- Illuminates larger leaks through the use of high quality universal fluorescent dye
- For R12, R134a A/C systems
- Safe for hybrid and electric compressors



- 53909** Mini Auto A/C Master Leak Shield Dye Injector
"Cartridge Type" 1 oz Injector with Auto A/C Master Leak Shield Sealant with Dye, Low side hose, R12 adapter
- 53910** Auto A/C Master Leak Shield
1 oz Replacement Cartridge of Auto A/C Master Leak Shield Sealant with Dye
- 53592** Mini UV Flashlight Kit
53512-UV Mini UV Flashlight (12 LED), "Cartridge Type" 1 oz Injector with Auto A/C Master Leak Shield Sealant with Dye, Low side hose, R12 adapter, UV safety glasses, Service info. labels, Packaged in clam shell
- 53597** Compact UV Flashlight Kit
53517-UV Compact UV Flashlight (17 LED), "Cartridge Type" 1 oz Injector with Auto A/C Master Leak Shield Sealant with Dye, Low side hose, R12 adapter, UV safety glasses, Service info. labels, Packaged in clam shell

Easy to use! Stops leaks in metal and rubber automotive air conditioner parts including evaporators, condensers, o-rings, gaskets and hoses.

- For use in R134a, HFO-1234yf, hybrid and electronic A/C systems.
- Includes o-ring conditioner, proprietary anti-wear and anti-oxidant additives.
- Adds 1 oz. (30 ml) leak stop with U/V leak detection dye.
- Patented delivery system, does not contain refrigerant.
- Safe, does not contain harmful polymers
- HFC Free Aerosol



US Patent No. 8,074,009, other US and foreign patents pending

- 53615-A** Auto Master Leak Shield
1 oz can of Auto Master Leak Shield Sealant with Dye



SERVICE ACCESSORIES AND CONSUMABLES



NITROGEN PRESSURE REGULATOR



Mastercool's nitrogen regulator is specifically designed to meet the specifications of HVAC/R and automotive A/C systems. This single stage nitrogen regulator is used to test systems for leaks when they do not contain refrigerant.

- 1/4" SAE flare outlet port, with control valve, to keep pressure on the regulator at all times
- T-Handle for ease of pressure adjustment
- 63 mm (2 1/2") gauges with guards
- High pressure gauge 4400 psig (300 bar)
- Low pressure gauge 1000 psig (70 bar)

53001 CGA580 (US) Standard, 1/4 FL-M outlet connection

- 53010-AUT** Pressure Testing Regulator Kit
- 53001 Nitrogen Pressure Regulator
 - CGA580 (US) Standard
 - 1/4 FL-M outlet connection
 - 48" Yellow Charging Hose (47482)
 - Leak Testing Adapter (53042)
 - High Side Standard R134a, 1/4" FL-M x 13mm Economy Coupler (66434-R)
 - Blow molded case (53000-PB)

OPTIONAL ACCESSORIES

66434-R High Side Standard R134a 1/4" FL-M x 13 mm Economy Coupler

82834 High Side Manual R134a 14 mm-F x 16 mm Coupler

90413 R410a Straight Adapter 1/4" FL-M x 5/16" Swivel-F

53042 Leak Testing Adapter

53000-42 Leak Testing Gauge

53000-70 Low Pressure Regulator Gauge

53000-300 High Pressure Regulator Gauge

47482 48" Yellow Charging Hose

93254-E Black Gauge Guard

53000-W Teflon Washer

53042-YF LEAK TESTING ADAPTER FOR R1234yf



- 80 mm gauge
- R1234yf low side coupler



69900 FLUSH MACHINE



Designed to flush automotive systems with a capacity of over 10 liters of flush. This flush machine will be commonly used for removal of all solids and residues caused by breakage of compressor or filters. Designed with durable roll-away wheels and handle, this machine can conveniently move as needed.



- Stainless steel ball valve controls
- Flush gun connection with conical tip for automotive applications
- Additional external container connection
- External nitrogen bottle connection
- Pump equipped with mechanical seal and PTFE gasket
- Mechanical filter present at suction side
- Coiled flexible hoses

- 69925** Multiple Flushing & Leak Test Kit for Flush Machine
Multipurpose leak test and flushing adapters suitable for more than 80% of the automotive air conditioning systems in the market!



TOTAL A/C QUICK FLUSH



Specific fluid for the inner flushing of air conditioning and refrigeration systems

- O-Ring safe
- Non-Flammable
- Non-Corrosive
- For Professional Use
- Pressurized container ready to use

- 91051** Total A/C Quick Flush Kit
91050 17 oz. Total A/C Quick Flush Can
91050-6 6 Pack - 17 oz. Total A/C Quick Flush Cans

91046-A A/C SYSTEM FLUSH KIT

>>POPULAR<<



Includes flush gun, hose, canister and canister adapter. Designed to work with any light weight flushing agent which can be mixed with pressurized air. Excellent for quickly and effectively removing refrigerant oil debris during retrofitting or compressor replacement.



A/C FLUSH SOLVENT



- Effectively removes debris and sludge from A/C components
- Solvent-based
- Evaporates quickly
- Leaves no residue

- 91049-32** 32 oz. Flush Solvent
91049-32-6 6 pack - 32 oz. Flush Solvent
91049-128 1 Gallon Flush Solvent
91049-128-4 4 pack - 1 Gallon Flush Solvent

SERVICE ACCESSORIES AND CONSUMABLES

92707 HYBRID A/C COMPRESSOR OIL



- Formulated for Vehicles with Electric A/C Compressors
- High Dielectric Formula Provides Advanced Compressor Protection
- Synthetic lubricant specifically created for electric hybrid air conditioning compressors
- For replenishing hybrid or electric compressor oil in accordance with the quantity evacuated or the quantity recommended by the compressor manufacturer
- Provides outstanding lubricity and compressor protection
- Compatible replacement lubricant for compressors using Honda 38899RCJA01, ND-10, ND-OIL 11 (ND-11), and SE-10Y
- High dielectric protection formula has excellent “resistivity” to potential electrical current leakage in high voltage hybrid A/C systems
- Contains conditioners, inhibitors and anti-wear agents
- Net contents 7 oz. (210 mL)

COMPRESSOR OILS



Maximum protection with excellent thermal & oxidative stability. Moisture tolerant. OEM approved.

PAG 65

92709-65-8 PAG 65 Oil (8 oz (240 ml) bottle)

92709-65-32 PAG 65 Oil (32 oz (1 L) bottle)

PAG 100

53826 PAG 100 Oil (2 oz (60 ml) cartridge)

92709-100-8 PAG 100 Oil (8 oz (240 ml) bottle)

92709-100-32 PAG 100 Oil (32 oz (1 L) bottle)

PAG 150

92709-150-8 PAG 150 Oil (8 oz (240 ml) bottle)

92709-150-32 PAG 150 Oil (32 oz (1 L) bottle)

ESTER OIL

53827 Ester Oil (2 oz (60 ml) cartridge)

92710 Ester Oil (8 oz (240 ml) bottle)

92712 Ester Oil (32 oz (1 L) bottle)

ACCESSORIES



53314 Dye Remover
4 oz (120 ml)

53315 Service Labels
25 per pack, bright yellow label indicating that the system has been charged with UV Dye.

92398 UV Enhancing Safety Glasses
This is a must for protection against ultraviolet light during leak detection.

ALUM BOND



A two-component epoxy formula highly concentrated with carefully selected pure aluminum particles, modified curing agents and special high quality additives to provide maximum strength, durability and ease of application. Alumbond is aluminum filled epoxy specially formulated for repairing condenser coils, tanks, valves, pumps, castings, water jackets, radiators, etc., where non-rusting, non-magnetic aluminum finish is desired.

PHYSICAL PROPERTIES:

- Hardness (Shore, ASTM D 1706): 83D
- Coefficient of Thermal Expansion: $40 \times 10^{-6} \text{ cm/cm}^\circ\text{C}$
- Compression Strength (ASTM D 695): 8600 psi (59 M Pa)
- Tensile Strength (ASTM D 638): 3500 psi (24 M Pa)
- Maximum Line Pressure (after 5 hours application time): 650 psi



90935 Aluminum Repair Kit (6.5 oz package)

90934 Aluminum Repair Kit (2 oz package)

ContiTouringContact



MEASURE AND TEST INSTRUMENTS

43300 14 PC COOLING SYSTEM PRESSURE TEST KIT



- Detects and exposes external system leaks
- Detects internal engine leaks due to blown gaskets or cracked block
- Includes blue and black radiator cap test connector
- Includes hand pump, thermometer and 12 adapters (No.'s 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13) to fit most popular domestic and import car and trucks



43301 MASTER RADIATOR PRESSURE SYSTEM KIT AND VACUUM SYSTEM KIT



- 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
- Includes 1 black radiator cap test connector R123/R124
- Includes 1 thermometer, 1 universal radiator cap, 1 vacuum purge and refill tool, coolant hose and additional installation accessories
- Includes hand pump and 19 adapters (No.'s 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21) to fit most popular domestic and import car and trucks



43705 REFRACTOMETER



- Offers a quick and easy way to test the freezing point of coolant/anti-freeze
- Compatible with Ethylene or Propylene Glycol
- Measures battery acid gravity to verify battery life
- Automatic temperature compensation
- Large, easy to read graphics and high contrast lens
- Adjustable viewfinder
- Strong, steel body structure
- Includes storage case, fluid dropper and mini screw driver



43302 25 PC COOLING SYSTEM PRESSURE TEST KIT

- Detects and exposes external system leaks
- Detects internal engine leaks due to blown gaskets or cracked block
- Includes blue and black radiator cap test connectors
- Includes hand pump, thermometer and 21 adapters (No.'s 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23) to fit most popular domestic and import car and trucks

**43305 10 PC. COOLING SYSTEM PRESSURE TEST ADAPTER KIT**

- Adapter update kit to be used with 43300
- Detects and exposes external system leaks
- Detects internal engine leaks due to blown gaskets or cracked block
- Includes blue and black radiator cap test connectors
- Includes 8 adapters (No's 14, 15, 16, 17, 18, 19, 20, 21) to fit most popular domestic and import car and trucks



* For the complete pressure testing adapter chart, please see page 71



52224-A INFRARED THERMOMETER WITH LASER

>>POPULAR<<



The 52224-A offers laser targeting accuracy, enhanced back-lit LCD Display and an expanded temperature range. The compact design is simple to use and easy to store.



SPECIFICATIONS:

Non-Contact Temperature Range: -58 to 932°F (-50 to 500°C)
 Field of View: 12 : 1
 Display Illumination: Back-lit LCD Color Display
 Target Indicator: Single Laser Spot
 Emissivity: 0.95
 Resolution: 0.5°F / 0.5°C
 Accuracy: ±4°F (2°C) or ±2% of reading
 Response Time: 0.5 seconds
 Power Off: Automatic after 15 seconds
 Battery Life: Approximately 180 hours
 Included Accessories: 2 AAA batteries, instruction manual, plastic molded case



52224-C INFRARED THERMOMETER WITH DUAL LASER



Features both infrared and dual laser technologies.



SPECIFICATIONS:

Non-Contact Temperature Range: -76 to 1022°F (-60 to 550°C)
 Field of View: 12 : 1
 Display Illumination: Back-lit LCD Color Display
 Target Indicator: Dual Laser Spot
 Emissivity: 0.95
 Resolution: 0.1°F / 0.1°C
 Accuracy: ±4°F (2°C) or ±2% of reading
 Response Time: 1 second
 Power Off: Automatic after 15 seconds
 Battery Life: Approximately 180 hours
 Included Accessories: 2 AAA batteries, instruction manual, plastic molded case



52225-A DUAL TEMP PLUS INFRARED THERMOMETER



3 ft. (1m) Wire Thermocouple Included

Features both infrared and contact thermometer technologies. Includes programmable HI/LO alarms and Lock Mode to capture temperature readings. The contact function offers a built-in K type jack and wire thermocouple.

SPECIFICATIONS:

Non-Contact Temperature Range: -76 to 1400°F (-60 to 760°C)
 Thermocouple Temp. Range: -83 to 1999°F (-64 to 1400°C)
 Field of View: 30 : 1
 Display Illumination: Back-lit LCD display
 Target Indicator: Single Laser Spot
 Emissivity: 0.10 (10E) to 1.0 (100E)
 Resolution: 0.1°F / 0.1°C
 Modes: MIN, MAX, DIFF & AVG
 Accuracy: ±4°F (2°C) or ±2% of reading
 Response Time: 1 second
 Power Off: Automatic after 15 seconds
 Battery Life: Approximately 180 hours
 Included Accessories: 2 AAA batteries, 1m thermocouple probe, instruction manual, plastic molded case
 Optional Accessories: 3 m Wire Thermocouple Probe, Piercing Penetration Probe, Surface Probe, Air Probe



52225-B ULTRA TEMP DUAL LASER THERMOMETER

Features both infrared and contact thermometer technologies. Includes programmable HI/LO alarms, and Lock Mode to capture temperature readings. The built-in K type jack offers optional contact functions. Illuminates working area with built-in LED light.

SPECIFICATIONS:

- Non-Contact Temperature Range: -76 to 1832°F (-60 to 1000°C)
- Thermocouple Temp. Range: -83 to 1999°F (-64 to 1400°C)
- Field of View: 50 : 1
- Display Illumination: Back-lit LCD display
- Target Indicator: Dual Laser Spot
- Emissivity: 0.95
- Resolution: 0.1°F / 0.1°C
- Modes: MIN, MAX, DIFF & AVG
- Accuracy: ±4°F (2°C) or ±2% of reading
- Response Time: 1 second
- Power Off: Automatic after 15 seconds
- Battery Life: Approximately 180 hours
- Included Accessories: 2 AAA batteries, instruction manual, plastic molded case
- Optional Accessories: 1 m, 3 m Wire Thermocouple Probes, Piercing Penetration Probe, Surface Probe, Air Probe



52226 DUAL TEMP INFRARED/PROBE THERMOMETER



The 52226 Dual Temp Thermometer offers both infrared and contact probe technologies.

- Infrared Temp Range: -67 to 428°F (-55 to 220°C)
- Probe Temp Range: -67 to 626°F (-55 to 330°C)
- Field of View Ratio 1 : 1
- Adjustable Emissivity
- Lock Mode for hands free scanning
- Minimum/Maximum capture mode
- Contact Probe locks safely on the side of the unit

52227 POCKET INFRARED THERMOMETER



The 52227 Pocket Infrared Thermometer offers accurate non-contact temperature measurement in a compact and easy to use size.

- Temp Range: -67 to 428°F (-55 to 220°C)
- Field of View Ratio 1 : 1
- Adjustable Emissivity
- Back-lit LCD Display
- Minimum/Maximum capture mode

POCKET DESIGNS



All thermometers include pocket holder and clip.

Pocket Analog Design

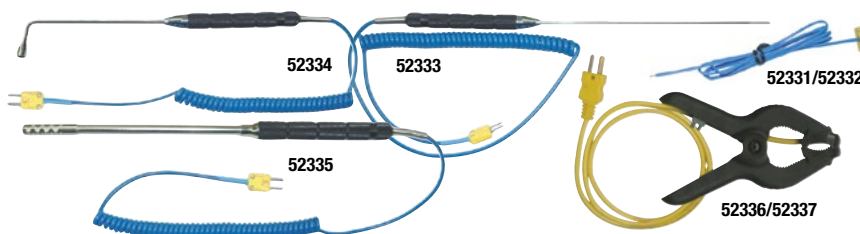
Item#	Dial Size	Temperature Scale
52220	25 mm	0 to 220°F
52161	35 mm	-40 to 160°F (-40 to 70°C)
91120	44.5 mm	0 to 220°F

Pocket Digital Design

Battery operated, on/off and auto shut-off after 10 minutes, ±1°C accuracy, 0.1°C resolution

Item#	Dial Size	Temperature Scale
52223-A	25 mm	-58 to 302°F (-50 to 150°C)

OPTIONAL THERMOCOUPLE PROBES



52331	Wire Probe - 3 ft (1 m)
52332	Wire Probe- 10 ft (3 m)
52333	Piercing Penetration Probe w/coil cord
52334	Surface Probe w/coil cord
52335	Air Probe w/coil cord
52336	Clamp-On Probe - 3 ft (1 m)
52337	Clamp-On Probe - 10 ft (3 m)



Mastercool[®]
"World Class Quality"

52325 THERMAL IMAGING CAMERA WITH VISIBLE CAMERA

with carry case, micro SD card, CD, USB cord, batteries and instructions

>>AVAILABLE JANUARY 2018<<



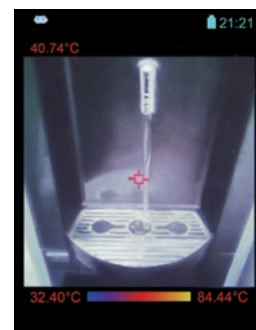
- Fully Automatic
- Focus Free
- Superior Measurement/Accuracy
- Micro SD Card Storage
- Reporting Software Included



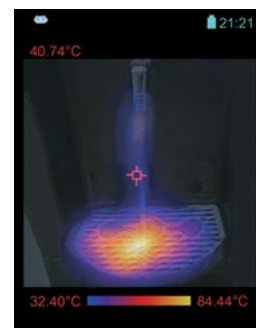
SPECIFICATIONS:

Thermal Image Resolution:	32 x 31 pixels
Visual Image Resolution:	640 x 480
Measurement Range:	-4 to 662°F (-20 to 350°C)
Accuracy (Tamb=20 to 26°C):	±2% of reading, or 4°F (2°C) whichever is greater
Thermal Sensitivity:	0.1°F (0.1°C)
Frame Rate:	9 Hz
Field of View:	40 x 40 deg
Emissivity Range:	0.95 default – adjustable 0.1 to 1 step 0.1
Focus:	Focus free
LCD Size:	2.8" (71 mm)
LCD:	Color
Image Storage:	Stores up to 25,000 images, BMP format (typical 8G micro SD card)
Memory Type:	micro SD card
Sensor Filter:	8 to 14 um
Interface:	USB
Battery Type:	3.6V Li-ion rechargeable battery
Battery Life (with back-lit):	3 hours continuous use
Dimensions:	3.73 x 2.91 x 9.20 inch (94.65 x 74.03 x 233.68 mm)

VISIBLE CAMERA:



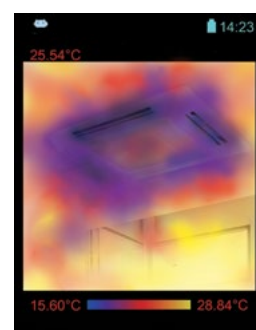
Visual



Fusion

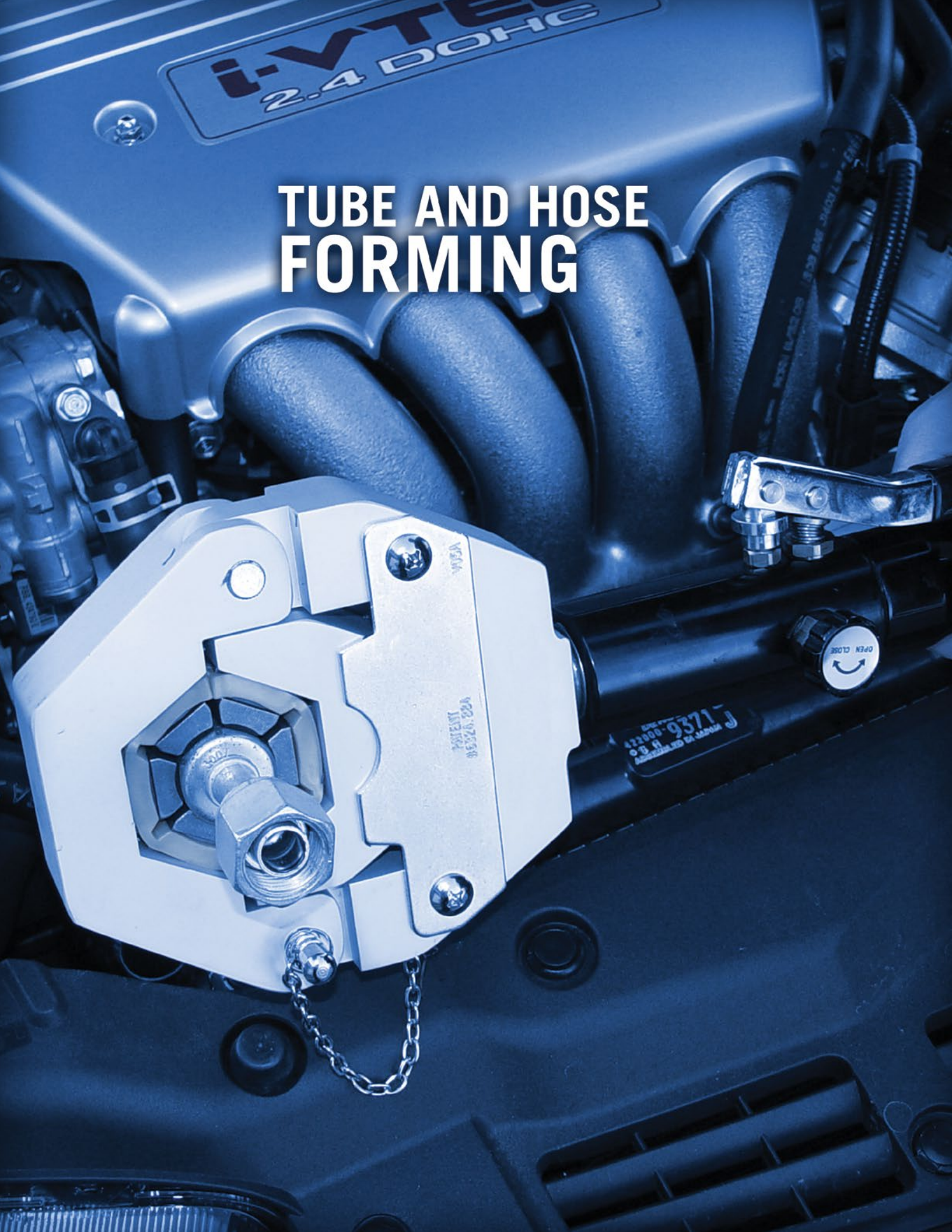


Visual



Fusion

TUBE AND HOSE FORMING



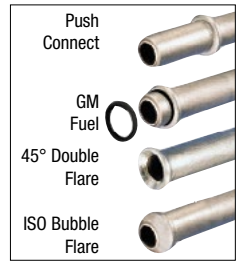
72475 UNIVERSAL HYDRAULIC FLARING TOOL SET



This kit fabricates: Push Connect 1/4, 5/16 and 3/8", GM Fuel Line Flare, Brake Lines and Transmission 5/16 and 3/8", Flare/Double Flare 3/16, 1/4, 5/16, 3/8 and 1/2", Metric Bubble Flare 4.75, 6, 8, and 10 mm. Comes in a custom molded box. **PATENT# 5,782,128**



>>POPULAR<<

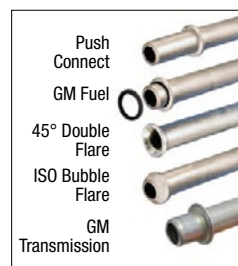


71202	Hydra-flare Yoke & Pump Assembly
71097-01	45° Flaring Cone
72485-PB	Custom Molded Plastic Box for 72475
Push Connect Adapters	
71204	1/4" Adapter
71205	5/16" Adapter
71206	3/8" Adapter
GM Fuel Line Adapters	
71405	5/16" Adapter
71406	3/8" Adapter
45° & Double Flaring Adapters	
71097-03	3/16" Adapter
71097-04	1/4" Adapter
71097-05	5/16" Adapter
71097-06	3/8" Adapter
71097-08	1/2" Adapter
Metric Bubble Flaring Adapters	
71475-4M	4.75mm Adapter
71475-6M	6mm Adapter
71475-8M	8mm Adapter
71475-10M	10mm Adapter
Push Connect Die Sets	
71214	1/4" Die Set
71215	5/16" Die Set
71216	3/8" Die Set
GM Fuel Line Die Sets	
71415	5/16" Die Set
71416	3/8" Die Set
45° & Double Flaring Die Sets	
71097-13	3/16" Die Set
71097-14	1/4" Die Set
71097-15	5/16" Die Set
71097-16	3/8" Die Set
71097-18	1/2" Die Set
Metric Bubble Flaring Die Sets	
71475-14M	4.75mm Die Set
71475-16M	6mm Die Set
71475-18M	8mm Die Set
71475-110M	10mm Die Set

72485 UNIVERSAL HYDRAULIC FLARING TOOL SET



This kit fabricates: Push Connect 1/4, 5/16 and 3/8", GM Fuel Line Flare, Brake Lines and Transmission 5/16 and 3/8", Flare/Double Flare 3/16, 1/4, 5/16, 3/8 and 1/2", Metric Bubble Flare 4.75, 6, 8, and 10 mm, GM Transmission Cooling Line 3/8 and 1/2". Comes in a custom molded box. **PATENT# 5,782,128**



71202	Hydra-flare Yoke & Pump Assembly
71097-01	45° Flaring Cone
72485-PB	Custom Molded Plastic Box for 72475
Push Connect Adapters	
71204	1/4" Adapter
71205	5/16" Adapter
71206	3/8" Adapter
GM Fuel Line Adapters	
71405	5/16" Adapter
71406	3/8" Adapter
45° & Double Flaring Adapters	
71097-03	3/16" Adapter
71097-04	1/4" Adapter
71097-05	5/16" Adapter
71097-06	3/8" Adapter
71097-08	1/2" Adapter
Metric Bubble Flaring Adapters	
71475-4M	4.75mm Adapter
71475-6M	6mm Adapter
71475-8M	8mm Adapter
71475-10M	10mm Adapter
GM Transmission Cooling Line Adapters	
71099-06	3/8" Adapter
71099-08	1/2" Adapter
Push Connect Die Sets	
71214	1/4" Die Set
71215	5/16" Die Set
71216	3/8" Die Set
GM Fuel Line Die Sets	
71415	5/16" Die Set
71416	3/8" Die Set
45° & Double Flaring Die Sets	
71097-13	3/16" Die Set
71097-14	1/4" Die Set
71097-15	5/16" Die Set
71097-16	3/8" Die Set
71097-18	1/2" Die Set
Metric Bubble Flaring Die Sets	
71475-14M	4.75mm Die Set
71475-16M	6mm Die Set
71475-18M	8mm Die Set
71475-110M	10mm Die Set
GM Transmission Cooling Line Die Sets	
71099-16	3/8" Die Set
71099-18	1/2" Adapter

71197 45° AND DOUBLE FLARING ADAPTERS AND DIES FOR HYDRA-FLARE YOKE AND PUMP ASSEMBLY



To be used with 71475 hydraulic pump assembly.

Includes:

- 71097-01** 45° Flaring Cone
- 71097-03** 3/16" 45° & Double Flaring Adapter
- 71097-04** 1/4" 45° & Double Flaring Adapter
- 71097-05** 5/16" 45° & Double Flaring Adapter
- 71097-06** 3/8" 45° & Double Flaring Adapter
- 71097-08** 1/2" 45° & Double Flaring Adapter
- 71097-13** 3/16" 45° & Double Flaring Die Set
- 71097-14** 1/4" 45° & Double Flaring Die Set
- 71097-15** 5/16" 45° & Double Flaring Die Set
- 71097-16** 3/8" 45° & Double Flaring Die Set
- 71097-18** 1/2" 45° & Double Flaring Die Set

71144 GM FUEL LINE ADAPTERS AND DIES FOR HYDRA-FLARE YOKE AND PUMP ASSEMBLY



To be used with 71475 hydraulic pump assembly.

Includes:

- 71405** 5/16" GM Fuel Line Adapter
- 71406** 3/8" GM Fuel Line Adapter
- 71415** 5/16" GM Fuel Line Die Set
- 71416** 3/8" GM Fuel Line Die Set

71175 METRIC BUBBLE FLARING ADAPTERS AND DIES FOR HYDRA-FLARE YOKE AND PUMP ASSEMBLY



To be used with 71475 hydraulic pump assembly.

Includes:

- 71475-4M** 4.75mm Metric Bubble Flaring Adapters
- 71475-6M** 6mm Metric Bubble Flaring Adapters
- 71475-8M** 8mm Metric Bubble Flaring Adapters
- 71475-10M** 10mm Metric Bubble Flaring Adapters
- 71475-14M** 4.75mm Metric Bubble Flaring Die Set
- 71475-16M** 6mm Metric Bubble Flaring Die Set
- 71475-18M** 8mm Metric Bubble Flaring Die Set
- 71475-110M** 10mm Metric Bubble Flaring Die Set

71099-TC 3/8" GM TRANSMISSION COOLING LINE DIE AND ADAPTER SET



To be used with 71475 hydraulic pump assembly.

Includes:

- 71099-06** 3/8" GM Transmission Cooling Line Adapter
- 71099-16** 3/8" GM Transmission Cooling Line Die Set



71099-TC8 1/2" GM TRANSMISSION COOLING LINE DIE AND ADAPTER SET



To be used with 71475 hydraulic pump assembly.

Includes:

- 71099-08** 1/2" GM Transmission Cooling Line Adapter
- 71099-18** 1/2" GM Transmission Cooling Line Die Set



71098 37° FLARING & DOUBLE FLARING ADAPTER SET



Includes:

- 71098-03** 3/16" 37° Double Flaring Adapter
- 71098-04** 1/4" 37° Double Flaring Adapter
- 71098-05** 5/16" 37° Double Flaring Adapter
- 71098-06** 3/8" 37° Double Flaring Adapter
- 71098-08** 1/2" 37° Double Flaring Adapter
- 71098-01** 37° Cone
- 71098-13** 3/16" 37° Double Flare Die Set
- 71098-14** 1/4" 37° Double Flare Die Set
- 71098-15** 5/16" 37° Double Flare Die Set
- 71098-16** 3/8" 37° Double Flare Die Set
- 71098-18** 1/2" 37° Double Flare Die Set

71201-001A-REPK REPAIR KIT for 71475, 71480, 71300, 71400, 71450



Includes Snap Ring "C-Clip", O-Ring for Shaft, Back Up O-Ring for Shaft, Valve Assembly Kit with .187" Silver Ball, Back Check Valve and Shaft Handle Assembly



Mastercool®
"World Class Quality"

72480 37° FLARING AND DOUBLE FLARING HYDRAULIC TOOL KIT



This kit fabricates factory style 37° and 37° double flare found on aviation and specialty automotive applications. The hand-held hydraulic pump operates easily with all steel and light stainless tubing. Includes: 3/16, 1/4, 5/16, 3/8 and 1/2" dies 3/16, 1/4, 5/16, 3/8 and 1/2" double flare adapters and 37° Cone.

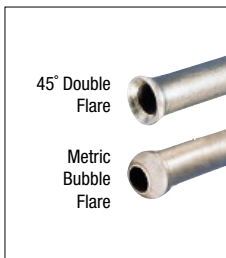


71202	Hydra-flare Yoke & Pump Assembly		
71098-01	37° Cone		
72480-PB	Custom Molded Plastic Box for 72480		
37° Double Flaring Adapters & Die Sets			
71098-03	3/16" Double Flare Adapter	71098-13	3/16" Double Flare Die Set
71097-04	1/4" Double Flare Adapter	71098-14	1/4" Double Flare Die Set
71097-05	5/16" Double Flare Adapter	71098-15	5/16" Double Flare Die Set
71097-06	3/8" Double Flare Adapter	71098-16	3/8" Double Flare Die Set
71097-08	1/2" Double Flare Adapter	71098-18	1/2" Double Flare Die Set

72450 DOUBLE FLARE & METRIC BUBBLE FLARING TOOL SET



This kit fabricates flare/double flare 3/16, 1/4, 5/16, 3/8 and 1/2"; and metric bubble flare 4.75, 6, 8 and 10mm. Comes in a custom molded carrying case and includes:



71202	Hydra-flare Yoke & Pump Assembly		
71097-01	45° Flaring Cone		
45° & Double Flaring Adapters		45° & Double Flaring Die Sets	
71097-03	3/16" Adapter	71097-13	3/16" Die Set
71097-04	1/4" Adapter	71097-14	1/4" Die Set
71097-05	5/16" Adapter	71097-15	5/16" Die Set
71097-06	3/8" Adapter	71097-16	3/8" Die Set
71097-08	1/2" Adapter	71097-18	1/2" Die Set
Metric Bubble Flaring Adapters		Metric Bubble Flaring Die Sets	
71475-4M	4.75mm Adapter	71475-14M	4.75mm Die Set
71475-6M	6mm Adapter	71475-16M	6mm Die Set
71475-8M	8mm Adapter	71475-18M	8mm Die Set
71475-10M	10mm Adapter	71475-110M	10mm Die Set

72400 GM FUEL LINE FLARING KIT



This kit fabricates the special flares found on most GM fuel lines and some GM truck power steering pump return lines (5/16"). Kit comes in a custom molded carrying case and includes:

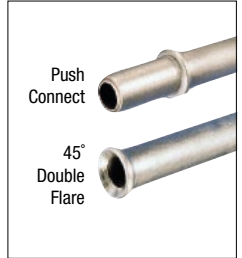


71202	Hydra-flare Yoke & Pump Assembly		
GM Fuel Line Adapters		GM Fuel Line Die Sets	
71405	5/16" Adapter	71415	5/16" Die Set
71406	3/8" Adapter	71416	3/8" Die Set

72300 PUSH-CONNECT, 45° & DOUBLE FLARING SET WITH “HYDRA-FLARE”



Fabricates “production quality” flares quickly and easily with hand held convenience. Flaring die sets for five sizes: 3/16, 1/4, 5/16, 3/8 and 1/2” O.D. tubing; five double flaring adapters cover 3/16, 1/4, 5/16, 3/8 and 1/2” O.D. tubing. Set includes:



71202 Hydra-flare Yoke & Pump Assembly

71097-01 45° Flaring Cone

Push Connect Adapters

71204 1/4” Adapter

71205 5/16” Adapter

71206 3/8” Adapter

45° & Double Flaring Adapters

71097-03 3/16” Adapter

71097-04 1/4” Adapter

71097-05 5/16” Adapter

71097-06 3/8” Adapter

71097-08 1/2” Adapter

Push Connect Die Sets

71214 1/4” Die Set

71215 5/16” Die Set

71216 3/8” Die Set

45° & Double Flaring Die Sets

71097-13 3/16” Die Set

71097-14 1/4” Die Set

71097-15 5/16” Die Set

71097-16 3/8” Die Set

71097-18 1/2” Die Set

71100 METRIC BUBBLE FLARING TOOL SET



Fashions International Standards Organization (I.S.O.) bubble flare found on European, Japanese and some domestic model brake lines. Flares without removing brake lines from a vehicle. Includes hardened steel bar and carrying case. Set includes: Adapters for 4.75, 6, 8 and 10mm O.D. tubing.

Also available:

71101 Set of four bubble flaring adapters for 4.75, 6, 8 and 10mm O.D. tubing.



70092 45° FLARING, DOUBLE FLARING & CUTTING TOOL SET



Includes heavy duty tube cutter 70033 for 1/8 to 1 1/8” O.D. tubing; standard 45° flaring tool 70051 flares 7 sizes: 3/16, 1/4, 5/16, 3/8, 7/16, 1/2 and 5/8” O.D. tubing; five double flaring adapters 70192 cover 3/16, 1/4, 5/16, 3/8 and 1/2” O.D. tubing.

Also available:

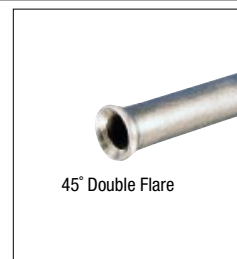
70097 Same as 70092, less 70033 tube cutter

70192 Set of 5 double flaring adapters for 3/16, 1/4, 5/16, 3/8 and 1/2” O.D. tubing.

70092-M Metric Flaring, Double Flaring & Cutting Tool Set Flares 7 metric sizes: 4, 6, 8, 10, 12, 15 and 16mm O.D. tubing.

70192-M Metric Double Flaring Adapter Set Covers 4.75, 5, 6, 8 and 10mm O.D. tubing.

70097-M Same as 70092-M, less 70033 tube cutter.



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71500-A HYDRA-KRIMP

>>POPULAR<<

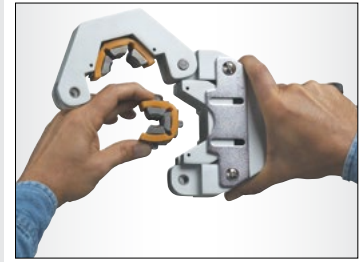


Fabricating A/C Hoses Just Got Easier...

Mastercool's Patented "Hydra - Krimp" makes crimping barbed and beaded fittings as easy as 1 - 2 - 3! The lightweight hand-held hydraulic press is very portable and ideal for shop and field applications. The kit comes with a complete set of dies covering hose sizes #6, #8, #10, #12 and reduced barrier #6, #8, #10 and #12. The dies snap quickly into the press fixture requiring no pins or screws.



PATENT# 6,324,884



The die snaps quickly into the press fixture requiring no pins or screws.



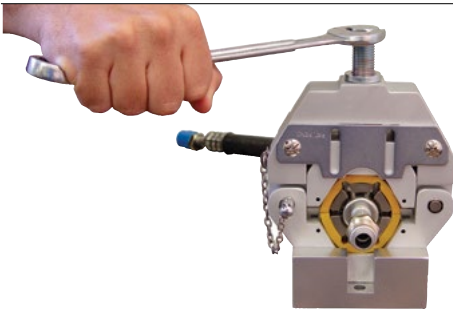
Kit comes in a custom molded case and includes:

- 71500-001AB** Hydra - Krimp Pump
- 71500-001B** Hydra - Krimp Yoke
- 71500-001C** Complete Die Set Assembly (7 pc. set)
- 71500-6** Die Set - #6 (5/16")
Die Set - #8 (13/32" Reduced Barrier)
- 71500-8** Die Set - #8 (13/32")
- 71500-10** Die Set - #10 (1/2")
- 71500-12** Die Set - #12 (5/8")
- 71500-6SRB** Die Set - #6 (5/16" Reduced Barrier)
- 71500-10SRB** Die Set - #10 (1/2" Reduced Barrier)
- 71500-12SRB** Die Set - #12 (5/8" Reduced Barrier)
- 71500-PB** Custom Molded Box
- 71500-REPAIRKT** Repair Kit for 71500



71550 A/C HOSE CRIMPER

>>POPULAR<<

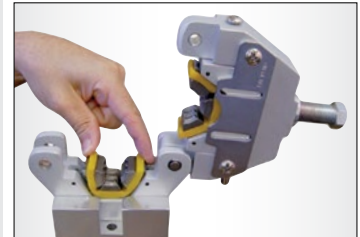


The 71550 is our "manual style" A/C hose crimper. The dies snap quickly into place requiring no pins or screws. The unit can be easily mounted to a bench using the holding fixture or held securely in a vice. This kit comes with a complete set of dies covering standard hose sizes #6, #8, #10 and #12.



PATENT# 6,324,884

***Optional reduced barrier sizes are available.**



The die snaps quickly into the press fixture requiring no pins or screws.

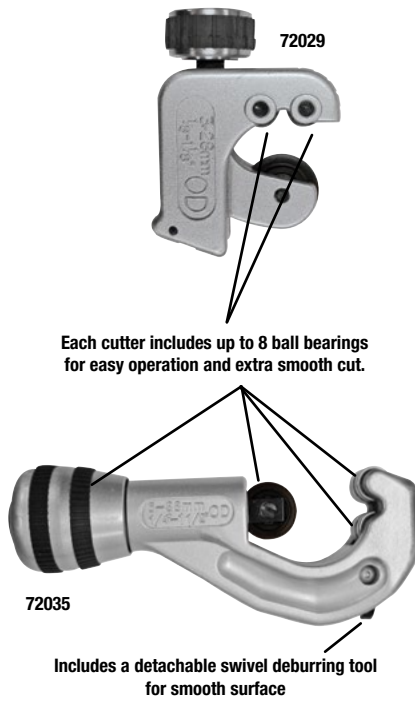


Kit comes in a custom molded case and includes:

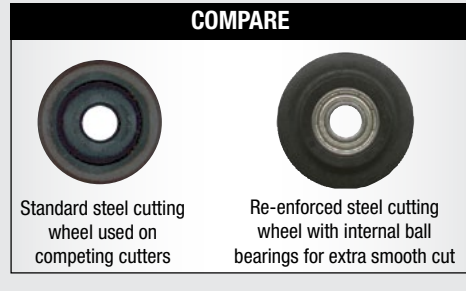
- 71500-001** Hydra - Krimp Pump
- 71550-002** Arbor Assembly
- 71550-003** Holding Fixture Assembly
- 71500-6** Die Set - #6 (5/16")
- 71500-8** Die Set - #8 (13/32")
- 71500-10** Die Set - #10 (1/2")
- 71500-12** Die Set - #12 (5/8")
- 71550-PB** Custom Molded Carrying Case



BALL BEARING CUTTERS



Mastercool's EZ Tube Cutters offer the latest "Reduced Friction" technology! Our reduced friction design incorporates ball bearings into the cutter wheel, tube rollers and a control knob. Reducing the resistance in these high friction areas allows the cutter to roll fast and easy as it slices through the tube. The "Reduced Friction" design is sure to save time and reduce fatigue!



- 72029 "Reduced Friction" Tube Cutter for 1/8 to 1 1/8" (3-28 mm)
- 72035 "Reduced Friction" Tube Cutter for 1/4 to 1 1/2" (6-38 mm)
- 72030 Replacement Cutting Wheel for 72029
- 72034 Replacement Cutting Wheel for 72035

TUBE CUTTERS



MASTERCool tube cutters are lightweight yet durable. Carbide steel cutting wheels work with hard and soft copper, aluminum, brass, thin wall steel and stainless steel. All cutters feature rollers with flare cut-off grooves to salvage as much old tubing material as possible.

- 70027 Mini Tube Cutter for 1/8 to 5/8" (3-16 mm) O.D. Tubing (1/8 to 1/2" Nominal)
- 70029 Mini Tube Cutter for 3/8 to 1 1/8" (4-28 mm) O.D. Tubing (1/4 to 1" Nominal)
- 70033 Heavy Duty Tube Cutter for 1/8 to 1 1/8" (4-28 mm) O.D. Tubing (1/4 to 1" Nominal)
- 70035 Heavy Duty Tube Cutter for 1/4 to 1 5/8" (6-40 mm) (1/4 to 1 1/2" Nominal)
- 70037 Sliding Ratchet Tube Cutter for 1/4 to 2 5/8" (6-67 mm) O.D. Tubing (1/4 to 2 3/4" Nominal), Triple Chrome Plated
- 70038 Sliding Ratchet Tube Cutter for 1/4 to 3 1/2" (6-89 mm) O.D. Tubing (1/4 to 3" Nominal)



Mastercool[®]
"World Class Quality"

RATCHET STYLE TUBE CUTTER



When you don't have swing room, ratchet action allows cutting all the way around the tubing easy.

70030 (1/4 to 7/8" O.D. Tubing)

70031 (5/16 to 1 1/8" O.D. Tubing)

80021 PLUMBERS TYPE MINI CUTTER



Designed for applications with limited working space. Cuts soft copper, aluminum and thin wall steel tubing. Tube Cutter for 1/8 to 7/8" (4-22 mm) O.D. Tubing. (1/8 to 3/4" nom.)

80121 Spare Cutting Wheel for 80021

REPLACEMENT CUTTER WHEELS



70028 Replacement Cutting Wheels for 70027 (10 pcs).

70034 Replacement Cutting Wheels for 70029, 70030, 70031, 70033, 70035, 70037 (10 pcs + 1 holding screw).

70128 Carbide Cutting Wheel & Screw Set for 70027 includes: 2 Spare Cutting Wheels and 1 Holding Screw.

70134 Carbide Cutting Wheel and Screw Set for 70029, 70035. Includes: 2 Spare Cutting Wheels and 1 Holding Screw.

70138 Replacement Cutting Wheel for 70038 (1 per pkg.) Cut Hard and Soft Copper, Aluminum, Brass, Thin Wall Steel and Stainless Steel.

70237 PVC Cutting Wheel for 70037. Cuts PVC and ABS.

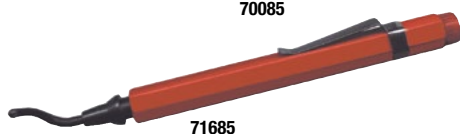
70238 Oversize PVC Cutting Wheel for 70038. Wheel is 1 5/8" Diameter. Cuts PVC and ABS.

TUBE CONSTRICTOR WHEEL



70233 Used with 70033 or 70035.

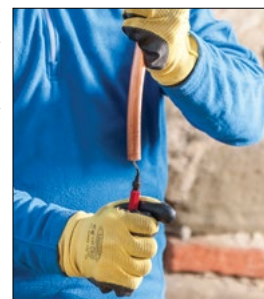
INNER-OUTER REAMERS



70085 Inner/Outer Reamer for 3/16 to 1 1/2" O.D. Tubing.

71685 Designed to remove inner burrs easily. Full metal grip. Includes one spare tungsten blade for long use.

71686-2 Two spare blades for 71685 (2 pcs).



70069-A 4-IN-1 LEVER STYLE TUBE BENDER



Complete 180° bend all metal multi-purpose tube bender for 3/16, 1/4, 5/16 and 3/8" O.D. Tubing.

SPRING STYLE TUBE BENDERS



Economical and effective tools for bending soft copper or aluminum tubing without kinks. Special nickel plated, spring steel is flared on one end for quick tube insertion. Each tool bends one size.

MODEL#	SIZE	LENGTH
70071	1/4"	10"
70072	5/16"	10"
70073	3/8"	10"
70074	1/2"	12"
70075	5/8"	14"
70077	3/4"	14"

70076 SPRING STYLE TUBE BENDER SET



Set of 5 spring benders for 1/4, 5/16, 3/8, 1/2 and 5/8" O.D. tubing.

RATCHET WRENCHES



- 70081** Steel forged wrench with reversible ratchet. 9/16", 1/2" hex, 1/4" and 3/16" square.
- 70082** Compact chrome plated wrench specially designed for use in hard to reach places. 1/4, 3/8, 3/16 and 5/16" square ratchet.

91000-A DELUXE CLUTCH HUB PULLER/INSTALLER KIT

Kit contains a complete offering of A/C compressor clutch hub pullers and installers for GM, Ford, Chrysler and Imports. Includes a compressor identification chart and comes in a custom molded case.

>>POPULAR<<



92311 DELUXE ORIFICE TUBE SERVICE KIT

This 5 piece universal kit will remove and install any style orifice tube. Comes in custom molded box.



92329 TOYOTA A/C DISCONNECT TOOL

The new Toyota spring lock A/C hose couplings require this special disconnect tool. Simply insert the end of the tool into the coupling to disengage the hose.



91002 GM & FORD ORIFICE TUBE REMOVER/INSTALLER



Used on all GM (CCOT) and Ford (FOTCC) systems with evaporator inlet orifice tube.

91008 FORD (FOTCC) REMOVER/INSTALLER



Used for Ford systems produced after 1980.

91009 GM (CCOT) & FORD (FOTCC) SCREEN EXTRACTOR



Used with 91002 and 91008

91010 FORD AEROSTAR EXPANSION TUBE REMOVER/INSTALLER



Special design for condenser mounted tube.

90499 UNIVERSAL CLUTCH HOLDING TOOL



CAP #	MAKE & MODEL
2	Mercedes Benz, GM (Buick), Jeep
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)
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: 1990-2002, 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)
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: 2011), Dodge (Colt: 1993-1994, Stratus: 2001-2004), Eagle (Summit: 1992-1993), 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, Protege: 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 V6 w/auto trans: 1990-1991, 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, 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)
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, Cromia-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), MiniCooper (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-), 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 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 (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-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)
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-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)
11	Audi (1975-1993: w/ male thread on expansion tank), VW (1975-1993: w/ male thread on expansion tank, Golf: 1983-1992, Cabriolet: 1985-1992, Dasher: 1980-1981, Fox: 1987-1993, Golf: 1985-1990, Jetta: 1980-1990, Quantum: 1980-1988, Rabbit: 1975, Rabbit Convertible: 1980-1984, Scirocco: 1975-1988)

PRESSURE TESTING ADAPTER CHART

12	<p>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 1V: 1995-2002, Fiesta Van V: 1999-2002, Fiesta Van VI: 2002-2008, Fiesta VI: 2002-2008, Focus 1: 1998-2005, Focus Wagon 1: 1998-2005, Fusion: 2002-2005, Granada Scoprio: 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, Scopio 1: 1984-1994, Scopio 11: 1994-1998, Sierra Cosworth 11: 1987-1993, Sierra 1: 1984-1987, Sierra11: 1987-1993, Sierra Sapphire 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 O: 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 11: 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)</p>
13	<p>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)</p>
14	<p>Ford (Mondeo: 2000-2007, Focus: 2000-2005, C-MAX03, Contour: 1995-2000), Mercury (Cougar: 1999, Mystique: 1995-1999)</p>
15	<p>Ford International (C-Max: 2007-2012, C-Max 11: 2010, Fiesta V JH, JO: 2001, Fiesta Van: 2009, Fiesta VI: 2009, Fiesta VI: 2008, Focus C-Max: 2003-2007, Focus 11 OA: 2004, Focus 11 Convertible: 2006, Focus 11 Estate OAW: 2004, Focus Saloon OA: 2005, Focus 11 Station Wagon OAW: 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, 3: 2003-2013, 5: 2010, 2 OE: 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 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)</p>
16	<p>Mercedes (A140: 19 7-2004, A150: 2010-2012, 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)</p>
17	<p>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)</p>
18	<p>Ford (Galaxy Van : 1995-2006), SEAT (Alhambra Van: 1996-2010), VW (Sharan Van: 1996-2010)</p>
19	<p>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)</p>
20	<p>Saab (EcoPower 9-3, 9-5)</p>
21	<p>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 HO: 2002-2007, Silverado 2500: 1999-2004, Silverado 2500 HO: 2001-2007, Silverado 3500: 2001-2007, Silverado 3500 HO: 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 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: 2004-2003), Envoy: 2003-2007, K2500 Suburban: 1999, Savana 1500: 2003-2007, Savana 3500: 2004-2007, Sierra 1500: 1999-2007, Sierra 1500 HO: 2001-2007, Sierra 2500: 1999-2004, Sierra 2500 HO: 2001-2007, Sierra 3500: 2001-2007, Sierra 3500 HO: 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 O: 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)</p>
22	<p>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 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, Alpi a 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)</p>
23	<p>Ford (Late Model), GM (Late Model)</p>



ITEM #	PAGE	ITEM #	PAGE	ITEM #	PAGE	ITEM #	PAGE	ITEM #	PAGE	ITEM #	PAGE
0332-002	17	46360	14	53010-AUT	52	67010	38	71098-06	63	80103	10
0377-001	17, 21, 22	46361	14	53012	47, 48	67011	38	71098-08	63	80111	23
0378-001	21	46362	14	53012-B	47	68010	38	71098-13	63, 64	80113	23
0531-001	21	46363	14	53012-L	47	69000	36	71098-14	63, 64	80121	68
0768-001	21	46364	14	53042	52	69100	36	71098-15	63, 64	80134	18, 20
0769-001	21	46372	14	53042-YF	52	69110	37	71098-16	63, 64	80134-1	20
1336-006	21	46396	14	53100	48	691234YF	42	71098-18	63, 64	80134-2	20
1336-008	21	46601	14	53100-C	48	69134-A	42	71099-06	62, 63	80136	10
1336-010	21	46602	14	53123	48, 49	69300	34	71099-08	62, 63	80161	10
1336-012	21	46603	14	53123-A	49	69360	35	71099-16	62, 63	80172	10
1336-016	21	46604	14	53123-YF	49	69365	35	71099-18	62, 63	80234	17, 19
1336-018	21	46721	14	53134	49	69370	34	71099-TC	63	80296	17
1336-110	21	46722	14	53223	48, 49	69390	35	71099-TC8	63	80636	10
1336-112	21	46723	14	53312	47, 48	69391	35	71100	65	80661	10
20300	30	46724	14	53312-B	47	69500	37	71101	65	80772	10
20300-HTR	30	46961	14	53312-L	47	69500-DR	35	71144	63	81102	10
21200	30	46962	14	53314	54	69900	53	71175	63	81113	10
32636	10	46963	14	53315	54	69925	53	71197	63	81290	21, 23
32661	10	46964	14	53515-B	47	70027	67, 68	71201-001A-REPK		81297	16
32772	10	47336	14	53515-BAT-2	47	70028	68		63	81379	16
33103	10	47360	14	53322	49	70029	67, 68	71202	62, 64, 65	81490	23
33636	10	47361	14	53351	48	70030	68	71204	62, 65	81661	10
33661	10	47362	14	53451-110	48	70031	68	71205	62, 65	82010	17, 20
33772	10	47363	14	53451-C-110	48	70033	67, 68	71206	62, 65	82010-10	15
34215	10	47364	14	53500	48	70034	68	71214	62, 65	82031	29
34216	10	47372	14	53500-C	48	70035	67, 68	71215	62, 65	82214	18
35636	10	47396	14	53512-UV	47, 48, 50	70037	67, 68	71216	62, 65	82214-E	18
35661	10	47482	52	53515	47, 48	70038	67, 68	71405	62, 63, 64	82224	18
35772	10	47601	14	53517-UV	47, 48, 50	70069-A	69	71406	62, 63, 64	82224-E	18
36636	10	47602	14	53518-UV	47, 48	70071	69	71415	62, 63, 64	82272	17
36661	10	47603	14	53580	48	70072	69	71416	62, 63, 64	82274	16
36772	10	47604	14	53582	48	70073	69	71475-4M	62, 63, 64	82275	16
37636	10	47721	14	53585	48	70074	69	71475-6M	62, 63, 64	82297	16
37661	10	47722	14	53587	48	70075	69	71475-8M	62, 63, 64	82332	16
37772	10	47723	14	53592	50	70076	69	71475-10M	62, 63, 64	82333	16
40336	14	47724	14	53597	50	70077	69	71475-14M	62, 63, 64	82335	17, 20
40360	14	47961	14	53609	50	70081	69	71475-16M	62, 63, 64	82336	20
40372	14	47962	14	53610	50	70082	69	71475-18M	62, 63, 64	82336-10	15
40396	14	47963	14	53615-A	50	70085	68	71475-110M	62, 63, 64	82354	16
41361	14	47964	14	53625	50	70092	65	71500-001	66	82357	16
41362	14	48364	14	53809	48, 49	70092-M	65	71500-001AB	66	82358	16
41363	14	48604	14	53810	50	70097	65	71500-001B	66	82374	49
41601	14	48724	14	53825	50	70097-M	65	71500-001C	66	82375	49
41602	14	48964	14	53826	54	70128	68	71500-6	66	82379	16
41603	14	49262-36	14	53827	54	70134	68	71500-6SRB	66	82495	16
41721	14	49262-60	14	53909	50	70138	68	71500-8	66	82633	17
41722	14	49262-72	14	53910	50	70192	65	71500-10	66	82634	17, 19
41723	14	49263-36	14	55900	44	70192-M	65	71500-10SRB	66	82634-M	17, 19
41961	14	49263-60	14	55975	45	70233	68	71500-12	66	82635	19
41962	14	49263-72	14	56100	46	70237	68	71500-12SRB	66	82733	19
41963	14	49264-36	14	56200	46	70238	68	71500-A	66	82734	17, 19
42010	17, 20, 21	49264-60	14	56300	46	71097-01	62, 63, 64,	71500-PB	66	82735	19
42010-10	15	49264-72	14	56310	46		65	71500-REPAIRKT	66	82736	19
42014	17, 20, 21	49265-36	14	56400	46	71097-03	62, 63, 64,		66	82738	19
42014-10	15	49265-60	14	58211	12		65	71550	66	82834	18, 52
42016	20	49265-72	14	58212	12	71097-04	62, 63, 64,	71550-002	66	82834-E	18
43300	56	52161	59	58213	12		65	71550-003	66	82834-SL	18
43301	56	52220	59	58214	12	71097-05	62, 63, 64,	71550-PB	66	82834-SL-E	18
43302	57	52223-A	59	58490	22		65	71685	68	82836	19
43305	57	52224-A	58	58531	22	71097-06	62, 63, 64,	71686-2	68	82836-E	19
43705	56	52224-C	58	58560	22		65	72029	67	82934	18, 20
45336	14	52225-A	58	60034-10	18	71097-08	62, 63, 64,	72030	67	82934-E	18
45360	14	52225-B	59	60134-10	18		65	72034	67	82934-SL	18
45361	14	52226	59	62010	38	71097-13	62, 63, 64,	72035	67	82934-SL-E	18
45362	14	52227	59	62011	38		65	72300	65	83102	9
45363	14	52325	60	62012	38	71097-14	62, 63, 64,	72400	64	83136	10
45372	14	52331	59	62020-W	38		65	72450	64	83161	10
45396	14	52332	59	63010	38	71097-15	62, 63, 64,	72475	62	83172	10
45601	14	52333	59	63010-AUS	38		65	72480	64	83272	9
45602	14	52334	59	64010	38	71097-16	62, 63, 64,	72480-PB	64	83341	17, 19, 20
45603	14	52335	59	65010	38		65	72485	62	83341-10	15
45721	14	52336	59	66010	38	71097-18	62, 63, 64,	72485-PB	62	83360	15
45722	14	52337	59	66011	38		65	80011	23	83372	15
45723	14	53000-42	52	66012	38	71098	63	80013	23	83436	10
45961	14	53000-70	52	66434-R	18, 52	71098-01	63, 64	80021	68	83461	10
45962	14	53000-300	52	66534-R	18	71098-03	63, 64	80034	18, 20	83472	10
45963	14	53000-W	52	66660	10	71098-04	63	80034-1	20	83601	15
46336	14	53001	52	66661	10	71098-05	63	80034-2	20	83602	15

ITEM #	PAGE	ITEM #	PAGE	ITEM #	PAGE	ITEM #	PAGE	ITEM #	PAGE
83603	15	88161	8	90358	17	91588	39	98315	40
83634	29	88172	8	90363	19	91685	39	98315-AUT	40
83721	15	88436	8	90364	19	91686	39	98364	15
83722	15	88461	8	90365	16	91687	39	98370	19
83723	15	88472	8	90368	17, 20, 21	91688	39	98604	15
83834	19	89136	8	90369	17, 20, 21	92107	20, 21	98660	8
83934	19	89161	8	90373	17	92311	70	98661	8
84136	10	89172	8	90375	49	92329	70	98724	15
84161	10	89636	8	90376	22	92376	49	98964	15
84172	10	89660	8	90377	22	92398	54	99134-A	6
84336	15	89661	8	90378	21	92636	9	99333	30
84360	15	89772	8	90389	16	92661	9	99334-110	30, 40
84361	15	90010-6	29	90410	17	92699	50	99860-A	6
84362	15	90016-6	29	90413	52	92707	54	99872-A	6
84363	15	90018-6	29	90430	16	92708	50	COMMANDER1000	
84364	15	90024-6	29	90499	70	92709-65-8	54		32
84365	15	90032-6	29	90612-2V-110-B		92709-65-32	54	COMMANDER2000	
84372	15	90059-B	28, 29		27, 29	92709-100-8	54		32
84396	15	90061-8	29	90633	17	92709-100-32		COMMANDER3000	
84601	15	90062-11-SEAL		90637	17		54		32
84602	15		29	90638	17	92709-150-8	54	COMMANDER4000	
84603	15	90062-B	28	90924	17	92709-150-32			32
84604	15	90063-2V-110-B		90925	23		54	COMMANDER4000-X	
84605	15		27, 29	90927	17	92710	54		32
84636	10	90065	26, 29	90934	54	92712	54		
84661	10	90066-2V-110-B		90935	54	92732	50		
84721	15		27, 29	91000-A	70	92772	9		
84722	15	90066-B	28, 29	91002	70	93000	19		
84723	15	90066-B-SF	28	91008	70	93098	19		
84724	15	90067	26, 29	91009	70	93099	19		
84725	15	90068-2V-110-B		91010	70	93100	19		
84772	10		27, 29	91046-A	53	93101	19		
84961	15	90112-B	29	91049-32	53	93103	9		
84962	15	90128-4	29	91049-32-6	53	93211	12		
84963	15	90165-R	29	91049-128	53	93211-R	12		
84964	15	90166-B	29	91049-128-4	53	93253-E	12		
84965	15	90167-R	29	91050	53	93254-E	52		
85103	9	90168-B	29	91050-6	53	93350	11		
85113	9	90259	16	91051	53	93500	11		
85136	8	90262-36	14	91084	17	93503-E	12		
85161	8	90262-60	14	91120	59	93553-E	12		
85172	8	90262-72	14	91200	29	93636	9		
85200	20	90263	16	91207	20	93661	9		
85211	12	90263-36	14	91253-EE	12	93772	9		
85211-R	12	90263-60	14	91290	23	95102-R-KIT	7		
85212	12	90263-72	14	91334	20	95103-A	7		
85212-R	12	90264	16	91334-A	20	95136-A	7		
85215	9	90264-36	14	91335	21	95161-A	7		
85216	9	90264-60	14	91336	21	95172-A	7		
85253-E	12	90264-72	14	91337	21	95236-A	7		
85350	11	90265	16	91339	21	95261-A	7		
85500	11	90265-36	14	91339-01	21	95272-A	7		
85510	24	90265-60	14	91339-02	21	95336-A	7		
85510-YF	24	90265-72	14	91339-03	21	95361-A	7		
85511	17	90269	16	91339-04	21	95372-A	7		
85512-YF	24	90274	17	91339-05	21	95436-A	7		
85525	24	90279	16	91339-06	21	95461-A	7		
85525-YF	24	90289	16	91339-07	21	95472-A	7		
85530	24	90296	17	91339-08	21	95636	9		
85535-YF	24	90314	17	91339-09	21	95661	9		
85636	8	90328	16	91339-10	21	95772	9		
85661	8	90328-5/16	16	91339-11	21	96636	9		
85772	8	90331	17	91339-12	21	96661	9		
86103	7	90332	17	91339-13	21	96772	9		
86350	11	90333-R	16, 17	91339-14	21	97636	9		
86436	7	90333-UV	16	91339-15	21	97661	9		
86461	7	90335-R	16, 17	91339-16	21	97772	9		
86472	7	90336	17, 20	91339-17	21	98061	30		
86500	11	90336-10	15	91339-18	21	98061-C	30		
86536	7	90337	16, 17	91490	22	98061-SENSOR			
86561	7	90338	17	91503-EE	12		30		
86572	7	90339	17	91553-EE	12	98100	41		
86936	7	90340	17	91580-A	39	98210-A	40		
86961	7	90341	17, 20, 21	91580-B	39	98211-A	41		
86972	7	90354	17	91585	39	98230	41		
87350	9, 10, 11	90355	17	91585-B	39	98250	41		
87500	9, 10, 11	90356	17	91586	39	98251-E	12		
88136	8	90357	17	91587	39	98310	40		



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