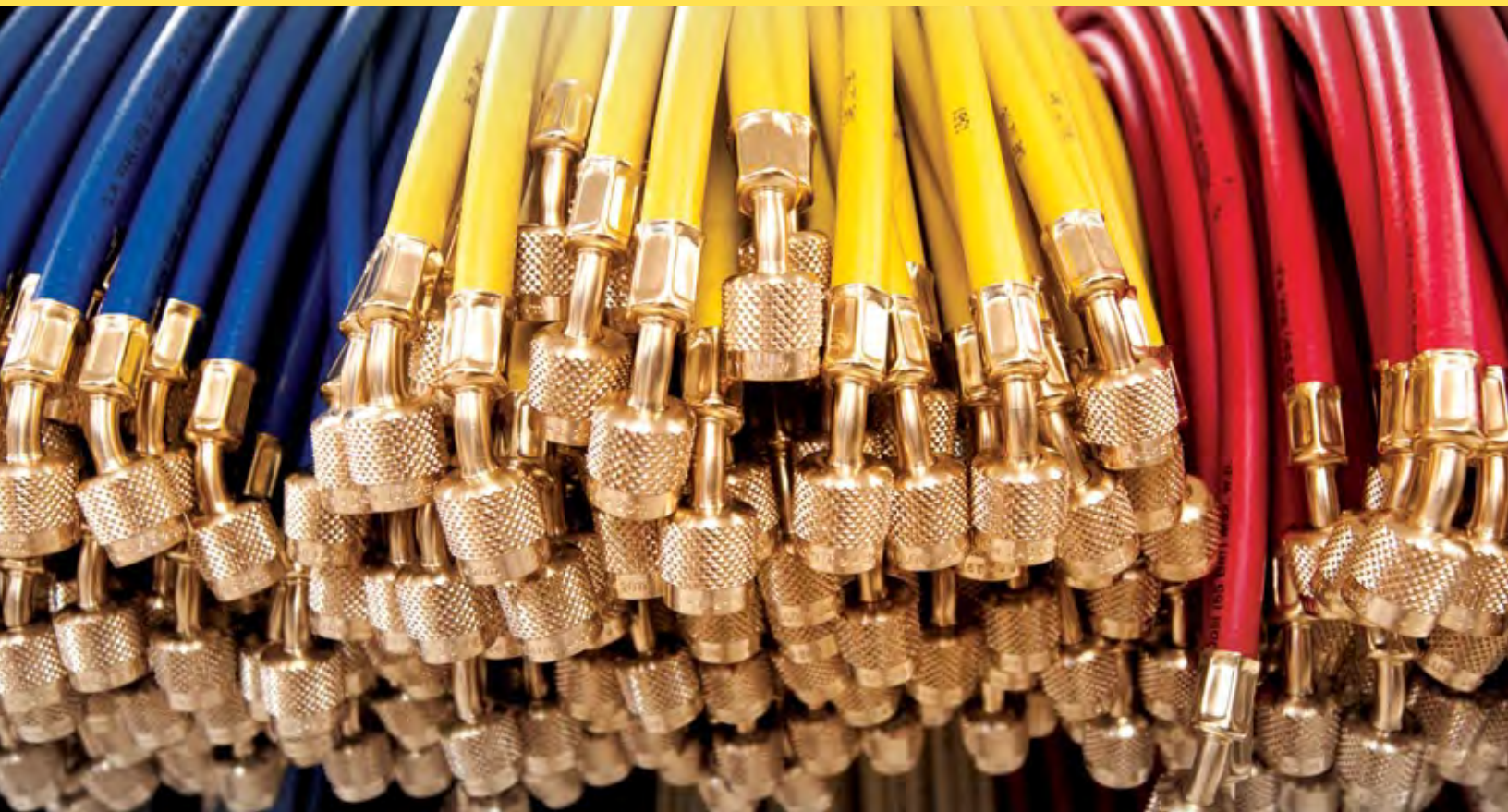
YELLOW JACKET

RITCHIE ENGINEERING COMPANY, INC.

HVAC&R SERVICE TOOLS

EDITION 62



All production photos in this catalog were taken at the Ritchie Engineering Co., Inc. manufacturing facility in Bloomington, MN, U.S.A.

For over 60 years, the YELLOW JACKET® name has been synonymous with craftsmanship and reliability. Ritchie Engineering is proud of this legacy and continues to provide not only the tools to get the job done, but the confidence to know it will get done right.

Whether you've been around as long as we have or you're still breaking in your first tool belt, you know you can trust YELLOW JACKET tools every time. Isn't it nice to have tools that work as hard as you do?

YELLOW JACKET
RITCHIE ENGINEERING

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REFRIGERANT RECOVERY SYSTEMS

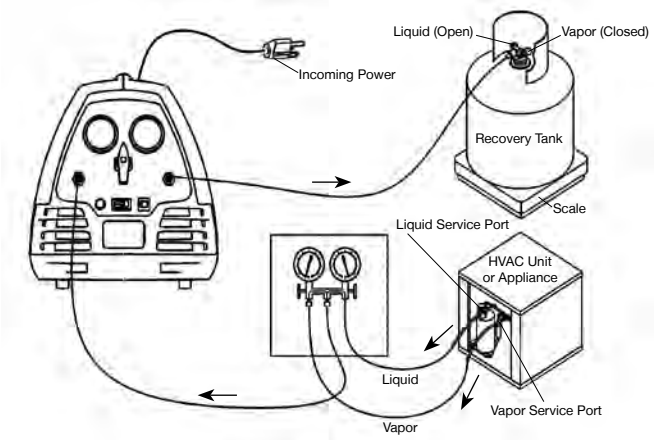
YELLOW JACKET®

RecoverXLT Refrigerant Recovery Machine

Fully automatic operation for fast recovery of Class III, IV and V refrigerants including R-410A, backed by the best warranty in the industry

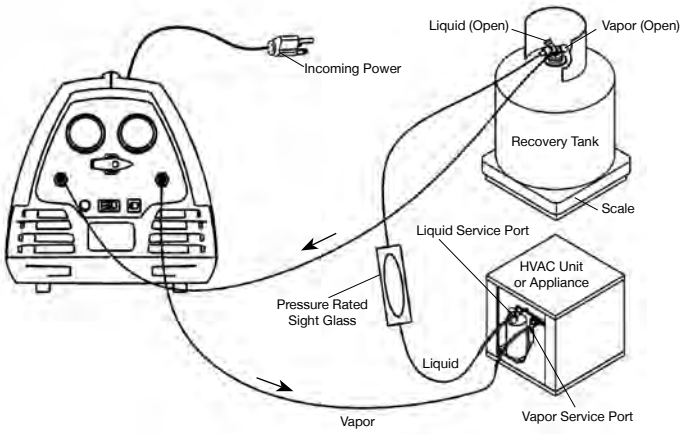
The CPR (Constant Pressure Regulator) valve automatically reduces the pressure of the refrigerant being recovered – regardless of which refrigerant – without slugging the compressor.

Turn the single control valve to “liquid” or “vapor” settings, and the machine will complete recovery while you work on other aspects of the job.



Liquid and Vapor Recovery Set Up

- Liquid recovery is the fastest method, but not all equipment can handle the process
- Vapor recovery is slower than liquid recovery, but is the most commonly used recovery method
- Liquid and vapor recovery are performed the same way, but liquid recovery requires a connection to the high side of the system



Push/Pull Recovery Set Up

- Quickly removes liquid refrigerant, but requires hose connection change to recover vapor refrigerant
- Works best when recovering more than 10 pounds of refrigerant
- Make sure system will allow a solid column of liquid to form, does not have a heat pump or reversing valve and does not have an accumulator

- Single valve control for easy changeover from liquid to vapor to purge
- Constant Pressure Regulator (CPR) valve regulates refrigerant to the compressor. Eliminates the need for technician to throttle the suction valve
- Advanced 1/2 hp, 3425 rpm oil-less compressor with precision valves manufactured in an ISO-9001 facility
- Recovers refrigerant and shuts off when unit reaches 13" of vacuum. Unit will automatically restart if system pressure rises
- Indicator signals “recovery complete”
- Quiet running with components nested to reduce vibration and noise. Oil-less compressor is inherently quiet
- Controls and gauges inset for protection and angled for easy access and viewing
- Senses back pressure from tank and shuts off automatically at 517 psi for safety
- Reusable mesh particulate filter inserts into suction port for protection. Simple cleaning eliminates replacement due to clogging
- “On-the-fly” purge with simple turn of a knob to remove residual refrigerant and help prevent cross-contamination
- High efficiency fan keeps air moving across condenser for cool running even in hot weather
- High strength HDPE case for lightweight and rugged use. Rounded corners help protect from nicks and scrapes
- Single high pressure safety switch - external circuit breaker
- Includes three-year compressor warranty
- Made in the USA
- Tested by UL to ARI 740-98

95760

Convenient cord storage

RecoverXLT REFRIGERANT RECOVERY MACHINE

UPC#	Description
95760	RecoverXLT 115V/60 Hz
95762	RecoverXLT with tank overfill switch 115/60 Hz
95763	RecoverXLT 230V/50 Hz (Euro and UK plug)
95765	RecoverXLT 110V/50 Hz (IEC 60309 plug)
95766	RecoverXLT 230V/50 Hz Euro plug (French)
95768	RecoverXLT 230V/50 Hz (AU and NZ plug)

RecoverX REFRIGERANT RECOVERY MACHINE

The RecoverX builds on the performance and success of the original YELLOW JACKET RecoverX Recovery Machine.

Cost-effective for smaller systems and push/pull applications.

- Maximum air flow and cool running even in high ambient temperatures. High efficiency fan keeps air moving across condenser
- High strength HDPE case for lightweight and rugged use. Rounded corners help protect you and your customers from nicks and scrapes
- Whisper-quiet 1/6 hp oil-filled reciprocating hermetic compressor charged with polyol ester oil. Oil drain port for easy maintenance
- Controls and gauges inset for protection and angled for easy access and viewing
- High pressure switch with automatic reset and external circuit breaker
- Made in the USA
- Tested by UL to ARI 740-95

UPC#	Description
95700	RecoverX 115V/60 Hz

FREQUENTLY ASKED QUESTIONS

1. How long has YELLOW JACKET® been manufacturing refrigerant recovery machines?

YELLOW JACKET began manufacturing refrigerant recovery machines in 1991.

2. What refrigerants can RecoverX and RecoverXLT Refrigerant Recovery Machines recover?

All YELLOW JACKET refrigerant recovery machines are tested by UL to either ARI 740-95 (RecoverX) or ARI 740-98 (RecoverXLT) and approved for medium (R-12, R-134a, R-401C, R-406A and R-500) and medium-high pressure refrigerants (R-22, R-401A, R-401B, R-402B, R-407C, R-407D, R-408A, R-409A, R-411A, R-411B, R-412A, R-502 and R-509). RecoverXLT is also approved for high-pressure refrigerants (R-402A, R-404A, R-407A, R-407B, R-410A and R-507).

3. What is auto purge and how does it work?

At the end of each cycle, several ounces of refrigerant can be left in the recovery machine to possibly contaminate the next job or be illegally vented. Many competitive recovery machines require switching hoses, turning the unit off and on, etc. The RecoverXLT can be quickly purged with a simple turn of the single control valve. In a few seconds, all residual refrigerant is purged into a recovery tank. Purging is completed without turning off the recovery unit.

4. Why do YELLOW JACKET recovery machines feature a built-in filter?

Every recovery machine requires an in-line filter to protect the machine against the particles and “gunk” that can be found in failed refrigeration systems. The RecoverX, RecoverXLT and R 100 incorporate a built-in 80-mesh filter that you can clean and replace, if necessary. The filter traps 150 micron particles and protects against the dirtiest systems to maximize service life. In case of a burn-out, an acid core filter/drier is mandatory (P/N 95014).

5. Can increased airflow benefit recovery cylinder pressure?

Yes. For reliable performance in high ambient temperatures, YELLOW JACKET machines are engineered with a larger condenser and more aggressive fan blade with a greater pitch. This allows the unit to run cooler and keeps the refrigerant cooler in the recovery cylinder.

6. Can I service a YELLOW JACKET system in the field?

Yes. The operation manual which comes with every unit includes a wide variety of information such as tips to speed recovery, troubleshooting and parts listings. On the side of every unit you’ll find hook-up instruction, a quick start guide and simple tips for troubleshooting. If needed, call 1-800-769-8370 and ask for technical service. Training DVD’s are available upon request by calling 1-800-769-8370 or visiting www.yellowjacket.com.

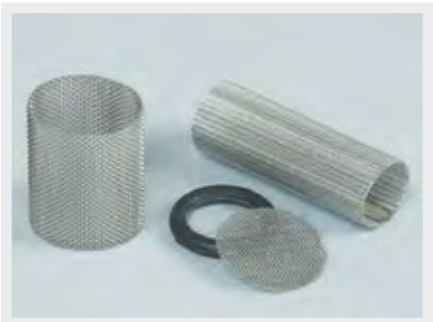
RECOVERY MACHINE COMPARISON CHART

Features	RecoverX #95700	RecoverXLT #95760/95762	RecoverXLT #95763/95766/95768	RecoverXLT #95765
Recovery capabilities	Vapor and push/pull	Vapor, liquid, push/pull	Vapor, liquid, push/pull	Vapor, liquid, push/pull
Compressor	1/6 hp oil-filled hermetic	1/2 hp oil-less	1/2 hp oil-less	1/2 hp oil-less
Weight	29.0 lbs. (13.15 kg)	32.6 lbs. (14.78 kg)	32.6 lbs. (14.78 kg)	32.6 lbs. (14.78 kg)
Size L x W x H inches Size L x W x H mm.	19.3 x 12.4 x 12.5 490 x 315 x 317	19.3 x 12.4 x 12.5 490 x 315 x 317	19.3 x 12.4 x 12.5 490 x 315 x 317	19.3 x 12.4 x 12.5 490 x 315 x 317
Refrigerant compatibility	12, 22, 134a, 407C, 500, 502, MP and blends	12, 22, 134a, 407C, 410A, 500, 502, HP, MP and blends	12, 22, 134a, 407C, 410A, 500, 502, HP, MP and blends	12, 22, 134a, 407C, 410A, 500, 502, HP, MP and blends
Volts/Hertz	115V/60 Hz	115V/60 Hz	230V/50 Hz	110V/50 Hz
Tank overfill sensor	No	95760 No / 95762 Yes	No	No
Low pressure shut-off sensor	No	Standard	Standard	No
Inlet mesh filter screen	Included	Included	Included	Included
Inlet filter dryer	Optional filter available for use on contaminated and burn-out systems; use a filter of adequate size (P/N 95014).			
Suction and discharge pressure gauges	Standard	Standard	Standard	Standard
Upgraded higher suction and discharge pressure gauges	No	Standard	Standard	Standard
Upgraded single higher pressure switch	No	Standard	Standard	Standard
External circuit breaker	Standard	Standard	Standard	Standard
Plug	U.S.	U.S.	95763 Euro and UK 95766 Euro 95768 AU and NZ	IEC 60309
Warranty	1 year parts and labor	1 year parts and labor; 3 years compressor	1 year parts and labor; 3 years compressor	1 year parts and labor; 3 years compressor
Certified to ARI standard	ARI 740-95	ARI 740-98	ARI 740-98	ARI 740-95
Testing agency	UL	UL	UL	UL
CUL listed	Yes	Yes	Yes	No
CE marked	No	No	Yes	Yes

Applicable ARI standard	740-95			740-98			740-98			740-95		
Recovery rating in lbs./min.	**Vapor**	**Push/Pull**	**Liquid**	**Vapor**	**Push/Pull**	**Liquid**	**Vapor**	**Push/Pull**	**Liquid**	**Vapor**	**Push/Pull**	**Liquid**
R-12	0.24	10.43	N/A	0.33	13.49	1.98	0.22	8.99	1.32	0.22	8.99	1.32
R-22	0.29	8.77	N/A	0.33	13.49	1.98	0.22	8.99	1.32	0.22	8.99	1.32
R-134a	0.20	9.33	N/A	0.33	13.49	1.98	0.22	8.99	1.32	0.22	8.99	1.32
R-410A	N/A	N/A	N/A	0.48	12.21	1.68	0.32	8.14	1.12	N/A	N/A	N/A
R-500	0.24	9.66	N/A	0.33	13.49	1.98	0.22	8.99	1.32	0.22	8.99	1.32
R-502	0.24	7.61	N/A	0.59	13.58	2.65	0.39	9.05	1.77	0.39	9.05	1.77
Recovery rating in kg./hr.*	**Vapor**	**Push/Pull**	**Liquid**	**Vapor**	**Push/Pull**	**Liquid**	**Vapor**	**Push/Pull**	**Liquid**	**Vapor**	**Push/Pull**	**Liquid**
R-12	6.60	283.80	N/A	9.00	367.20	54.00	6.00	244.80	36.00	6.00	244.80	36.00
R-22	7.80	238.80	N/A	9.00	367.20	54.00	6.00	244.80	36.00	6.00	244.80	36.00
R-134a	5.40	253.80	N/A	9.00	367.20	54.00	6.00	244.80	36.00	6.00	244.80	36.00
R-410A	N/A	N/A	N/A	13.20	332.40	45.60	8.80	221.60	30.40	N/A	N/A	N/A
R-500	6.60	262.80	N/A	9.00	367.20	54.00	6.00	244.80	36.00	6.00	244.80	36.00
R-502	6.60	207.00	N/A	16.20	369.70	72.00	10.80	246.40	48.00	10.80	246.40	48.00

*ARI tests are only one way to evaluate recovery speed. In other testing conditions the units can exhibit much higher performance rates. ARI rates are a "level field" comparison method.

PARTS FOR R 50A, R 60A, R 70A, R 100



Mesh particulate filter for YELLOW JACKET recovery machines remove particles to protect units. Easy to clean and reuse or replace.

UPC#	Description
95134	Screens R 70a Series (4 pak)
95136	Screens R 80a, R 100 Series (4 pak)
95139	Screens R 60 and R 60a Series (4 pak)
95141	Screens RST (4 pak)
95342	Replacement brass bulkhead fitting for R 60a and R 70a
95343	Replacement "O" ring for R 60a and R 70a (3 pak)

RECOVERY BURNOUT FILTER FOR DIRTY SYSTEMS

High capacity in-line filter drier removes moisture and oil breakdown products, as well as acid from burnt out systems. Attaches directly to refrigerant recovery system with a 1/4" female and a 1/4" male connection. UL and CSA listed.

UPC#	Description
95014	Recovery filter

SIGHT GLASS

Use with YELLOW JACKET RecoverX and RecoverXLT machines. Indicates when all liquid has been recovered so you can switch immediately to vapor cycle and speed up the recovery process. 1/4" flare x 1/4" female flare.

UPC#	Description
41145	Sight glass with 1/4" connections

THE TRAP SEPARATOR

High porosity filter effectively traps sealant, dye and lubricant so only pure refrigerant exits to your recovery equipment. Filter replacement is easy in less than five minutes.

UPC#	Description
38087	The Trap Separator – 1/4" flare fittings
38081	Replacement filter pak

RECOVERY MACHINE PARTS

UPC#	Description
95156	Circuit breaker (12 AMP)
95190	Capacitor (115V Machine)
95187	Relay (115V Machine)
95188	Shorting cap for umbilical cord
95210	Large cord strain relief bushing
95215	Power cord (U.S.)
95216	Rocker switch
95218	Oil-less compressor 115V/60 Hz
95248	Umbilical cord overfill sensor
95294	Fan clip
95325	High pressure switch
95338	Low pressure switch
95449	Compressor bracket grommet (5 pak)
95451	High pressure gauge
95452	Low pressure gauge
95453	Manifold assembly
95528	CPR valve
95455	Fan blade
95457	Replacement filter screen
95477	TOS LED strip assembly
95527	Solid state TOS board
95538	R 60 solid state TOS board

COMPRESSOR SERVICE PARTS FOR OIL-LESS MODELS

UPC#	Description
95121	Compressor kit for oil-less units
95122	Eccentric and bearing assembly for R 60/R 60a, R 70a, XLT
95124	Compressor service kit for R 100
95125	Eccentric and bearing assembly for R 100
95126	Compressor overhaul kit for R 100
95230	Head and valve plate assembly for oil-less machines
95269	Connecting rod for R 100 0.600 stroke
95287	Connecting rod for R 60a, R 70a and XLT 0.750 stroke

REFRIGERANT RECOVERY CYLINDERS

These gray and yellow 30 and 50 lb. cylinders feature "Y" valve for liquid/vapor, 400 psi rating and 3/4" plug for a float switch.

UPC#	Description
95002	30 lb. 400 psi cylinder DOT 400
95007	50 lb. 400 psi cylinder DOT 400
95012	30 lb. 400 psi cylinder DOT 400 with float switch
95013	50 lb. 400 psi cylinder DOT 400 with float switch

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SUPERVAC 6

YELLOW JACKET®

BULLET™ Vacuum Pump

A two-stage rotary vane oil-sealed pump that pulls down to 25 microns or better

The BULLET™ pulls down to 25 microns or better, protecting from contaminants and non-condensable gasses in the HVAC system, which can damage components, reduce efficiency and cause system failure.

- Wide mouth oil reservoir port for easier, cleaner filling. Doubles as pump exhaust; threaded to attach garden hose for exhausting to remote location
- Large oil sight glass for easy monitoring of oil level
- Large brass oil drain for easy access to fast oil changes
- Internal intake check valve to help prevent oil backup into the system during a power failure
- Intake filter screen keeps damaging particles from entering the pump
- Heavy-duty rotors and bearings
- Heavy-duty steel handle for well-balanced carrying
- Tethered port caps stay with the pump
- Stable base; wide-stance metal with rubber overlay
- Made in the USA

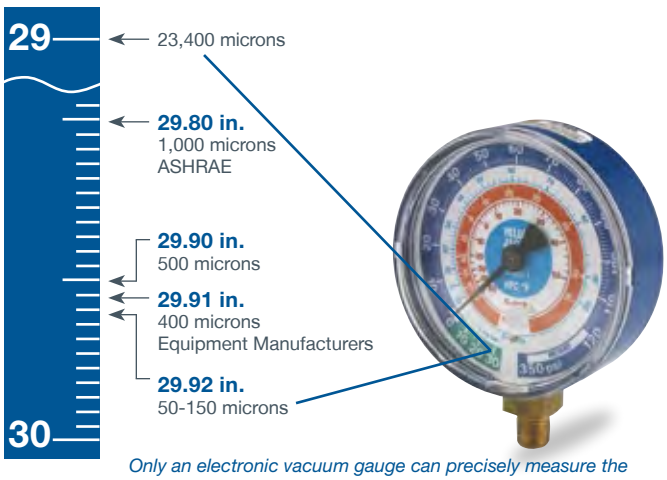
Domestic	Model 93603	Model 93605	Model 93600
Free air displacement	3.0 cfm	5.0 cfm	7.0 cfm
Number of stages	2-stage rotary vane	2-stage rotary vane	2-stage rotary vane
Field blankoff	25 microns	25 microns	25 microns
Intake	1/4" x 3/8" x 3/8"	1/4" x 3/8" x 3/8"	1/4" x 3/8" x 3/8"
Motor	1/2 hp - 1725 rpm	1/2 hp - 1725 rpm	1/2 hp - 1725 rpm
Thermal overload protection	Yes	Yes	Yes
Voltage (single phase)	115V/60 Hz	115V/60 Hz	115V/60 Hz
Power cord	6' - motor mounted switch - U.S. plug	6' - motor mounted switch - U.S. plug	6' - motor mounted switch - U.S. plug
Oil capacity	33.5 oz. (0.991 L)	30 oz. (0.9 L)	28 oz. (0.828 L)
Dimensions	16.25" L x 6.25" W x 8.25" H (41.3 cm x 15.9 cm x 21 cm)	16.25" L x 6.25" W x 8.25" H (41.3 cm x 15.9 cm x 21 cm)	16.25" L x 6.25" W x 8.25" H (41.3 cm x 15.9 cm x 21 cm)
Net weight	29.1 lbs. (13.2 kg)	30.0 lbs. (13.6 kg)	31.6 lbs. (14.3 kg)
Export	**EU/UK 93613 AU/NZ 93623**	**EU/UK 93615 AU/NZ 93625**	**EU/UK 93610 AU/NZ 93620**
Detachable IEC Cord type	EU/UK AU/NZ	EU/UK AU/NZ	EU/UK AU/NZ
Free air displacement	85/70 L/M	142/120 L/M	200/165 L/M
Motor CE	1/2 hp - 1725 rpm/1425 rpm	1/2 hp - 1725/1425 rpm	1/2 hp - 1725/1425 rpm
Voltage (dual phase)	115/230V / 50-60 Hz	115/230V / 50-60 Hz	115/230V / 50-60 Hz
Dimensions	17" L x 6.25" W x 8.25" H (43.2 cm x 15.9 cm x 21 cm)	17" L x 6.25" W x 8.25" H (43.2 cm x 15.9 cm x 21 cm)	17" L x 6.25" W x 8.25" H (43.2 cm x 15.9 cm x 21 cm)
Net weight	32.1 lbs (14.6 kg)	33 lbs (15 kg)	34.5 lbs (15.7 kg)

HOW TO MEASURE AN "ADEQUATE" VACUUM

Many contractors pull the refrigerant out and think the work is done. In reality, when you get to 29 inches of vacuum (the green zone on your gauge), you are only half finished. Once the recovery machine has done its work, it's time to finish off the job with a vacuum pump.

Standard Lo-Side Gauge

Shows vacuum in inches. A ±1% gauge would be accurate to ±7600 microns when calibrated at a full vacuum (which is generally not the case with this type of gauge).



Only an electronic vacuum gauge can precisely measure the level at which non-condensable gas is removed from system.

Why a Vacuum Pump?

ASHRAE recommends evacuation to below 1000 microns for moisture removal and below 500 microns after replacing a compressor. Some equipment manufacturers call for evacuation to 400 microns to ensure that harmful water vapor is removed from the system.

When you have water vapor in your system, the risk of icing up capillary tubing and expansion valves becomes much higher. A high quality vacuum pump will be able to take you down to 200-500 microns. With the system almost completely free from water vapor, you are ready to put the refrigerant back in the system. A thorough approach to evacuation ensures longer equipment life and reduced risk of problems.

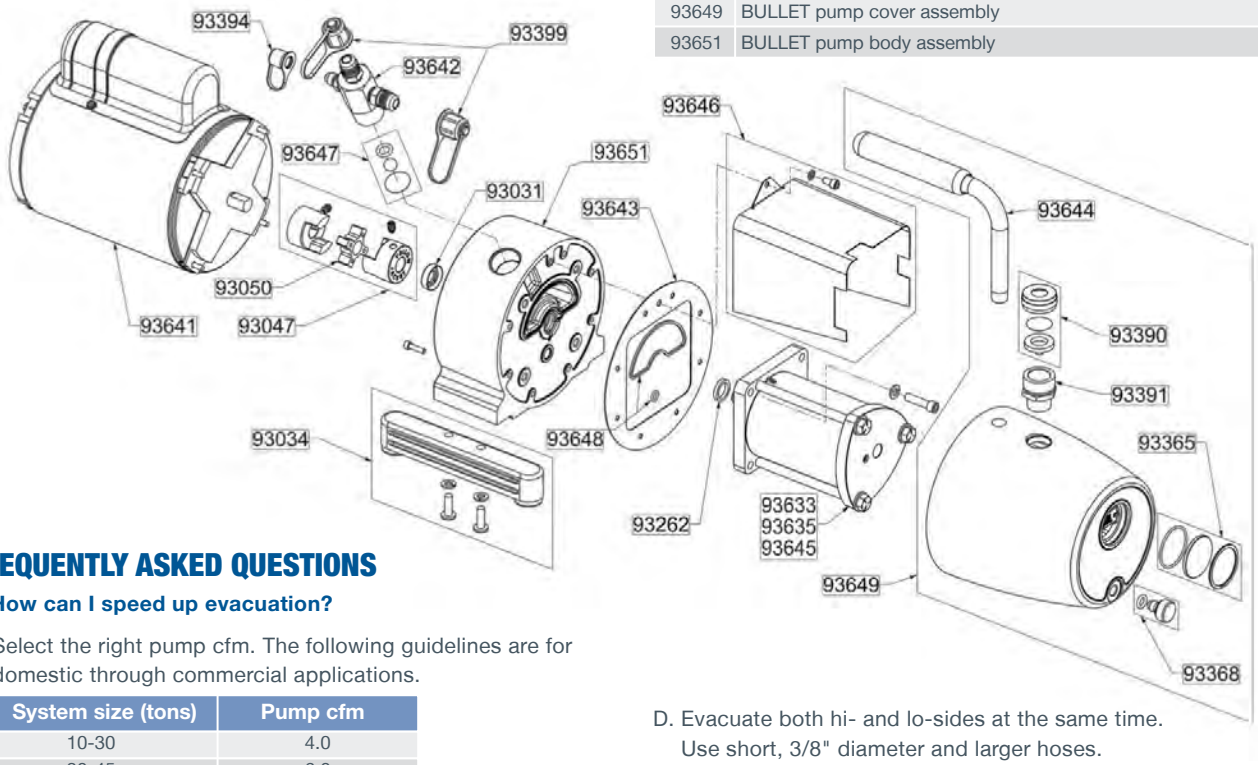
Use a Vacuum Gauge to Read Vacuum Down to 25 Microns

1000 microns equal only 0.039 inches of mercury, a measurement that cannot be made with a mechanical gauge, or determined by evacuation time or the sound of the pump. A popular tool that can measure vacuum at evacuation levels below 1000 microns is an electronic vacuum gauge.

The best place to measure vacuum is at the system, not at the pump. With a combination vacuum/charging valve, you can attach the electronic vacuum gauge directly to the system and isolate it from the pump, hoses and manifold for a true indication of the vacuum in the system. With a digital vacuum gauge, you can see the last evidence of moisture being removed and witness that the system has been dried out.

BULLET™ REPLACEMENT PARTS

BULLET™ replacement parts	
UPC#	**Description**
93031	Shaft seal
93034	Universal pump leg (1)
93047	Drive coupling (including spider)
93050	Coupling spider for 93047
93262	Cartridge locate ring
93365	Sight glass
93368	Oil drain
93390	Oil fill cap
93391	Oil fill fitting
93394	1/4" Flare cap and strap
93399	3/8" Flare cap and strap
93513	1/2 hp motor (115-230V / 50-60 Hz)
93633	BULLET 3 cfm (85 L/M) cartridge
93635	BULLET 5 cfm (142 L/M) cartridge
93641	1/2 hp Motor 115V/60HZ
93642	3/8", 3/8" and 1/4" Male flare intake fitting
93643	BULLET pump cover gasket
93644	BULLET pump handle
93645	BULLET 7 cfm (200 L/M) cartridge
93646	BULLET cartridge baffle
93647	BULLET anti-suckback assembly
93648	BULLET cartridge gaskets
93649	BULLET pump cover assembly
93651	BULLET pump body assembly



FREQUENTLY ASKED QUESTIONS

1. How can I speed up evacuation?

A. Select the right pump cfm. The following guidelines are for domestic through commercial applications.

System size (tons)	Pump cfm
10-30	4.0
30-45	6.0
40-50	7.0
45-60	8.0
60 and above	11.0

B. Use clean vacuum pump oil. Milky oil is water saturated and limits pump efficiency.

C. Remove valve cores from both high and low fittings with a vacuum/charge valve tool to reduce time through this orifice by at least 20 percent.

D. Evacuate both hi- and lo-sides at the same time. Use short, 3/8" diameter and larger hoses.

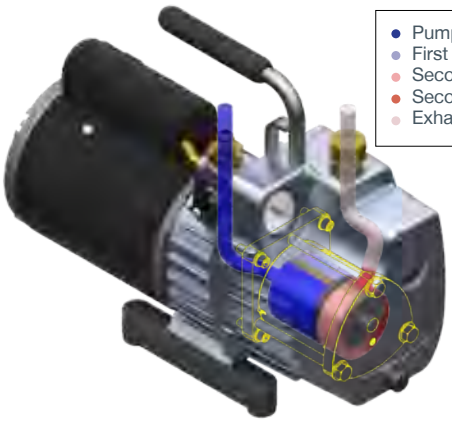
E. SuperEvac™ manifolds can reduce evacuation time by over 50-60 percent.

F. Use a heat gun.

2. Does extension cord length affect performance?

To ensure proper starting and running performance from your YELLOW JACKET pump, always use a minimum 12 gauge extension cord for lengths up to 100 feet. Extension cords over 100 feet are not recommended.

4, 6, 8, & 11 SuperEvac™ VACUUM PUMPS



- Pump and first stage intake
- First stage compression
- Second stage intake
- Second stage compression
- Exhaust to atmosphere

For increased efficiency, the first stage exhausts into the second stage similar to using two single stage pumps connected together.

The SuperEvac™ vacuum pump is a highly efficient, two-stage rotary vane oil-sealed pump field-rated at 15 microns or better.

- Isolation valve for oil changes without losing vacuum in the system
- Built-in vacuum indicator gauge
- Wide-mouth oil reservoir port for easier, cleaner filling. Doubles as pump exhaust—threaded to attach garden hose for exhausting to remote location
- Large oil sight glass for easy monitoring of oil level
- Large brass oil drain for easy access to fast oil changes
- Gas ballast valve keeps oil cleaner, longer during evacuation of wet systems
- Internal intake check valve to help prevent oil backup into the system during a power failure
- Intake filter screen keeps damaging particles from entering the pump
- Heavy duty rotors and bearings
- Heavy duty steel handle with lift hook for well-balanced carrying
- Tethered port caps stay with the pump
- Metal with rubber overlay base for stability
- Made in the USA

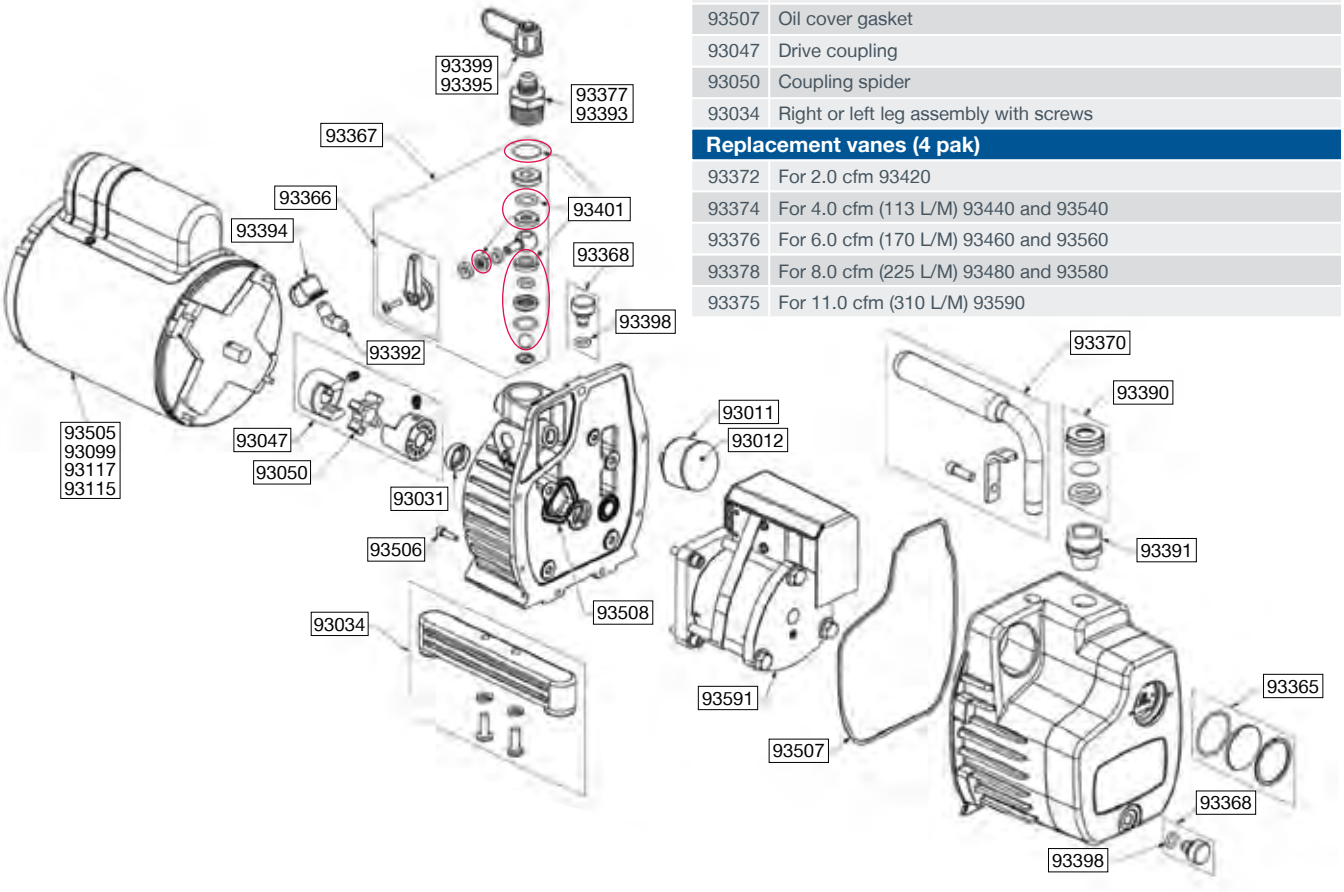
Domestic	Model 93540	Model 93560	Model 93580	Model 93590
Free air displacement	4.0 cfm	6.0 cfm	8.0 cfm	11.0 cfm
Number of stages	2-stage rotary vane	2-stage rotary vane	2-stage rotary vane	2-stage rotary vane
Field blankoff	15 microns	15 microns	15 microns	15 microns
Intake	1/4" and 3/8" Male flare	1/4" and 3/8" Male flare	1/4" and 1/2" Male flare	1/4" and 1/2" Male flare
Motor	1/2 hp - 1725 rpm	1/2 hp - 1725 rpm	1/2 hp - 1725 rpm	1/2 hp - 1725 rpm
Thermal overload protection	Yes	Yes	Yes	Yes
Voltage (single phase)	115V/60 Hz	115V/60 Hz	115V/60 Hz	115V/60 Hz
Power cord	6' - motor mounted switch	6' - motor mounted switch	6' - motor mounted switch	6' - motor mounted switch
Oil capacity	36 oz.	34 oz.	47 oz.	44 oz.
Dimensions	16" L x 6" W x 11.5" H (40.6 cm X 15.2 cm X 29.2 cm)	16" L x 6" W x 11.5" H (40.6 cm X 15.2 cm X 29.2 cm)	17.5" L x 6" W x 11.5" H (44.5 cm X 15.2 cm X 29.2 cm)	17.5" L x 6" W x 11.5" H (44.5 cm X 15.2 cm X 29.2 cm)
Net weight	30.3 lbs. (13.7 kg)	31.2 lbs. (14.2 kg)	32.5 lbs. (14.8 kg)	34.1 lbs. (15.4 kg)
Export	**Model 9354x**	**Model 9356x**	**Model 9358x**	**Model 9359x**
Free air displacement	113/95 L/M	170/142 L/M	225/190 L/M	310/260 L/M
Motor	1/2 hp - 1725/1425 rpm	1/2 hp - 1725/1425 rpm	1/2 hp - 1725/1425 rpm	1/2 hp - 1725/1425 rpm
Motor voltage (dual phase)	115/230V / 50-60 Hz	115/230V / 50-60 Hz	115/230V / 50-60 Hz	115/230V / 50-60 Hz
Dimensions	16.75" L x 6" W x 11.5" H (42.5 cm X 15.2 cm X 29.2 cm)	16.75" L x 6" W x 11.5" H (42.5 cm X 15.2 cm X 29.2 cm)	18.25" L x 6" W x 11.5" H (46.4 cm X 15.2 cm X 29.2 cm)	18.25" L x 6" W x 11.5" H (46.4 cm X 15.2 cm X 29.2 cm)
Net weight	33.2 lbs. (15.1 kg)	33.9 lbs. (15.4 kg)	35.5 lbs. (16.1 kg)	37.0 lbs. (16.8 kg)
Model # US plug Factory voltage setting	**93542** (95 L/M at 50 Hz) (113 L/M at 60 Hz) 230V	**93562** (142 L/M at 50 Hz) (170 L/M at 60 Hz) 230V	**93582** (190 L/M at 50 Hz) (225 L/M at 60 Hz) 230V	**93592** (260 L/M at 50 Hz) (310 L/M at 60 Hz) 230V
Model # Euro plug CE Factory voltage setting	**93543** (95 L/M at 50 Hz) 230V	**93563** (142 L/M at 50 Hz) 230V	**93583** (260 L/M at 50 Hz) 230V	**93593** (260 L/M at 50 Hz) 230V (EU/UK plug)
Model # CE AU/NZ plug Factory voltage setting	**93544** (95 L/M at 50 Hz) (113 L/M at 60 Hz) 230V	**93564** (142 L/M at 50 Hz) (170 L/M at 60 Hz) 230V	**93584** (190 L/M at 50 Hz) (225 L/M at 60 Hz) 230V	**93595** (260 L/M at 50 Hz) (310 L/M at 60 Hz) 230V
Model # UK Plug CE Factory voltage setting	**93547** (95 L/M at 50 Hz) 230V	**93567** (142 L/M at 50 Hz) 230V	**93587** (190 L/M at 50 Hz) 230V	**93593** (260 L/M at 50 Hz) 230V (EU/UK plug)

Will not work with NH_3.

SuperEvac™ REPLACEMENT PARTS

SuperEvac™ replacement parts	
UPC#	2005-present 4, 6, 8, 11 cfm
Pump oil cover	
93370	Handle assembly
93390	Oil fill cap with seal
93391	Oil fill fitting
93365	Oil sight glass
93368	Drain/gas ballast plug

SuperEvac™ replacement parts	
UPC#	2005-present 4, 6, 8, 11 cfm
Vacuum cartridge	
93541	4 cfm cartridge complete
93561	6 cfm cartridge complete
93581	8 cfm cartridge complete
93591	11 cfm cartridge complete
Mounting body	
93031	Shaft seal
93011	0-30" Vacuum indicator
93012	Vacuum gauge lens
93368	Drain/gas ballast plug
93398	“O” ring for gas ballast/drain plug
93392	1/4" Male flare x 1/8" NPT fitting
93377	4 and 6 cfm intake fitting (3/8" Male flare x 3/4" NPT)
93393	8 and 11 cfm intake fitting (1/2" Male flare x 3/4" NPT)
93394	1/4" Flare cap
93399	4 and 6 cfm 3/8" flare cap
93395	8 and 11 cfm 1/2" flare cap
93366	Blank-off handle
93367	Complete parts for blank-off handle
93401	Blank-off rebuild kit
93508	Intake port gasket
Motor	
93513	1/2 hp motor 115-230V / 50-60 Hz
93505	1/2 hp - 115V/60 Hz* (includes parts listed below)
93099	8/32 x 7-1/4" Motor bolts (4)
93117	Rocker style switch
93115	6' Long cord
Final assembly parts	
93506	8/32 x 5/8" Socket head screws
93507	Oil cover gasket
93047	Drive coupling
93050	Coupling spider
93034	Right or left leg assembly with screws
Replacement vanes (4 pak)	
93372	For 2.0 cfm 93420
93374	For 4.0 cfm (113 L/M) 93440 and 93540
93376	For 6.0 cfm (170 L/M) 93460 and 93560
93378	For 8.0 cfm (225 L/M) 93480 and 93580
93375	For 11.0 cfm (310 L/M) 93590



SUPEREVAC™ PUMP FOR AMMONIA SYSTEMS

Designed and built to the same quality specifications as other SUPEREVAC™ pumps. Features a pump exhaust that doubles as an oil fill port.

	Model 93530	Model 93533
Free air displacement	8.0 cfm	190 L/M (50 Hz)
Number of stages	2-stage rotary vane	2-stage rotary vane
Field blankoff	15 microns	15 microns
Intake	1/2" Male pipe	1/2" Male pipe
Motor	1/2 hp – 1725 rpm	1/2 hp – 1425 rpm (50 Hz)
Thermal overload	Yes	Yes
Voltage	115V/60 Hz	115/230V 50 Hz*
Power cord	6' – rocker style switch	6' – rocker style switch
Oil capacity	47 oz.	47 oz.
Dimensions	17.5" L x 6.0" W x 11.5" H	18.25" L x 6.0" W x 11.5" H
Net weight	36.2 lbs. (16.4 kg)	38.8 lbs. (17.6 kg)

* The 93533 is factory wired for 230V. It can also be configured for 115V. Remove the motor switch plate and make connections as shown on the motor label.

BELT DRIVE VACUUM PUMPS
(0.88-17.7 cfm) by Hyvac Products

These two-stage pumps are lab rated at 0.1 micron and feature large oil capacity, vented exhaust, standard belt guards, motor capacitors and automatic overload protection. Optional exhaust filters available.

UPC#	80200	80210	80220	80230	80240
cfm - free air (L/M)	0.88 (25)	2.79 (79)	5.6 (160)	10.6 (310)	17.7 (500)
Ultimate vacuum (lab)	0.1 micron	0.1 micron	0.1 micron	0.1 micron	0.1 micron
Stages	2	2	2	2	2
Motor hp (ODP)	1/4	1/3	1/2	1	1-1/2
Voltage (single phase)	115V/60 Hz	115V/60 Hz	115V/60 Hz	115V/60 Hz	115V/60 Hz
Pump rpm	580	525	525	525	550
Oil capacity	1 quart	1-1/2 quart	2.5 quarts	3.5 quarts	4.5 quarts
Gas ballast	Standard	Standard	Standard	Standard	Standard
Intake O.D.	9/16"	7/8"	1-1/4"	1-5/16"	1-13/16"
Dimensions (L x W x H)	15" x 10" x 11"	18" x 12" x 11"	18" x 13" x 16"	18" x 16" x 19"	21" x 20" x 20"
Shipping weight	70 lbs.	110 lbs.	135 lbs.	154 lbs.	242 lbs.

For special electrical requirements, contact factory. Some 50 Hz available for export.

VACUUM PUMP OIL

YELLOW JACKET vacuum pump oil is specially refined and formulated for extremely low vapor pressure and high pump efficiency at all temperature conditions to help keep your pump running for years.

MSDS sheet on website

UPC#	Description
93091	Pint of vacuum oil - 24 per case
93092	Quart of vacuum oil - 12 per case
93096	Gallon of vacuum oil - 6 per case
93095	55 gallon drum

VACUUM PUMP ADAPTER

Convert a 3/8" or 1/2" vacuum pump intake into flare and Acme compatible fittings.

UPC#	Description
36018	1/2" Pump adapter with 1/4" flare and 1/2" Acme Male fittings
19015	1/2" Replacement gaskets for 36018 (10 pak)
36019	3/8" Pump adapter with 1/4" flare and 1/2" Acme Male fittings
19011	3/8" Replacement gaskets for 36019 (10 pak)

VACUUM PUMP INTAKE REDUCER ADAPTER

UPC#	Description
19030	Rubber gasket "O" ring (10 pak) for 19130 and 19133
19130	3/8" Female fl. x 1/4" Male fl. adapter
19131	1/2" Female fl. x 3/8" Male fl. adapter
19132	1/2" Female fl. x 1/4" Male fl. adapter
19133	3/8" Female fl. x 1/2" Male fl. adapter
19160	1/2" Female fl. x 1/2" Male Acme adapter
93058	Rubber gasket "O" ring for 19131, 19132 and 19160

OIL EXHAUST FILTER

Screws onto the pump exhaust to eliminate oil mist. Use on SUPEREVAC™ and BULLET™ pumps.

UPC#	Description
93386	Exhaust filter
93387	Replacement element

HEAT GUN

600° and 1000°F settings. Shockproof and tough housing is durable and lightweight. Use for:

- Coil defrosting
- Faster vacuums
- Drying out condensation in motors, clutches, etc.

Kits include gun, adapters and case.

UPC#	Description
69092	Heat gun kit 115V - UL, CSA
69093	Heat gun kit 230V - Euro plug, CE

SuperEvac™ EVACUATION MANIFOLDS

SuperEvac™ manifolds are engineered as system components for the SuperEvac pumps to help decrease vacuum time by over 50 percent and improve micron readings. Mounts with 1/2" or 3/8" Female flare quick coupler and provides easy connections for two 3/8" vacuum hoses.

- Flutterless™ gauge
- Non-restricting, full flow valves for fast vacuum
- Convenient 1/4 turn full flow
- Extra port for electronic gauge
- Now includes step-down adapter to connect to 3/8" pump intake

3/8" Female flare coupler	
UPC#	**Description**
93851	Single valve with 1/4" Schrader mount with 3/8" Female flare
93852	Single valve with lo-side gauge mount with 3/8" Female flare
93853	Two valves with lo-side gauge mount with 3/8" Female flare
19011	CH-11 gasket (10 pak)
19131	Pump step-down adapter - 1/2" Female flare to 3/8" Male flare

1/2" Female flare coupler	
UPC#	**Description**
93850	Single valve with 1/4" Schrader mount with 1/2" Female flare
93855	Single valve with lo-side gauge mount with 1/2" Female flare
93860	Two valves with lo-side gauge mount with 1/2" Female flare
19015	CH-80 gasket (10-pak)
19027	1/2" Quad ring (10 pak)
19133	Pump step-up adapter - 3/8" Female flare to 1/2" Male flare

Additional replacement parts	
UPC#	**Description**
19030	3/8" "O" ring (10 pak)
19096	Ball valve replacement handles (2 pak)
40272	1/4" Male flare with Schrader for 93850
41139	3/8" Male flare x 1/4" NPT Male fitting
49002	Blue compound °F gauge
77921	1/4" Flare x 1/8" NPT Male elbow
93211	3/8" Flare cap with gasket
93854	1/2" Flare connector

SuperEvac™ EVACUATION SYSTEMS I, II & III

All system components are available separately, but system pricing makes I, II and III attractive buys.

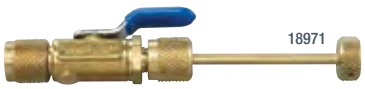
All systems include a two-valve manifold and two 3/8" vacuum hoses for a fast vacuum. Vacuum valves, included with all systems, allow core removal and system isolation. This combination reduces vacuum time by over 50 percent compared to using a regular 1/4" manifold and evacuating through only one side.

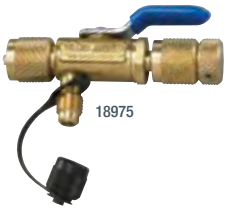
System II adds 69075 electronic gauge and standard ratchet wrench to the basic System I.

System III adds a 6 or 8 cfm SuperEvac™ pump to System II.

UPC# for 1/2"	Description	UPC# for 3/8"
93865	System I: 2-valve manifold, 2 16248 48" vacuum hoses, 2 valves	93866
93875	System II: all of above plus 69075 electronic vacuum gauge and ratchet wrench	93876
93886 (8 cfm)	System III: all of above plus a SuperEvac pump	93885 (6 cfm)
	CH-11 gasket (10 pak)	19011
19015	CH-80 gasket (10 pak)	

1/4" AND 5/16" BALL VALVE 4-IN-1 VACUUM/CHARGE VALVE & CORE TOOL





This versatile tool for the lo- or hi-side of a system does four jobs:

1. **Vacuum valve.** Extra 1/4" side port on 18975 to attach electronic micron vacuum gauge right at system for greater accuracy. Working pressure of 800 psi.
2. **Core removal access.** Lets you evacuate and charge through an unrestricted line for increased speed and higher vacuum.
3. **Core replacement.**
4. **Recovery valve.** Core removal speeds recovery process.

Made in the USA

For more details see page 32.

UPC#	Description
18971	1/4" Vacuum/charge valve without side port
18975	1/4" Vacuum/charge valve with side port
18981	5/16" Vacuum/charge valve without side port
18985	5/16" Vacuum/charge valve with side port

SuperEvac™ LCD VACUUM GAUGE
Full range from atmosphere to 1 micron

The SuperEvac™ LCD vacuum gauge combines thermocouple sensor technology with advanced electronics for precise readings and repeatability not found with thermistor sensors or analog meters.

Thermocouple technology has long been proven in laboratory and precision industrial instrumentation for sensing the deep vacuum range. Thermocouple sensors are factory calibrated and exhibit few of the electronic variances of thermistor sensors found in many other electronic gauges. Durable molded case with storage for sensor, cable and brass connector.

Specifications

Response time: 3 seconds
Calibration: Automatic
Warm up: 3 seconds
Sensor cable: 5.5' (167 cm) coiled
Sensor connection: 1/4" Male flare
Maximum pressure: To avoid sensor damage, do not exceed 5 psig
Operating temperature range: 32˚ to 120˚F (0˚ to 49˚C)
Display: 0.5" LCD with battery check
Automatic shut-off: Yes
Power: D cell battery, 70 hours continuous battery life
Dimensions: 9" x 12.25" x 2.37" (230 mm x 310 mm x 60 mm)
Accuracy: ± 20% of reading

UPC#	Description
69075	SuperEvac™ LCD vacuum gauge full range complete in case
69067	Optional ball valve to add to sensor 1/8" NPT Female x 1/4" Female flare
69071	Optional brass connector 1/4" Female flare x 1/4" Female flare
69073	Replacement sensor for 69070, 69075
19110	Optional coupler to add to sensor 1/8" NPT Female x 1/4" Female flare
69058	Replacement cord

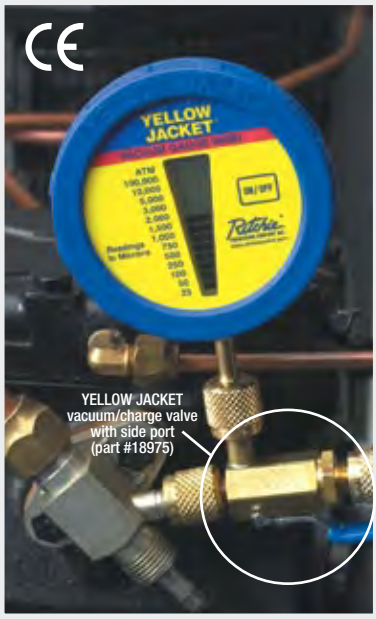
Thermocouple sensor features:

- No adjustments or warm-up. Stays calibrated after on/off switching and long evacuations
- Automatic battery compensation
- Automatic ambient temperature compensation
- Replacement sensor requires no calibration

LCD gauge features:

- Automatic off 20 minutes after power up and no change
- Normal handling and jarring will not affect the LCD reading
- Case protects electronic circuitry and sensor
- Calibration standards traceable to NIST
- Precision circuitry controls sensor and translates sensor input into micron readings
- Made in the USA

DIGITAL LCD ECONOMY VACUUM GAUGE



Connect to the YELLOW JACKET SuperEvac™ Vacuum Pump, in line with a tee fitting or directly to the system with YELLOW JACKET core removal tool 18975.

This product is protected by one or more of U.S. Patent Number: 6,779,350; 6,832,491; 7,073,346; 7,310,965; and 7,428,822

The digital LCD economy vacuum gauge indicates air and moisture have been removed from the system. Track down the 14 level bargraph from atmosphere to 25 microns to know that the system is clean and the vacuum pump is performing properly. Packaged complete with 9V alkaline battery and hanging hook.

- Unique thermal conductivity sensor automatically compensates for temperature with no calibration
- Simple On/Off controls
- Easy-to-clean sensor handles 450 psi positive pressure
- Rugged contractor-grade construction with tough ABS housing and solid state circuitry for accuracy
- Automatic battery saver shuts gauge off after 20 minutes with no reading changes
- Low battery indicator
- Calibration standards traceable to NIST
- Patented technology
- Made in the USA

To keep the 69080 vacuum gauge accurate, it is best to avoid oil contamination. Keep the sensor vertical whenever possible and connect the gauge directly to the system, away from the pump.

UPC#	Description
69080	Digital LCD vacuum gauge with battery, hook and pouch
69081	Replacement soft-sided protective case
69079	Replacement battery door and screw
69095	Tee fitting

DELUXE LED VACUUM GAUGE
AC powered

Professional laboratory type instrument with 0.56" high bright LED readout is 100 percent automatic. Complete unit includes aluminum LED display unit, sensor with ball valve, cable, brass connector and carrying case.

- Thermocouple sensor technology for precise and repeatable accuracy
- Improved software expands sensing range from atmospheric pressure to 1 micron
- Calibration standards traceable to NIST
- Accuracy: ±15% of reading
- Made in the USA

Specifications

Response time: 3 seconds	**Storage temperature range:** -30˚ to 160˚F (-34˚ to 65˚C)
Calibration: Automatic	**Power:** 115V/60 Hz (230V available)
Warm up: 3 seconds	**Power cord:** 6'
Sensor cable: 9' (274 cm)	**Dimensions:** 4.25" x 5.5" x 1.5" (108 mm x 140 mm x 38 mm)
Sensor connection: 1/4" Male flare with isolation valve	**Carrying case:** 12.25" x 8" x 3.5" (310 mm x 203 mm x 89 mm)
Operating temperature range: -30˚ to 150˚F (-34˚ to 65˚C)	

UPC#	Description
69060	LED vacuum gauge kit complete with case, 115V
69063	LED vacuum gauge kit complete with case, 230V
69064	Sensor for 69060 and 69063
69065	9' sensor cable for above
69066	Carrying/storage case
69067	Ball valve for sensor 1/8" NPT Female x 1/4" Male flare
69071	1/4" Female flare connector
15006	Optional vibration isolation hose

MECHANICAL VACUUM GAUGES

Mechanical vacuum gauges for system installation. Bourdon tube type gauge. 1/8" NPT Male bottom fitting. CAUTION: Handle gauges carefully to assure full service life. See page 53 for further details.

UPC#	Description
69044	3 1/8" Vacuum gauge 0-30 inHg/760-0 Torr (mm)
69045	3 1/8" Vacuum gauge European version (1000-0 millibar/30-0 inch)

DIGITAL VACUUM GAUGE
Seven units of vacuum for confidence

This easy-to-use gauge shows that air and moisture have been removed from the system. Simple push of a button changes the display readout between 7 units of measurement. **Each displays from atmosphere to 10 microns (bargraph indication above 25000 microns) of vacuum to let you know that your vacuum pump is clean and performing properly.** If the sensor gets dirty, simply plug a new sensor into the gauge, run through a quick calibration process and be back on the job within minutes.

This product is protected by one or more of U.S. Patent Number: 6,779,350; 6,832,491; 7,073,346; 7,310,965; and 7,428,822

- Unique patented thermal conductivity sensor automatically compensates for temperature
- Replaceable, cleanable, plug-in sensor (Part #69087) handles 450 psi positive pressure
- Displays seven different units of vacuum (microns, milliTorr, Torr, millimeters of mercury, millibar, kiloPascal and Pascal)
- 12" coiled sensor cord stretches to 24" for easy reach, connectivity and readability of display
- Low battery indicator
- Automatic shut-off after 20 minutes
- Calibration standards traceable to NIST
- 32° to 122°F (0° to 50°C) operating temperature range
- 14 oz. (392 g) with battery
- Approximately 25 hours continuous battery life
- Accuracy ±20% of reading
- Made in the USA

UPC#	Description
69086	Hand-held vacuum gauge with fabric carry pouch
69087	Replacement sensor
69088	Replacement cable for original version - not detachable
40819	Replacement cable for new version - detachable
69091	Replacement fabric pouch

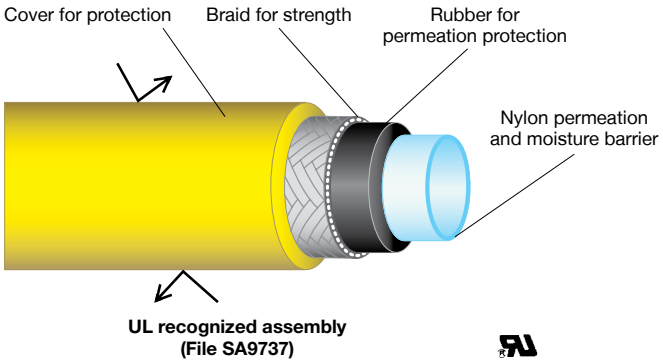
YELLOW JACKET®
TEST AND CHARGING MANIFOLD
Ritchie
ENGINEERING COMPANY INC.
Date Code 2011
500 psi
800 psi
RETARD
R-404A
R-22
SAE J2196

YELLOW JACKET®

PLUS II™ Charging Hoses

Double barrier protection for CFC, HCFC and HFC refrigerants

- **1/4" *PLUS II*™ hoses are UL recognized assemblies (File SA9737)**
- The nylon permeation barrier meets SAE requirements J2196 for CFC, HCFC and HFC refrigerants
- The moisture barrier provides improved resistance to moisture migration which contaminates expensive refrigerant
- 1/4" RYB *PLUS II*™ hoses are rated for 4000 psi (276 bar) minimum burst and 800 psi (55 bar) maximum working pressure and an operating temperature of -20° to 180°F (-28.8° to 82.2°C)
- Minimum bend radius: 6" (152 mm)
- Made in the USA



PLUS II™ hoses with UL assemblies are available in the following configurations:

- 1/4" with 1/4" flare fittings
- 1/4" with compact ball valve end
- 1/4" with SealRight™ low loss anti-blow back fitting
- 1/4" for 5/16" flare (1/2 – 20 thread) service ports for R-410A
- 1/4" with FlexFlow™ valve

PLUS II™ hose - standard 1/4" flare fittings				
Length	**Yellow**	**Blue**	**Red**	**3 pak***
12"	21012	21212	21612	-
24"	21024	21224	21624	-
36"	21036	21236	21636	21983
48'	21048	21248	21648	21984
60"	21060	21260	21660	21985
72"	21072	21272	21672	21986
96"	21096	21296	21696	21988
10'	21110	21310	21710	-
12'	21112	21312	21712	-
25'	21125	21325	21725	-
50'	21150	21350	21750	-
75'	21175	21375	21775	-
100'	21200	21399	21799	-
Multi-length				21982 two 36", one 60" 21981 two 36", one 72"

* 3 pak includes a red, yellow and blue hose.

Replacement parts	
UPC#	**Description**
19020	Replacement gasket (10 pak)
19302	"Adjust-a-Valve" opener (10 pak)

PLUS II™ 1/4" HOSE
With compact ball valve end

- Metal handle at end of hose fits tight areas and traps all the gas
- Full flow valve
- Uses standard gasket and valve opener
- Recommended for R-410A
- Made in the USA

UL recognized assemblies (File SA9737)

Compact ball valve end					
Length	Yellow	Blue	Red	3 pak	Black
36"	29036	29236	29636	29983	–
48"	29048	29248	29648	29984	–
60"	29060	29260	29660	29985	29595
72"	29072	29272	29672	29986	–
96"	29096	29296	29696	29988	–
10'	29110	29310	29710	–	–
12'	29112	29312	29712	–	–
25'	29125	29325	29725	–	–
50'	29150	29350	29750	–	–
75'	29175	29375	29775	–	–
100'	29199	29399	29799	–	–

Replacement parts	
UPC#	Description
19020	Replacement gasket (10 pak)
19302	"Adjust-a-Valve" opener (10 pak)

PLUS II™ 1/4" HOSE
With FlexFlow™ valve

- Valve handle position shows when valve is opened or closed
- Metal handle and smaller ergonomic valve with zero restriction for maximum flow
- Flexible length of hose between valve and fitting makes access to tight areas easier
- Recommended for R-410A
- Made in the USA

UL recognized assemblies (File SA9737)

FlexFlow™ valve 8" from angle end				
Length	Yellow	Blue	Red	3 pak
36"	25036	25236	25636	25983
48"	25048	25248	25648	25984
60"	25060	25260	25660	25985
72"	25072	25272	25672	25986
96"	25096	25296	25696	25988
10'	25110	25310	25710	–
12'	25112	25312	25712	–
25'	25125	25325	25725	–
50'	25150	25350	25750	–
75'	25175	25375	25775	–
100'	25199	25399	25799	–

Replacement parts	
UPC#	Description
19020	Replacement gasket (10 pak)
19302	"Adjust-a-Valve" opener (10 pak)

PLUS II™ 1/4" HOSE With SealRight™
low loss anti-blow back fitting

UL recognized assemblies (File SA9737)

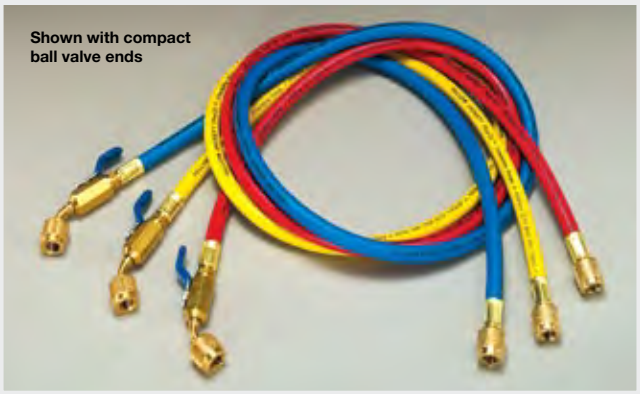
- Low loss anti-blow back SealRight fitting immediately traps refrigerant in the hose when disconnected, helping meet non-venting regulations and prevent finger burns
- 45° end for easy installation in tight areas
- Gaskets resist deterioration from existing CFC, HCFC and HFC refrigerants and oils
- Available with SealRight fittings on both ends
- **For R-410A, order the *PLUS II*™ hose with compact ball valve**
- Made in the USA

45° SealRight fitting at one end				
Length	Yellow	Blue	Red	3 pak
12"	22012	22212	22612	–
24"	22024	22224	22624	–
36"	22036	22236	22636	22983
48"	22048	22248	22648	22984
60"	22060	22260	22660	22985
72"	22072	22272	22672	22986
96"	22096	22296	22696	22988
10'	22110	22310	22710	–
12'	22112	22312	22712	–
25'	22125	22325	22725	–
50'	22150	22350	22750	–
75'	22175	22375	22775	–
100'	22200	22399	22799	–

UPC#	Multi-length 3 pak
22981	Two 36" RB, one 72" Y
22982	Two 36" RB, one 60" Y

Replacement parts	
UPC#	Description
19020	1/4" and 5/16" Replacement gasket (10 pak)
19037	SealRight "O" ring (10 pak)
19038	Plug and gasket
19039	Nut and clip
19040	SealRight repair kit with valve, gasket, plug, spring and two "O" rings
19041	Complete kit includes 19038, 19039 and 19040

PLUS II™ 1/4" HOSE For 5/16" flare (1/2 – 20 thread) service ports for R-410A



UL recognized assemblies (File SA9737)

- Available with standard fittings or compact ball valve
- Compatible with both POE and PVE oils
- Made in the USA

PLUS II™ hose with 1/4" (7/16 – 20) Female flare on manifold connection and 5/16" (1/2 – 20) Female flare angled on service end			
Standard fitting			
Length	**Yellow**	**Blue**	**Red**
36"	21403	21423	21463
60"	21405	21425	21465
72"	21406	21426	21466

For use with R-410A tanks with 1/4" fittings *Yellow *PLUS II*™ hose with standard 1/4" (7/16 – 20) flare fittings	
Length	**3 pak**
36"	21483 (21036*, 21423, 21463)
60"	21485 (21060*, 21425, 21465)
72"	21486 (21072*, 21426, 21466)

PLUS II™ hose with 5/16" (1/2 – 20) Female flare on manifold connection and 5/16" (1/2 – 20) Female flare angled on service end				
Standard fitting				
Length	**Yellow**	**Blue**	**Red**	**3 pak**
36"	21503	21523	21563	21583
60"	21505	21525	21565	21585
72"	21506	21526	21566	21586
Compact ball valve (R&B 1/4" x 5/16") (Y 1/4" x 1/4")				
Length	**Yellow**	**Blue**	**Red**	
36"	29403	29423	29463	
60"	29405	29425	29465	
72"	29406	29426	29466	

For use with R-410A tanks with 1/4" fittings *Yellow *PLUS II*™ hose with 1/4" (7/16 – 20) compact ball valve fittings	
Length	**3 pak**
36"	29483 (29036*, 29423, 29463)
60"	29485 (29060*, 29425, 29465)
72"	29486 (29072*, 29426, 29466)

Compact ball valve (RYB 5/16" x 5/16")				
Length	**Yellow**	**Blue**	**Red**	**3 pak**
36"	29003	29203	29603	29993
60"	29005	29205	29605	29995
72"	29006	29206	29606	29996

Replacement parts	
UPC#	**Description**
19020	1/4" and 5/16" Replacement gasket (10 pak)
19302	"Adjust-a-Valve" opener (10 pak)

9" FlexFlow™ AND LOW LOSS ADAPTER HOSES

UL recognized assemblies (File SA9737) (Valves SA10088) (except 25802 and 26002)

- Easy retrofit of existing *PLUS II*™ hoses with ball valve capabilities
- Flexible hose between valve and fitting for handling in tight areas
- Operating temperature -20° to 180°F (-28.8° to 82.2°C)*/**
- 800 psi working pressure***
- Minimum bend radius: 8" (203 mm)
- Made in the USA

Compact ball valve assemblies	
UPC#	**Description**
29001	1/4" Yellow ball valve adapter
29201	1/4" Blue ball valve adapter
29601	1/4" Red ball valve adapter
29980	29001, 29201, 29601 (3 pak)
93843	1/4" Compact ball valve – 45°
93842	1/4" Compact ball valve – 45° (3 pak)

FlexFlow™ assemblies	
UPC#	**Description**
25002	1/4" Yellow FlexFlow adapter
25202	1/4" Blue FlexFlow adapter
25602	1/4" Red FlexFlow adapter
25980	25002, 25202, 25602 (3 pak)
25802	1/4" Heavy duty FlexFlow adapter*
26002	3/8" Heavy duty FlexFlow adapter*/***
26202	Yellow standard "B" FlexFlow adapter**/***
27002	Acme 1/2" Yellow FlexFlow adapter
19095	Set of 2 handles and screws

*25802 and 26002: Operating temperature -22° to 176°F (-30° to 80°C)
**26202: Operating temperature -20° to 200°F (-28.8° to 93.3°C)
***26002 and 26202: 3000 psi (207 bar) burst and 600 psi (41 bar) working pressures

Replacement parts	
UPC#	**Description**
19011	3/8" Replacement gasket (10 pak)
19020	1/4" Replacement gasket (10 pak)
19302	"Adjust-a-Valve" opener (10 pak)

Underwriters Laboratories Inc. Registered Component Mark – applies to all standard 1/4" *PLUS II*™ and 1/4" RYB FlexFlow™ hoses on pages 21-23.

PLUS II™ 3/8" "B" CHARGING HOSE

PLUS II™ features in a larger volume hose for fast, high vacuum or charging.

- 3000 psi (207 bar) minimum burst, 600 psi (41 bar) maximum working pressure
- Operating temperature -20° to 180°F (-28.8° to 82.2°C)
- Minimum bend radius: 6" (152 mm)
- Large selection of fittings available
- Made in the USA

Replacement parts	
UPC#	Description
19011	3/8" Replacement gasket (10 pak)

Common selections						Other selections				
Length	3/8" Str. fl. x 3/8" Str. fl.				3/8" fl. x FlexFlow	3/8" Str. fl. x 3/8" 45°			3/8" Str. fl. x 3/8" 90°	1/4" Str. fl. x 1/4" 45°
	Yellow		Blue	Red		Yellow	Blue	Red		
36"	14536	B36	27836	28036	26236	18136	28236	28436	20036	20436
48"	14548	B48	27848	28048	26248	18148	28248	28448	20048	20448
60"	14560	B60	27860	28060	26260	18160	28260	28460	20060	20460
72"	14572	B72	27872	28072	26272	18172	28272	28472	20072	20472
96"	14596	B96	27896	28096	26296	18196	28296	28496	20096	20496
10'	14610	B120	27910	28110	26310	18210	28310	28510	20110	20510
12'	14612	B144	27912	28112	26312	18212	28312	28512	20112	20512
25'	14625	B300	27925	28125	26325	18225	28325	28525	20125	20525
50'	14650	B600	27950	28150	26350	18250	28350	28550	20150	20550
75'	14675	B900	27975	28175	26375	18275	28375	28575	20175	20575
100'	14699	B1200	27999	28199	26399	18299	28399	28599	20199	20599

PLUS II™ 1/4" HEAVY DUTY CHARGING HOSE

Heavy duty construction for substantially increased service life.

- Flexibility for all-weather easy handling
- Pulls 75 micron vacuum or better on 36" hose
- 4000 psi (276 bar) minimum burst, 800 psi (55 bar) maximum working pressure
- Operating temperature -22° to 176°F (- 30° to 80°C)
- Minimum bend radius: 6" (152 mm)
- Made in the USA

Replacement parts	
UPC#	Description
19020	Replacement gasket (10 pak)
19302	"Adjust-a-Valve" opener (10 pak)

Common selections					Other selections			
Length	HCA hose Str. x angle		Hose with FlexFlow™	Hose with ball valve	HCL hose Str. x 90°		HCS hose Str. x Str.	
12"	15012	HCA-12"	–	–	15212	HCL-12"	15412	HCS-12"
24"	15024	HCA-24"	–	–	15224	HCL-24"	15424	HCS-24"
36"	15036	HCA-36"	25836	29836	15236	HCL-36"	15436	HCS-36"
48"	15048	HCA-48"	25848	29848	15248	HCL-48"	15448	HCS-48"
60"	15060	HCA-60"	25860	29860	15260	HCL-60"	15460	HCS-60"
72"	15072	HCA-72"	25872	29872	15272	HCL-72"	15472	HCS-72"
96"	15096	HCA-96"	25896	29896	15296	HCL-96"	15496	HCS-96"
10'	15110	HCA-120"	25910	29910	Black only. Longer lengths available. Please specify.			
12'	15112	HCA-144"	25912	29912				
25'	15125	HCA-300"	25925	29925				
50'	15150	HCA-600"	25950	29950				
75'	15175	HCA-900"	25975	29975				
100'	15199	HCA-1200"	25999	29999				

PLUS II™ 3/8" HEAVY DUTY COMBINATION CHARGING/VACUUM HOSE

Pulls a vacuum much faster than the 1/4" hose.

- Operating temperature -22° to 176°F (- 30° to 80°C)
- 3000 psi (207 bar) minimum burst, 600 psi (41 bar) maximum working pressure
- Minimum bend radius: 8" (203 mm)
- Made in the USA

Replacement parts	
UPC#	Description
19020	1/4" Replacement gasket (10 pak)
19011	3/8" Replacement gasket (10 pak)
19302	"Adjust-a-Valve" opener (10 pak)

Common selections				Other selections					
Length	3/8" Str. fl. x 3/8" Str. fl.		3/8" Str. fl. x FlexFlow™	3/8" fl. x 3/8" 45°	3/8" fl. x 3/8" 90°	3/8" fl. x 1/4" 45°		1/4" fl. x 1/4" 45°
36"	15636	BC-36"	26036	19636	19836	16236	BCA-36"	20236
48"	15648	BC-48"	26048	19648	19848	16248	BCA-48"	20248
60"	15660	BC-60"	26060	19660	19860	16260	BCA-60"	20260
72"	15672	BC-72"	26072	19672	19872	16272	BCA-72"	20272
96"	15696	BC-96"	26096	19696	19896	16296	BCA-96"	20296
10'	15710	BC-120"	26110	19710	19910	Longer lengths available. Please specify. Longer than 8' not recommended for evacuation.		20310
12'	15712	BC-144"	26112	19712	19912			20312
25'	15725	BC-300"	26125	19725	19925			20325
50'	15750	BC-600"	26150	19750	19950			20350
75'	15775	BC-900"	26175	19775	19975			20375
100'	15799	BC-1200"	26199	19799	19999			20399

PLUS II™ 1/2" AND 5/8" HEAVY DUTY COMBINATION CHARGING/ VACUUM HOSE

Heavy duty construction with *PLUS II*™ barrier technology reduces permeation and vacuum loss. Large I.D. reduces vacuum time substantially over 1/4" or 3/8" hose.

- Pull a more complete vacuum
- Faster refrigerant transfer
- Faster charging on large systems
- 3000 psi (207 bar) minimum burst, 600 psi (41 bar) maximum working pressure
- Operating temperature -22° to 176°F (-30° to 80°C)
- Other fittings available on request
- Minimum bend radius: 10" (254 mm)
- Made in the USA

Replacement parts	
UPC#	Description
19015	1/2" and 5/8" Replacement gaskets
19020	1/4" Replacement gasket (10 pak)
19011	3/8" Replacement gasket (10 pak)
19302	"Adjust-a-Valve" opener (10 pak)

Common selections					Other selections					
Length	"C" 1/2" fl. x 1/2" fl.		"D" 5/8" fl. x 5/8" fl.		"CA" 1/4" angle end x 1/2" fl.		"DA" 1/4" angle end x 5/8" fl.		1/2" fl. x 3/8" fl.	3/8" fl. x 3/8" fl.
36"	15836	C-36"	16036	D-36"	16436	CA-36	16636	DA-36	19236	20636
48"	15848	C-48"	16048	D-48"	16448	CA-48	16648	DA-48	19248	20648
60"	15860	C-60"	16060	D-60"	16460	CA-60	16660	DA-60	19260	20660
72"	15872	C-72"	16072	D-72"	16472	CA-72	16672	DA-72	19272	20672
96"	15896	C-96"	16096	D-96"	16496	CA-96	16696	DA-96	19296	20696
10'	15910	C-120"	16110	D-120"	36" hose will pull to 25 microns and lower. Hoses longer than 8' not recommended for evacuation.				19310	20710
12'	15912	C-144"	16112	D-144"					19312	20712
25'	15925	C-300"	16125	D-300"					19325	20725
50'	15950	C-600"	16150	D-600"					19350	20750

Black only. Longer lengths available. Specify type, length and fitting combination.

PLUS II™ 3/4" HEAVY DUTY CHARGING HOSE

Large 3/4" I.D. designed to save time in charging or evacuation of centrifugals and other large systems.

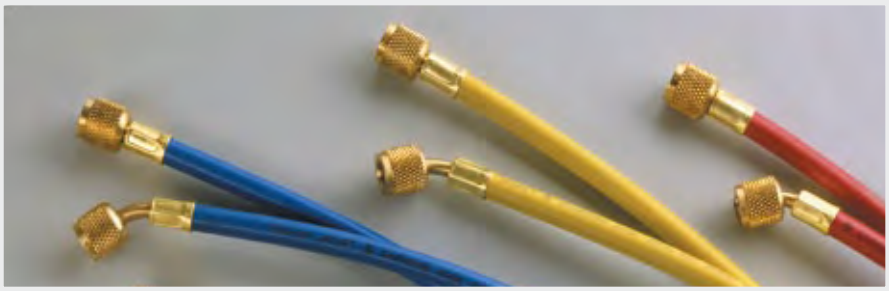
- Constructed for heavy duty use with most refrigerants
- 3000 psi (207 bar) minimum burst, 600 psi (41 bar) maximum working pressure
- Available with steel 3/4" Female, 3/4" Male flares, 3/4" Male pipe or hex fittings
- Operating temperature -20° to 200°F (-28.8° to 93.3°C)
- Minimum bend radius: 12" (305 mm)
- Not for use with NH_3

Length	3/4" fl. x 3/4" fl. – "O" ring seal	3/4" hex x 3/4" hex copper gasket seal
12"	18412 E-12"	20812
24"	18424 E-24"	20824
36"	18436 E-36"	20836
48"	18448 E-48"	20848
60"	18460 E-60"	20860
72"	18472 E-72"	20872
96"	18496 E-96"	20896
10'	18510 E-120"	20910
12'	18512 E-144"	20912
25'	18525 E-300"	20925
50'	18550 E-600"	20950

Replacement parts

UPC#	Description
19012	3/4" "O" ring
59655	3/4" Copper gasket

ORIGINAL 1/4" CHARGING HOSES



The YELLOW JACKET original charging hose has been the standard of the industry for 60 years.

- Specially formulated rubber tube resists most refrigerants and assures long work life
- Blow-off groove channels refrigerant out of the front of the nut to help prevent spray back
- Hose cover pin-pricked to resist bubbling and bursting
- Individual hose inspection
- 2500 psi (172 bar) minimum burst, 500 psi (34 bar) maximum working pressure
- Operating temperature -40° to 180°F (-40° to 82.2°C)
- Minimum bend radius: 6" (152 mm)
- 6" to 100' lengths in yellow, red and blue. Longer lengths are available upon request

Replacement parts

UPC#	Description/Quantity
19010	1/4" Gasket (6 pak) Valve depressor (3 pak)
19020	Replacement gasket (10 pak)
19302	"Adjust-a-Valve" opener (10 pak)

1/4" Straight x 1/4" 45° angle fitting

Length	Yellow		Blue		Red		3 pak
12"	11012	HA12Y	11212	HA12B	11612	HA12R	–
24"	11024	HA24Y	11224	HA24B	11624	HA24R	–
36"	11036	HA36Y	11236	HA36B	11636	HA36R	11983
48"	11048	HA48Y	11248	HA48B	11648	HA48R	11984
60"	11060	HA60Y	11260	HA60B	11660	HA60R	11985
72"	11072	HA72Y	11272	HA72B	11672	HA72R	11986
96"	11096	HA96Y	11296	HA96B	11696	HA96R	11988
10'	11110	HA120Y	11310	HA120B	11710	HA120R	–
12'	11112	HA144Y	11312	HA144B	11712	HA144R	–
25'	11125	HA300Y	11325	HA300B	11725	HA300R	–
50'	11150	HA600Y	11350	HA600B	11750	HA600R	–
75'	11175	HA900Y	11375	HA900B	11775	HA900R	–
100'	11200	HA1200Y	11399	HA1200B	11799	HA1200R	–

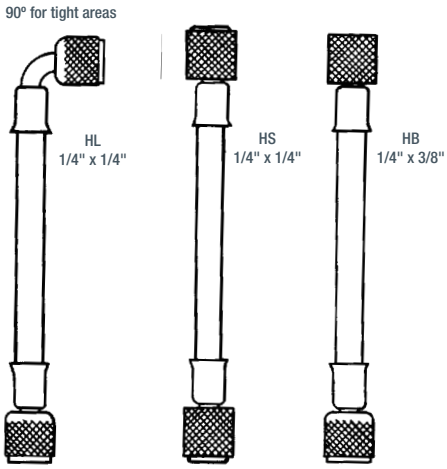
NOTE: Not all hose products shown are stocked; many are made-to-order.

SPECIAL 1/4" ORIGINAL CHARGING HOSES

YELLOW JACKET 1/4" yellow charging hoses with special fittings include straight, 3/8" and 90° fittings. Red and blue hoses also available.

Length	1/4" fl. x 1/4" 90° fl.		1/4" fl. x 1/4" fl.		1/4" fl. x 3/8" fl.	
36"	12036	HL36	13036	HS36	14036	HB36
48"	12048	HL48	13048	HS48	14048	HB48
60"	12060	HL60	13060	HS60	14060	HB60
72"	12072	HL72	13072	HS72	14072	HB72

Longer lengths available. Please specify.



Replacement parts

UPC#	Description/Quantity
19010	1/4" Gasket (6 pak) and valve depressor (3 pak)
19020	Replacement gasket (10 pak)
19302	"Adjust-a-Valve" opener (10 pak)

HOSE COMPARISON CHART

1/4" Flexible hoses		3/8" Flexible hoses	1/2" and 5/8" Flexible hoses
Easily connects to 1/4" Male flare access fitting on system		Evacuates and charges faster than 1/4" hose	Evacuates and charges faster than 1/4" hose Allows you to pull a deeper vacuum More efficient job of removing moisture and contaminants from the system
***PLUS II*™ 1/4" Charging hose (SealRight,™ FlexFlow and ball valve ends)**	**Original 1/4" Charging hose**	***PLUS II*™ 3/8" Charging hose**	***PLUS II*™ 1/2" and 5/8" Charging hose**
Adjust-a-Valve™ valve core depressor easily opens all out-of-tolerance Schrader valves (SealRight hoses offer different technology) *PLUS II*™ hoses offer double barrier protection Nylon layer for permeation, braid for strength, and outer cover for protection Fully UL recognized assemblies (File SA9737)	All-weather flexible Dependable Adjust-a-Valve™ valve core depressor easily opens all out-of-tolerance Schrader valves	*PLUS II*™ hoses with double barrier protection	*PLUS II*™ hoses with double barrier protection Large I.D. reduces vacuum time substantially over 1/4" or 3/8" hose Faster refrigerant transfer and faster charging on large systems Wide selection of fittings are available
Temp: -20° to 180°F (-28.8° to 82.2°C)	**Temp:** -40° to 180°F (-40° to 82.2°C)	**Temp:** -20° to 180°F (-28.8° to 82.2°C)	**Temp:** -22° to 176°F (-30° to 80°C)
Burst: 4000 psi (276 bar) minimum	**Burst:** 2500 psi (172 bar) minimum	**Burst:** 3000 psi (207 bar) minimum	**Burst:** 3000 psi (207 bar) minimum
Working: 800 psi (55 bar) maximum	**Working:** 500 psi (34 bar) maximum	**Working:** 600 psi (41 bar) maximum	**Working:** 600 psi (41 bar) maximum
Safety factor: 5 to 1	**Safety factor:** 5 to 1	**Safety factor:** 5 to 1	**Safety factor:** 5 to 1
Available lengths: 12 inches to 100 feet	**Available lengths:** 6 inches to 100 feet	**Available lengths:** 12 inches to 100 feet	**Available lengths:** 12 inches to 100 feet

The "**Adjust-a-Valve**" valve core depressor easily opens out-of-tolerance Schrader valves. Simply adjust height with needle nose pliers. Designed for repeat usage; replacement is convenient.

Fittings available for 1/4" original and *PLUS II*™ hoses

Type	Str.	45°	90°
1/8" Female flare	■		
3/16" Female flare	■	■	■
1/4" Female flare	■	■	■
1/4" Female SealRight™	■	■	■
3/8" Female flare	■	■	■
5/16" Female flare		■	
1/4" Male flare	■		
1/8" NPT Male	■		
1/4" NPT Male	■		
1/2" Female Acme	■	■	■
14 mm Male	■		

Not all hose and fitting combinations are listed in this catalog. Ask for specifics.

Inspect your hoses on a regular basis.

Since 1964, YELLOW JACKET 1/4" charging hoses have "year of manufacture" coded or listed on the rim of the nut. Prior to 2006, a series of I's, X's, O's, A's, B's or C's indicated the year. Since mid-2006, the actual year of manufacture has been used. ***If your hoses are more than five years old, we recommend that you replace them.***

6	1964	4 BBBB	1997
1	1970	3 BBB	1998
6 IIIIII	1971	2 BB	1999
1 I	1976	1 B	2000
6 XXXXXX	1977	6 CCCCCC	2001
1 X	1982	5 CCCCC	2002
6 OOOOOO	1983	4 CCCC	2003
1 O	1988	3 CCC	2004
6 AAAAAA	1989	2 CC	2005
1 A	1994	1 C or 2006	2006
6 BBBBBB	1995	2007	2007
5 BBBBB	1996		

All after 2007 are stamped with year of mfg.

Ounces of liquid held per foot of hose at 80° F

Hose type	R-12	R-22	R-134a	R-404A	R-407C	R-410A	R-502
1/4" Original	0.36	0.33	0.33	0.29	0.31	0.29	0.33
1/4" *PLUS II*™	0.36	0.33	0.33	0.29	0.31	0.29	0.33
1/4" Heavy duty	0.34	0.31	0.32	0.27	0.30	0.28	0.32
3/8" *PLUS II*™	0.85	0.77	0.78	0.67	0.73	0.68	0.78
3/8" Heavy duty	0.85	0.77	0.78	0.67	0.73	0.68	0.78
1/2" Heavy duty	1.85	1.68	1.70	1.47	1.60	1.49	1.71
3/4" Heavy duty	3.89	3.53	3.58	3.09	3.37	3.13	3.60

AMMONIA CHARGING HOSE

Designed with steel quick couplers at both ends. Features include:

- Regular CH20 gaskets for 1/4" hoses (19010, 19020). CH11 gaskets for 3/8" hoses (19011)
- 1/4" and 3/8" – 2500 psi (172 bar) minimum burst, 500 psi (34 bar) maximum working pressure
- 1/4" operating temperature -20° to 176°F (-28.8° to 80°C) and minimum bend radius: 6" (152 mm)
- 3/8" operating temperature -22° to 176°F (-30° to 80°C) and minimum bend radius: 8" (203 mm)
- Made in the USA

1/4" Str. fl. x 1/4" 45°			3/8" Str. fl. both ends	
UPC#	Part#	Length	UPC#	Part#
16848	NHA-48"	48"	19448	NBC-48"
16872	NHA-72"	72"	19472	NBC-72"
16896	NHA-96"	96"	19496	NBC-96"
16910	NHA-120"	10'	19510	NBC-120"
16912	NHA-144"	12'	19512	NBC-144"

Steel half union ammonia fittings	
UPC#	Description
16801	1/4" Male fl. x 1/4" NPT Male Str.
16802	1/4" Male fl. x 1/4" NPT Male 90°
16803	3/8" Male fl. x 1/4" NPT Male

NH_3 manifold on page 46.

FUEL OIL ASSEMBLY HOSES

Reinforced hose designed for quick pump to nozzle connection and oil burner connections.

- Flexible to absorb vibration and swelling while providing positive cut-off
- 4000 psi (276 bar) minimum burst and 800 psi (55 bar) maximum working pressure
- Operating temperature -20° to 180°F (-28.8° to 82.2°C)
- Minimum bend radius: 6" (152 mm)
- Made in the USA

UPC#	Length	Description
78041	12"	3/16" Female flare x 3/16" Female flare Pump to nozzle connector
78042	12"	1/4" Female flare x 1/4" Female flare Pump to nozzle connector
78112	12"	1/8" NPT Female swivel x 1/8" NPT Male Pump to nozzle connector or gauge to pump
78043	18"	3/16" Female flare x 3/16" Female flare Pump to nozzle connector
78044	18"	1/4" Female flare x 1/4" Female flare Pump to nozzle connector

Longer lengths available.

OIL PUMP VIBRATION ELIMINATOR

Reinforced rubber hose helps eliminate noise and vibration when installed in a heating system.

- 3000 psi (207 bar) minimum burst, 600 psi (41 bar) maximum working pressure
- Operating temperature -20° to 180°F (-28.8° to 82.2°C)
- Minimum bend radius: 6" (152 mm)

UPC#	Length	Description
78012	12"	3/8" Male flare x 1/4" NPT Male oil burner connector

CYLINDER VALVE HOSES
With finger tight drum fitting

Designed for finger tight operation on 125 lb. and 145 lb. refrigerant cylinders. Gaskets seal without wrenches.

UPC#	Description
19020	Replacement gasket for 1/4" and 1/2" Acme hose (10 pak)
18001	Cylinder gasket (10 pak)

Use cylinder valve adapters only. See page 33.

UPC#	L.	Part#	Type	Fittings	Burst pressure	Working pressure	Operating temp.	Min. bend radius
18612	12"	CVX-12	1/4" Heavy duty	1/4" Male flare x 3/4" NPS	4000 psi (276 bar)	800 psi (55 bar)	-22 to 176 (-30° to 80°C)	6" (152 mm)
18912	12"	CVY-12	3/8" Heavy duty	3/8" Male flare x 3/4" NPS	3000 psi (207 bar)	600 psi (41 bar)	-22 to 176 (-30° to 80°C)	8" (203 mm)
18072	72"	CVH-72	1/4" Original	1/4" Female flare x 3/4" NPS	2500 psi (172 bar)	500 psi (34 bar)	-20 to 180 (-28.8° to 82.2°C)	6" (152 mm)
18372	72"	CVB-72	3/8" Standard	3/8" Female flare x 3/4" NPS	3000 psi (207 bar)	600 psi (41 bar)	-20 to 200 (-28.8° to 93.3°C)	6" (152 mm)

HIGH PRESSURE CONTROL HOSE
For HFC, HCFC and CFC refrigerants

The YELLOW JACKET® pressure control hose is constructed of a thermoplastic polymer inner tube and cover. This new material eliminates the vibration problems that are present in copper capillary tube installations.

The higher temperature ratings of this thermoplastic to 266° F eliminate the failures caused by maximum load conditions on rubber type pressure control hoses.

Between the inner tube and the cover, the hose is reinforced with a polyester braid of high tensile strength with high modulus, giving it the ability to withstand higher pressures.

Available in any combination of 1/4" or 3/8" brass SAE flare straight or 90° angle fittings. Hex nuts are steel and finished with black zinc. Copper gaskets provide the best possible seal.

- Improved permeation characteristics. R-134a permeation tested at: 0.188 oz./ft./yr. 0.0118 lb./ft./yr 17.6 gr./m./yr.
- Results with other refrigerants will also show superior performance characteristics
- For use with most HFCs such as R-134a, R-404A, R-407A, R-407B, R-407C, R-410A and R-507, and HCFC such as R-22
- Usable oil types include polyol ester, alkylbenzene and mineral oils.

Specifications

I.D.: .156" (4.0 mm)
O.D.: .325" (8.2 mm)
Working pressure: 800 psi, 55 bar, 5.5 MPa
Burst pressure: 4000 psi, 276 bar, 27.6 MPa
Minimum temperature: -49° F (-44° C)
Maximum temperature: 266° F (130° C)
Minimum bend radius: 4" (102 mm)

Length*	UPC#				
(assembly)	1/4" Str. x Str.	1/4" Str. x 90°	1/4" 90° x 90°	3/8" Str. x Str.	3/8" Str. x 90°
12"	78612	78712	78812	78912	79112
18"	78618	78718	78818	78918	79118
24"	78624	78724	78824	78924	79124
30"	78630	78730	78830	78930	79130
36"	78636	78736	78836	78936	79136
48"	78648	78748	78848	78948	79148
60"	78660	78760	78860	78960	79160
72"	78672	78772	78872	78972	79172

* Special lengths are readily available.

STAINLESS STEEL HOSE SPECIFICATIONS

YELLOW JACKET stainless steel assemblies are 300 series corrugated hose and braid for applications where temperature and pressure could be a problem.

With stainless steel braid wrapping a stainless steel core, all hoses on this page prevent permeation and moisture infusion. Use with all standard refrigeration oils and refrigerants, as well as the new alternative oils and refrigerants including R-123.

Applications: vacuum and charging, vibration isolation, movable components and permanent application. **Not for use with NH_3.**

Stainless steel hose specifications				
Size	Max psi working*	Flexing bend radius	Permanent bend radius	Temperature/pressure correction
1/4"	1275 (88 bar)	5.5"	1"	68°F – 1.00 200°F – .86 300°F – .80 400°F – .78 500°F – .77 800°F – .76 900°F – .74 1000°F – .70
3/8"	1000 (69 bar)	6.5"	1-1/4"	
1/2," 5/8"	1000 (69 bar)	8.5"	1-1/2"	
3/4," 7/8"	725 (50 bar)	10"	2"	
1," 1-1/8"	700 (48 bar)	11.5"	2-3/4"	
1-1/4," 1-3/8"	550 (38 bar)	13"	3-1/4"	
1-1/2"	450 (31 bar)	15"	3-3/4"	
2"	450 (31 bar)	17.5"	5"	
2-1/2"	300 (21 bar)	21"	7"	
3"	350 (24 bar)	23"	9"	

* PSI at 68°F with a 4-to-1 safety factor. Core is T-321 SS with 300 Series SS braid.

Standard and custom length assemblies are made to order. Minimum length 12."

QUICK COUPLER ASSEMBLY
For vacuum and charging

Oversized to increase flow and speed evacuation. Pull 25 microns and better on 36" length.

- Brass quick coupler
- Standard 45° angle at one end on 1/4" and 3/8" (90° available)
- Straight fittings only on 1/2", 5/8" and 3/4"
- Made in the USA

Length	Str. x 45° 1/4" I.D.	Str. x 45° 3/8" I.D.	Str. x Str. 1/2" I.D.	Str. x Str. 5/8" I.D.	Str. x Str. 3/4" I.D.
36"	81636	81736	81836	81936	82036
48"	81648	81748	81848	81948	82048
60"	81660	81760	81860	81960	82060

SWEAT FITTING ASSEMBLY

Female sweat fitting		Male sweat fitting	
86136	1/4" x 36"	85136	1/4" x 36"
86236	3/8" x 36"	85236	3/8" x 36"
86336	1/2" x 36"	85336	1/2" x 36"
86436	5/8" x 36"	85436	5/8" x 36"
86536	3/4" x 36"	85536	3/4" x 36"
86636	7/8" x 36"	85636	7/8" x 36"
86736	1-1/8" x 36"	85736	1-1/8" x 36"
86836	1-3/8" x 36"	85836	1-3/8" x 36"

Manufactured with straight, copper sweat ends.

- Male sweat to fit inside mating tube
- Female sweat to fit outside mating tube
- Made in the USA

GET MAXIMUM BENEFIT FROM YOUR YELLOW JACKET METAL HOSES

Keep your hoses on the job longer and the YELLOW JACKET warranty in effect by avoiding sharp bending and twisting that causes early failure. The warranty does not cover fatigue failure. Replace gaskets in quick couplers as needed to ensure a proper sealing.

FLARE ASSEMBLY
For display cases, etc.

Stainless steel assemblies are made with a combination of Male and Female flares. Custom assemblies can be made.

Fl. size x length	Male fl. x Male fl.	Male fl. x Fe. fl.	Fe. fl. x Fe. fl.
1/4" x 36"	82136	83136	84136
1/4" x 48"	82148	83148	84148
3/8" x 36"	82236	83236	84236
3/8" x 48"	82248	83248	84248
1/2" x 36"	82336	83336	84336
1/2" x 48"	82348	83348	84348
5/8" x 36"	82436	83436	84436
5/8" x 48"	82448	83448	84448
3/4" x 36"	82536	83536	84536
3/4" x 48"	82548	83548	84548

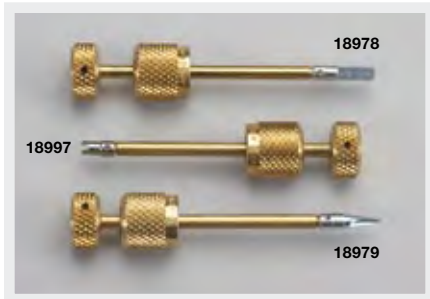
NOTE: Stainless steel hoses are made-to-order and cannot be returned.

NOTE: Custom lengths are available for all stainless steel hose assemblies on this page.

YELLOW JACKET
YELLOW JACKET

1/4" 4-IN-1 BALL VALVE TOOL

For vacuum, charge, cores and recovery



Remove and replace Schrader cores without losing charge.

- Extra 1/4" side port on 18975 to attach electronic micron vacuum gauge right at system for greater accuracy or to add refrigerant
- Evacuate and charge through an unrestricted line for increased speed and higher vacuum
- Core removal allows recovery unit to work at maximum efficiency, speeding the recovery process

UPC#	Description
18975	Vacuum/charge valve with side port
18971	Vacuum/charge valve without side port
18980	Accessory set - 2 piece
18978	Schrader rethreading accessory
18979	Broken Schrader remover accessory
18997	Grappler rod/nut assembly
18973	Gasket for 18975 (5 pak)
18974	Seal kit includes core, cap, 4 “O” rings, gasket
19305	Schrader cores (10 pak)

5/16" 4-IN-1 BALL VALVE TOOL

For R-410A systems with 5/16" access ports

Similar to the 1/4" 4-in-1 core tool but with 5/16" flare fittings. For use with R-410A systems and mini splits with larger 5/16" service ports.

UPC#	Description
18985	5/16" Vacuum/charge valve with side port
18981	5/16" Vacuum/charge valve without side port
18987	5/16" Grappler rod/nut assembly
18988	5/16" Rethread accessory
18989	5/16" Schrader remover
18984	Seal kit includes core, cap, 4 “O” rings, gaskets
19305	Schrader cores (10 pak)

COMPACT BALL VALVES

1/4" and 5/16"

Compact ball valves feature full flow for charging and recovery. Metal valve handle.

- 1/4" ball valves are UL recognized to 4000 psi (276 bar) minimum burst, 800 psi (55 bar) maximum working pressure
- 5/16" for R-410A applications where 5/16" system ports are used
- 5/16" are UL recognized to 4000 psi (276 bar) minimum burst, 800 psi (55 bar) maximum working pressure

UPC#	Description
93844	1/4" Compact ball valve – straight
93843	1/4" Compact ball valve – 45°
93842	45° Compact ball valves (3 pak)
93825	5/16" Compact ball valve for 5/16" Female flare x 1/4" Male flare
93826	5/16" Compact ball valve for 1/4" Female flare x 5/16" Male flare
93827	5/16" Compact ball valve for 5/16" Female flare x 5/16" Male flare

FULL CONTROL BALL VALVES FOR VACUUM/CHARGING

When building your own charging/vacuum system, these straight flow-through valves connect hoses and provide full-flow capacity.

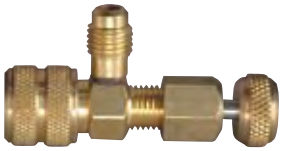
- No angles to cause restrictions and pressure drops
- Handle position shows when the valve is opened or securely closed

Use gaskets on page 35.

	M. fl. x M. fl.	M. fl. x 1/4" FPT	M. fl. x Fe. fl.	Gaskets
1/4" SAE*	93834	93833	93844	19020
5/16" SAE	–	–	93827	19020
3/8" SAE*	93836	93832	93846	19011
1/2" SAE	93838	–	93848	19015
1/2" Acme*	93830	93831	93840	19020
19095	Replacement handle/screw for all 1/4", 3/8" and Acme valves			
19096	Replacement handle/screw for all 1/2" flare valves			

* UL Listed

GAS RETENTION VALVE



- Valve controls refrigerant flow from access fitting
- Closes Schrader before disconnecting
- Back seat valve feature to retain gas in hose when disconnecting
- 1/4" Female flare x 1/4" Male flare
- 500 psi working pressure
- Made in the USA

UPC#	Description
18993	Core depressor valve

VACUUM/CHARGE VALVE

1/4" vacuum/charge valve with or without side port. For faster vacuum/charging or removing/replacing Schrader cores.

UPC#	Description
18990	Vacuum/Charge valve with side port
19000	Vacuum/Charge valve
Replacement parts	
18995	"O" ring set
18996	Shut-off stem
18997	Grappler rod/nut assembly

QUICK COUPLER-STYLE BRAZE-IN FITTINGS

Braze-in brass fitting with replaceable soft seat. Quick coupler-style fittings are the same as supplied on metal hose.

UPC#	Description
19082	1/4" Str. Female fl. with CH20 gasket
19083	1/4" 45° Female fl. with CH20 gasket
19084	1/4" 90° Female fl. with CH20 gasket
19085	3/8" Str. Female fl. with quad ring
19086	3/8" 45° Female fl. with quad ring
19087	3/8" 90° Female fl. with quad ring
19088	1/2" Str. only Female with CH80 gasket

Use 19015 (CH80), 19020 (CH20) and 19026 (quad ring) seals.

UPC#	Description
Compact ball valve assemblies	
29001	1/4" Yellow ball valve adapter
29201	1/4" Blue ball valve adapter
29601	1/4" Red ball valve adapter
29980	3 pak (29001, 29201, 29601)

VALVE CORE TOOL

Self contained tool for quickly removing and replacing cores. Handle contains six cores.

UPC#	Description
19306	Valve core tool

125 AND 145 LB. CYLINDER VALVE ADAPTER

Finger tight adapters fit 125 and 145 lb. cylinders. Seal remains seated.

UPC#	Description
19105	3/4" NPS cylinder adapter with 1/4" Male flare
19106	3/4" NPS cylinder adapter with 3/8" Male flare
18001	Replacement gasket (10 pak)

VACUUM PUMP INTAKE ADAPTER

Reducing adapter for pump intakes on SuperEvac™ and other vacuum pumps.

UPC#	Description
19130	3/8" Fe. fl. x 1/4" M. fl. adapter
19131	1/2" Fe. fl. x 3/8" M. fl. adapter
19132	1/2" Fe. fl. x 1/4" M. fl. adapter
19160	1/2" Fe. fl. x 1/2" M. Acme adapter
19133	3/8" Fe. fl. x 1/2" M. fl. adapter

VACUUM PUMP ADAPTER

Convert a 3/8" or 1/2" vacuum pump intake into 1/4" and 1/2" Acme R-134a compatible fittings.

UPC#	Description
36018	1/2" Pump adapter with 1/4" flare and 1/2" Acme Male fittings
36019	3/8" Pump adapter with 1/4" flare and 1/2" Acme Male fittings

MODIFIED NEEDLE VALVE
In-line control

UPC#	Description
69670	Needle type bleed valve 1/4" flare
69675	Replacement gasket

MANIFOLD PARTICULATE FILTER

Manifold particulate filters trap particles before they damage valve seats or pass into recovery equipment. Screens are replaceable and cleanable.

UPC#	Description
41119	1/4" Manifold particulate filter
41120	3/8" Manifold particulate filter
41121	1/2" Manifold particulate filter
41122	Replacement filter screen (5 pak)

ADD-A-HOSE COUPLER

Add-a-hose couplers easily connect hoses to the length desired.

UPC#	Description	UPC#	Description
19143	3/16" Male flare	19150	5/8" Male flare
19144	1/4" Male flare	19152	3/4" Male flare
19146	3/8" Male flare	19142	1/2" Acme
19148	1/2" Male flare	–	–

QUICK COUPLERS Expanded line

- Full size with deep knurling for easy handling
- CH14 "Adjust-a-Valve" opener in all 1/4" Female ends
- Acme conversion couplers are available for recovery tank threads and R-134a cylinder threads
- 5/16" Conversion couplers available
- Made in the USA

UPC#	Description
Straight quick couplers	
19125	1/8" Female QC x 1/4" Male flare (Ford)
19120	3/16" Female QC x 1/4" Male flare (GM)
19101	1/4" Female QC x 1/4" Male flare
19102	1/4" Female QC x 3/8" Male flare
19111	1/4" Female QC Str. x 1/8" NPT Male
19116	1/4" Female QC Str. x 1/4" NPT Male
19118	1/4" Female QC Str. x 1/4" NPT Female
19103	3/8" Female QC x 3/8" Male flare
19104	3/8" Female QC x 1/4" Male flare
19115	1/2" Female QC x 3/8" Male flare
19114	3/8" Female QC x 1/2" Male flare
90° Quick couplers	
19220	3/16" Female QC 90° x 1/4" Male flare
19201	1/4" Female QC 90° x 1/4" Male flare
19202	1/4" Female QC 90° x 3/8" Male flare
19203	3/8" Female QC 90° x 3/8" Male flare
19214	3/8" Female QC 90° x 1/2" Male flare
Gauge quick couplers with CH14 adjustable valve opener	
19110	1/4" Female QC x 1/8" NPT Fe.
19210	1/4" Female QC 90° x 1/8" NPT Fe.
5/16" Quick couplers with CH14 adjustable valve opener	
19121*	5/16" QC Str. x 1/4" Male flare
19221*	5/16" QC 90° x 1/4" Male flare
19122*	1/4" QC Str. x 5/16" Male flare
19222*	1/4" QC 90° x 5/16" Male flare
ACME 1/2" couplers – auto straight	
19161	1/4" Female QC x 1/2" Acme Male
19162	1/4" Female hex x 1/2" Acme Male for permanent applications
19166	1/2" Acme Male x 1/2" Acme Female
19165	1/2" Acme Female x 1/4" Male flare
19168	1/2" Acme Female x 1/8" NPT Male
19158	1/2" Acme Female x 14 mm Male

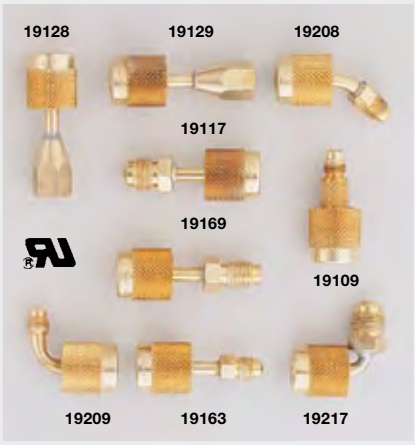
* Not pictured

QUICK COUPLERS Schrader core in male end

- All couplers have Schrader valve cores in Male flare end
- Female coupler end has deep knurling for easy handling
- Patented CH14 "Adjust-a-Valve" opener in all 1/4" Female ends
- Made in the USA

UPC#	Description
Straight quick couplers	
19171	1/4" Female QC x 1/4" Male flare
19172	3/8" Female QC x 1/4" Male flare
90° Bend quick couplers	
19191	1/4" Female QC x 1/4" Male flare
19192	3/8" Female QC x 1/4" Male flare
45° R-410A couplers	
19173	5/16" Female QC x 1/4" Male flare
19174	1/4" Female QC x 5/16" Male flare
19175	5/16" Female QC x 5/16" Male flare

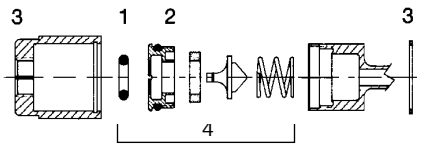
SEALRIGHT™ QUICK COUPLERS



SealRight fittings automatically and immediately trap refrigerant in the hose when disconnected, helping meet non-venting regulations and preventing finger burns. One-piece attaches quickly, saving up to 50 percent in time compared to 2-piece quick couplers.

- Works with or without Schrader core
- Gaskets resist deterioration from SealRight repair assembly components
- CFC, HCFC, HFC refrigerants and refrigerant oils. Field serviceable
- **Not recommended for R-410A systems**
- Made in the USA

UPC#	Description
19109	1/4" SealRight Str. x 1/4" Male flare
19208	1/4" SealRight 45° x 1/4" Male flare
19209	1/4" SealRight 90° x 1/4" Male flare
19100	Set of 19109 and 19209
19117	1/4" SealRight Str. x 3/8" Male flare
19217	1/4" SealRight 90° x 3/8" Male flare
19128	1/4" SealRight Str. x 1/8" NPT Female
19129	1/4" SealRight Str. x 1/4" NPT Female
19169	Acme 1/2" SealRight x 1/2" Acme
19163	Acme 1/2" SealRight x 1/4" Male flare



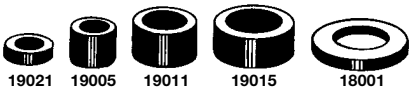
UPC#	Description
SealRight repair assembly components	
19037	"O" rings (10 pak) (1)
19038	Plug assembly with all seals (2)
19039	Nut and clip (3)
19040	Rebuild kit (4)
19041	Overhaul kit with all above parts
19045	Gasket set

SINGLE VALVES

- Individual manifolds for hi- and lo-sides of system
- Individual valves are available in two or three port versions
- Nylon seals with double “O” rings
- Made in the USA

UPC#	Description
40317	Hi-side manifold with gauge
40318	Lo-side manifold with gauge and hook
40315	2 Port valve – 1/8" NPT Female x 1/4" Male flare
40325	3 Port valve – 1/8" NPT Female x 2 1/4" Male flares
40350	2 Port valve – 1/4" QC Female with CH14 depressor x 1/4" Male flare with Schrader
40326	Lo-side 1/4" valve for R-410A

QUICK COUPLER GASKETS AND “O” RINGS



The only gaskets designed for optimum performance with YELLOW JACKET Charging Hoses. Works with all refrigerants. Manufactured to strict tolerances to resist blow out.

UPC#	Gasket/ Part	Quantity	Application
19020	CH20/10	10	1/4" Hose 5/16" Hose 1/2" Acme hose
19005	CH20/100	100	1/4" Hose
19011	CH11	10	3/8" Hose
19015	CH80	10	1/2"-5/8" Hose
19012	E hose	10	3/4" Hose
18001**		10	Cylinder valve
19021	1/8" Gasket	10	1/8" Coupler
19022		5	60667 Recovery pliers
19010	CH20 and CH14	6 3	1/4" Hose opener

UPC#	“O” ring	Quantity	Application
19025*	–	10	1/4" Quad ring
19026*	–	10	3/8" Quad ring
19027*	–	10	1/2" Quad ring
19034	–	10	“O” ring for 14 mm Male
19037	–	10	1/4” SealRight “O” ring
19094	–	10	Snap-It “O” rings

UPC#	Description
59651	1/4" Copper gaskets (10 pak)
59652	3/8" Copper gaskets (10 pak)
59653	1/2" Copper gaskets (10 pak)
59654	5/8" Copper gaskets (10 pak)
59655	3/4" Copper gaskets (10 pak)

* Gaskets for some metal hose sizes. Others use 19020 or 19011 gaskets.
**Flat washer.

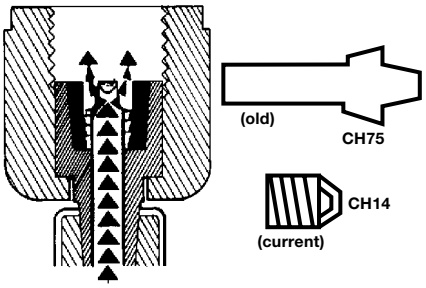
PARTS KITS AND EMPTY BOXES

The **19003** complete kit includes the following gaskets, valve openers and SealRight parts in a 12 compartment case.

- Five 1/8" gaskets
- Five 1/8" valve openers
- One hundred 3/16"–1/4" gaskets
- Ten 1/4" Adjust-a-Valve openers
- Ten 1/4" flat valve openers
- Ten 3/8" gaskets
- Ten 1/2"–5/8" gaskets
- Ten cylinder valve flat gaskets
- Ten SealRight “O” rings
- Four SealRight plug and seal assemblies
- Four 1/4" SealRight nut and clip

UPC#	Description
19003	Complete kit
19004	11" x 6-3/4" x 3/4" Kit box with parts label
60177	11" x 6-3/4" x 3/4" 6 Compartments empty
60178	11" x 6-3/4" x 3/4" 12 Compartments empty
60135	11" x 6-3/4" x 3/4" 18 Compartments empty

“ADJUST-A-VALVE™” OPENERS



High volume flow pattern

The patented “Adjust-a-Valve” reaches out-of-tolerance Schrader valves in 1/4", 3/16" and 5/16" couplers. Simply rotate the opener with needle nose pliers to the desired height and when finished, rotate it back. “Adjust-a-Valve” for 1/4" and 5/16" hoses is the same.

UPC#	Description
19302	“Adjust-a-Valve” openers (10 pak)
19301	1/4" Valve openers (10 pak)
19304	1/8" Valve openers (10 pak)

AUTOMOTIVE R-134a A/C COUPLERS
Premium with control valve

Couplers interface with R-134a service ports. 14 mm Female thread or 1/4" Male flare available.

- Quick, easy connect/disconnect
- Control valve for access to systems even at working pressures
- Integral safety sleeve holds coupler securely to service port
- Highest flow characteristics
- Low profile for tight applications

UPC#	Description
41301	Chrome hi-side x 14 mm R-134a coupler
41302	Chrome lo-side x 14 mm R-134a coupler
41327	Hi-side x 3/8" Male fl., R-134a coupler
41328	Lo-side x 3/8" Male fl., R-134a coupler
41337	Hi-side x 1/4" Male fl., R-134a coupler
41338	Lo-side x 1/4" Male fl., R-134a coupler
41300	Replacement "O" rings (2 pak)

LIQUID CHARGING ADAPTER
Convert liquid to saturated vapor

- To protect the compressor, adapter orifice reduces liquid flow to a level below compressor capacity
- Refrigerant flashes off into a saturated vapor to speed entry
- Eliminates the time and work of heating cylinders

Liquid charging is recommended when charging blends into refrigeration and air conditioning systems. A liquid charging adapter is necessary for safe and fast liquid (saturated vapor) charging through the low pressure side of a system. The YELLOW JACKET liquid charging adapter connects to the cylinder valve or refrigerant tank.

UPC#	Description
41123	1/4" Liquid charging adapter
41124	5/16" Liquid charging adapter
41132	Replacement "O" ring/orifice for 1/4" adapter
41138	Replacement "O" ring/orifice for 5/16" adapter

AUTOMOTIVE R-134a ECONOMY A/C COUPLERS

A basic R-134a service coupler with no control valve. Snaps on for instant flow.

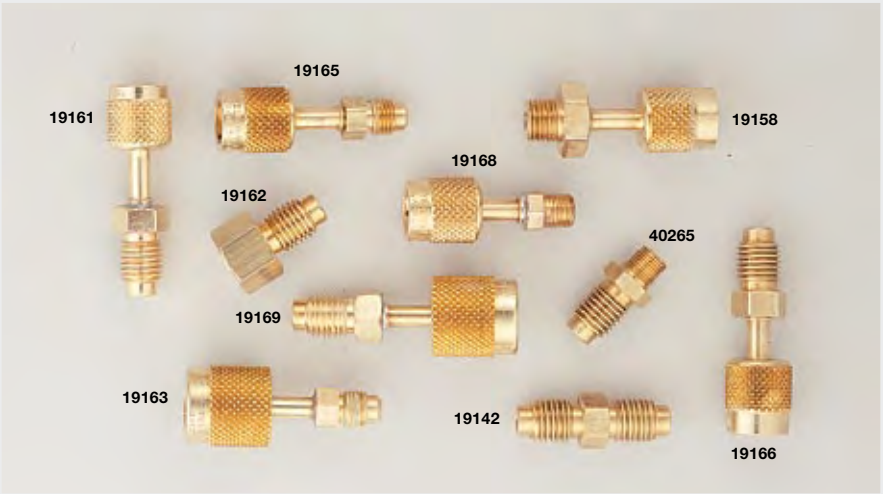
UPC#	Description
41318	Lo-side coupler with 1/4" flare
41317	Hi-side coupler with 1/4" flare
41305	Replacement "O" ring set (6 pak)

WRAP-AROUND HEATER FOR REFRIGERANT CYLINDER

- Fits 30, 50 and 125 lb. cylinders
- Thermostat controlled with maximum 130°F (54°C) and minimum 120°F (48.8°C) (surface temperature of tank)
- Cycles on/off to maintain surface temperature
- 200 watt, 115V or 230V
- 20" velcro straps and 6' cord

UPC#	Description
68848	Wrap-around cylinder heater 115V
68849	Wrap-around cylinder heater 230V

AUTOMOTIVE A/C FITTINGS COUPLERS



Adapter fittings designed to work with 1/2" Acme or 14 mm threads.

UPC#	Description
19157*	14 mm Male x 1/4" Male flare
19156*	14 mm Male x 3/8" Male flare
19161	1/2" Acme Male x 1/4" Female flare
19165	1/2" Acme Female x 1/4" Male flare
19158	1/2" Acme Female x 14 mm Male
19162	1/2" Acme Male x 1/4" Female flare hex
19168	1/2" Acme Female x 1/8" Male pipe
19169	1/2" Acme Male x 1/2" Acme SealRight
19163	1/2" Acme SealRight x 1/4" Male flare
19166	1/2" Acme Female x 1/2" Acme Male
40265	1/2" Acme Male x 1/8" NPT Male half union
19142	1/2" Acme union
19153*	1/2" Acme Female hex x 13 mm R-134a lo-side Male for A/C system

* Not pictured

SYSTEM ANALYZER
06/03/10 13:51 Psig R-22
0.0
0.0
Vapor sat -41.5°F
Liquid sat 40.7°F
Temp-1 ***°F
Temp-2 ***°F
Superheat ***°F
Subcool ***°F
YELLOW JACKET
MENU
CLEAR
HOLD
CHART TIME
UP/ LEFT
ENTER
CHART PRES.
DOWN/ RIGHT
T1
T2
VACUUM
USB
YELLOW JACKET
TITAN

YELLOW JACKET®

Refrigeration System Analyzer

Digital color TFT display with adjustable brightness and contrast protected by anti-glare, scratch resistant lens

The YELLOW JACKET® refrigeration system analyzer features a full color graphics display for intuitive, easy reading. The display reads in analog, digital or a combination of both, and monitors two pressures, two live temperatures, subcooling and superheat, and saturation temperatures (liquid and vapor) for nearly 100 refrigerants.

- Nearly 100 NIST refrigerant profiles included (upgradeable via USB for new refrigerants)
- Built-in pressure/temperature chart reference screen for all refrigerants
- Built-in full scale vacuum sensor reads deep vacuum down to 10 microns
- Dual K-Type temperature-compensated sensor ports allow for simultaneous suction and liquid readings
- High accuracy and resolution pressure transducers for fast and sensitive leak detection
- Provides real-time pressure data in selectable time increments: 0.1, 0.2, 0.5, 1 and 2 seconds

Specifications

Pressure sensing resolution (low and high sides):
0.1 psi, 0.01 bar, 1 kPa, 0.1 MPA, 0.01 kg/cm²

Pressure sensing accuracy:
0.5% of full scale at 25°C
1% of full scale at 55°F to 130°F
2% of full scale -40°C to 120°C

Working pressure (maximum measurable pressure):
Low side: 0 - 350 psia High side: 0 - 700 psia

Proof pressure (low and high sides): 1000 psi

Burst pressure (low and high sides): 1500 psi

Temperature sensor range: -100 to 600°F (-73 to 315°C)

Temperature display resolution: 0.1°F or C°

Temperature accuracy: ±1.8°F (±1°C)

Vacuum display resolution:
Shows two most significant digits in microns
(25xxx-10xxx, 99xx-10xx, 99x-10x, 99-10)
Other units are direct conversions from the micron value

Vacuum accuracy: 20% of reading

Operating temperature: -4 to 122°F (-20 to 50°C)

Storage temperature: -20 to 170°F (-29 to 77°C)

Dimensions: 8.3" wide x 6.7" tall x 3.6" deep
(21 cm x 17 cm x 9 cm) excluding manifold

Weight: 3.2 lb (1.45 kg) excluding manifold

Power: AA batteries (8); alkaline, NiCd, NiMH, A-A Lithium, Li Ion, Li Pol (approximately 14 hours of continuous use with industrial alkaline batteries)

- Automatic superheat and subcooling calculations
- Corresponding bubble point and dew points for current high side and low side pressures, respectively
- Displays and records max/min pressures
- Holds current reading/scrolls back to past readings
- Data logging for onscreen review or USB export to PC to generate performance/Excel™ work reports
- Tracks and exports date and time, useful for data logging
- Elevation may be entered manually for accurate, automatic pressure compensation
- Zero pressure by pressing a key in the set-up menu
- Selectable “auto power off” and “power saving mode”
- Low battery indicator
- 360° swivel hook stows when not in use
- Highly weather resistant, glass fiber reinforced, engineering grade thermoplastic housing - fully gasketed for water and dust resistance
- Two-year warranty
- Made in the USA

The YELLOW JACKET® refrigeration system analyzer comes in a blow-molded carrying case complete with a TITAN™ 4-valve test and charging manifold, vacuum sensor cordset, battery holder (‘AA’ size, 2X4), instrument boot, bumper, plug, and sensor/probe boots, USB cable, vacuum sensor and two general purpose “K-Type” probes.

UPC#	Description
40812	Refrigeration system analyzer with TITAN™ 4-valve manifold
40813	Refrigeration system analyzer with TITAN™ 4-valve manifold, 60" *PLUS II*™ charging hoses (RYB) with compact ball valve end, and 3/8" Str. fl. x 3/8" 45° (Y)
40815	Refrigeration system analyzer with TITAN™ 4-valve manifold and 60" *PLUS II*™ charging hoses (RYB)
Replacement parts	
40819	Vacuum sensor cordset
40820	Battery holder, ‘AA’ size, 2X4
40821	Refrigeration system analyzer boot
40823	Refrigeration system analyzer battery door
40824	Refrigeration system analyzer bumper, plug & sensor/probe boots
40827	USB cable
40828	General purpose “K-Type” probe (4 meter)
40832	AA Batteries (package of 8)
69081	Replacement accessory pouch
69087	Vacuum sensor
69218	General purpose “K-Type” probe (1 meter)

TITAN™ 4-VALVE TEST & CHARGING MANIFOLD °F and ºC

Forged aluminum alloy body makes this unit lightweight for handling ease with the durability and reliability required for repeated use.

- Fourth hose to enable connection to hi-/lo-sides, refrigerant tank and recovery unit or vacuum pump for diagnostics, evacuation and charging without switching hoses
- 3/8" Vacuum port for use with larger hose to cut evacuation time by up to 33% (all other fittings are 1/4")
- Large, easy-to-read 3-1/8" (80 mm) steel case red and blue, 1% accuracy (Class 1) gauges
- Front access for easy field recalibration
- Double "O" ring piston for reliability and long service life
- Exclusive 100 mesh filter in-line on all flare fittings helps keep out particulate material and extend the life of the seats
- Contoured easy-grip handles for positive control; color-coded for ready identification
- Sight glass to easily view refrigerant movement and condition during charging and recovery
- Optional protective gauge boots available
- Heavy duty hook won't pull out
- Also available with 3-1/2" (90 mm) red and blue liquid-filled gauges
- Manifold and hose holder fittings 1/4"-3/8"-1/4"-1/4" unless otherwise identified
- Made in the USA

Replacement parts on page 42.

TITAN™ 4-Valve				
UPC#	**Description - °F/°C**	**Gauges**	**Scale**	**Refrigerant**
49892	Manifold only	Solar	bar/psi/MPa	R-22/134a/404A/407C/409A/410A/438A/507
49895	With 60" *PLUS II*™ RYB and 3/8" x 45°	Solar	bar/psi/MPa	
49915	Manifold only with 5/16"-3/8"-1/4"-5/16" anchor fittings and 1/4"-3/8"-1/4"-1/4" service fittings	Red/Blue	kPa/psi	R-410A
49922	Manifold only	Liquid	bar/psi	R-22
49925	With 60" *PLUS II*™ RYB and 3/8" x 45°	Liquid	bar/psi	
UPC#	**Description - °F**	**Gauges**	**Scale**	**Refrigerant**
49962	Manifold only	Red/Blue	bar/psi	R-410A
49982	Manifold only	Liquid	bar/psi	
49960	With 60" *PLUS II*™ compact ball valve RYB and 3/8" x 45°	Red/Blue	bar/psi	
49965	With 60" *PLUS II*™ RYB and 3/8" x 45°	Red/Blue	bar/psi	
49973	Manifold only	Liquid	psi	R-22/410A
49977	With 60" *PLUS II*™ RYB and 3/8" x 45°	Liquid	psi	
49963	Manifold only	Red/Blue	psi	R-22/404A/410A
49967	With 60" *PLUS II*™ RYB and 3/8" x 45°	Red/Blue	psi	
49968	With 60" *PLUS II*™ compact ball valve RYB and 3/8" x 45°	Red/Blue	psi	
49283*	Manifold only	Red/Blue	psi	
49902	Manifold only	Red/Blue	psi	R-12/22/502
49905	With 60" *PLUS II*™ RYB and 3/8" x 45°	Red/Blue	psi	
49983	Manifold only	Red/Blue	psi	R-22/134a/404A
49987	With 60" *PLUS II*™ RYB and 3/8" x 45°	Red/Blue	psi	
49993	Manifold only	Liquid	psi	
49997	With 60" *PLUS II*™ RYB and 3/8" x 45°	Liquid	psi	
49932	Manifold only	Red/Blue	psi	R-134a/404A/407C
49935	With 60" *PLUS II*™ RYB and 3/8" x 45°	Red/Blue	psi	
49952	Manifold only	Liquid	psi	
49955	With 60" *PLUS II*™ RYB and 3/8" x 45°	Liquid	psi	
49900	With 72" *PLUS II*™ RYB and 3/8" x 45°	Red/Blue	psi	R-417A/422A/422D
UPC#	**Description - °C**	**Gauges**	**Scale**	**Refrigerant**
49969	Manifold only with 5/16"-3/8"-1/4"-5/16" anchor fittings and 1/4", 3/8" 1/4", 1/4" service fittings	Red/Blue	bar/psi	R-410A
49970	Manifold only with 5/16"-3/8"-5/16"-5/16" anchor and service fittings	Red/Blue	bar/psi	
49914	Manifold only with 5/16"-3/8"-5/16"-5/16" anchor and service fittings	Red/Blue	kPa/psi	
49913	49914 with 60" *PLUS II*™ RYB and 3/8" x 45°	Red/Blue	kPa/psi	
49906	Manifold only	Red/Blue	bar/MPa	R-12/22/502
49916	Manifold only	Red/Blue	bar/psi	
49933	Manifold only	Red/Blue	bar/psi	R-22/134a/404A
49912	Manifold only	Red/Blue	kPa/psi	
49911	49912 with 60" *PLUS II*™ RYB and 3/8" x 45°	Red/Blue	kPa/psi	
49903	Manifold only	Red/Blue	bar/psi	R-22/134a/407C
49936	Manifold only	Red/Blue	bar/MPa	R-134a/404A/407C
49956	Manifold only	Red/Blue	bar/psi	

* Manifold comes standard with certified gauges. For more information on the certification of 3-1/8" gauges, see page 51.

TITAN™ 2-VALVE TEST & CHARGING MANIFOLD °F and °C

Comes with the same features and benefits as the TITAN™ 4-valve unit but without the fourth hose. All fittings 1/4" unless otherwise noted.

Replacement parts on page 42.

UPC#	Description - °F/°C	Gauges	Scale	Refrigerant
49792	Manifold only	Solar	bar/psi/MPa	R-22/134a/404A/407C/ 409A/410A/438A/507
49795	With 60" *PLUS II*™ RYB	Solar	bar/psi/MPa	
49815	Manifold only with 5/16"-1/4"-5/16" anchor fittings and 1/4" service fittings	Red/Blue	kPa/psi	R-410A
UPC#	**Description - °F**	**Gauges**	**Scale**	**Refrigerant**
49862	Manifold only	Red/Blue	bar/psi	R-410A
49865	With 60" *PLUS II*™ RYB	Red/Blue	bar/psi	
49860	With 60" *PLUS II*™ compact ball valve RYB	Red/Blue	bar/psi	
49802	Manifold only	Red/Blue	psi	R-12/22/502
49282*	Manifold only	Red/Blue	psi	
49805	With 60" *PLUS II*™ RYB	Red/Blue	psi	
49801	With 60" *PLUS II*™ SealRight RYB	Red/Blue	psi	
49883	Manifold only	Red/Blue	psi	R-22/134a/404A
49887	With 60" *PLUS II*™ RYB	Red/Blue	psi	
49889	With 60" *PLUS II*™ SealRight RYB	Red/Blue	psi	
49863	Manifold only	Red/Blue	psi	R-22/404A/410A
49281*	Manifold only	Red/Blue	psi	
49867	With 60" *PLUS II*™ RYB	Red/Blue	psi	
49868	With 60" *PLUS II*™ compact ball valve RYB	Red/Blue	psi	
49832	Manifold only	Red/Blue	psi	R-134a/404A/407C
49835	With 60" *PLUS II*™ RYB	Red/Blue	psi	
49831	With 60" *PLUS II*™ SealRight RYB	Red/Blue	psi	
49847	With 72" *PLUS II*™ Acme fittings RYB	Red/Blue	psi	R-134a
UPC#	**Description - °C**	**Gauges**	**Scale**	**Refrigerant**
49869	Manifold only with 5/16"-1/4"-5/16" anchor and 1/4" service fittings	Red/Blue	bar/psi	R-410A
49870	Manifold only with 5/16" anchor and service fittings	Red/Blue	bar/psi	
49814	Manifold only with 5/16" anchor and service fittings	Red/Blue	kPa/psi	
49813	49814 with 60" *PLUS II*™ 5/16" x 5/16" RYB	Red/Blue	kPa/psi	
49806	Manifold only	Red/Blue	bar/MPa	R-12/22/502
49816	Manifold only	Red/Blue	bar/psi	
49833	Manifold only	Red/Blue	bar/psi	R-22/134a/404A
49812	Manifold only	Red/Blue	kPa/psi	
49811	49812 with 60" *PLUS II*™ RYB	Red/Blue	kPa/psi	
49803	Manifold only	Red/Blue	bar/psi	R-22/134a/407C
49836	Manifold only	Red/Blue	bar/MPa	R-134a/404A/407C
49856	Manifold only	Red/Blue	bar/psi	

* Manifold comes standard with certified gauges. For more information on the certification of 3-1/8" gauges, see page 51.

PROTECTIVE GAUGE BOOTS

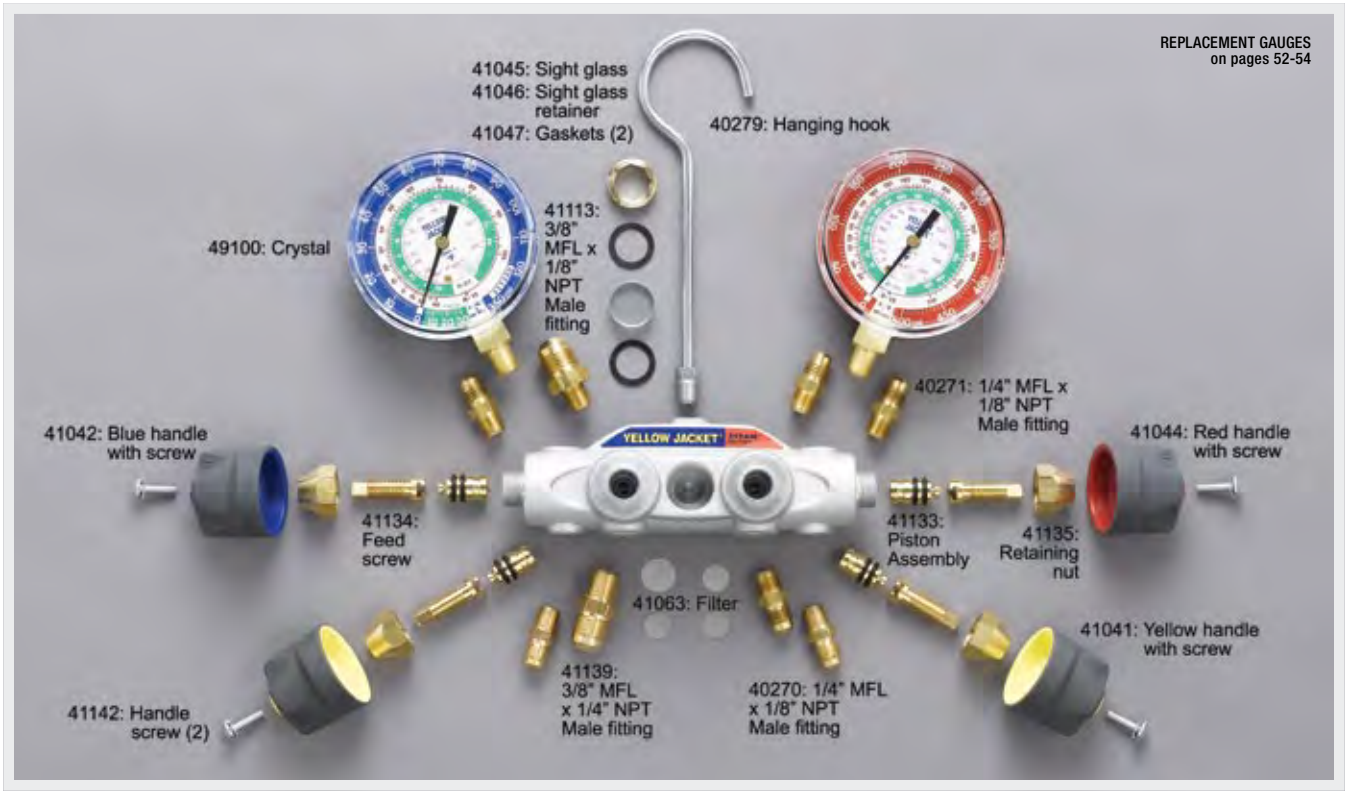
For 2-1/2" (63.5 mm), 3-1/8" (80 mm), and solar gauges

Rubber boots slip easily around gauges to cushion and protect them from impact.

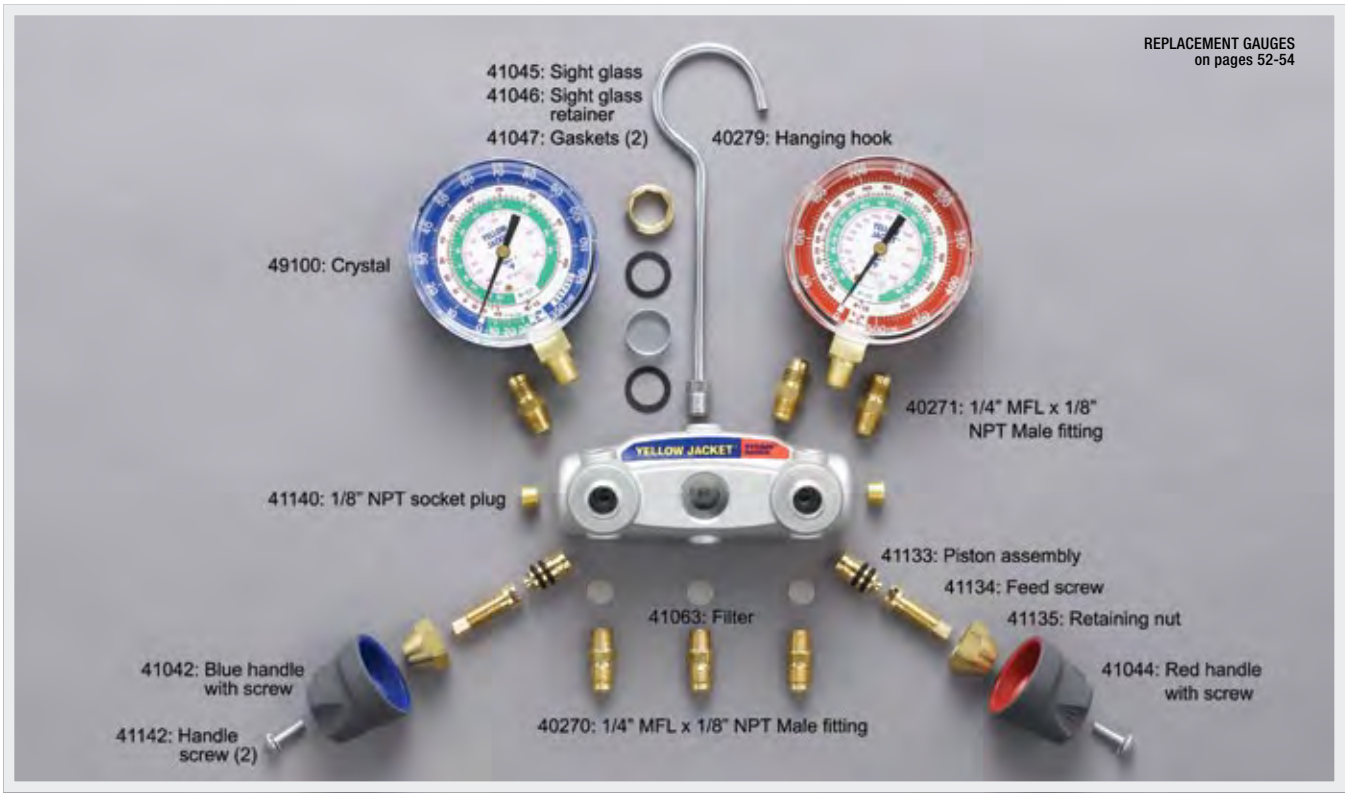
- Fit 2-1/2" and 3-1/8" gauges without covering easy access recalibration screw
- Color-coded red or blue to match gauge

UPC#	Description
49090	2-1/2" Set of gauge boots
49091	2-1/2" Red protective gauge boot
49092	2-1/2" Blue protective gauge boot
49190	3-1/8" Set of gauge boots
49191	3-1/8" Red protective gauge boot
49192	3-1/8" Blue protective gauge boot
49087	Red solar gauge boot
49088	Blue solar gauge boot
49089	Solar gauge boot set

TITAN™ 4-VALVE MANIFOLD REPLACEMENT PARTS



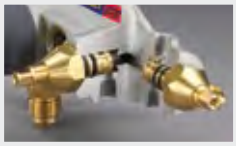
TITAN™ 2-VALVE MANIFOLD REPLACEMENT PARTS



BRUTE II™ 4-VALVE TEST & CHARGING MANIFOLD ºF and ºC

The *BRUTE II*™ 4-Valve Test and Charging Manifold provides the flow that's proven faster than any conventional manifold. The aluminum alloy body is forged for strength and reliability with 3/8" bores through the body to speed the job.

- Fourth hose enables connection to hi-/lo-sides, refrigerant tank and recovery unit or vacuum pump for diagnostics, evacuation and charging without switching hoses
- Available in 1/4" hi-/lo-sides with 3/8" vacuum port for regular jobs, or 3/8" hi-/lo-sides with 1/2" vacuum port for larger systems
- Front access for easy field recalibration



- Double "O" ring piston for reliability and long service life
- Exclusive 100-mesh filter in-line on all flare fittings helps keep out particulate material and extend the life of the seat
- Contoured easy-grip handles for positive control; color-coded for ready identification
- Sight glass to easily view refrigerant movement and condition during charging and recovery
- Heavy duty hook won't pull out
- Also available with 3-1/2" (90 mm) red and blue liquid-filled gauges
- Manifold and hose holder fittings 1/4"-3/8"-1/4"-1/4" unless otherwise identified
- Made in the USA

Replacement parts on page 44.

BRUTE II™ 4-Valve

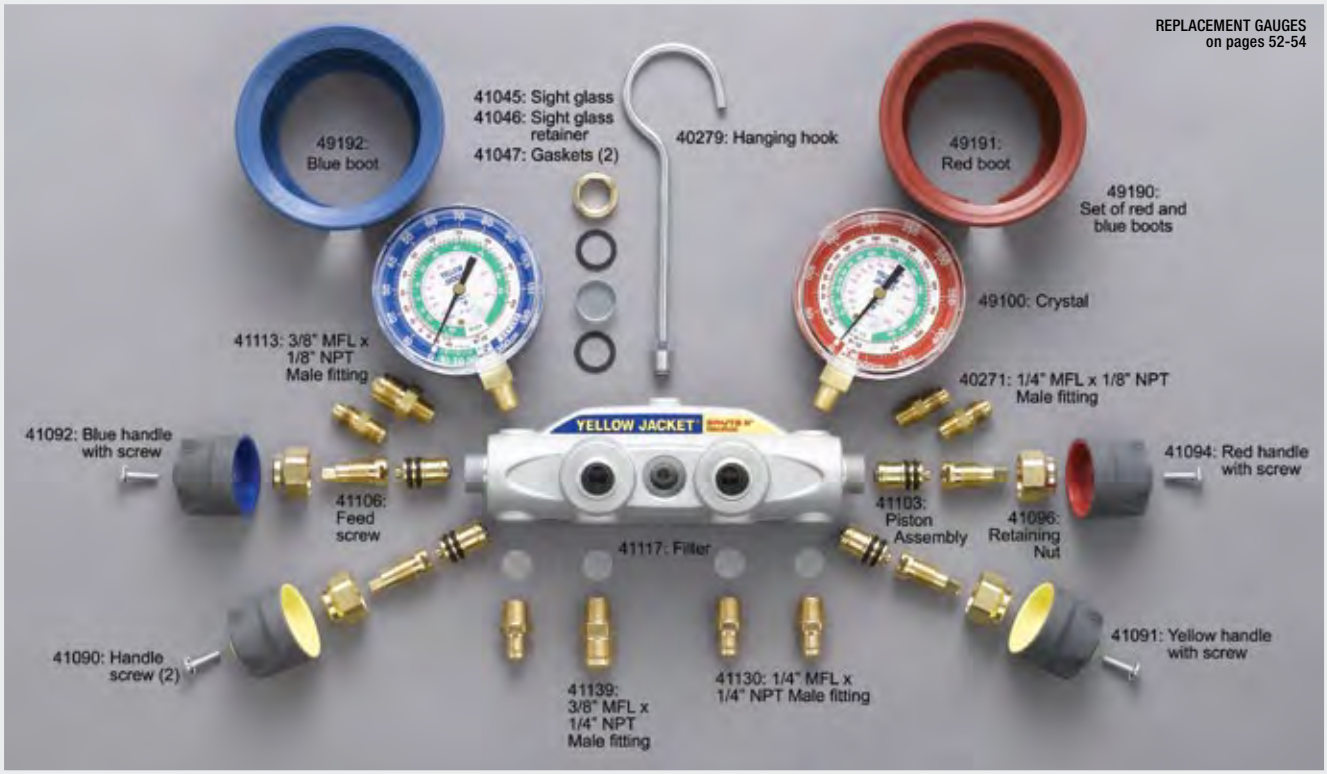
UPC#	Description - ºF/ºC	Vacuum port	Hi/Lo charge	Gauges	Scale	Refrigerant
46001	Manifold only	3/8"	1/4"	Liquid	bar/psi	R-410A
46021	Manifold only	3/8"	1/4"	Liquid	bar/psi	R-22
46026	With 72" *PLUS II*™ RYB and 3/8" x 45°	3/8"	1/4"	Liquid	bar/psi	
UPC#	**Description - ºF**	**Vacuum port**	**Hi/Lo charge**	**Gauges**	**Scale**	**Refrigerant**
46000	Manifold only	3/8"	1/4"	Red/Blue	bar/psi	R-410A
46003	With 60" *PLUS II*™ compact ball valve RYB and 3/8" x 45°	3/8"	1/4"	Red/Blue	bar/psi	
46011	Manifold only	3/8"	1/4"	Liquid	psi	R-22/410A
46010	Manifold only	3/8"	1/4"	Red/Blue	psi	R-22/404A/410A
46013	With 60" *PLUS II*™ compact ball valve RYB and 3/8" x 45°	3/8"	1/4"	Red/Blue	psi	
49291*	Manifold only	3/8"	1/4"	Red/Blue	psi	
46020	Manifold only	3/8"	1/4"	Red/Blue	psi	R-12/22/502
46022	With 60" *PLUS II*™ RYB and 3/8" x 45°	3/8"	1/4"	Red/Blue	psi	
49292*	Manifold only	3/8"	1/4"	Red/Blue	psi	
46030	Manifold only	3/8"	1/4"	Red/Blue	psi	R-134a/404A/407C
46031	Manifold only	3/8"	1/4"	Liquid	psi	
46032	With 60" *PLUS II*™ RYB and 3/8" x 45°	3/8"	1/4"	Red/Blue	psi	
46038	With 72" *PLUS II*™ RYB and 3/8" x 45°	3/8"	1/4"	Liquid	psi	
46040	Manifold only	3/8"	1/4"	Red/Blue	psi	R-22/134a/404A
46041	Manifold only	3/8"	1/4"	Liquid	psi	
46042	With 60" *PLUS II*™ RYB and 3/8" x 45°	3/8"	1/4"	Red/Blue	psi	
46043	With 60" *PLUS II*™ compact ball valve RYB and 3/8" x 45°	3/8"	1/4"	Red/Blue	psi	
46048	With 72" *PLUS II*™ RYB and 3/8" x 45°	3/8"	1/4"	Liquid	psi	
UPC#	**Description - °C**	**Vacuum port**	**Hi/Lo charge**	**Gauges**	**Scale**	**Refrigerant**
46160	Manifold only with 5/16"-3/8"-1/4"-5/16" anchor and 1/4" service fittings	–	–	Red/Blue	bar/psi	R-410A
46170	Manifold only with 5/16"-3/8"-5/16"-5/16" anchor and service fittings	–	–	Red/Blue	bar/psi	
46120	Manifold only	–	–	Red/Blue	bar/MPa	R-12/22/502
46180	Manifold only	–	–	Red/Blue	bar/psi	
46130	Manifold only	–	–	Red/Blue	bar/MPa	R-134a/404A/407C
46190	Manifold only	–	–	Red/Blue	bar/psi	
46140	Manifold only	–	–	Red/Blue	bar/psi	R-22/134a/404A
46150	Manifold only	–	–	Red/Blue	bar/psi	R-22/134a/407C

BRUTE II™ 4-Valve commercial

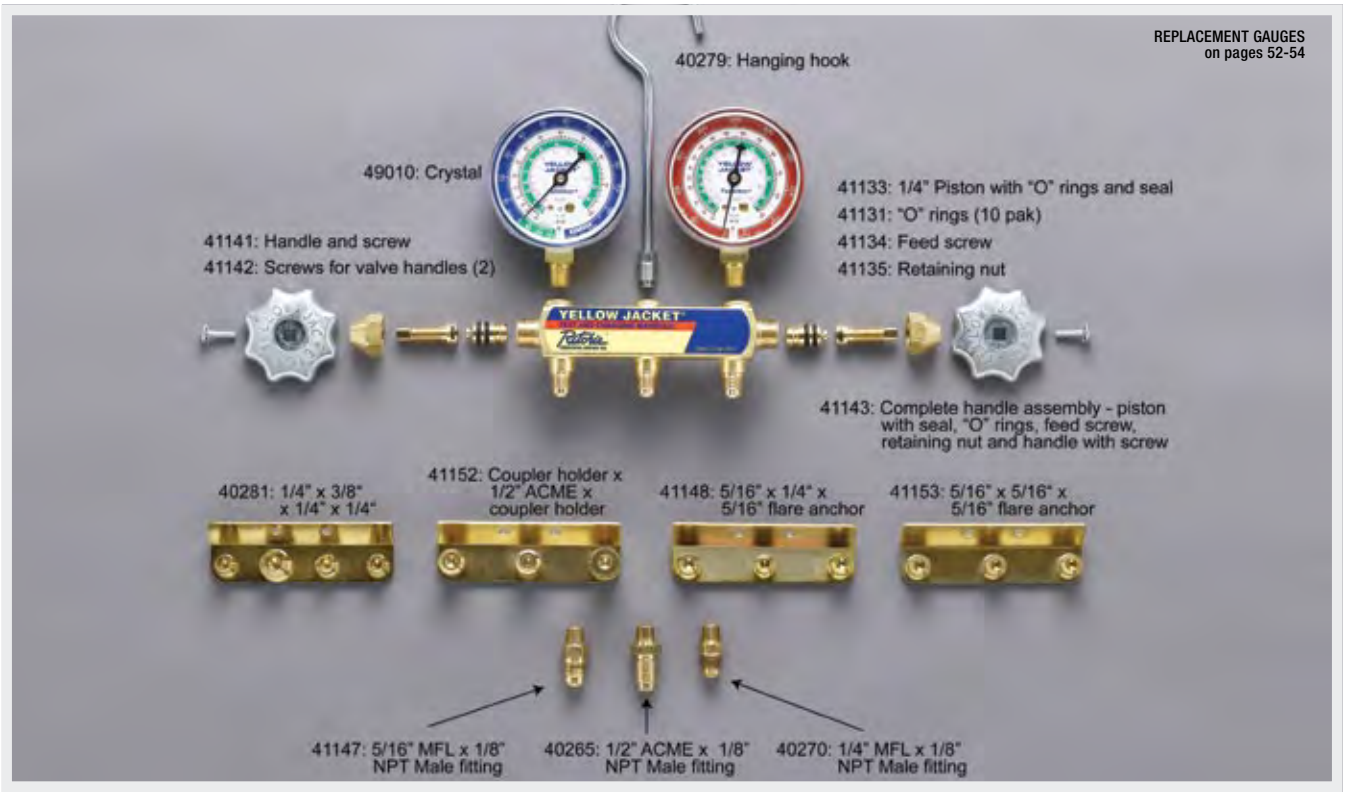
UPC#	Description - ºF/ºC	Vacuum port	Hi/Lo charge	Gauges	Scale	Refrigerant
46081	Manifold only	1/2"	3/8"	Liquid	bar/psi	R-22
46084	With 3 at 3/8" x 60" heavy duty - Straight x 45° and 1 at 1/2" x 60" heavy duty - Straight x Straight	1/2"	3/8"	Liquid	bar/psi	
UPC#	**Description - ºF**	**Vacuum port**	**Hi/Lo charge**	**Gauges**	**Scale**	**Refrigerant**
46080	Manifold only	3/8"	3/8"	Red/Blue	psi	R-12/22/502
46082	With 4 at 3/8" x 60" heavy duty - Straight x 45°	3/8"	3/8"	Red/Blue	psi	
46090	Manifold only	3/8"	3/8"	Red/Blue	psi	R-22/134a/404A
46091	Manifold only	1/2"	3/8"	Liquid	psi	
46092	With 4 at 3/8" x 60" heavy duty - Straight x 45°	3/8"	3/8"	Red/Blue	psi	
46094	With 3 at 3/8" x 60" heavy duty - Straight x 45° and 1 at 1/2" x 60" heavy duty - Straight x Straight	1/2"	3/8"	Liquid	psi	

* Manifold comes standard with certified gauges. For more information on the certification of 3-1/8" gauges, see page 51.

BRUTE II™ MANIFOLD REPLACEMENT PARTS



SERIES 41 MANIFOLD REPLACEMENT PARTS



SERIES 41 MANIFOLDS
°F and ºC with 2-1/2" (63.5 mm) gauges

Forged body is solid brass for durability. Full porting maximizes capacity. Metal valve handles are full size for easy operation. Hose anchors are forged into back of body at 45°.

- Flutterless™ technology means surge protector and silicone dampened movement helps minimize needle pulsation for easier, more accurate readings
- Sliding double “O” ring pistons reduces wear
- Most manifolds include color-coded YELLOW JACKET charging hoses
- Easy-to-read 2-1/2" (63.5 mm) steel case gauges with 3-2-3% accuracy (Class B)
- Limited lifetime warranty on manifold bar and valves – not gauges. See warranty information for details
- Made in the USA

Box	Clamshell			
UPC#	**UPC#**	**Description - ºF/ºC - Solar**	**Scale**	**Refrigerant**
41612	–	Manifold only	bar/psi/MPa	R-22/134a/404A/ 407C/409A/410A/ 438A/507
41615	–	With 60" *PLUS II*™ standard fittings	bar/psi/MPa	
UPC#	**UPC#**	**Description - ºF - Red/Blue**	**Scale**	**Refrigerant**
41212**	42000	Manifold only	psi	R-12/22/502
41213	–	With 36" RYB	psi	
41220	–	With 48" RYB	psi	
41215**	42015	With 60" RYB	psi	
41219	–	With 72" RYB	psi	
43213	–	With 36" *PLUS II*™ standard fittings	psi	
43220	–	With 48" *PLUS II*™ standard fittings	psi	
43215	–	With 60" *PLUS II*™ standard fittings	psi	
43219	–	With 72" *PLUS II*™ standard fittings	psi	
44213	–	With 36" *PLUS II*™ SealRight fittings	psi	
44220	–	With 48" *PLUS II*™ SealRight fittings	psi	
44215	–	With 60" *PLUS II*™ SealRight fittings	psi	
44219	–	With 72" *PLUS II*™ SealRight fittings	psi	
42215	–	With 60" *PLUS II*™ compact ball valve fittings	psi	
42219	–	With 72" *PLUS II*™ compact ball valve fittings	psi	
41312**	42010	Manifold only	psi	R-134a/404A/507
41313	–	With 36" RYB	psi	
41311	–	With 48" RYB	psi	
41315**	42014	With 60" RYB	psi	
41319	–	With 72" RYB	psi	
43313	–	With 36" *PLUS II*™ standard fittings	psi	
43315	–	With 60" *PLUS II*™ standard fittings	psi	
43319	–	With 72" *PLUS II*™ standard fittings	psi	
44313	–	With 36" *PLUS II*™ SealRight fittings	psi	
44315	–	With 60" *PLUS II*™ SealRight fittings	psi	
44319	–	With 72" *PLUS II*™ SealRight fittings	psi	
42315	–	With 60" *PLUS II*™ compact ball valve fittings	psi	
41712**	42030	Manifold only	bar/psi	R-410A
41709	–	With 60" *PLUS II*™ standard fittings	bar/psi	
41715*	–	With 60" *PLUS II*™ standard fittings for R-410A	bar/psi	
41710	–	With HCA 60" *PLUS II*™ standard fittings	bar/psi	
41702	–	With HCABV 60" *PLUS II*™ standard fittings	bar/psi	
42715	–	With 60" *PLUS II*™ compact ball valve fittings	bar/psi	
41711*	–	With 60" *PLUS II*™ compact ball valve fittings for R-410A	bar/psi	
UPC#	**UPC#**	**Description - ºC - Red/Blue**	**Scale**	**Refrigerant**
41282**	42008	Manifold only	bar/psi	R-12/22/502
41283	–	With 36" RYB	bar/psi	
41285	–	With 60" RYB	bar/psi	
41222**	42002	Manifold only	kPa/psi	
41223	–	With 36" RYB	kPa/psi	
41225	–	With 60" RYB	kPa/psi	
41292	–	Manifold only	kg/cm²/psi	
41293	–	With 36" RYB	kg/cm²/psi	
41295	–	With 60" RYB	kg/cm²/psi	
41299	–	With 72" RYB	kg/cm²/psi	
41382	–	Manifold only	bar/psi	R-134a/404A/507
41353	–	With 36" RYB	bar/psi	
41355	–	With 60" RYB	bar/psi	
43355	–	With 60" *PLUS II*™ standard fittings	bar/psi	
41392	–	Manifold only	kg/cm²/psi	
41363	–	With 36" RYB	kg/cm²/psi	
41365	–	With 60" RYB	kg/cm²/psi	
43365	–	With 60" *PLUS II*™ standard fittings	kg/cm²/psi	
41332**	42012	Manifold only	bar/psi	R-134a/404A/407C
40944	–	Manifold only with 1/4" ports and 5/16" hose fittings	bar/MPa	R-410A
41781	–	Manifold only with 5/16" fittings	bar/MPa	
41780	–	Manifold only with 1/4" fittings	bar/MPa	

* Special R-410A hose – R/B hoses are 1/4" x 45° 5/16" end; Y hose is 1/4" x 45° 1/4" end.
** Now shipping in clamshells. Order either part number.

SERIES 41 MANIFOLDS

ºF and ºC with 3-1/8" (80 mm) gauges

Series 41 manifolds are also available with larger, easier to read 3-1/8" color-coded gauges in rugged steel cases with polycarbonate crystals. These gauges feature 1% accuracy (Class 1) for an exact reading in critical charge systems.

- Color-coded scales
- Sliding double "O" ring pistons reduce wear
- Long life nylon seats
- Forged brass body for durability
- Full porting maximizes capacity and flow
- Some models include color-coded, 60" *PLUS II*™ hoses with standard 1/4" flare fittings
- Hose assemblies UL recognized for 4000 psi (275 bar) burst and 800 psi (55 bar) working pressure. File# SA9737
- Made in the USA

Box	Clamshell			
UPC#	**UPC#**	**Description - ºF/ºC**	**Scale**	**Refrigerant**
–	41612	Manifold only - solar gauge	bar/psi/MPa	R-22/134a/404A/
–	41615	With 60" *PLUS II*™ standard fittings - solar gauge	bar/psi/MPa	407C/422D/427A/507
41863	–	Manifold only with 5/16"-1/4"-5/16" anchor fittings and 1/4" service fittings - red/blue gauge	kPa/psi	R-410A
UPC#	**UPC#**	**Description - ºF - Red/Blue**	**Scale**	**Refrigerant**
–	42021	Manifold only	bar/psi	R-410A
–	42024	With 60" *PLUS II*™ standard fittings	bar/psi	
41842	–	Manifold only	psi	R-12/22/134a
–	42007	With 60" *PLUS II*™ standard fittings	psi	
41846	–	With 72" *PLUS II*™ with couplers	psi	
49271**	42001	Manifold only	psi	R-22/404A/410A
–	42004	With 60" *PLUS II*™ standard fittings	psi	
49272**	42005	Manifold only	psi	R-22/134a/404A
–	42006	With 60" *PLUS II*™ standard fittings	psi	
UPC#	**UPC#**	**Description - ºC - Red/Blue**	**Scale**	**Refrigerant**
–	41622	Manifold only	bar/psi	R-22/134a/404A
–	41852	Manifold only	kPa/psi	
–	41855	With 60" *PLUS II*™ standard fittings	kPa/psi	
41642	–	Manifold only	bar/psi	R-22/134a/407C
41632	–	Manifold only	bar/psi	R-12/134a/413A
41652	–	Manifold only with 5/16", 1/4", 5/16" anchor and 1/4" service fittings	bar/psi	R-410A
41862	–	Manifold only with 5/16" anchor and service fittings	kPa/psi	
–	41865	41862 with 60" *PLUS II*™ 5/16" fittings	kPa/psi	
–	42031	Manifold only	psi	R-22/404A/410A
–	42034	With 60" *PLUS II*™ hose, standard fittings		

* Manifold comes standard with certified gauges. For more information on the certification of 3-1/8" gauges, see page 51.

** Now shipping in clamshells. Order either part number. See page 36 for automotive couplers.

SERIES 41 DELUXE MANIFOLDS

ºF Class 1 (1% accuracy) brass gauges

All the same features as the regular "Series 41" with 1% accuracy (Class 1) brass gauges.

- Upgraded movement with phosphor bronze plates, brass gears and pinions. Dissimilar parts create less friction and last longer. FlutterLess™ technology included
- Polished solid brass case with glass crystals
- Made in the USA

UPC#	Description	Scale	Refrigerant
41232†	Manifold only	psi	R-12/22/502
41233	With 36" RYB	psi	
43233	With 36" *PLUS II*™ standard fittings	psi	
41235	With 60" RYB	psi	
43235	With 60" *PLUS II*™ standard fittings	psi	
44235	With 60" *PLUS II*™ SealRight fittings	psi	
42332††	Manifold only	psi	R-22/134a/404A
42333	With 36" RYB	psi	
42335	With 60" RYB	psi	
42436	With 60" *PLUS II*™ compact ball valve fittings	psi	
42435	With 60" *PLUS II*™ standard fittings	psi	

† Now shipping in clamshells UPC# 42020. Order either part number.

†† Now shipping in clamshells UPC# 42011. Order either part number.

See page 36 for automotive couplers.

NH_3 AMMONIA MANIFOLD

This heavy duty manifold features cast iron body and full size metal handles. Dual temperature/pressure R717 gauge has bar with ˚C and psi with ˚F ammonia scales.

- Finger-tight one-piece valve stem for positive seal on nylon seat
- Easy, accurate valve adjustment
- Use only with NH_3 rated hoses
- Made in the USA

UPC#	Description
40190	Manifold body with valves
40192	Manifold and gauges
40193	Manifold and gauges with three NHA 48" hoses
40199	Replacement valve assembly
41151	Hose anchor

HEAT PUMP MANIFOLD

The YELLOW JACKET® Heat Pump Manifold features two 800 psi gauges to read all heat pump pressure conditions. Traditional lo-side manifold gauges can be susceptible to damage when heat pumps go into heating mode. Because the lo-side gauge of the YELLOW JACKET Heat Pump Manifold is also designed for pressures up to 800 psi, it can read the pressure whether the pump is in heating mode, cooling mode or transition.

- Large 3-1/8" gauges feature black steel cases with polycarbonate crystal
- Hi- and lo-side gauges read up to 800 psi
- Larger dials are bold and easy to read
- Dials with 1% accuracy (Class 1) full scale movement provide the level of accuracy necessary for critical charge systems
- Proven sliding double "O" ring pistons reduce wear
- Long life nylon seats
- Forged brass body for durability
- Full porting maximizes capacity and flow
- Full-size metal valve handles for easy operation
- Hose assemblies UL recognized for 4000 psi (275 bar) burst and 800 psi (55 bar) working pressure (File # SA9737)
- Made in the USA

UPC#	Description	Hoses	Hose holder fittings	Refrigerants
42041	Heat pump manifold	None	1/4-1/4-1/4"	R-22/ R-407C/ R-410A
42044	Heat pump manifold	(3) 60" black *PLUS II*™ 1/4" hoses	1/4-1/4-1/4"	
42040*	Heat pump manifold in fitted backpack	(3) 60" black *PLUS II*™ 1/4" hoses	1/4-1/4-1/4"	
49133	High side replacement gauge	800 psi, °F	–	
49134	Low side replacement gauge	800 psi, °F	–	
42052	Heat pump manifold	None	1/4-1/4-1/4"	R-410A
42055	Heat pump manifold	(3) 60" black *PLUS II*™ 1/4" ball valve hoses	1/4-1/4-1/4"	
42051	Heat pump manifold	None	5/16-1/4-5/16"	
42054	Heat pump manifold	60" black *PLUS II*™ 1/4" ball valve hoses; (2) 5/16" on service end (1) 1/4" on service end	5/16-1/4-5/16"	
49141	High side replacement gauge	800 psi (55 bar), °C and °F	–	
49142	Low side replacement gauge	800 psi (55 bar), °C and °F	–	

*Limited time offer

MANIFOLD SELECTION CHART

Refrigerant - °F/ °C	TITAN™ 4-Valve	TITAN™ 2-Valve	*BRUTE II*™ 4-Valve	*BRUTE II*™ 4-Valve commercial	Series 41
R-22/134a/404A/407C/ 409A/410A/438A/507	49892 49895	49792 49795	–	–	41612 41615
R-22	49922 49925	–	46021 46026	46081 46084	–
R-410A	49915	49815	46001	–	41863
Refrigerant - °F	**TITAN™ 4-Valve**	**TITAN™ 2-Valve**	***BRUTE II*™ 4-Valve**	**Series 41**	
R-12/22/502	49902 49905	49282 49801 49802 49805	46020 46022 46080 46082 49292	41212 41213 41232 41233 41235 41215 41219 41220 42000 42015 42020 42215 42219 43213 43215 43219 43220 43233 43235 44213 44215 44219 44220 44235	
R-12/22/134a	–	–	–	41842 41846 42007	
R-22/134a/404A	49983 49987 49993 49997	49883 49887 49889	46040 46041 46042 46043 46048 46090 46091 46092 46094	42005 42006 42332 42333 42335 42436 42435 49272	
R-22/404A/410A	49283 49963 49967 49968	49281 49863 49867 49868	46010 46013 49291	42001 42004 49271	
R-22/410A	49973 49977	–	46011		
R-134a	–	49847	–	–	
R-134a/404A/407C	49932 49935 49952 49955	49831 49832 49835	46030 46031 46032 46038	–	
R-134a/404A/507	–	–	–	41311 41312 41313 41315 41319 42010 42011 42014 42315 43313 43315 43319 44313 44315 44319	
R-410A	49960 49962 49965 49982	49860 49862 49865	46000 46003	41702 41709 41710 41711 41712 41715 42021 42024 42030 42715	
R417A/422A/422D	49900	–	–	–	
Refrigerant - °C	**TITAN™ 4-Valve**	**TITAN™ 2-Valve**	***BRUTE II*™ 4-Valve**	**Series 41**	
R-12/22/502	49906 49916	49806 49816	46120 46180	41222 41223 41225 41282 41283 41285 41292 41293 41295 41299 42002 42008	
R-12/134a/413A	–	–	–	41632	
R-22/134a/404A	49911 49912 49933	49833 49811 49812	46140	41622 41852 41855	
R-22/134a/407C	49903	49803	46150	41642	
R-134a/404A/407C	49936 49956	49836 49856	46130 46190	41332 42012	
R-134a/404A/507	–	–	–	41353 41355 41363 41365 41382 41392 43355 43365	
R-410A	49969 49970 49913 49914	49869 49870 49813 49814	46160 46170	40944 41652 41780 41781 41862 41865	

LIQUID CHARGER

Liquid charging is recommended when charging blends into refrigeration and air conditioning systems, and a liquid charger adapter is necessary for safe and fast liquid charging through the low pressure side of a system.

- The adapter connects to the cylinder valve or refrigerant can
- To protect the compressor, adapter orifice reduces liquid flow to a level below compressor capacity
- Eliminates the time and work of heating cylinders

UPC#	Description
41123	1/4" Liquid charging adapter
41124	5/16" Liquid charging adapter
41132	1/4" "O" ring and orifice
41138	5/16" "O" ring and orifice

"O" RING LUBRICANT

To lubricate "O" rings in manifolds when pistons or "O" rings are being replaced. Use sparingly.

UPC#	Description
41118	"O" ring lubricant (0.75 oz.)

MANIFOLD PARTS KIT
For Series 41, TITAN™, and *BRUTE II*™ Manifolds

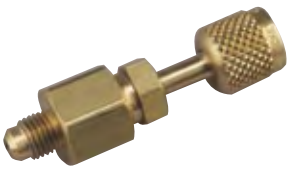
UPC#	Description
41099	Complete kit
41105	Box only with label
Kit contents/quantity	
41041	Yellow handle with screw - TITAN (4)
41042	Blue handle with screw - TITAN (3)
41044	Red handle with screw - TITAN (3)
41048	Handle screws (2) - TITAN (6 sets)
41061	Sight glass (1), retainer (1), gaskets (2) - *BRUTE II*/TITAN (4 sets)
41090	Handle screws (2) - *BRUTE II* (6 sets)
41091	Yellow handle with screw - *BRUTE II* (4)
41092	Blue handle with screw - *BRUTE II* (3)
41094	Red handle with screw - *BRUTE II* (3)
41096	Valve retaining nut - *BRUTE II* (4)
41103	3/8" Piston - *BRUTE II* (8)
41106	Feed screw - *BRUTE II* (4)
41134	Feed screw - Series 41/TITAN (6)
41135	Valve retaining nut - Series 41/TITAN (6)
41141	Metal handle with screw - Series 41 (4)
41142	Handle screws (2) - Series 41/TITAN (6 sets)
41133	1/4" Piston - Series 41/TITAN (6)

MANIFOLD CARRYING CASES

Heavy duty blue blow-molded cases are available in four different manifold/hose configurations. Includes handle and a long life top hinge.

UPC#	Description
40261	Series 41 case – 13-1/2" x 10" x 3-1/2"
40263	Series 41 case – 12-1/4" x 8" x 4-1/4"
41111	Bantam™, *BRUTE*™ and TITAN™ case – 13-1/2" x 10" x 4-5/8"
40822	Case for *BRUTE*™ *II* and Refrigeration System Analyzer (40815) – 6-1/2" x 17" x 14"

MANIFOLD PARTICULATE FILTER



As manifold usage changes with more recovery change outs, more particulate matter is drawn through manifolds. Trap the particles with these fittings before they damage valve seats or pass into your recovery equipment. Replaceable, cleanable screens.

UPC#	Description
41119	1/4" Manifold particulate filter
41120	3/8" Manifold particulate filter
41121	1/2" Manifold particulate filter
41122	Replacement filter screen (5 pak)

SINGLE GAUGE MANIFOLD

- Check pressure on lo-side of system
- Nylon seals
- Double "O" ring pistons

UPC#	Description
40318	Lo-side manifold R-12/22/502
40319	Lo-side manifold R-134a/404A/407C
40320	Lo-side manifold R-410A

SINGLE TEST GAUGES

Quick pressure checks – use lo- or hi-side gauge with quick coupler to attach directly to system or tanks.

UPC#	Description
Gauge with quick coupler and 12" hose - angle coupling	
40341	Red pressure °F
40342	Blue compound °F
14811	12" Red hose 1/4" Male flare x 45° quick coupler
14821	12" Blue hose 1/4" Male flare x 45° quick coupler
19110	Quick coupler only
Gauge with 19110 quick coupler for recovery tank pressure checks	
40331	Red pressure °F
40332	Blue compound °F
19110	Quick coupler only

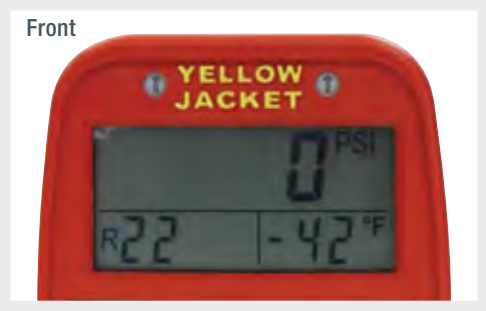
YELLOW JACKET
0 PSI
R410A -62 °F
YELLOW JACKET
164 PSI
R410A 58 °F
YELLOW JACKET
TEST AND CHARGING MANIFOLD
Ritchie
Burst Max. w.p.
YELLOW JACKET

YELLOW JACKET®

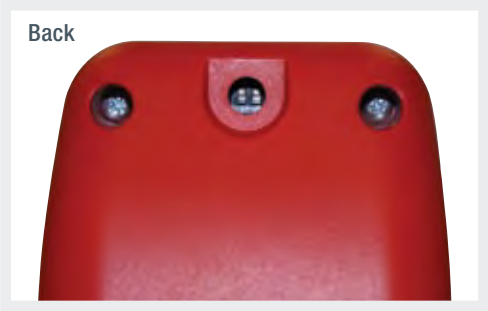
Solar/Light-Powered Digital LCD Gauges

Class 1 (1% accuracy) digital refrigerant gauges measure eight commonly used refrigerants

- Light-powered pressure gauges operate continuously, even in low light conditions. Eliminate battery replacement costs and loss of power during jobs
- Automatic pressure-temperature readout for R-22, R-134a, R-404A, R-507, R-407C, R-409A, R-410A and R-438A
- Available individually or on TITAN™ 4-Valve Manifold, TITAN™ 2-Valve Manifold or Series 41 Manifold



Two selector switches on the front panel select the refrigerant type (left switch) and zero-set the gauge (right switch).



A DIP switch on the back selects the unit of measure.

- Calibrated to 1% accuracy
- 1/8" NPT Male connection
- Two second display response
- ABS plastic case
- PSI °F, PSI °C, bar °C and MPa °C
- Lo-side pressure scale of 30 inHg vacuum to 350 psi
- Hi-side pressure scale of 0 to 800 psig
- Working temperature range from 14 to 122°F (-10 to 50°C)

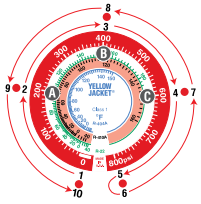
UPC#	Description
49041	Hi-side pressure solar gauge
49042	Lo-side compound solar gauge
49087	Hi-side (red) gauge boot
49088	Lo-side (blue) gauge boot
49089	Set of red and blue gauge boots for 49041 and 49042

YELLOW JACKET® CERTIFIED GAUGES
10-point measurement and documentation

Have greater confidence in measurements and decisions with certified YELLOW JACKET Class 1 Replacement Manifold Gauges and Manifolds with Class 1 gauges.

YELLOW JACKET gauges have always been manufactured and calibrated to NIST standards. The standard Ritchie Engineering procedure has been to measure for accuracy at five points: two times up the scale and then back down. Many manufacturers measure at only three points (A, B, C).

The Ritchie Engineering certification process documents the NIST calibration plus compliance to ANSI Z540.1 and ISO 10012 standards. The certification is good for one year; recalibration is recommended after one year.



CALIBRATION CERTIFICATE

The certificate packed with each certified gauge provides evidence of calibration standards traceable to NIST and includes a serial number that matches the serial number on the gauge. Ritchie Engineering maintains records of each certificate.

3-1/8" Manifold Gauge with Class 1 Accuracy

Repeated pressurization and recalibration.

Atmospheric pressure variations are of little importance with gauging pressures typically encountered in refrigeration and A/C service work. With a change of 2 inHg, the gauge changes by only 1 psi. It is unlikely that system pressures would cause concerns if the reading is correct within several psi.

Repeated pressurization (especially over-pressurization) of a gauge does, however, tend to change the response of the tube or diaphragm, and recalibration may be required.

The ***easiest way*** for a service technician to recalibrate a gauge is to connect it to a source of known, pure refrigerant, and then adjust the recalibration screw on the gauge to the appropriate pressure reading based on refrigerant temperature.

The ***most accurate*** way to recalibrate is to connect the gauge to a deadweight tester at a recalibration facility that has equipment traceable to NIST. This is usually cost-prohibitive for most situations, but may be warranted when total documentation is required.

Why should I zero out a manifold gauge?

As a general rule, a gauge can get off "0" due to a change in altitude or barometric pressure. It's important that you check to see that it's set back to "0" before you start charging. To reset a gauge, look for the reset screw that will be located on the front or back of the gauge. Then use a small blade screw driver to set the dial back to "0".

Using manifold gauges for evacuation?
See page 11 for important information.

Unless noted, gauges not meant to be used with liquid nitrogen. Dry nitrogen through a nitrogen regulator and coming to the manifold at less than 800 psi for calibration purposes is fine.

3-1/8" (80 mm) DRY MANIFOLD GAUGES (°F and °C) RED, BLUE AND BLACK With 1% accuracy (Class 1) calibration

Large 3-1/8" gauges are housed in a red or blue steel case with front recalibrator screw. High visibility colored temperature scales are easy to read through the full view polycarbonate crystal.

- Flutterless™ technology with brass surge protector to minimize needle pulsation
- Brass gauge movement
- Copper alloy Bourdon tube
- 1/8" NPT Male connection
- Calibrated to 1% accuracy
- Color-coded red for pressure and blue for compound
- Color-coded refrigerant types

When a gauge has a **RETARD zone**, full scale is considered to be the last marked reading prior to entering the RETARD zone. For example, this gauge has a full scale reading of 120 psi. Gauge accuracy is not specified in the RETARD zone.

°F - Fahrenheit Gauges

UPC#	Description	Pressure scale	Refrigerants
49101	3-1/8" Red pressure	0 - 500 psi	R-12/22/502
49102	3-1/8" Blue compound	30"-0-120** psi	
49103	3-1/8" Red pressure	0 - 500 psi	R-12/22/134a
49104	3-1/8" Blue compound	30"-0-120** psi	
49105	3-1/8" Red pressure	0 - 500 psi	R-22/134a/404A
49106	3-1/8" Blue compound	30"-0-120** psi	
49111	3-1/8" Red pressure	0 - 500 psi	R-417A/422A/422D
49112	3-1/8" Blue compound	30"-0-120** psi	
49133	3-1/8" Heat pump red dial	0 - 800 psi	R-22/407C/410A
49134	3-1/8" Heat pump blue dial	0 - 800 psi	
49135*	3-1/8" Red pressure	0 - 800 psi/bar	R-410A
49136*	3-1/8" Blue compound	30"-0-300*** psi/bar	
49137	3-1/8" Red pressure	0 - 800 psi	R-22/404A/410A
49138	3-1/8" Blue compound	30"-0-350*** psi	
49141*	3-1/8" Heat pump red dial	0 - 800 psi	R-410A
49142*	3-1/8" Heat pump blue dial	0 - 800 psi	
49151	3-1/8" Red pressure	0 - 500 psi	R-134a/404A/407C
49152	3-1/8" Blue compound	30"-0-120** psi	
Certified Gauges			
49201	3-1/8" Red pressure	0 - 500 psi	R-12/22/502
49202	3-1/8" Blue compound	30"-0-120** psi	
49203	3-1/8" Red pressure	0 - 500 psi	R-12/22/134a
49204	3-1/8" Blue compound	30"-0-120** psi	
49205	3-1/8" Red pressure	0 - 500 psi	R-22/134a/404A
49206	3-1/8" Blue compound	30"-0-120** psi	
49235*	3-1/8" Red pressure	0 - 800 psi/bar	R-410A
49236*	3-1/8" Blue compound	30"-0-300*** psi/bar	
49237	3-1/8" Red pressure	0 - 800 psi	R-22/404A/410A
49238	3-1/8" Blue compound	30"-0-350*** psi	
49251	3-1/8" Red pressure	0 - 500 psi	R-134a/404A/407C
49252	3-1/8" Blue compound	30"-0-120** psi	
49100	Replacement crystal		

* These gauges have °C and °F on dial. ** Features retard protection to 350 psi.
*** Features retard protection to 500 psi.

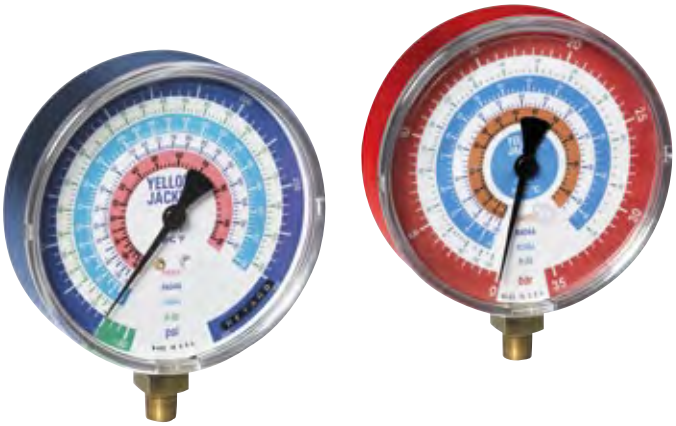
°C - Celsius Gauges

UPC#	Description	Pressure scale	Refrigerants
49107	3-1/8" Red pressure	kPa and psi	R-22/134a/404A
49108	3-1/8" Blue compound	kPa and psi	
49169	3-1/8" Red pressure	bar and psi	
49170	3-1/8" Blue compound	bar and psi	
49109	3-1/8" Red pressure	kPa and psi	R-410A
49110	3-1/8" Blue compound	kPa and psi	
49153	3-1/8" Red pressure	bar and MPa	
49154	3-1/8" Blue compound	bar and MPa	
49113	3-1/8" Red pressure	bar and psi	R-417A/422A/422D
49114	3-1/8" Blue compound	bar and psi	
49131	3-1/8" Red pressure	bar and psi	R-134a/404A/407C
49132	3-1/8" Blue compound	bar and psi	
49135*	3-1/8" Red pressure	bar and psi	R-410A
49136*	3-1/8" Blue compound	bar and psi	
49139	3-1/8" Red pressure	psi	R-22/404A/410A
49140	3-1/8" Blue compound	psi	
49141*	3-1/8" Heat pump red dial	0 - 800 psi	R-410A
49142*	3-1/8" Heat pump blue dial	0 - 800 psi	
49143	3-1/8" Red pressure	bar and MPa	R-12/22/502
49144	3-1/8" Blue compound	bar and MPa	
49145	3-1/8" Red pressure	bar and psi	R-12/22/502
49146	3-1/8" Blue compound	bar and psi	
49163	3-1/8" Red pressure	bar and MPa	R-134a/404A/407C
49164	3-1/8" Blue compound	bar and MPa	
49165	3-1/8" Red pressure	bar and psi	R-12/134a/413A
49166	3-1/8" Blue compound	bar and psi	
49167	3-1/8" Red pressure	bar and psi	R-22/134a/407C
49168	3-1/8" Blue compound	bar and psi	
Certified Gauges			
49231	3-1/8" Red pressure	bar and psi	R-134a/404A/407C
49232	3-1/8" Blue compound	bar and psi	
49235*	3-1/8" Red pressure	bar and psi	R-410A
49236*	3-1/8" Blue compound	bar and psi	
49243	3-1/8" Red pressure	bar and MPa	R-12/22/502
49244	3-1/8"Blue compound	bar and MPa	
49245	3-1/8" Red pressure	bar and psi	R-12/22/502
49246	3-1/8" Blue compound	bar and psi	
49253	3-1/8" Red pressure	bar and MPa	R-410A
49254	3-1/8" Blue compound	bar and MPa	
49263	3-1/8" Red pressure	bar and MPa	R-134a/404A/407C
49264	3-1/8" Blue compound	bar and MPa	
49265	3-1/8" Red pressure	bar and psi	R-12/134a/413A
49266	3-1/8" Blue compound	bar and psi	
49267	3-1/8" Red pressure	bar and psi	R-22/134a/407C
49268	3-1/8" Blue compound	bar and psi	
49269	3-1/8" Red pressure	bar and psi	R-22/134a/404A
49270	3-1/8" Blue compound	bar and psi	
49100	Replacement crystal		

* These gauges have °C and °F on dial.

LARGE 4" MANIFOLD GAUGES (°F and °C) RED AND BLUE

With 1% accuracy (Class 1) calibration



Large 4" gauges are housed in a red or blue steel case with front recalibrator screw. High visibility colored temperature scales are easy-to-read through the full view polycarbonate crystal.

- Flutterless™ technology with brass surge protector minimizes needle pulsation
- Brass gauge movement
- Copper alloy Bourdon tube
- 1/8" NPT Male connection
- Calibrated to 1% accuracy
- Color-coded blue for compound and red for pressure
- °F features color-coded refrigerant types: R-22, R-134a, R-404A, R-410A
- °C features color-coded refrigerant types: R-22, R-134a, R-404A, R-407C

°F - Fahrenheit Gauges			
UPC#	**Description**	**Pressure scale**	**Refrigerants**
49185	4" Red pressure	0 - 800 psi	R-22/134a/404A/410A
49186	4" Blue compound	30"-0-300* psi	
°C - Celsius Gauges			
UPC#	**Description**	**Pressure scale**	**Refrigerants**
49183	4" Red pressure	bar/psi	R-22/134a/404A/407C
49184	4" Blue compound	bar/psi	
49189	Replacement crystal for both °C and °F		

*Features retard protection to 500 psi.

3-1/2" (90 mm) LIQUID-FILLED MANIFOLD GAUGES (°F and °C) RED AND BLUE

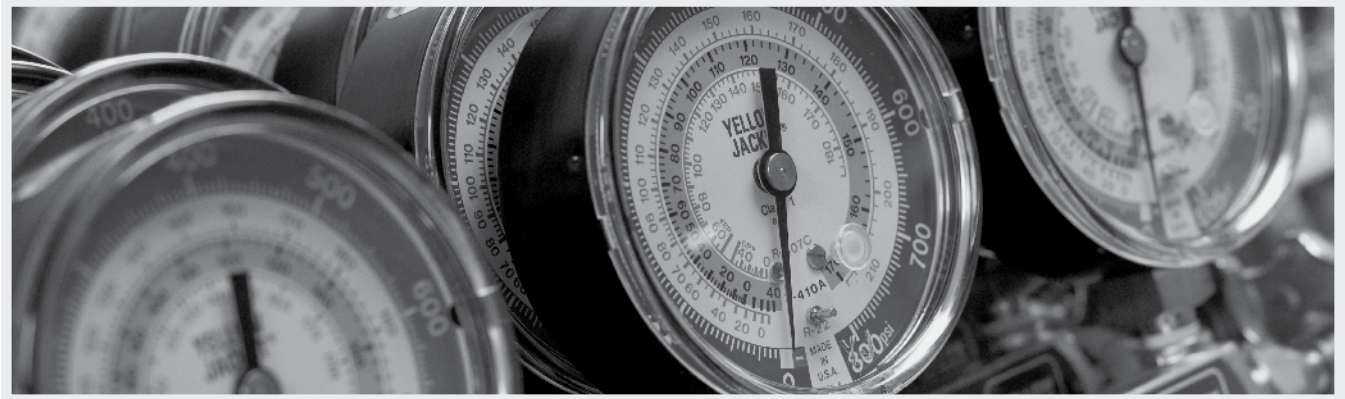
With 1% accuracy (Class 1) calibration

Gauges are completely filled with glycerin for maximum protection from pulsation. Large 3-1/2" (90 mm) diameter gauge with refrigerants color-coded on the dials in bold numbers. Offset stem fits all major manifold brands.

- Now with zero adjustment
- 1/8" NPT Male connection
- Temperature rating of 0° to 122°F (-18° to 50°C)
- Calibrated to 1% accuracy (Class 1)

°F - Fahrenheit and °C - Celsius Gauges			
UPC#	**Description**	**Pressure scale**	**Refrigerants**
49511	3-1/2" Red pressure	0-500 psi (0 to 34 bar)	R-22 only
49512	3-1/2" Blue compound	30"-0-120 psi (-1 to 8 bar)	
49519	3-1/2" Red pressure	0-800 psi (0 to 55 bar)	R-410A
49520	3-1/2" Blue compound	30"-0-300* psi (-1 to 21 bar)	
°F - Fahrenheit Gauges			
UPC#	**Description**	**Pressure scale**	**Refrigerants**
49513	3-1/2" Red pressure	0-500 psi	R-22/134a/404A
49514	3-1/2" Blue compound	30"-0-120 psi	
49515	3-1/2" Red pressure	0-800 psi	R-22/410A
49516	3-1/2" Blue compound	30"-0-300* psi	
49517	3-1/2" Red pressure	0-500 psi	R-134a/404A/407C
49518	3-1/2" Blue compound	30"-0-120 psi	
°C - Celsius Gauges			
UPC#	**Description**	**Pressure scale**	**Refrigerants**
49521	3-1/2" Red pressure	0-500 psi (0 to 35 bar)	R-134a/ 404A/407C
49522	3-1/2" Blue compound	30"-0-116 psi (-1 to 8 bar)	

*Features retard protection to 500 psi.



2-1/2" (68 mm) MANIFOLD GAUGES (°F and °C) RED AND BLUE Class B

- Steel case for durability
- High-visibility dials with colored temperature scales for easy reading
- Flutterless™ technology surge protector minimizes the needle pulsation for improved accuracy
- 1/8" NPT Male connection
- 3-2-3% accuracy
- Calibration traceable to NIST standards

°F - Fahrenheit Gauges

UPC#	Description	Pressure scale	Refrigerants
49001 49002 49008	2-1/2" Red pressure 2-1/2" Blue compound Set red and blue	0 - 500 psi 30"-0-120** psi	R-12/22/502
49013 49014	2-1/2" Red pressure 2-1/2" Blue compound	0 - 500 psi 30"-0-120** psi	R-12/22/134a
49015 49016	2-1/2" Red pressure 2-1/2" Blue compound	0 - 500 psi 30"-0-120** psi	R-22/134a/404A
49035* 49036*	2-1/2" Red pressure 2-1/2" Blue compound	0 - 800 psi/kg/cm² 30"-0-300*** psi/kg/cm²	R-410A
49051 49052	2-1/2" Red pressure 2-1/2" Blue compound	0 - 500 psi 30"-0-120** psi	R-134a/404A/507
49053* 49054*	2-1/2" Red pressure 2-1/2" Blue compound	bar and MPa bar and MPa	R-410A
49010	Replacement crystal		

* These gauges have °C and °F on dial.
** Features retard protection to 350 psi.
*** Features retard protection to 500 psi.
Note: Small screw in back is 6/32" x 5/32" Phillips pan head screw.
Note: Gauges not meant to be used with nitrogen.

°C - Celsius Gauges

UPC#	Description	Pressure scale	Refrigerants
49003 49004	2-1/2" Red pressure 2-1/2" Blue compound	kPa and psi kPa and psi	R-12/22/502
49005 49006	2-1/2" Red pressure 2-1/2" Blue compound	bar and psi bar and psi	R-12/22/502
49025 49026	2-1/2" Red pressure 2-1/2" Blue compound	bar and MPa bar and MPa	R-12/22/502
49027 49028	2-1/2" Red pressure 2-1/2" Blue compound	kg/cm² and psi kg/cm² and psi	R-12/22/502
49031 49032	2-1/2" Red pressure 2-1/2" Blue compound	bar and psi bar and psi	R-22/134a/407C
49033 49034	2-1/2" Red pressure 2-1/2" Blue compound	bar and psi bar and psi	R-22/134a/404A
49035* 49036*	2-1/2" Red pressure 2-1/2" Blue compound	psi/kg/cm² psi/kg/cm²	R-410A
49053* 49054*	2-1/2" Red pressure 2-1/2" Blue compound	bar and MPa bar and MPa	R-410A
49055 49056	2-1/2" Red pressure 2-1/2" Blue compound	bar and psi bar and psi	R-134a/404A/507
49057 49058	2-1/2" Red pressure 2-1/2" Blue compound	kg/cm² and psi kg/cm² and psi	R-134a/404A/507
49059 49060	2-1/2" Red pressure 2-1/2" Blue compound	MPa MPa	R-134a/404A/407C/507
49063 49064	2-1/2" Red pressure 2-1/2" Blue compound	bar and psi bar and psi	R-134a/404A/407C
49010	Replacement crystal		

* These gauges have °C and °F on dial.

HEAVY DUTY 2-1/2" BRASS MANIFOLD GAUGES (°F)

With 1% accuracy (Class 1) calibration

Solid brass case and premium movements. Heavy duty phosphor bronze and stainless steel internal components for longer service life under severe use.

- Flutterless™ technology with brass surge protector to minimize needle pulsation
- 1/8" NPT Male connection
- Calibrated to 1% accuracy
- Full view glass crystal

UPC#	Description	Pressure scale	Refrigerants
49047 49048	2-1/2" Brass pressure 2-1/2" Brass compound	0 - 500 psi 30"-0-120* psi	R-12/22/502
49067 49068	2-1/2" Brass pressure 2-1/2" Brass compound	0 - 500 psi 30"-0-120* psi	R-22/134a/404A
49049	Set of 49047, 49048		
49069	Set of 49067, 49068		
Certified Gauges			
49197 49198	2-1/2" Brass pressure 2-1/2" Brass compound	0 - 500 psi 30"-0-120* psi	R-12/22/502
49199 49200	2-1/2" Brass pressure 2-1/2" Brass compound	0 - 500 psi 30"-0-120* psi	R-22/134a/404A
49010	Replacement crystal (polycarbonate) for old 49011, 49012		
49039	Glass crystal for brass gauge		
49040	Brass gauge ring		

*Features retard protection to 350 psi.
Note: Gauges are not meant to be used with nitrogen.

PROTECTIVE GAUGE BOOTS
For 2-1/2" and 3-1/8" gauges

- Rubber boots slip easily around gauges to cushion and protect them from impact
- Fit 2-1/2" or 3-1/8" gauges without covering easy access recalibration screw
- Color-coded red or blue to match gauge

UPC#	Description
49090	2-1/2" Set of gauge boots
49091	2-1/2" Red protective gauge boot
49092	2-1/2" Blue protective gauge boot
49190	3-1/8" Set of gauge boots
49191	3-1/8" Red protective gauge boot
49192	3-1/8" Blue protective gauge boot
49087	Red solar gauge boot
49088	Blue solar gauge boot
49089	Set red and blue solar gauge boots

LOW PRESSURE DIAPHRAGM 2-1/2" GAUGES

- The bronze diaphragm is designed for better protection on incidental overpressure
- Intended for low pressure applications only
- Black steel case
- Cannot be recalibrated

UPC#	Description	Range
78056	2-1/2" Barb type connection	0-10" W.C.
78061	2-1/2" Barb type connection	0-35" W.C.
78057	2-1/2" 1/4" NPT Male connection	0-10" W.C.
78066	2-1/2" 1/4" NPT Male connection	0-35" W.C.

3-1/8" MECHANICAL VACUUM GAUGES

Full range mechanical Bourdon tube steel gauges for determining system vacuum is more accurate than a compound gauge. All gauges are 1/8" NPT Male bottom connection.

- Larger to show vacuum more accurately in inches of mercury and Torr (or millibar)

CAUTION: Vacuum gauges must be handled carefully. Dropping, pressurizing and rough handling reduce their life.

UPC#	Size	Scale	Connection	Case
69044	3-1/8"	0-30" Hg & 760-0 Torr	1/8" NPT Male lower	Green
69045	3-1/8"	1000-0 millibar & 30-0" (Euro)	1/8" NPT Male lower	Green

2-1/2" AMMONIA GAUGES
With dual scale

Ammonia gauges are designed for use on manifolds and as permanent gauges on any system or equipment charged with ammonia. The Bourdon tube is made of 316 stainless. The dials show dual temperature and pressure scales. All gauges are equipped with restrictors to protect the gauges against pulsating pressure.

- 1/4" NPT Male connection
- Black steel gauges
- Steel sockets
- Calibrated to 3-2-3% accuracy

UPC #	Description	Range
40201	2-1/2" Gauge with twist on polycarbonate crystal	30" - 0 - 400 psi °F and 76-0-28 bar °C
40202	2-1/2" Gauge with twist on polycarbonate crystal	30" - 0 - 150 psi °F and 76-0-10 bar °C
49010	2-1/2" Replacement crystal	

MATCHING REFRIGERANT WITH A YELLOW JACKET® GAUGE

Gases	UPC #	Certified	Size	Type	Color	F/C	Scale
12/134a/ 413A	49165	49265	3-1/8"	Steel	Red	C	bar/psi
	49166	49266	3-1/8"	Steel	Blue	C	bar/psi
12/22/ 134a	49013		2-1/2"	Steel	Red	F	psi
	49014		2-1/2"	Steel	Blue	F	psi
	49103	49203	3-1/8"	Steel	Red	F	psi
	49104	49204	3-1/8"	Steel	Blue	F	psi
12/22/ 502	49001		2-1/2"	Steel	Red	F	psi
	49002		2-1/2"	Steel	Blue	F	psi
	49008		Set 49001/02				
	49003		2-1/2"	Steel	Red	C	kPa/psi
	49004		2-1/2"	Steel	Blue	C	kPa/psi
	49005		2-1/2"	Steel	Red	C	bar/psi
	49006		2-1/2"	Steel	Blue	C	bar/psi
	49025		2-1/2"	Steel	Red	C	bar/MPa
	49026		2-1/2"	Steel	Blue	C	bar/MPa
	49027		2-1/2"	Steel	Red	C	kg/cm²/psi
	49028		2-1/2"	Steel	Blue	C	kg/cm²/psi
	49047	49197	2-1/2"	Brass		F	psi
	49048	49198	2-1/2"	Brass		F	psi
	49049		Set 49047/48				
	49101	49201	3-1/8"	Steel	Red	F	psi
	49102	49202	3-1/8"	Steel	Blue	F	psi
	49143	49243	3-1/8"	Steel	Red	C	bar/MPa
	49144	49244	3-1/8"	Steel	Blue	C	bar/MPa
	49145	49245	3-1/8"	Steel	Red	C	bar/psi
	49146	49246	3-1/8"	Steel	Blue	C	bar/psi
22	49511		3-1/2"	Liquid	Red	F/C	bar/psi
	49512		3-1/2"	Liquid	Blue	F/C	bar/psi
134a/ 404A/ 407C	49063		2-1/2"	Steel	Red	C	bar/psi
	49064		2-1/2"	Steel	Blue	C	bar/psi
	49131	49231	3-1/8"	Steel	Red	C	bar/psi
	49132	49232	3-1/8"	Steel	Blue	C	bar/psi
	49151	49251	3-1/8"	Steel	Red	F	psi
	49152	49252	3-1/8"	Steel	Blue	F	psi
	49163	49263	3-1/8"	Steel	Red	C	bar/MPa
	49164	49264	3-1/8"	Steel	Blue	C	bar/MPa
	49517		3-1/2"	Liquid	Red	F	psi
	49518		3-1/2"	Liquid	Blue	F	psi
	49521		3-1/2"	Liquid	Red	C	bar/psi
	49522		3-1/2"	Liquid	Blue	C	bar/psi
134a/ 404A/ 407C/507	49059		2-1/2"	Steel	Red	C	MPa
	49060		2-1/2"	Steel	Blue	C	MPa
134a/ 404A/ 507	49051		2-1/2"	Steel	Red	F	psi
	49052		2-1/2"	Steel	Blue	F	psi
	49055		2-1/2"	Steel	Red	C	bar/psi
	49056		2-1/2"	Steel	Blue	C	bar/psi
	49057		2-1/2"	Steel	Red	C	kg/cm²/psi
	49058		2-1/2"	Steel	Blue	C	kg/cm²/psi
22/134a/ 404A	49015		2-1/2"	Steel	Red	F	psi
	49016		2-1/2"	Steel	Blue	F	psi
	49033		2-1/2"	Steel	Red	C	bar/psi
	49034		2-1/2"	Steel	Blue	C	bar/psi
	49067	49199	2-1/2"	Brass		F	psi
	49068	49200	2-1/2"	Brass		F	psi
	49069		Set 49067/68				
	49105	49205	3-1/8"	Steel	Red	F	psi
	49106	49206	3-1/8"	Steel	Blue	F	psi
	49107		3-1/8"	Steel	Red	C	kPa/psi
	49108		3-1/8"	Steel	Blue	C	kPa/psi
	49169	49269	3-1/8"	Steel	Red	C	bar/psi
	49170	49270	3-1/8"	Steel	Blue	C	bar/psi
	49513		3-1/2"	Liquid	Red	F	psi
	49514		3-1/2"	Liquid	Blue	F	psi

Gases	UPC #	Certified	Size	Type	Color	F/C	Scale
22/134a/ 404A/407C	49183		4"	Steel	Red	C	bar/psi
	49184		4"	Steel	Blue	C	bar/psi
22/134a/ 404A/407C 409A/410A/ 438A/507	49041		–	Solar	Red	F/C	bar/psi/MPa
	49042		–	Solar	Blue	F/C	bar/psi/MPa
22/134a/ 404A/410A	49185		4"	Steel	Red	F	psi
	49186		4"	Steel	Blue	F	psi
22/134a/ 407C	49031		2-1/2"	Steel	Red	C	bar/psi
	49032		2-1/2"	Steel	Blue	C	bar/psi
	49167	49267	3-1/8"	Steel	Red	C	bar/psi
	49168	49268	3-1/8"	Steel	Blue	C	bar/psi
22/404A/ 410A	49137	49237	3-1/8"	Steel	Red	F	psi
	49138	49238	3-1/8"	Steel	Blue	F	psi
	49139		3-1/8"	Steel	Red	C	psi
	49140		3-1/8"	Steel	Blue	C	psi
22/410A	49515		3-1/2"	Liquid	Red	F	psi
	49516		3-1/2"	Liquid	Blue	F	psi
410A	49035		2-1/2"	Steel	Red	F/C	kg/cm²/psi
	49036		2-1/2"	Steel	Blue	F/C	kg/cm²/psi
	49053		2-1/2"	Steel	Red	F/C	bar/MPa
	49054		2-1/2"	Steel	Blue	F/C	bar/MPa
	49109		3-1/8"	Steel	Red	C	kPa/psi
	49110		3-1/8"	Steel	Blue	C	kPa/psi
	49135	49235	3-1/8"	Steel	Red	F/C	bar/psi
	49136	49236	3-1/8"	Steel	Blue	F/C	bar/psi
	49141		3-1/8"	Steel	Heat Pump Red	F/C	bar/psi
	49142		3-1/8"	Steel	Heat Pump Blue	F/C	bar/psi
	49153	49253	3-1/8"	Steel	Red	C	bar/MPa
	49154	49254	3-1/8"	Steel	Blue	C	bar/MPa
	49519		3-1/2"	Liquid	Red	F/C	bar/psi
	49520		3-1/2"	Liquid	Blue	F/C	bar/psi
417A/ 422A/ 422D	49111		3-1/8"	Steel	Red	F	psi
	49112		3-1/8"	Steel	Blue	F	psi
	49113		3-1/8"	Steel	Red	C	bar/psi
	49114		3-1/8"	Steel	Blue	C	bar/psi

YELLOW JACKET

YELLOW JACKET®

Electronic Charging Scales

Eliminates refrigerant transfer from tank to cylinder to system.
The cylinder with refrigerant is weighed before and after charging.
Charge directly into the system or recover from the system

Electronic charging scales show the progress of the charge as it's happening, indicating when to close the valves and stop the charge. Works with any refrigerant in any system.

- Calibration standards traceable to NIST
- Removable control module on retractable 5' coiled cord
- Mechanical overload protection and "OL" alert on LCD
- Industrial grade circuitry for long life performance
- Minus (-) reading shows weight removed from the platform
- Single point load cell strain gauge for long-term stability and accuracy

Full bridge configuration with four strain gauges for accuracy.

Programmable electronic charging scales have added capabilities for automated, faster and more economical charging. Simply program the charging weight and the valve will close automatically when the charge is complete.

- Mesh filter in charging module protects solenoid valve from debris
- Low flow triggers automatic hold to extend solenoid life
- Schrader valve prevents backflow through solenoid
- Charging accuracy is equal to scale accuracy +/- 0.25 oz.
- Solenoid valve with 400 psi maximum operating pressure differential (MOPD) allows metering broad range of refrigerants
- Made in the USA

Convert standard 68802 and 68800 scales to programmable with upgrade kits 68804 and 68805. Each kit includes a charging module, power pack, instruction manual and larger carrying case to hold all parts.

UPC#	Description
68802	Electronic charging scale 110 lbs. (50 kg)
68812	Electronic charging scale 220 lbs. (100 kg)
68803	Programmable electronic charging scale 110 lbs. (50 kg)
68813	Programmable electronic charging scale 220 lbs. (100 kg)
68800	Metric electronic charging scale 50 kg (110 lbs.)
68810	Metric electronic charging scale 100 kg (220 lbs.)
68801	Metric programmable charging scale 50 kg (110 lbs.)
68811	Metric programmable charging scale 100 kg (220 lbs.)
68804	115V Upgrade kit
68805	230V Upgrade kit
68806	115V Adapter
68807	230V Adapter
68818	230V Adapter (UK)
68835	Replacement battery cover (black)
69089	Replacement battery cover (blue)
68808	Charging module

Specifications

Resolution: 0.1 oz./0.01 lb./0.01 kg
Display: Sealed LCD with high resolution 0.5" characters
Keypad: Moisture resistant membrane keypad with tactile metal domes
Operating temperature range: 32° to 122°F (0° to 50°C)
Storage temperature range: -4° to 158°F (-20° to 70°C)
Power: 9V battery, battery life approximately 25 hours

Specifications: 110 lbs. (50 kg) scale

Platform size: 9" x 9" (228 mm x 228 mm)
Case size: 15.5" x 12.25" x 3.25" (394 mm x 311 mm x 83 mm)
Accuracy: ± 0.5 oz./ ± 0.03 lb./ ± 0.015 kg or 0.1% of reading, whichever is greater
Total unit weight: 9 lbs. (4.1 kg)

Specifications: 220 lbs. (100 kg) scale

Platform size: 11.3" x 11.3" (287 mm x 287 mm)
Case size: 18" x 13" x 4.25" (457 mm x 330 mm x 108 mm)
Accuracy: ± 1.0 oz./ ± 0.06 lb./ ± 0.03 kg or 0.1% of reading, whichever is greater
Total unit weight: 12 lbs. (5.4 kg)

Model 68802 – 110 lbs. (50 kg) 9" x 9" (228 mm x 228 mm)

Model 68812 – 220 lbs. (100 kg) 11.3" x 11.3" (287 mm x 287 mm)

SuperEvac™ LCD VACUUM GAUGE

Full range from atmosphere to 1 micron

The SuperEvac™ LCD vacuum gauge combines thermocouple sensor technology with advanced electronics for precise readings and repeatability not found with thermistor sensors or analog meters.

Thermocouple technology has long been proven in laboratory and precision industrial instrumentation for sensing the deep vacuum range. Thermocouple sensors are factory calibrated and exhibit few of the electronic variances of thermistor sensors found in many other electronic gauges. Durable molded case with storage for sensor, cable and brass connector.

Thermocouple sensor features:

- No adjustments or warm-up. Stays calibrated after on/off switching and long evacuations
- Automatic battery compensation
- Automatic ambient temperature compensation
- Replacement sensor requires no calibration

LCD gauge features:

- Normal handling and jarring will not affect the LCD reading
- Case protects electronic circuitry and sensor
- Calibration standards traceable to NIST
- Precision circuitry controls sensor and translates sensor input into micron readings
- Auto-off 20 minutes after power up and no change
- Made in the USA

Specifications

Response time: 3 seconds
Calibration: Automatic
Warm up: 3 seconds
Sensor cable: 5.5' (167 cm) coiled
Sensor connection: 1/4" Male flare
Operating temperature range: 32˚ to 120˚F (0˚ to 49˚C)
Display: 0.5" LCD with battery check
Automatic shut-off
Power: D cell battery, 70 hours continuous battery life
Dimensions: 9" x 12.25" x 2.37" (230 mm x 310 mm x 60 mm)
Accuracy: ± 20% of reading

UPC#	Description
69075	SuperEvac LCD vacuum gauge full range complete in case
69067	Optional ball valve to add to sensor 1/8" NPT Female x 1/4" Female flare
69071	Brass connector 1/4" Female flare x 1/4" Female flare (optional)
69073	Replacement sensor for 69070, 69075
19110	Optional coupler to add to sensor 1/8" NPT Female x 1/4" Female flare

DIGITAL LCD ECONOMY VACUUM GAUGE

Connect to the YELLOW JACKET® SuperEvac™ Vacuum Pump, or in line with a tee fitting, or directly to the system with YELLOW JACKET® Core Removal Tool 18975.

This product is protected by one or more of U.S. Patent Number: 6,779,350; 6,832,491; 7,073,346; 7,310,965; and 7,428,822

The digital LCD economy vacuum gauge indicates air and moisture have been removed from the system. Track down the 14 level bargraph from atmosphere to 25 microns to know that the system is clean and the vacuum pump is performing properly. Packaged complete with 9V alkaline battery and hanging hook.

- Unique thermal conductivity sensor automatically compensates for temperature with no calibration
- Simple On/Off controls
- Easy-to-clean sensor handles 450 psi positive pressure
- Rugged contractor-grade construction with tough ABS housing and solid state circuitry for accuracy
- Automatic battery saver shuts gauge off after 20 minutes with no reading changes
- Low battery indicator
- Calibration standards traceable to NIST
- Patented technology
- Made in the USA

To keep the 69080 vacuum gauge accurate, it is best to avoid oil contamination. Keep the sensor vertical whenever possible and connect the gauge directly to the system, away from the pump.

UPC#	Description
69080	Digital LCD vacuum gauge with battery, hook and pouch
69081	Replacement soft-sided protective case
69079	Replacement battery door and screw
69095	Tee fitting

DIGITAL VACUUM GAUGE
Seven units of measurement for confidence

This easy-to-use gauge shows that air and moisture have been removed from the system. Simple push of a button changes the display readout between 7 units of measurement. **Each displays from atmosphere to 10 microns (bargraph indication above 25000 microns) to let you know that your vacuum pump is clean and performing properly.** If the sensor gets dirty, simply plug a new sensor into the gauge, run through a quick calibration process and be back on the job within minutes.

This product is protected by one or more of U.S. Patent Number: 6,779,350; 6,832,491; 7,073,346; 7,310,965; and 7,428,822

- Unique patented thermal conductivity sensor automatically compensates for temperature
- Replaceable, cleanable, plug-in sensor (Part #69087) handles 450 psi positive pressure
- Displays seven different units of measurement (microns, milliTorr, Torr, millimeters of mercury, millibar, kiloPascal and Pascal)
- 12" coiled sensor cord stretches to 24" for easy reach, connectivity and readability of display
- Magnetized on back for secure, upright positioning on any metal surface
- Low battery indicator
- Automatic shut-off after 20 minutes
- Calibration standards traceable to NIST
- 32° to 122°F (0° to 50°C) operating temperature range
- 14 oz. (392 g) with battery
- Approximately 25 hours continuous battery life
- Made in the USA

UPC#	Description
69086	Hand-held vacuum gauge with fabric carry pouch
69087	Replacement sensor
69088	Replacement cable for original version - not detachable
40819	Replacement cable for newer version - detachable
69091	Replacement fabric carry pouch for 69086

DELUXE LED VACUUM GAUGE
AC powered

Professional laboratory type instrument with 0.56" high bright LED readout is 100 percent automatic. Complete unit includes aluminum LED display, sensor with ball valve, cable, brass connector and carrying case.

- Thermocouple sensor technology for precise and repeatable accuracy
- Improved software expands sensing range from atmospheric pressure to 1 micron
- Calibration standards traceable to NIST
- Accuracy = ±15% of reading
- Made in the USA

Specifications

Response time: 3 seconds
Calibration: Automatic
Warm up: 3 seconds
Sensor cable: 9' (274 cm)
Sensor connection: 1/4" Male flare with isolation valve
Operating temperature range: -10˚ to 150˚F (-23˚ to 65˚C)
Storage temperature range: -30˚ to 150˚F (-34˚ to 65˚C)
Power: 115V/60 Hz (230V available)
Power cord: 6'
Dimensions: 4.25" x 5.5" x 1.5" (108 mm x 140 mm x 38 mm)
Carrying case: 12.25" x 8" x 3.5" (310 mm x 203 mm x 89 mm)

UPC#	Description
69060	LED vacuum gauge kit complete with case, 115V
69063	LED vacuum gauge kit complete with case, 230V
69064	Sensor for 69060 and 69063
69065	9' sensor cable for above
69066	Carrying/storage case
69067	Ball valve for sensor 1/8" NPT Female x 1/4" Male flare
69071	1/4" Female flare connector

REFRIGERANT ANALYZER
Speed, accuracy and portability

Built-in printer (68947) runs an instant receipt for convenient and accurate customer billing.

- Dispersive infrared technology quickly determines the weight concentrations of R-12, R-134a, hydrocarbons and air
- Analytical software identifies EPA SNAP approved blends, as well as illegal replacements and blends including propane and butane
- Quickly and automatically determines purity of R-12/R-134a and R-410A to help eliminate potential of human error
- Large, easy-to-read graphing display
- Rechargeable battery lasts all day
- Rugged portable case includes R-12 hose with 1/4" flare and R-134a with auto coupler

Specifications

Operating temperature range: 40° to 130°F
Operating humidity: 0-95% RH non-condensing
Display: 128 x 64 pixel LCD
Resolution: 0.1%
Output: Digital display and LEDs, optional printer module (internal)
Power: 12V, via battery clips (optional power supply available)
Weight: 8.0 lbs.
Start to finish: 60 seconds

UPC#	Description
68945	Refrigerant analyzer (R-12, R-134a, HC, and EPA SNAP approved blends)
68947	Refrigerant analyzer with printer
68948	Optional internal rechargeable battery kit with battery and 110V charger
68949	Optional 110/220V power adapter
68950	Thermal printer paper - 1 roll
68977	In line identifier replacement filter
68978	R-12 replacement hose
68979	R-134a replacement hose

MICRO INFRARED THERMOMETER

This is the most compact infrared thermometer available. Quickly measures -27° to 428°F (-33° to 220°C) with distance to spot ratio of about 1:1.

Specifications

Operating temperature range: 14° to 122°F (-10° to 50°C)
Resolution: 0.1°F or °C
Emissivity: 0.05-1 adjustable
Wave lengths: 5-14 microns
Power: 3V button cell battery included (CR2032)
Dimensions: 2.7" x 1.5" x 0.7"
Weight: 0.09 oz. (1.1 oz. with battery)
Accuracy: ± 2% of reading or 4°F (2°C), whichever is greater

UPC#	Description
69225	Micro infrared thermometer

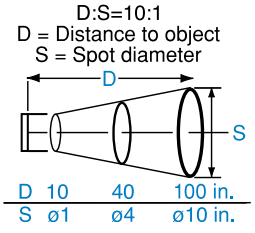
THERMOMETER APPLICATIONS

- HVAC/R
- Automotive
- Plant maintenance
- Laboratories
- Food service
- Plastic molding
- Road construction
- Energy auditing
- Electrical

PISTOL-GRIP INFRARED THERMOMETER

With wide measurement of -40° to 932°F, this easy-to-use tool is the effective choice for high or low temperature and refrigeration applications. For accuracy and resolution, the focal point is a tight 10:1 ratio with laser sighting.

- Selectable 3-point emissivity for simple set-up
- Backlight for dark area use
- °F/°C switchable
- ± 2% or 2°C accuracy
- 0.1°F resolution at -40° to 212°F (-40° to 100°C)
- Fast response time of 500 msec



UPC#	Description
69228	Pistol-grip infrared thermometer

DIGITAL THERMOMETERS
Differential and single probe types

Easy strap-on probe (69224) for 1/4" O.D. and larger piping. Efficient for super heat.

Specifications

Temperature range: -58° to 1999°F (-50° to 1300°C)
Resolution: 0.1 or 1°
Display: LCD 5/8" (16 mm)
Operating temperature range: 32° to 120°F (0 to 49°C)
Storage temperature range: -20° to 130°F (-29 to 54°C)
Power: 9V, battery life approximately 200 hours
Dimensions: 7.2" x 2.75" x 1.6" (180 mm x 70 mm x 40 mm)
Accuracy: -58° to 1800°F ± (0.3% of reading + 2°F); -50° to 982°C ± (0.3% of reading + 1°C)

Single Probe "K" type:

- Single "K" type input
- °F/°C switchable
- Maximum and minimum hold
- Low battery indicator
- Power off after 30 minutes

Differential "K" type:

- Dual "K" type thermocouple inputs
- T1, T2 or T1-T2 differential readings
- Resolution 1°

THERMOMETER APPLICATIONS

- HVAC/R
- Research
- Laboratories

UPC#	Description
69200	Digital thermometer – single general purpose probe and case
69205	Differential thermometer – 2 clamp-on, 2 general purpose probes and case
69207	Differential thermometer – 2 strap-on, 2 general purpose probes and case
69210	Differential thermometer – 2 general purpose probes and case

UPC#	Description	Maximum temperature	Length	Response time (sec.)
69215	Type "K" air probe (E)	1100°F (593°C)	4 ft. (1.21 m)	5
69216	Type "K" 1.25" ø clamp-on probe (A)	1100°F (593°C)	4 ft. (1.21 m)	12
69218	Type "K" general purpose probe (C)	500°F (260°C)	3 ft. (0.91 m)	3
69220	Type "K" surface probe (B)	1650°F (900°C)	4 ft. (1.21 m)	3
69222	Type "K" puncture probe (D)	570°F (299°C)	4 ft. (1.21 m)	12
69224	Type "K" strap-on probe (F)	300°F (149°C)	12 ft. (3.65 m)	12

WATER-PROOF DIGITAL THERMOMETER

Easy-to-use single "K" probe unit meets IP66 standard.

- Maximum/minimum relative reading memory
- Backlight for dark area use
- Sleep mode on/off
- °F/°C switchable

Specifications

Temperature range: -328° to 1999°F (-200° to 1300°C)
Operating temperature range: 32° to 122°F (0° to 50°C) (0-85% RH, non-condensing)
Sampling rates: 2.5 per second
Battery: 9V, battery life approximately 200 hours
Display: LCD 1.5" x 1.7" (37 mm x 42 mm), maximum reading 1999
Dimensions: 7.1" x 2.8" x 1.2" (181 mm x 71 mm x 30 mm)
Accuracy:
-200° to 1300°C ± (0.3% of reading + 1°C)
1000° to 1300°C ± (0.5% of reading + 1°C)
-328° to 2372°F ± (0.3% of reading + 2°F)
(18° to 28°C ambient temperature)

UPC#	Description
69233	Waterproof thermometer – single "K" probe

DIGI-ALARM THERMOMETER

Extended reach stainless steel probe.

This compact unit measures from -58° to 392°F (-50° to 200°C) and triggers an alarm at the high and low programmed temperatures.

- No calibration
- °F/°C switchable
- Data hold function
- Key tone for operation confirmation
- Maximum/minimum temperature memory
- Foldaway stand
- Automatic self test after battery installation

Specifications

Measurement range: -50 to 200°C / -58 to 392°F
Accuracy: ±1°C between -19.9 to 119.9°C
±2°C between 120 to 199.9°C
otherwise ±3°C
±1.8°F between -3.8 to 183.8°F
±3.6°F between 248 to 391.8°F
otherwise ±5.4°F
Display resolution: 0.1° over full range
Alarm resolution: 1° over full range
Sampling rate: 1 second
Battery: Requires one 1.5 volt size AAA/UM4 or equivalent (included)
Ambient temperature: 0 to 50°C / 32 to 122°F

UPC#	Description
69239	Digi-alarm thermometer

POCKET DIGITAL THERMOMETER

Digital head rotates 180° for easy reading.

- On/off button
- Auto off after 10 minutes
- Reading updates every second
- 5" (125 mm) stem

UPC#	Description
69107	Digital thermometer -58° to 302°F (-50° to 150°C)
69250	69107 display (12 pak)
69110	Battery

POCKET THERMOMETERS

1" and 1-3/8" dial thermometers are adjustable with a 5" stainless steel stem. Colored sheath with pocket clip.

- Individually calibrated
- Shock resistant

12 units with display packaging.

UPC#	Description
69251	1" Dial 0° to 220°F (12 pak)
69252	1" Dial 40° to 160°F (12 pak)
69253	1" Dial 50° to 550°F (12 pak)
69255	1-3/8" Dial -40° to 160°F (-40° to 70°C) (12 pak)
69256	1-3/8" Dial 0° to 220°F (-10° to 110°C) (12 pak)
69265	1" Dial 0° to 70°C (12 pak)

ANEMOMETER

This hand-held instrument reads both air velocity and temperature simultaneously when balancing air conditioning/heating ventilation systems.

- Microprocessor controller
- Calculates cfm air volume
- Records minimum and maximum readings
- Averages air velocity
- Display “hold” button freezes LCD reading
- °F/°C switchable
- Auto off after 20 minutes
- RS232 output

Specifications

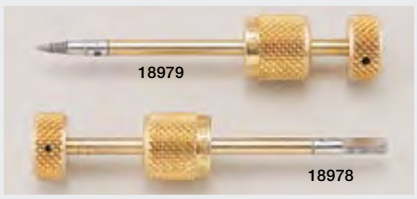
Air flow ranges: 125 – 4900 ft/min
Resolution: 1 ft/min and 0.01 m/sec.
Accuracy: ±2%
Temperature: 14° to 122°F (-10° to 50°C)
Resolution: 0.01°F and 0.1°C
Accuracy: ±1.0°F (±0.6°C)
Power: 9V battery, battery life approximately 100 hours
Fan diameter: 2-7/8" (70 mm)

UPC#	Description
68915	Anemometer kit
68916	Replacement 2.75" (70 mm) diameter probe assembly

SUPERHEAT CALCULATION KIT

Easily take an internal temperature reading for calculating system superheat.

- Read from -58° to 302°F (-50° to 150°C)
- °F/°C switchable
- Extract Schrader cores without opening system
- Remove broken Schrader cores
- Chase damaged threads
- Replace cores
- Use as vacuum valve to increase flow and reduce vacuum and charging time
- Use to reduce recovery time
- Made in the USA



Accessory set 18980.

UPC#	Description
69103	Superheat kit without accessory kit
69104	Complete superheat kit and accessories (as shown)
69106	Digital thermometer and nut - 40° to 230°F
69107	Pocket thermometer (made in China)
18975	Improved vacuum/charge valve
18978	Schrader rethreading accessory
18979	Broken Schrader remover accessory
18980	Accessory set - 2 piece
18997	Grappler rod and nut assembly

DIGITAL REFRIGERANT PRESSURE AND TEMPERATURE CHART

Fast and accurate pressure and temperature references for 66 refrigerants.

- 5.1 to 462.5 psi
- 0.25 to 31.88 bar
- 0.035 to 3.188 MPa
- -40° to 155°F (-40° to 68°C)
- Auto off after five minutes
- Includes manual, soft case and battery (3V CR2032)

UPC#	Description
69096	Digital refrigerant pressure and temperature chart

TACHOMETER

Easy-to-read and use unit measures 10 to 99,999 rpm on compressors, fans, motors, gears, pulleys and more. Non-contact reading maintains torque and precise measurement.

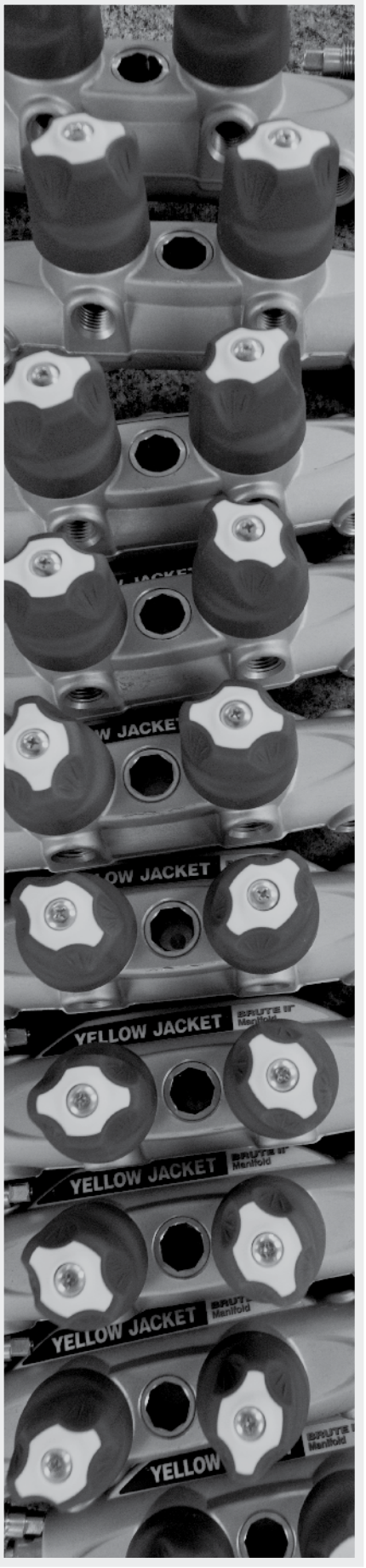
- Auto range function
- Units in rpm
- Hold function to freeze rotating speed

Specifications

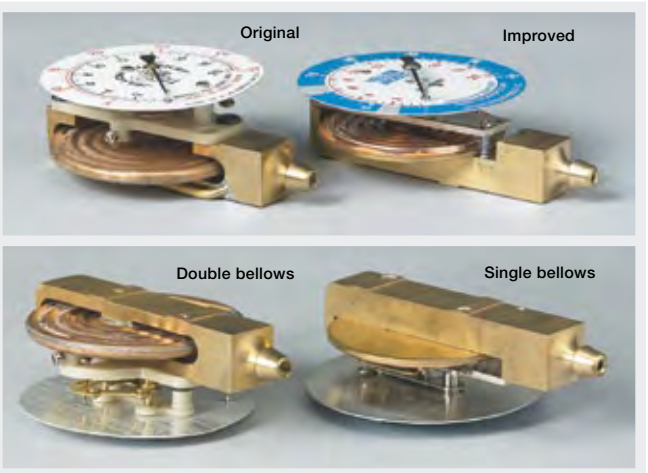
Time base: 4.0 MHz quartz crystal
Power: 9V battery (included)
Resolution: 0.001 rpm
Sampling time: 1 second (>60 rpm, 10 to 60 rpm)
Dimension: 4.8" x 1.9" x 1.3" (124 mm x 50 mm x 33 mm)

UPC#	Description
69348	Non-contact photo tachometer

*We recommend Scotch™ 198 for replacement adhesive.



GAS PRESSURE TEST KIT



The unique single bellows on brass plate design replaces the double bellows for a stronger seal that better resists over-pressure.

Easier to use than a manometer, this compact kit helps you accurately set manifold pressure for natural or L.P. gas.

- Sensitive diaphragm gauge calibrated in inches of water column and ounces per square inch
- Improved lamination strength of diaphragm (bellows) to brass plate withstands higher over-pressure
- Tube nipple for easy connection to system manifold
- Two gauge ranges available
- Made in the USA

UPC#	Description
78055	Complete test kit – 0-10" W.C.
78056	Barb-fitting gauge – 0-10" W.C.
78057	1/4" NPT Male gauge – 0-10" W.C.
78060	Complete test kit – 0-35" W.C.
78061	Barb-fitting gauge – 0-35" W.C.
78066	1/4" NPT Male gauge – 0-35" W.C.
78062	Hose with nipple
78064	Brass barb-fitting
78065	Rubber nipple
78059	Gauge crystal
78063	Carrying case

2" GAS TEST GAUGE
1/2", 3/4" and 1" pipe

Easy-to-read gauge to test system pressure for leaks in new installations. Pressure drop indicates leakage. 0-30 gauge is in 1/4 lb. increments and 0-15 gauge is in 1/5 lb. increments. Brass threaded bell for leak tight connection.

UPC#	Description
78076	2" Test unit 0-15 lb. gauge 1/2" pipe
78077	2" Test unit 0-15 lb. gauge 3/4" pipe
78080	2" Test unit 0-30 lb. gauge 3/4" pipe
78087	2" Test unit 0-60 lb. gauge 3/4" pipe
78090	2" Test unit 0-100 lb. gauge 3/4" pipe
78078	Gauge 1/4" NPT Male 0-15 lb.
78081	Gauge 1/4" NPT Male 0-30 lb.
78091	Gauge 1/4" NPT Male 0-100 lb.
78079	2" Test unit 0-15 lb. gauge 1" pipe
78085	2" Test unit 0-30 lb. gauge 1" pipe
78095	2" Test unit 0-100 lb. gauge 1" pipe
78096	Schrader fitting 1/8" NPT Male x tire fitting (0.305" - 32)

3-1/2" GAS TEST GAUGE
3/4" and 1" pipe

Larger 3-1/2" gauges are easier to read. Scale in psi and bar. Brass threaded bell for leak tight connection.

UPC#	Description
78084	3-1/2" Test unit 0-30 3/4" pipe
78086	3-1/2" Test unit 0-100 3/4" pipe
78088	3-1/2" Test unit 0-30 1" pipe
78089	3-1/2" Test unit 0-100 1" pipe
49422	Gauge only 3-1/2" test unit 0-60 psi
49421	Gauge only 3-1/2" test unit 0-30 psi
49424	Gauge only 3-1/2" test unit 0-100 psi

DIGITAL PSYCHROMETER

Quickly measure humidity, dry bulb, dew point and wet bulb. No need to whirl a meter or refer to a chart for results.

- °F/°C switchable
- Data hold
- Auto power off
- Display relative humidity and temperature simultaneously
- Response time of 60 seconds to changes in humidity

Specifications

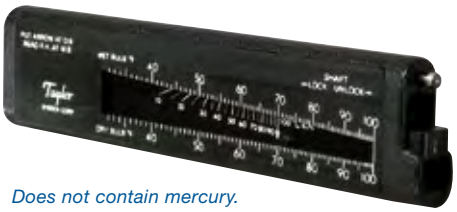
Temperature range: -4° to 122°F (-20° to 50°C)
Resolution: 0.1°F/°C, 0.1% RH
Operating temperature range: 4° to 122°F (-20° to 50°C) 0-100% RH
Power: 2 AAA batteries
Dimensions: 7" x 1-7/8" x 1" (178 mm x 48 mm x 25 mm)
Weight: 2.65 oz. (75 g)
Accuracy: Relative humidity functions (± 3% RH at 25°C)
Temperature ± 1°F (0.6°C)
Sensors: Temperature: thermistor bead
Humidity: polymer film (capacitance)
Update rate: 2-6 seconds depending on function

UPC#	Description
69008	Digital psychrometer

SLING PSYCHROMETER

Measures wet and dry bulb temperatures of surrounding air for immediate conversion of readings to relative humidity percentage.

- One piece unit in self-contained housing fits into your pocket
- Calibrated and easy-to-read
- "Slide rule" scale built into case
- Accurate to 1 percent of "Hygrometric Tables"
- Made in the USA



Does not contain mercury.

UPC#	Description
69010	Sling psychrometer
69011	Replacement wicks (5 pak)
69015	Replacement thermometer

WATER-TYPE MANOMETER

Economical plastic tube manometer helps you set manifold pressure for natural or L.P. gas. Goes to -2" W.C. for newer systems.

- Strong magnet on manometer holds it in convenient upright position
- Includes tubing with fitting
- Made in the USA

UPC#	Description
78070	-2" - 0 - 7-1/2" scale manometer
78075	-2" - 0 - 15" scale manometer
78071	Tubing with fitting
59511	Brass fitting only

DIGITAL ELECTRONIC MANOMETER

The digital electronic manometer eliminates the mess and fragility of U-tubes or diaphragm type gas pressure gauges. This easy-to-use instrument provides a continuous display of the measured positive or negative pressure. Ideal for setting gas pressure at manifold, checking pressure, flue draft and air balancing. Kit includes battery, 18" tubing and brass fitting.

- Display unit: inches of water
- -19.95" to 19.95" water gauge
- Accuracy: ±1.5% FS (±0.3 inches of water)
- 0.05" water column resolution
- Large LCD display
- Automatic off
- Long battery life
- Made in the USA

UPC#	Description
78050	Digital electronic manometer
69089	Battery door
78071	18" Tubing with fitting
59511	Brass fitting only

TEST LEAD SETS

Set of two leads 3' in length. Clips with red and black insulators each end. 120/240V – AC. 69532 and 69531 use 16-1 wire. 69530 and 69529 use 14-1 wire.

UPC#	Maximum amps	Clip size
69532	5 Amp	Small
69531	10 Amp	Medium
69530	10 Amp	Medium
69529	20 Amp	Large

ADAPTER CORD – TEST CONNECTOR

A 12" lead using number 14-3 wire and Female plug one end. Three large clips other end with red, black and green insulators. 120/240V – AC.

UPC#	Maximum amps	Clip size
69522	15 Amp	Large

FUEL OIL TEST KIT

Determine pump efficiency, cut-off and suction, as well as analyze or troubleshoot burner efficiency. Kit includes 2" gauge, 30" 0-150 lb. scale and 12" hose with fittings.

UPC#	Description
78020	Complete fuel oil gauge kit
78021	2" Fuel oil gauge only
78023	Carrying case
78011	12" Hose – no valve opener
78024	Fitting set (4 pak)
78031	2-1/2" Gauge, scale 30", 0-150 lbs.
78032	2-1/2" Gauge, scale 30", 0-300 lbs.

All gauges are 1/8" NPT.

OIL PUMP VIBRATION ELIMINATOR

Reinforced rubber hose helps eliminate noise and vibration when installed in a heating system.

- 1250 psi (86 bar) minimum burst, 250 psi (17 bar) maximum working pressure
- Operating temperature -20° to 180°F (-28.8° to 82.2°C)
- Made in the USA

UPC#	Length	Description
78012	12"	3/8" Male flare x 1/4" NPT Male oil burner connector

YELLOW JACKET®

AccuProbe™ UV Leak Detector

With electrolyte sensor, UV technology and Smart Alarm™ indicator, this is the only tool you need for fast, easy and certain leak detection

Use the solid electrolyte sensor or UV technology (or both at the same time) to detect the more current and difficult HFC refrigerants such as R-134a, R-404A, R-407 and R-410A, in addition to all HCFC (R-22) refrigerants including SNAP approved hydrocarbon and HFO refrigerants, all with minimal chance of false alarms.

AccuProbe™ UV LEAK DETECTOR

Our solid electrolyte sensor technology reduces heat and gives the sensor longer life than traditional heated anode or heated diode detectors.

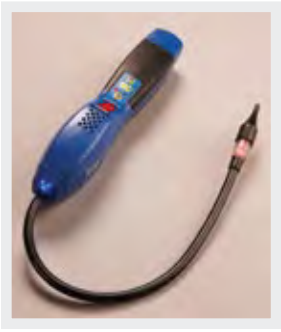
3 UV lights fluoresce between 395 and 415 nanometers.

The Smart Alarm™ LED shows how big or small a leak is on a scale of one to nine:

- 1 to 3 – less than 0.1 oz./yr.
- 4 to 6 – 0.1 to 0.5 oz./yr.
- 7 to 9 – more than 0.5 oz./yr.

In addition to the Smart Alarm indicator, the AccuProbe UV features low, normal and high sensitivity levels with visual and audible signals.

- If there is no response from the flashing tip or beeping signal at the preset normal sensitivity in the general area of a suspected leak, select high sensitivity
- High sensitivity will detect even low levels that could be missed with other detection systems
- Use low sensitivity as you move the tip over more defined areas of a system



The frequency of flashing from the electrolyte sensor tip increases as you get closer to a leak and refrigerant concentration increases. The audible alert, which can also be muted, increases in frequency and duration as concentration increases.

- Robust, ergonimic design is easy to use in close areas and extendable into hard-to-reach areas
- Long life, stable sensor
- Instantaneous response time
- Clears in 12 seconds or less after exposure to a 1.75 oz (50g)/yr. leak
- Automatic calibration and reset to ambient
- Low battery indicator
- Microcontroller technology
- SAE J2791 certified, CE marked, EN 14624
- 18-month limited warranty
- Made in the USA

Specifications

Sensitivity:
HFC (R-134a) 0.06 oz. (1.7g)/yr.
HCFC (R-22) 0.03 oz. (0.9 g)/yr.
HFO (1234yf) 0.15 oz. (4.3 g)/yr.

Heated solid electrolyte sensor: Over 300 hours service life with minimal cleaning and no adjustments

Maintenance required: None

Body length: 10.5" (270 mm)

Probe length: 17" (430 mm)

Weight: 17 oz. (480 g)

Warm up time: 20 seconds or less

Calibration: Automatic

Response time: Instantaneous

Power: 4 AA alkaline batteries, 4.5 hours continuous life

Operating temperature range: 24° to 125°F (-4° to 52°C)

Storage temperature range: -4° to 122°F (-20° to 50°C)

Humidity: 0 to 95% RH non-condensing

Approvals: SAE J2791, CE marked, EN 14624

UPC#	Description
69336	AccuProbe UV
69337	AccuProbe UV - EU/UK plug
69338	AccuProbe UV - Japan
69339	AccuProbe UV - AU/NZ plug
69334	AccuProbe UV with global power supply (US, EU, UK, AU, NZ)
69378	AC adapter – 230V/50-60 Hz AU/NZ plug (CE and TUV approved) (standard with 69339)
69380	AC adapter – 110-115Vac/50-60 Hz US plug (UL listed) (for use with 69336)
69381	AC adapter – 230V/50 Hz EU/UK plug (CE and TUV approved) (standard with 69337)
Accessories and parts	
69383	Kit – sensor, filters and bottle
69384	Replacement sensor and filter
69385	Sensor filters (5 pak)
69386	Leak sensor bottle
69387	Carrying case with inserts
69388	Battery cover/screw (AccuProbe UV)

AccuProbe™ II LEAK DETECTOR

Low, normal and high sensitivity levels with audible signals to quickly and easily pinpoint leaks.

Specifications

Sensitivity:
HFC (R-134a) 0.06 oz. (1.7 g)/yr.
HCFC (R-22) 0.03 oz. (0.9 g)/yr.
HFO (1234yf) 0.15 oz. (4.3 g)/yr.

Sensor life: Over 300 hours service life with minimal cleaning and no adjustments

Probe length: 17" **Weight:** 15 oz.

Warm up time: 20 seconds or less

Power: 4 AA alkaline batteries, 4.5 hours continuous life

Approvals: SAE J2791, CE marked, EN 14624

UPC#	Description
69354	AccuProbe II leak detector
69383	Kit – sensor, filter and bottle
69384	Replacement sensor and filter
69385	Sensor filters (5 pak)
69386	Leak sensor bottle
69387	Carrying case with inserts
69361	Zipper pouch

Tips for detecting system leaks with leak detector:

1. Inspect entire A/C system for signs of oil leakage, corrosion cracks or other damage. Follow the system in a continuous path so no potential leaks are missed.
2. Make sure there is enough refrigerant in the system (about 15% of system capacity or 50 psi min.) to generate pressure to detect leaks.
3. Check all service access port fittings. Check seals in caps.
4. Move detector probe at 1" per second within 1/4" of suspected leak area.
5. Refrigerant is heavier than air so position probe below test point.
6. Minimize air movement in area to make it easier to pinpoint the leak.
7. Verify an apparent leak by blowing air into suspected leak to clean the area and see if the leak remains.
8. When checking for evaporator leaks, check for gas in condensate drain tube.

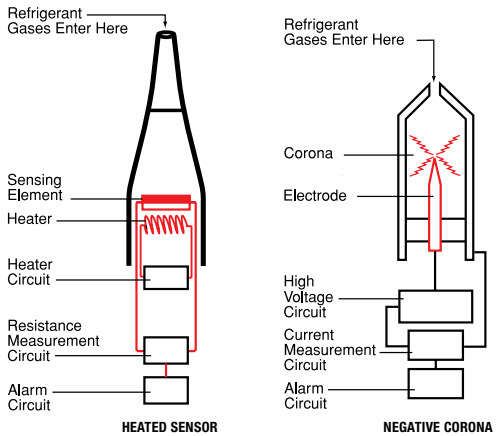
ELECTROLYTE SENSOR OR NEGATIVE CORONA?

Electrolyte Sensor Leak Detectors

When the electrolyte sensing element is exposed to refrigerant, an electrochemical reaction changes the electrical resistance within the element, causing an alarm. The sensor is refrigerant specific with superior sensitivity to all HFCs and HCFCs, and minimal chance of false alarms. When exposed to large amounts of refrigerant, which could poison other systems, the electrolyte sensor clears quickly and does not need recalibration before reuse.

Negative Corona Leak Detectors

In the sensor of a corona detector, high voltage applied to a pointed electrode creates a corona. When refrigerant breaks the corona arc, the degree of breakage generates the level of the alarm. Sensitivity decreases with exposure to dirt, oils and water. False alarms can be triggered by dust, dirt specks, soap bubbles, humidity, smoke, small variations in the electrode emission, high levels of hydrocarbon vapors and other non-refrigerant variables.



H_2 DETECTOR
Detects 5% H_2 in 95% Nitrogen Tracer Gas

Many countries are now adopting laws that ban the use of refrigerants for system testing. The YELLOW JACKET H_2 was developed for the H_2 (95% nitrogen and 5% hydrogen) tracer gas mixture.

When used with the H_2/nitrogen tracer gas mixture, the YELLOW JACKET H_2 will detect leak rates less than 5 ppm.

- Long life, stable sensor
- Does not require rechargeable batteries
- Automatic calibration and reset to ambient
- Three adjustable sensitivity levels
- Low battery indicator
- CE Certified
- True mechanical pump
- Two-year warranty
- Made in USA

Specifications	
Sensitivity: Less than 5 ppm	**Warm up time:** 20 seconds or less
Sensor life: Over 300 hours	**Power:** 4 AA alkaline batteries, 8 hours continuous life
Response Time: Instantaneous	
Probe length: 17" **Weight:** 1.5 lbs.	**Approvals:** EN35422 and EN14624

UPC#	Description
69341	H2 leak detector
69342	Replacement sensor
69343	Carrying case with inserts (grey)

MICRO LED UV LEAK DETECTION KITS AND LAMPS For all A/C systems and lamps

Individual reflectors surround each of five LEDs recessed for protection in the stainless steel head.

- 110,000+ hour LEDs
- Constant ON switch
- Sealing locks out moisture
- AA Alkaline battery included (dispose of batteries via disposal practices in your area)
- Aluminum body
- Limited lifetime warranty

UPC#	Description
69782	395-415 nm wavelength UV LED flashlight
69788*	Micro UV LED and dye kit for auto
69789*	Micro UV LED and dye kit for AC/R
69793	Replacement pouch for LED (for older style with black casing)
69794	Lithium battery (2 pak) (for older style with black casing)

* Not for direct injection into R-410A systems due to high pressure. Bulbs not replaceable.

LARGE SYSTEM INJECTORS
Systems with up to 32 gallons of lubricant

Self-contained injection system for inducing up to 16 oz. of universal AC/R dye into the largest systems. Add to the lo-side. Easily works on all system pressures to 300 psi, .35 oz. per stroke. Hose included with SealRight end.

- Recommended for R-410A
- Made in the USA

UPC#	Description
69555	Large system injector
77950	Large system injector with coupler

CALIBRATED A/C SCREW INJECTION

69730

This 2 oz. injector is easy to refill and easy to operate. Calibrations are clearly marked on the injector. Connect to A/C lo-side and rotate handle. AC/R and auto models. Maximum port pressure of 250 psi.

UPC#	Description
69729	Universal screw injector (no hose)
69730	1/4" Calibrated A/C screw injector (with hose)
69731	Auto R-134a calibrated A/C screw injector with service coupler
69732	Auto R-134a calibrated A/C screw injector without service coupler
69723	1/4" replacement hose
69724	R-134a replacement hose

UNIVERSAL A/C DYE INJECTORS AND HOSE

US Patent # 6,164,348

Universal A/C dye injectors work in AC/R and auto A/C systems. Four 1/4 oz. applications of dye in each disposable tube make it economical, fast and clean. Hose features back flow check valve.

- Maximum system port pressure of 80 psi
- Not for direct injection into R-410A systems due to high pressure
- Made in the USA

UPC#	Description
69702	Hose plus 2 injectors for AC/R
69703	Auto R-134a hose, coupling and injectors
69705	Injector hose with SealRight
69706	Auto R-134a injector hose and service coupler

DYE AND OIL INJECTORS

Body and cap are rugged aluminum with an “O” ring seal. 1/4" Male fitting at one end with Schrader. A ball valve for control on other end with a short length of hose. Valve depressor in 1/4" Female end. 600 psi working pressure.

Saves time on many applications:

- Add oil to system
- Put oil in after changeout
- Add scanner fluorescent solution
- Add additives to system
- Refrigerant sampling
- Recommended for R-410A
- Made in the USA

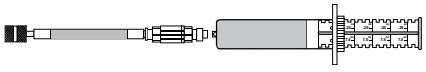
UPC#	Description
69559	1/4 oz. Oil injector
69560	1/2 oz. Oil injector
69561	2 oz. Oil injector
69562	4 oz. Oil injector
69563	“O” ring 1/4 and 1/2 oz. injector (5 pak)
69564	“O” ring 2 and 4 oz. injector (5 pak)
69722	Replacement hose

UNIVERSAL A/C DISPOSABLE INJECTORS

Universal disposable 1 oz. applicator for fast economical dispensing. Universal dye for all common refrigerants and oils. Two 1/2 oz. applications for regular split systems or four 1/4 oz. applications for small appliances or auto A/C.

US Patent # 6,164,348

- Less costly and faster than many other methods
- One dye minimizes inventory
- No back-up refrigerant to move dye into system
- Maximum system port pressure of 80 psi
- Not for direct injection into R-410A systems due to high pressure
- Made in the USA



Easy to use: connect to system, push in plunger, and then disconnect.

UPC#	Description
69700	1 oz. (30 ml) Injector (6 pak) (12 residential applications/case)
69721	1 oz. (30 ml) Injector (2 pak) (4 residential applications/package)
69727	1 oz. (30 ml) Injector

UNIVERSAL A/C DYE SOLUTIONS

Universal dye for A/C systems with mineral, alkyl benzene or polyol ester lubricants.

- Field proven and sold worldwide
- Passed thermal stability tests
- One dye for AC/R systems
- Raw material QC assures dye uniformity

UPC#	Description
69711	1/4 oz. (7.5 ml) Universal A/C (24 pak)
69708	1/2 oz. (15 ml) Universal A/C (12 pak)
69709	1 oz. (30 ml) Universal A/C (6 pak)
69710	2 oz. (60 ml) Universal A/C (6 pak)
69712	8 oz. (240 ml) Universal A/C
69713	8 oz. (240 ml) Universal A/C (6 pak)
69803	1 gal. (3.78 L) Universal A/C
69805	5 gal. (18.92 L) Universal A/C
69806	55 gal. (208.19 L) Universal A/C

Oil/fluid and coolant dyes available on page 75.

DYE APPLICATION AMOUNTS

Application
Small appliance
A/C or refrigerant systems
Larger systems

System size in lbs. of refrigerant
Up to 4.9 lbs. (2.22 kg)
Up to 25 lbs. (11.34 kg)
Above 25 lbs. (11.34 kg)

Universal dye amount
0.25 oz. (7.5 ml)
0.5 oz. (15 ml)
0.5 oz. (15 ml) per gallon of oil

Not recommended for systems with internal temperatures below -40°F. Compatible with mineral, alkylbenzene, ester and PAG oil systems.

FLUORESCENT SCANNER SOLUTIONS

Technology to match refrigerant and system volume

Disposable pre-filled solution tubes.

AC/R bottles.

Different concentrations of fluorescent solutions are available to match the refrigerant volume in a system.

- Operating temperature is -40°F for all solutions and -100ºF for alkylbenzene systems
- When working on split systems, use solution 3 even if system has 10 lbs. or less of gas

INJECTORS AND BOTTLES

01 – Systems with up to 2.9 lbs. gas
1 – Systems with 1 to 4.9 lbs. gas
2 – Systems with 5 to 9.9 lbs. gas
3 – Systems with 10 to 25 lbs. gas
4 – Large systems use 1/4 oz. per gallon of oil in system

		Self-infusing injector tubes				Bottles		
Solution concern	System size	Mineral oil system	Ester oil system	Alkylbenzene system	PAG oil system	Mineral oil system	Ester oil system	Alkylbenzene system
01 (0.03 oz.)	up to 2.9 lbs.	69610	69620	69600	69590			
1 (0.5 oz.)	up to 4.9 lbs.	69611	69621	69601		69451		
2 (0.5 oz.)	up to 9.9 lbs.	69612	69622	69602		69452		
3 (0.5 oz.)*	up to 25 lbs.	69613	69623	69603		69453		
4 (2 oz.)	Large**					69454	69624	69604
4 (16 oz.)	Large**					69455	69625	69605

* Use on all split systems.
** Only bottles are available for systems with over 75 lbs. of refrigerant. For large systems add 1/4 oz. #4 solution per gallon of oil.

Injectors sold as 6 paks.
Bottles of solution sold as12 paks.
#4 solution sold as individual bottles.

FLUORESCENT SOLUTIONS
For non-refrigerant applications

The oil and fluid dye solution is for finding leaks in oil-based applications. **Use 1 oz. per 2 gallons of oil.**

- Pin point leaks in milling machines and hydraulic systems such as cherry pickers
- Find seal and gasket leaks in engines, compressors and transmissions
- Locate leaks in gasoline or diesel fuel equipment, offset printing presses, injection-molding machines, locomotive engine oil coolers and oil-cooled chillers

H_2O (water) solution glows blue at leak sources in large closed-loop water systems. Use one pint per 1,000 gallons of water.

- Detect leaks in storage tanks and other high volume containers, as well as associated piping, valves, condensers, sprinkler systems, pumps, etc.
- Detect water leakage in any enclosed circulatory system or static system that can be pressurized or agitated
- Made in the USA

Coolant dye glows blue to pinpoint leak sources in antifreeze-based automotive water systems. Use 1 oz. per gallon of coolant.

UPC#	Description
69584	16 oz. Fluorescent H_2O solution
69733	1 oz. (30 ml) Oil and fluid dye (6 pak)
69734	1 oz. (30 ml) Oil and fluid dye (24 pak)
69735	8 oz. (240 ml) Oil and fluid dye
69737	1 oz. (30 ml) Coolant dye (6 pak)
69738	1 oz. (30 ml) Coolant dye (24 pak)
69739	8 oz. (240 ml) Coolant dye

YELLOW JACKET solutions meet or exceed applicable ASHRAE and ANSI tests and SAE standard J2297 for R-134a UV leak detection.

CLEANERS

Scan-off UV Cleaner
Water-based biodegradable spray cleans scanner solution from system.

Natural Degreaser
Heavy duty biodegradable degreaser removes scanner solution from system.

Hand Cleaner
Cleans solution from hands.

UPC#	Description
69698	19 oz. Natural degreaser #01020
69699	16 oz. Hand cleaner
69696	8 oz. Scan-off solution
69697	8 oz. Scan-off solution (12 pak)

COMBUSTIBLE GAS DETECTOR
With ultra-sensitive, long life sensor

Detects all hydrocarbon and other combustible gases including propane, methane, butane, industrial solvents and more.

Unit is preset at normal sensitivity, but you can switch to high or low. Slow beeping indicates that unit is warmed up. Frequency increases when a leak is detected until an alarm sounds when moving into high gas concentration. The Smart Alarm™ LED indicates leak size.

If no leak is detected in a suspected area, select high sensitivity. This will detect even low levels in the area. Move the tip over more defined areas, and you will be alerted when the tip encounters the concentration at the leak source.

- Ultra-sensitive sensor detects less than 15 ppm methane and better than 12 ppm for propane. Performs equally well on a complete list of detectable gases including acetylene, butane and isobutane
- Automatic calibration and zeroing
- Sensor replacable after full service life
- Smart Alarm LED shows how big or small a leak is on a scale of one to 9.
- 18-month limited warranty (12-month warranty on sensor)
- Made in USA

APPLICATIONS:

- Internal gas lines/pipes
- Propane filling stations
- Gas heaters
- Combustion appliances
- Hydrocarbon refrigerant
- Heat exchangers
- Marine bilges
- Manholes
- Air quality
- Arson residue (accelerants)

Specifications

Warm up time: 25 seconds
Power battery: 4 AA alkaline batteries, 20 hours continuous life
Probe length: 17" (43.17 cm)
Sensor life: 500 hours
Body length: 10.5" (26.67 cm)
Weight: 16 oz. (0.45kg)
Operating temperature range: 32° to 110°F (0° to 43°C)

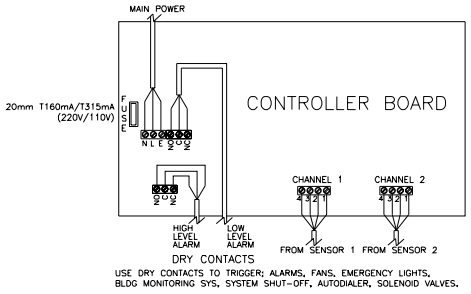
UPC#	Description
69373	Combustible gas detector with case
69371	Replacement sensor
69387	Carrying case – blow molded
69379	Battery cover and screw (2003-2011)
69347	Battery cover and screw (2011)

For a list of frequently asked questions on leak monitors and scanner solutions, go to www.yellowjacket.com.

CONFIGURING FIXED MONITORING SYSTEMS

YELLOW JACKET fixed monitoring systems allow you to configure controllers and remote sensors to help you meet requirements for point or perimeter detection of refrigeration leaks. Available for most common refrigerants or ammonia.

- System first emits an intermittent siren and constant orange illumination at the low level, about 100 ppm
- At the high level, usually 1,000 ppm*, the siren is continuous and the LED is red to signal a condition that requires immediate action
- All systems wait until “certain” of gas in the air before signaling to help minimize false alarms
- Voltage-free relay switch can activate ventilation or remote alarms, or report to control systems
- Sensors will not be poisoned by prolonged exposure to refrigerant



Typical two sensor, two level installation.

APPLICATIONS:

- Refrigerant storage areas
- Supermarkets
- Refrigeration machinery rooms
- Cold storage facilities
- Walk-in coolers
- Marine and fishing fleets
- Delis, ice cream parlors or quick service stores

ONE AND TWO SENSOR MONITORING SYSTEMS

68004

68008

Semi-conductor technology makes YELLOW JACKET monitoring systems an attractive alternative to electrochemical or infrared systems.

- Factory calibrated for R-404A (call factory for other refrigerants)
- Controllers and sensors mount to any flat vertical surface
- For point detection, mount sensor(s) near the most likely leak source
- For perimeter detection, sensors surround the potential leak area
- Operating temperature range of -20 to 122°F (-29 to 50°C).
- Refrigerant monitors and sensors for most common CFCs, HFCs and HCFCs, plus R-134a, R-404A, R-410A and R-407C
- Should not be used with refrigerants that have an Occupational Exposure Limit of less than 300ppm

Specifications

Controller: 7.6" x 4" x 3" (193 mm x 102 mm x 76 mm), 2.8 lbs. (1.3 kg)
Relays: Dry contact switch; 10 amp at 120/250V max
Sensor: 4.3" x 2.2" x 0.9" (109 mm x 56 mm x 23 mm)
Sensors can be hard wired up to 200' from controller
Power LED: Green
Audible alarm: Not included; has terminals for external sounder
Sensor cable: Use 4 conductor, unshielded cable, 22 AWG or larger*
Power: 120V/60 Hz or 230V/50-60 Hz
Operation: Constant power-on and fault monitoring
Reset: On two level unit, automatic on low level; manual on high level

*Check your local building code for additional requirements specific to your application.

UPC# 12V	UPC# 120V	UPC# 230V	Description
68010	68004	68104	Single sensor monitor with two levels of detection
68011	68008	68108	Two sensor monitor with two levels of detection
—	68091	68191	Refrigerant sensor for two level monitor
—	68099	—	Monitor key switch set

FOUR AND SIX SENSOR MONITORING SYSTEMS

(wiring not included)

Four and six sensor monitors provide all of the benefits of the one and two sensor systems, but increase arera and level of coverage with more sensors at greater distances from the controller. Cost per channel are lower. You can locate four or six sensors up to 500' from the controller.

Specifications

Controller: 10.3" x 10" x 3.2" (262 mm x 254 mm x 81 mm), 6.3 lbs. (2.9 kg)
Relays: Dry contact switch; 10 amp at 120/250V max.
Power LED: Green
Alarm: 80 dB at 3' (92 cm)
Sensor: 4.3" x 2.2" x 0.9" (109 mm x 56 mm x 23 mm) Sensors can be hard wired up to 500' from controller
Sensor cable: Use 4 conductor, unshielded cable, 22 AWG or larger*
Power: 120V/60 Hz or 230V/60 Hz
Operation: Constant power-on and fault monitoring
Reset: Automatic on one level unit. On two level unit, automatic on low level; manual on high level

*Check your local building code for additional requirements specific to your application.

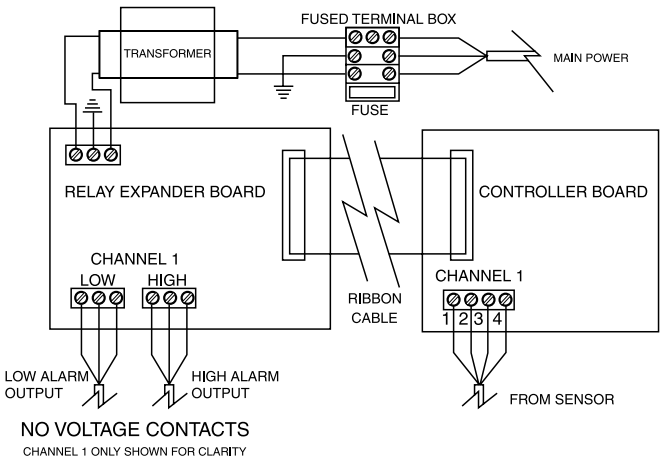
UPC# 120V	UPC# 230V	Description
68016	68116	Refrigerant four sensor monitor with two levels of detection
68024	68124	Refrigerant six sensor monitor with two levels of detection
68091	68191	Refrigerant replacement sensor for two level refrigerant monitor

RELAY EXPANDER BOX

Enables the four or six sensor controller to individualize response to each sensor, e.g. sensor one is set to activate a fan and auto dialer while other sensors activate different response systems. If sensor one detects a leak, only its corresponding systems are activated. The other sensors remain in monitoring mode and will respond individually if a leak is detected in their specific area.

Ribbon cable connects the relay expander box to the controller.

Typical Installation



UPC# 120V	UPC# 230V	Description
68028	68128	Four sensor expander box
68029	68129	Six sensor expander box

INTEGRATED AREA MONITOR

Sensor and controller are combined into a single, compact unit that can be hard wired into any outlet or power supply to detect leaks in the area.

The unit emits a continuous siren and constant red LED illumination at about 1000 ppm. This early warning allows time to find the leak while refrigerant concentration is still low. With adjustable delay, the monitor waits up to 15 minutes to avoid false alarms before signaling. Siren can be switched off.

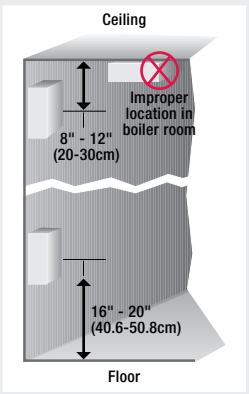
Two voltage-free relays can activate ventilation or remote alarms, or report to control systems. The monitor can also be connected to dedicated 16-unit panel (indefinitely expandable by connecting control panels).

- 3.4" x 5.8" x 2.4" (86 mm x 147 mm x 61 mm)
- For use in living spaces, marine and mechanical rooms

UPC#	Description
68050	Integrated area monitor 115V
68051	Integrated area monitor 220/240V
68052	Control panel 115V
68053	Control panel 220/240V

Guidelines on Mounting Sensors

Sensors must be powered according to the instruction manual and be within the cable length from the control unit.



- Do not mount in areas of high heat, direct solar heat, wetness, dampness or where condensation may form on the sensor
- Do not mount to piping or any structure subject to vibration
- For perimeter detection, place sensors around the area in question to monitor the entire space
- For point detection, place sensor(s) at a point where you are concerned about a leak, i.e. at the compressor
- For heavier than air gases, place sensors close to the ground
- To help prevent false alarms from stray gas particles such as Volatile Organic Compounds (VOCs), mount sensors 16" to 20" from the floor
- For lighter than air gases, place sensors high on the walls or ceiling, but convenient for maintenance. Note: Ammonia is lighter than air at normal temperature but heavier in a cold room
- Take room shape into consideration and mount sensors downstream of any air flow
- In hot rooms, hot air rises to form a barrier below the ceiling and prevents gas from getting to a ceiling-mounted sensor
- Mount sensors out of traffic flow areas to prevent bumping

Contact customer service for detailed suggestions.

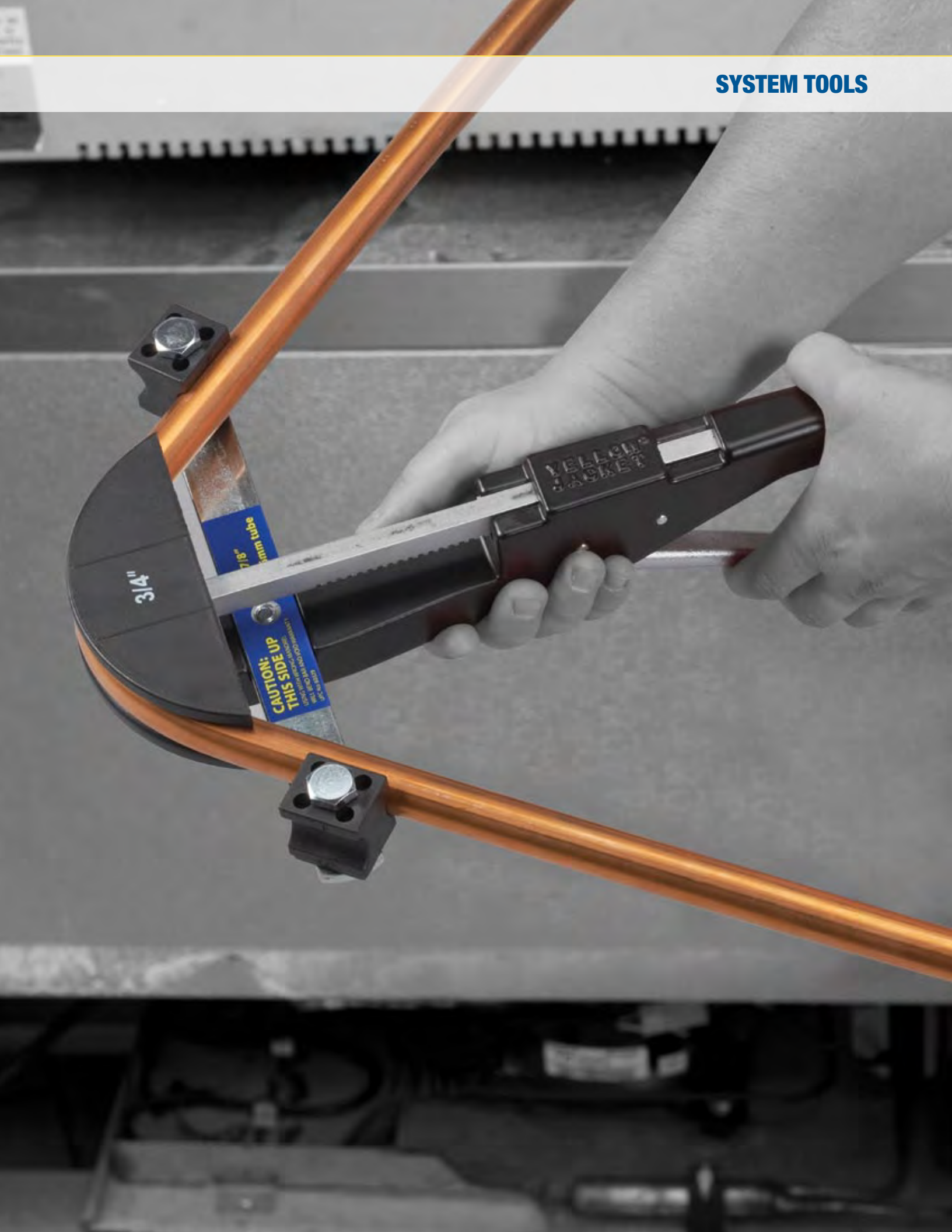
EVALUATING REFRIGERANT MONITORS

There are two major types of refrigerant monitoring systems – Fixed and infrared (IR). Following is a summary of the differences:

	Fixed Monitoring System	IR Systems
Gases Measured	Measures a broad band of most common CFCs, HFCs, and HCFCs, such as: , R-11, R-12, R-13, R-22, R-113, R-134a, R-407C, R-410A, R500, R-502 and R-507	A single sensor must be used for each specific refrigerant
Cost	Less than $500 per sensor to measure a broad range of refrigerants	$1000 and more per sensor for each refrigerant
Installation	Controllers mount on any flat surface and cable is run from the controller to the sensor(s)	Plumbing tube is used to reach sensing points. An additional tube for exhaust is required

Once you've chosen between a Fixed Monitoring System or an IR System for your application, you'll have to evaluate the features that a monitor might include.

- **Flexibility in size of controls –** Controllers available for one, two, four or six sensors allow you to buy what you need now and plan to expand in the future
- **Two levels of response –** A system can emit an intermittent alarm at a low level, about 100 ppm, indicating that maintenance is required, and a continuous siren at a high level, usually about 1000 ppm indicating that immediate action is required
- **Designed to minimize false alarms –** Waiting until "certain" that gas is in the air before signaling
- **Individualized response by "zone" –** Relay expander panel allows a four or six sensor system to be "zoned" for fast, individualized response in a larger application. If one sensor detects a leak, only its corresponding system is activated. The other sensors remain in monitoring mode
- **Sturdy protective housing –** Coated steel housing for controller circuitry and ABS casing for sensors help protect the system and keep it maintenance-free
- **Protection in harsh environments –** An optional vented environmental sensor enclosure protects a sensor that is mounted in an area of high condensation, low temperature to -40°F or direct airflow to avoid a false alarm


3/4"
CAUTION:
THIS SIDE UP

YELLOW JACKET®

Deluxe 45° Flaring Tool

A full range 1/8" to 3/4" O.D. flaring tool for soft copper

DELUXE 45° FLARING TOOL

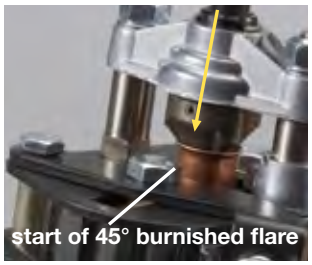
- Designed with the new R-410A system requirements in mind
- Self-centering yoke grips without marring or constricting tube
- Automatic tube height gauge for correct tubing height
- Multi-faceted burnishing cone produces a burnished flare seat for a positive seal
- Easy-to-use with four basic steps
- Made in the USA

Note: To improve grip on copper, all moving parts including the wing nut threads, wing nut mating threads and feed screw threads must be oiled regularly. Failure to do so may result in tubing slippage, undersize flares and damage to the tool.

1. With cone up, open the two dies of the clamping yoke

2. Select sizes on underside of dies to match tubing O.D.

3. Insert tubing until it touches the height gauge



4. Turn the feed screw to flare the tubing

UPC#	Description
60278	Deluxe flaring tool for 1/8" to 3/4" O.D.
60214	Replacement wing nut
60268	Replacement grip
60269	Wing nut and bolt
60273	Burnishing cone and pin
60274	Yoke assembly

R-410A Flare Diameters

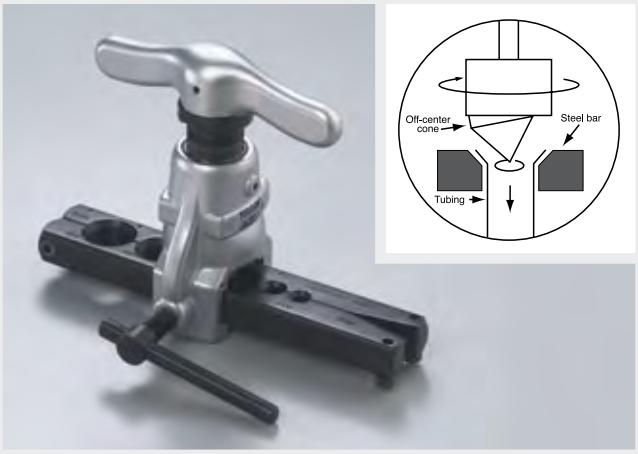
- Installation instructions for systems using R-410A vary between manufacturers with respect to 45˚ flares. Some require the larger flares produced by the Deluxe 45˚ Flaring Tool (60278) while others prefer the rolled flare produced by the eccentric cone flaring tool
- Instead of the standard 1/4" (7/16-20 thread, 1/4" O.D.) fitting for air conditioning systems, some manufacturers are moving to 5/16" (1/2-20 thread, 5/16" O.D.) to differentiate fittings and avoid misconnections. These fittings can often be found on mini split systems

Maximum Diameter of Flare Cone (Average)

Flare size	SAE spec produced by most flaring tools	Some R-410A mfgr. specs produced by 60278
1/8"	0.181"	*
3/16"	0.248"	*
1/4"	0.327"	0.358"
5/16"	0.406"	*
3/8"	0.488"	0.520"
1/2"	0.622"	0.654"
5/8"	0.748"	0.776"
3/4"	0.917"	0.945"

* These tube sizes are not used by some R-410A equipment manufacturers. The Deluxe Flaring Tool 60278 adopts the SAE standard for these sizes.

ECCENTRIC CONE FLARING TOOL



Off-center hardened steel cone with 45° flare produces a rolling action for uniform flare walls without galling in 3/16" to 3/4" O.D. tubing.

- Large feed screw handle for smooth turning with little effort
- Black oxide-finished steel flaring bars are heat-treated for durability and secure grip on tubing
- Recommended for soft materials such as copper and aluminum
- Built-in clutch release to prevent over-torquing

UPC#	Description
60295	Flaring tool with eccentric cone for 3/16" to 3/4" O.D.

45° FLARING TOOLS
3/16" to 1-1/8"

- 60210 heavy-duty is designed for tight spaces
- 60230 heavy-duty flares on tubing up to 3/4"
- 60290 large is designed to flare on tubing up to 1-1/8"
- Hardened steel flaring bar to resist tube slippage
- Forged steel yoke that slips over bar and locks with a turn
- Precision threaded feed screw and long handle
- Chrome finish

UPC#	Description
60210	Heavy-duty flaring tool for 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 5/8" O.D.
60212	Flaring bar only for 60210
60230	Heavy-duty flaring tool for 1/2", 5/8", 3/4" O.D.
60232	Flaring bar only for 60230
60213	Yoke for 60210 up to 5/8" flare
60214	Wing nut
60233	Yoke for 60230 up to 3/4" flare
60290	Large flaring tool for 3/4", 7/8", 1", 1-1/8" O.D.
60293	Flaring yoke for 60290
60292	Flaring bar for 60290

The only replaceable parts are those listed above.

FLARE/BURNISH TOOL

Multi-faceted cone rolls a precise flare and simultaneously burnishes it on brass, copper and aluminum.

UPC#	Description
60270	Flare/burnish tool for 3/16" to 5/8" O.D.
60271	Flare yoke only for 60270
60272	Flaring bar for 60270

The only replaceable parts are those listed above.

UNIVERSAL 45° FLARE/BURNISH TOOL

Universal designed bar will hold all inch and metric size tubing up to 5/8" (16 mm).

- Flare bar is compact and easy to use in tight spaces
- Multi-faceted cone rolls out precise 45° flare and burnishes simultaneously
- Flare is formed above flare bar

UPC#	Description
60275	Universal flaring tool for 3/16" to 5/8" O.D.
60276	Flaring bar only for 60275
60277	Flaring yoke only for 60275

The only replaceable parts are those listed above.

TIGHT SPOT™ FLARE CUT-OFF TOOL

Designed specifically for tight situations where only the flare must be removed, the flare cut-off tool saves time where flare nut cannot be moved back enough for regular cutter or saw, or where it is critical to not shorten tubing.

- Clean, right angle cuts on 1/4", 5/16" and 3/8" O.D. copper tubing
- Interchangeable arbors for the three sizes included
- Made in the USA

UPC#	Description
60122	Flare cut-off tool with arbors
60196	1/4" Support arbor
60197	5/16" Support arbor
60198	3/8" Support arbor
60100	Replacement blade
60094	Replacement retaining ring (5 pak)

TIPS FOR FLARING

- An incorrect flare is one of the most common sources of leaks. To help prevent leaks, cut tubing with a sharp wheel for a clean right-angle cut. To avoid tube constriction, don't feed the screw too fast.
- Since unremoved burrs can break off into the tubing or scratch the flared surface, remove burrs with a deburring tool.
- A flare tool with burnishing cone puts a high burnish on the flare and rolls out a perfect 45° flare for a good seal. Over or under flaring prevents a good seal. Use a drop of oil on the flaring cone and feed screw for precise action.

SWAGING AND 45° FLARING TOOL
1/2" to 1-1/8" O.D.

- 60453 mid-size swages and flares for 1/2", 5/8" and 3/4" O.D. tubing

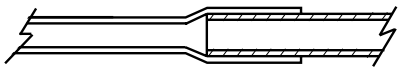
- 60455 large-size swages and flares for 3/4", 7/8" and 1-1/8" O.D. tubing

UPC#	Description
60453	Swage/flare kit complete for 1/2" to 3/4" O.D.
60446	1/2" Swage adapter
60447	5/8" Swage adapter
60448	3/4" Swage adapter
60449	Flare cone 1/2" to 3/4"
60443	Complete yoke for 60440/60453
60232	Flare bar 1/2" to 3/4" O.D.
60455	Large swage/flare kit complete 3/4" to 1-1/8" O.D.
60457	7/8" Swage adapter
60458	1-1/8" Swage adapter
60459	Flare cone 3/4" to 1-1/8"
60456	Complete yoke for 60455
60292	Flare bar 3/4" to 1-1/8" O.D.
60441	Handle screw assembly
60442	"C" clip and nut

SWAGING AND 45° FLARING TOOL
3/16" to 3/4" O.D.

This combination tool both flares and swages soft or annealed copper and similar materials.

- Six hardened and plated alloy steel adapters are interchangeable to convert sizes and functions
- Slip-on self-centering steel yoke has a feed screw with extra long handle
- Deeply knurled adapters
- Flaring bars are hardened and chrome plated for durability
- Kit comes complete with six swage adapters, flaring cone, two flaring bars, yoke and a deluxe case



Parallel Expansion Joint

UPC#	Description
60440	Swage/flare kit complete for 3/16" to 3/4" O.D.
60450	Case only
60451	Case insert only
60444	3/16" and 3/8" Adapter
60439	1/4" Adapter
60445	5/16" Adapter
60446	1/2" Swage adapter
60447	5/8" Swage adapter
60448	3/4" Swage adapter
60449	Flare cone for 3/8" to 3/4" - 45° adapter
60442	"C" clip and nut
60441	Handle/feed screw
60443	Complete yoke 60440/60453
60212	Flare bar for 3/16" to 5/8" O.D.
60232	Flare bar for 1/2" to 3/4" O.D.

FLARING/CUTTING KITS

A wide variety of heavy-duty tool kits for flaring 3/16" to 3/4" O. D.

UPC#	Description
60240	Full range 45° flaring kit for 3/16" to 3/4" O.D. with yoke, two bars, case, instructions
60230	45° Flaring tool only for 1/2" to 3/4" O.D.
60250	45° Flaring/cutting kit for 3/16" to 5/8" O.D. with 60210 flaring tool, 60101 cutter, case, instructions
60260	Full range 45° flaring/cutting kit for 3/16" to 3/4" O.D. same as 60240 with 60101 cutter, case, instructions

TUBING EXPANDER/SWAGER For 5/16" to 1-5/8" O.D.

With long handles for comfortable leverage, easily expand 5/16" to 1-5/8" O.D. soft copper and aluminum tubing in seconds. Select from nine expander heads to attach to the front of the handles.

- Precise swaging on the job
- Re-round deformed tubes and fittings
- Salvage shorts and scrap to make couplings
- Handles, tapered expanding pin, and other moving surfaces heat treated for durability
- Use on 0.063" wall soft copper and aluminum to 1-5/8" O.D. (anneal hard copper prior to use)
- Use on 0.047" wall soft steel to 7/8" O.D.
- Kit includes six expander heads; three optional sizes sold separately

Sets in case

UPC#	Description
60407	Expander kit with handles; heads for 3/8", 1/2", 5/8", 3/4", 7/8", 1-1/8" tubing O.D.; deburring tool, carrying case, instructions
60412	Expander handles
60405	Nut and bolt
60410	Expander handle hinge bolt (9 mm)
60411	Blue case
60427	Steel roller
60429	Drive pin

Expander heads

UPC#	Description	Maximum wall thickness	Swage depth	Segment stretch
60413*	5/16" Expander head	0.039"	0.24"	—
60414	3/8" Expander head	0.039"	0.35"	0.06"
60415	1/2" Expander head	0.047"	0.43"	0.06"
60416	5/8" Expander head	0.047"	0.57"	0.06"
60417	3/4" Expander head	0.047"	0.59"	0.06"
60418	7/8" Expander head	0.047"	0.71"	0.06"
60420	1-1/8" Expander head	0.063"	0.77"	0.90"
60422*	1-3/8" Expander head	0.063"	0.77"	0.90"
60424*	1-5/8" Expander head	0.063"	0.77"	0.90"

* Optional sizes sold separately.

PUNCH-TYPE SWAGING TOOL

- Expands one end of copper tubing for connecting same size tubes
- Heat-treated and plated alloy steel
- Made in the USA

Swaging sets

UPC#	Description
60475	Set – 4 piece in pouch for 1/4", 3/8", 1/2" and 5/8"
60476	Set – 5 piece in pouch for 1/4", 5/16", 3/8", 1/2" and 5/8"
60461	Set with clamping bar and 6 punches 3/16" to 5/8"
60462	Clamping bar only

Single tools

UPC#	Description
60460	Multi-swage punch, 6 sizes 3/16" to 5/8"
60463	3/16" O.D. punch
60464	1/4" O.D. punch
60465	5/16" O.D. punch
60466	3/8" O.D. punch
60467	1/2" O.D. punch
60468	5/8" O.D. punch
60469	3/4" O.D. punch
60470	7/8" O.D. punch

HYDRAULIC TUBE EXPANDER KIT

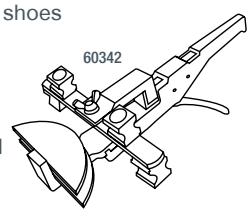
- Saves time and money
- Eliminates fittings
- Easy one-hand operation
- Hydraulic power
- Lightweight and portable

UPC#	Description
60493	Hydraulic expander kit: heads for 3/8", 1/2", 5/8", 3/4", 7/8", 1-1/8", 1-3/8", 1-5/8" tubing O.D.; small cutter, tube reamer, carrying case and instructions
60494	Hydraulic expander only
60495	Replacement expander pin 3/8" to 1-5/8"
60413-24	Replacement expander heads (see chart above)

RATCHET HAND TUBE BENDER

Easy one hand bending of 1/4" to 7/8" soft copper and soft aluminum. Hard copper must be annealed before bending.

- Quick change bending mandrels and shoes
- Trouble free ratchet mechanism
- Index marks to locate bends
- Complete tube bender kit includes all items required to bend 1/4", 5/16", 3/8", 1/2", 5/8", 3/4" and 7/8" tubing



- **Reverse bending mandrel 60342 sold separately**

UPC#	Bending radius	Description
60331	—	Complete kit
60326	1"	1/4" O.D. bending mandrel
60327	7/8"	5/16" O.D. bending mandrel
60332	1-3/16"	3/8" O.D. bending mandrel
60333	1-3/8"	1/2" O.D. bending mandrel
60334	1-15/16"	5/8" O.D. bending mandrel
60335	2-13/16"	3/4" O.D. bending mandrel
60336	3-3/8"	7/8" O.D. bending mandrel
60329	—	Crossbar assembly complete - 3/4" to 7/8"
60330	—	Crossbar assembly complete - 1/4" to 5/8"
60338	—	Plastic carrying case
60339	—	Ratchet body
60342	—	Reverse bending mandrel

UPC#	Replacement parts for 60331
60101	Small cutter for 1/8" to 1-1/8" O.D.
60161	Tube reamer for 1/16" to 1-3/8" O.D.
60328	Lever screw (20)*
60339	Ratchet body (10)*
60340	Ratchet bar (9)* and catch bolt (14)*
60344	Catch pin (13)* and spring (15)*
60345	Catch lever (16)*
60346	Flat spring (17)*
60347	Feed lever (19)*
60348	Wing nut screw (8, 11)*
60349	Tension spring (18)*

* Designates the call-out number for the parts diagram on the 60331 instruction chart.

FULL RANGE HEAVY DUTY TUBE BENDERS For 1/4" to 7/8" radius

Make fast bends on almost every size of soft copper, brass, aluminum, steel and soft stainless steel tubing to 180°.

60390 is a compact three-in-one bender for 1/4," 5/16" and 3/8" O.D. tubing. Calibrated markings for bends up to 180° help you duplicate angles.

Conforms to Fed. Spec. GGG-B-191-a Type III, Class 2.

UPC#	Bending radius	Description
60390	15/16"	1/4", 5/16", 3/8" 3-in-1 Tube bender
60373	9/16"	1/4" Tube bender
60374	11/16"	5/16" Tube bender
60375	15/16"	3/8" Tube bender
60377	1-1/2"	1/2" Tube bender
60378	2-1/4"	5/8" Tube bender
60379	3"	3/4" Tube bender
60380	3-1/4"	7/8" Tube bender
60395	—	Bolt for bender hook
60396	—	Hook/bolt 60378
60397	—	Hook/bolt 60379
60398	—	Hook/bolt 60380

SPRING TUBE BENDER For 1/4" to 7/8"

Spring benders slip over soft copper and aluminum tubing during bending to help prevent tube collapse.

- Silver-plated finish
- Conforms to Fed. Spec. GGG-B-191-a Type IV

UPC#	Description
60354	1/4" O.D. bending spring
60355	5/16" O.D. bending spring
60356	3/8" O.D. bending spring
60357	7/16" O.D. bending spring
60358	1/2" O.D. bending spring
60359	5/8" O.D. bending spring
60360	3/4" O.D. bending spring
60361	7/8" O.D. bending spring
60351	Set–6 sizes–1/4", 5/16", 3/8", 7/16", 1/2" and 5/8" O.D.
60352	Set–4 sizes–1/4", 3/8", 1/2" and 5/8" O.D.
60353	Set–4 sizes–1/2", 5/8", 3/4" and 7/8" O.D.

TUBE DEBURRING TOOL

For fast deburring, rotate blade.

UPC#	Description
60163	Deburring tool with spare blades
60164	Replacement blade for 60163
60165	Economy deburr for 60139 tube cutter
60166	Economy deburr for 60146 tube cutter

TUBE REAMER/BURR REMOVER

Steel blades remove inner and outer burrs.

UPC#	Description
60161	Tube reamer - 1/16" up to 1-3/8" O.D.

PREMIUM TUBE CUTTERS

60101

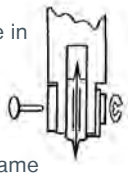
Retracted

Extended

Spare blade stored in handle

Enclosed precision feed mechanism for easy, smooth cutting.

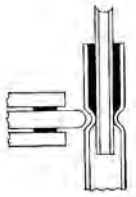
- Wide rollers with flare cut-off groove for convenience. Ground surface for easy rolling
- Wheel retracts into cutter body to save 1" in cutting radius
- Textured finish is easy to grip and hold
- Alloy steel wheels have a sharper cutting wheel edge for less burr on copper, aluminum and mild steel tubing
- Wheels are pinned to rotate in either direction without the screw backing out
- Corrosion-resistant finish on lightweight aluminum frame



- Fold away steel reamer with turned cutting edge for deburring
- Flare cut-off groove for quickly removing damaged flare
- Small and large sizes available
- Conforms to Fed. Spec. GGG-C-771-d, 1-31, 64. Type II, Class 1.
- Assembled in the USA

CONSTRICTOR/CUTTER

Cutter modified with blunt wheel to roll down the tube O.D.



UPC#	Description
60101	Small cutter* for 1/8" to 1-1/8" O.D.
60102	Large cutter* for 1/4" to 1-5/8" O.D.
60103	Constrictor/cutter for 1/4" to 1-1/8" O.D.

Spare parts listed on page 88.

HEAVY DUTY MINI-CUTTERS

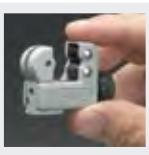
Mini-cutters are compact yet easy to grip and feature large rollers and flare cut-off groove.

Mini-cutter 60121 for heavy-duty cutting from 1/4" to 7/8" O.D.

Small Mini 60160 cuts 1/8" to 5/8" with a turning radius of only 1-3/16".

turning radius for 60160

Big Mini 60142 cuts from 1/4" to 1-1/8" O.D.



UPC#	Description
60160	Small Mini for 1/8" to 5/8" O.D.
60121	Mini-cutter for 1/4" to 7/8" O.D.
60142	Big Mini for 1/4" to 1-1/8" O.D.

Spare parts listed on page 88.

LARGE TUBE CUTTERS
To 5-1/8" O.D. (130 mm)

- "I beam" design uses aluminum alloy for both strength and light weight
- Wide body has long rollers to hold tubing and includes a flare cut-off groove
- Contoured handle for easy gripping also holds spare cutter wheel
- Separate deburr tool slides into cutter body

UPC#	Description
60139	Tube cutter for 3/8" to 2-5/8" O.D.
60146	Large tube cutter for 2" to 5-1/8" O.D.
60165	Replacement deburr tool for 60139
60166	Replacement deburr tool for 60146
60136	Individual/Retainer screw
60172	Handle screw for 60139
60173	Handle and screw for 60139
60174	Spring for 60139

PIPE CUTTER For black iron

Cuts black iron pipe more cleanly and quickly than other types of cutters. Cast iron body holds heat-treated steel cutter wheel.

- Fine pitch threads assure easy cuts on black pipe
- Large rollers for clean right angle cuts

UPC#	Description
60131	6 lb. pipe cutter for 1/8" to 2" pipe
60133	14 lb. pipe cutter for 2" to 4" pipe
60132	Pipe cutter wheel for 60131
60134	Pipe cutter wheel for 60133

PVC AND POLYETHYLENE PIPE CUTTER

- Easy ratchet action and unique hooked tube-gripping jaws give an easy and clean cut
- Steel alloy blade is replaceable, repairable and heat-treated for long life

UPC#	Description
60190	PVC pipe cutter up through 3/4"
60191	PVC pipe cutter up through 1-1/4"
60152	PVC pipe cutter up through 2-1/8"
60193	Replacement blade for 60190
60194	Replacement blade for 60191
60155	Replacement blade for 60152

CAPILLARY CUTTER

Cleanly cut capillary tubing without flattening or constricting tubing.

UPC#	Description
60195	Capillary cutter

TIPS FOR CUTTING

Cutters are designed for different applications and materials, and must be used properly for optimum performance.

- Tubing cutters are designed for softer thinner-wall materials such as copper, aluminum and brass. The wheel is designed very specifically with a sharp edge for quick cutting
- Black iron pipe cutters are larger in size and use fine pitch threads and large rollers for clean right-angle cuts

To ensure lasting tool performance, use the correct cutters for copper and pipe cutters for black iron pipe.

Tube cutter parts – organized by cutter

UPC#	Qty	Pkg*	UPC#	Qty	Pkg*	Description	Cutter
60098	1	B	60099	10	B	Cutter wheels for stainless	60101, 60102, 60103
60079	1	B	60097	5	B	Pin and clip for wheel	60101, 60102, 60103
—	—	—	60094	5	B	Clip only for pins above	60101, 60102, 60103, 60122
60093	1	B	—	—	—	Package one each wheel, pin, clip	60101, 60102, 60103
60100	1	B	60107	10	B	Cutter wheels for copper	60101, 60102, 60103, 60160
60106	1	B	60117	10	B	Constrictor wheels	60101, 60102, 60103
60077	1	B	60095	5	B	Reamer screw and washer	60101, 60102, 60103
60078	1	B	60096	5	B	Reamer	60101, 60102, 60103
60108	1	B	60129	5	B	Screw for knob	60101, 60102, 60103
60074	1	B	60075	5	B	Screw for cutter wheel	60121
60072	1	B	60073	10	B	Cutter wheels	60121
60080*	1	B	60125*	5	B	Screw for cutter wheel	60121, 60123
60120*	1	B	60116*	20	B	Cutter wheels	60121, 60142
60144	1	B	60143	5	B	Cutter blade pin and clip	60142
60124	1	B	60115	10	B	Cutter wheels	60123, 60139
60136	1	—	60140	5	—	Screw/retainer	60139
60169	1	B	—	—	—	Handle	60139
60172	1	B	—	—	—	Screw for handle	60139
60173	1	B	—	—	—	Screw and handle	60139
60174	1	B	—	—	—	Spring for shaft	60139
60165	1	—	—	—	—	Replacement deburr tool	60139
60147	1	B	60148	5	B	Cutter wheels	60146
60141	1	B	60149	5	B	Screws for cutter wheels	60146
60166	1	—	—	—	—	Replacement deburr tool	60146
60110	1	B	60088	10	B	Cutter wheel	60122 and 60160
60081	1	B	60085	10	B	Screw	60122 and 60160
60110	1	B	60088	10	B	Spare cutting wheel	60122 and 60160
60081	1	B	60085	10	B	Spare screw	60160
60111	1	B	60089	10	B	Cutter wheel for Imperial	75015 174-F, 274-F, 312-FB, 374-FC, TC 1000, TC 1020, TC 2050
60112	1	B	60090	10	B	Cutter wheel for stainless Imperial	75046 174-F, 274-F, 312-FB, 374-FC, TC 1000, TC 1020, TC 2050
60082	1	B	60086	10	B	Screw for Imperial	74762 174-F, 274-F, 312-FB, 374-FC, TC 1000, TC 1020, TC 2050
60113	1	B	60091	10	B	Cutter wheel for Imperial	74761 206-FA
60083	1	B	60087	10	B	Screw and nut for Imperial	77511 206-FA

* For old model with Ritchie imprint.

SERVICE COUNTER KIT

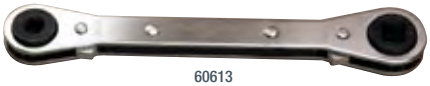
Kit quantities only. Order individual parts and paks for restocking from chart.

Service counter cutter parts kit 60130

UPC#	Qty	Description	Cutter
60130		Counter selection - tube cutter maintenance kit as below	
60179	1	Kit box only with label - empty	
60100	3	Cutter wheels for copper	
60079	3	Pin and clip for wheel	
60077	3	Reamer screw and spacer	60101
60078	3	Reamer	60102
60106	3	Constrictor wheel	60103
60098	3	Cutter wheel for stainless	
60108	3	Screw for knob	
60120	6	Cutter wheels	60121 (old)*, 60142
60072	3	Cutter wheels	60121 (new)*
60080	3	Cutter wheel screw and retainer	60121 (old)*
60074	3	Cutter wheel screw and retainer	60121 (new)*
60144	3	Cutter pin and clip for wheel	60142
60124	3	Cutter wheels	60139
60136	3	Cutter wheel screw and retainer	60139
60110	3	Spare cutting wheel	60160
60081	3	Spare screw	60160

* 60121 (old) model with Ritchie imprint.
* 60121 (new) model with YELLOW JACKET imprint.

SERVICE WRENCHES



60613

Standard reversible ratchet wrench with square openings: 1/4" and 3/16" at one end; 3/8" and 5/16" at other end.

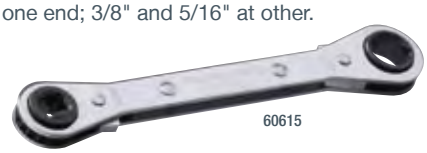
60618

Heavy-duty features a heavier handle and larger gear. Stronger gear teeth are combined with strong reversing mechanism for long service life.

Square opening 3/16" and 1/4" at one end; 3/8" and 5/16" at other end.

60616

Knuckle saver design for convenience in tight areas. Square opening 1/4" and 3/16" one end; 3/8" and 5/16" at other.



60615

Reversible wrench for **larger service valves.** 3/8" square one end; 1/2" square at other.

60612

7" heavy-duty reversible ratchet wrench with hex openings 1/2" and 9/16" at one end; square 3/16" and 1/4" at other end.

Service wrenches	
UPC#	**Description**
60613	Straight service wrench
60618	Heavy-duty service wrench
60616	Off-set service wrench
60615	Refrigeration wrench for large valves
60612	7" Heavy-duty wrench
60003	60613 (50 pak)
60006	60616 (50 pak)
60008	60618 (42 pak)

CAUTION: Do not use cheater bars.

SERVICE WRENCH AND ADAPTER

Combination service wrench and hex adapter for accessing liquid and suction based valves on residential and commercial units up to 7.5 tons. Heat-treated hex works for 3/16" and 5/16" hex valves. Black oxide plated. New adapter for some York and Coleman units.

UPC#	Description
60609	Hex key adapter
60610	60613 service wrench and 60609 adapter
60638	Shorter 3/16" and 5/16" hex key adapter

KNUCKLE-SAVER™ HEX WRENCH SETS

Three-piece or five-piece

The offset design saves knuckles in tight places.

- Accurately sized and broached ends for correct fit
- Heat-treated critical wear parts for long life
- Finger control reversing
- Chrome plated for durability
- Made in the USA

UPC#	Description	Hex sizes
60630	Set - 5 wrenches	1/4" to 7/8"
60631	Set - 3 wrenches	1/4" to 9/16"
60633	Ratchet wrench	1/4" x 5/16"
60634	Ratchet wrench	3/8" x 7/16"
60635	Ratchet wrench	1/2" x 9/16"
60636	Ratchet wrench	5/8" x 11/16"
60637	Ratchet wrench	3/4" x 7/8"

SPORLAN VALVE WRENCH

Spanner end tightens packing nut around super heat adjustment stem. 1/8" square end adjusts Sporlan solenoid valves with manual lift stems as on Series B6 and E6 through MA 50. Also 3/16" square at same end for expansion valves.

UPC#	Description
60617	Sporlan valve wrench

PREMIUM FORGED SERVICE WRENCHES

- Enclosed ratcheting mechanism to keep out debris that could jam the action
- Higher torque ratings than standard wrench
- 72 teeth per end for 5°/6° ratcheting
- No reversing mechanism to wear out; simply turn wrench over for reversing
- Uses less work room for ratcheting
- Heat-treated chrome vanadium forging for durability

UPC#	Description
60600	Forged wrench 1/4" and 3/8" square
60601	Forged wrench 3/16" and 5/16" square
60629	Set of 60600 and 60601
60619	Display pak 60600 (25 pieces)
60620	Display pak 60601 (25 pieces)

RETAINING RING PLIERS – COMBINATION INTERNAL/EXTERNAL

Compact pliers for use on SealRight™ coupler with interchangeable tips.

- Six point broached jaw for accurate tip alignment. Adjustable for hex tips
- High handle-to-jaw ratio for increased mechanical advantage
- Easy-to-use – just set lever to "internal" or "external"
- Adjustable stop for efficient internal ring installation and prevention of external ring damage
- Spring return for easy control
- Includes pouch with five pairs of alloy steel replaceable tips and hex wrench

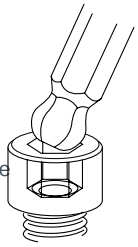
Works on internal and external retaining rings where bearings are used, where a shaft must be held in a bore, under the dashboard and more.

UPC#	Description
60593	Small pliers for 1/4" - 1" (8 mm - 26 mm) internal rings; 1/8" - 1" (3 mm - 26 mm) external rings
60596	Replacement tip set for 60593: straight 0.023" (0.6 mm), 0.036" (0.9 mm), 0.047" (1.2 mm); 90° 0.036" (0.9 mm), 0.047" (1.2 mm)

HEX KEYS

All hex keys from 1/20" to 5/16" are premium 8650 heat-treated steel alloy for rugged use.

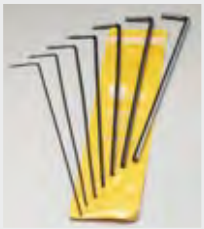
- Chamfered square cut ends for easy socket insertion
- Corrosion-resistant finish
- Patented organizer case with identifying slots that lock keys in place when not in use
- Ball end keys ease tightening of fasteners where sockets are up to 30° off axis. Provides fast full socket engagement where regular hex keys cannot do the job



UPC# Standard end	Description		UPC# Ball end
	Size	Length	
60670	12 piece set with case		60685
60669	Metric – 12 piece set with case		—
	All individual keys below are 10 paks		
60671	1/20"	2.8 inches	60686
60672	1/16"	3.0 inches	60687
60673	5/64"	3.2 inches	60688
60674	3/32"	3.4 inches	60689
60675	7/64"	3.6 inches	60690
60676	1/8"	3.7 inches	60691
60677	9/64"	3.9 inches	60692
60678	5/32"	4.1 inches	60693
60679	3/16"	4.5 inches	60694
60680	7/32"	4.9 inches	60695
60681	1/4"	5.1 inches	60696
60682	5/16"	6.0 inches	60697
60683	–	Case	60698

12" HEX KEY WRENCHES

- Heat-treated for long life
- Chamfered ends for easy insertion into sockets
- Black finish



UPC# 25 per pkg.	Size		UPC# Individual
60750	Set 7 pcs. Hex key wrenches, includes all sizes below		
60757	5/64"	1-3/4"	60857
60758	3/32"	1-3/4"	60858
60760	1/8"	1-3/4"	60860
60762	5/32"	1-3/4"	60862
60763	3/16"	1-3/4"	60863
60764	7/32"	1-3/4"	60864
60765	1/4"	1-3/4"	60865

FOLD-UP HEX KEY SETS

Locate the correct key size easily. For rugged use, each key is premium 8650 heat-treated steel alloy.

- Chamfered square cut ends for easy socket insertion
- Corrosion-resistant finish
- Smooth one-piece handle with sizes clearly marked
- Keys snap to work position for leverage and fold into handle for compact storage
- Replacement keys available

UPC#	Description
60700	Hex key set – 8 sizes - 1/20", 1/16", 5/64", 3/32", 7/64", 1/8", 9/64", 5/32"
60710	Hex key set – 9 sizes - 5/64", 3/32", 7/64", 1/8", 9/64", 5/32", 3/16", 7/32", 1/4"

FAN BLADE PULLER

All steel design includes a 15/16" hex head and 5/8" shaft milled back 1-1/2" and undersized for 1/2" shaft opening. A self centering alignment tool is included.

Four fingers attach to the fan blade. For durability they are made of hardened 4140 chrome moly steel.

- Remove squirrel cage type blower wheels
- Pull off fan blades
- Remove pulleys or sheaves
- Fits 1-3/4" hub maximum (will work on a 10" pully if the diameter is less than 1-3/4")

Comes with 8 screws, 4 for hex key and 4 for wrench.

UPC#	Description
60590	Fan blade puller complete
60591	Replacement “fingers” (4)
60592	Bolt for 60590

PINCH-OFF TOOLS

60665 will pinch off and reround 1/4", 5/16", 3/8" and 1/2" copper.

60661 pinches off copper and other lines quickly. Trigger release.

60666 is a ViseGrip® pinch-off tool.

UPC#	Description
60665	Bar-style pinch-off and reround tool
60661	Plier type pinch-off tool
60666	ViseGrip® pinch-off tool

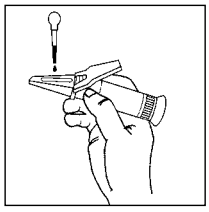
REFRIGERANT RECOVERY PLIERS

The fastest and easiest way to evacuate refrigerant before disposal of a unit.

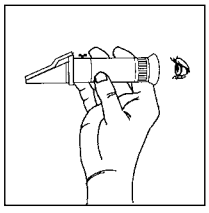
- Snaps onto refrigerant line and punctures large hole for immediate and maximum full flow to recovery unit
- One adjustable tool fits all sizes from 3/16" to 7/8" O. D. hard tubing
- Replaceable hardened steel needle

UPC#	Description
60667	Refrigerant recovery pliers
60668	Replacement needle and gasket
19022	Replacement gasket only (5 pak)

HAND-HELD REFRACTOMETER



Place sample liquid on prism and close cover.



Look through the eyepiece and focus for scale reading.

For retrofitting a mineral oil system with POE, the refractometer can accurately predict remaining mineral oil in the system down to one percent. Acceptable levels of remaining oil depend on compressor/system manufacturer requirements.

Refractive range 1.435 to 1.520 at room temperature.

UPC#	Description
69000	Hand-held refractometer with case

MAX-FLOW™ COMBINATION OIL PUMP

Pump oil into the compressor *on the down stroke* while the system is under pressure, making pumping easier with a positive stroke.

- Remove oil for recovery and conversion
- Add oil to existing systems
- Pumps 2.6 oz. or 78 ml per stroke
- Pumps against 200 psi pressure
- Comfort-grip rubber handle
- Universal stopper automatically adjusts to all standard openings in 1, 2-1/2 and 5 gallon oil containers
- Suction transfer hose and fittings included. Connects to bottom of unit to pump oil from equipment quickly and efficiently
- Use with alkyl-benzene, ester-based, polyol ester, mineral and synthetic oils
- Made in the USA

UPC#	Description
77940	Max-Flow combination oil pump with tubing
77941	Automatic stopper for oil container openings for new 77940 pump
77942	“O” ring kit for 77940
77920	Adapter fitting straight – 1/8" NPT Male x 1/4" flare
77921	Adapter fitting 90° angle – 1/8" NPT Male x 1/4" flare
77922	24" suction hose – 1/4" fitting one end only

Note: Not for use with ammonia laden oil.

MAX-FLOW™ DELUXE OIL PUMP

The Max-Flow deluxe oil pump is a high capacity unit for quick charging.

- Remove oil for recovery and conversion
- Add oil to existing systems
- Pumps 3.8 oz. (112.38 ml) per stroke
- Fits all size oil containers
- Foot stand base provides support and leverage while pumping against the high pressures of a running compressor
- Operating unit in reverse with adapter hose accessory removes oil from equipment quickly and efficiently
- Use with alkyl-benzene, ester-based, polyol ester, mineral and synthetic oils
- Will pump against 250 psi pressure
- Made in the USA

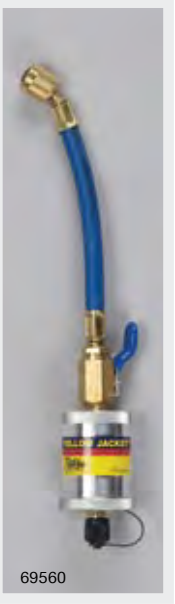
UPC#	Description
77930	Max-Flow deluxe oil pump
77925	Plastic seat
77931	"O" ring kit for 77930
77932	Piston rod assembly
77935	Ball spring – 2 each
77936	Replacement suction copper tube with 1/2" flare nut at one end
77933	Replacement fittings — 3/8" NPT Male x 1/2" flare — 90°
77937	Replacement fittings — 3/8" NPT Male x 3/8" flare — 90°
77938	Optional 1/2" flexible suction hose, 24" long — fitting one end only
77939	Optional 3/8" flexible drain hose, 24" long — fitting one end only
59653	1/2" copper gasket soft (10 pak)

REFILLABLE OIL INJECTORS

Add liquid to systems and sample refrigerant quickly and easily.

- Body and cap are rugged aluminum with “O” ring seal
- Male fitting at one end with Schrader. A ball valve for control on other end with a short length of hose
- Valve depressor in Female end
- 600 psi maximum working pressure
- Made in the USA

UPC#	Description
69560	1/2 oz. Oil injector 1/4" Male flare x 1/4" Female Q.C.
69561	2 oz. Oil injector 1/4" Male flare x 1/4" Female Q.C.
69562	4 oz. Oil injector 1/4" Male flare x 1/4" Female Q.C.
69563	“O” ring 1/2 oz. injector (5 pak)
69564	“O” ring 2 and 4 oz. injector (5 pak)
69565	1/2 oz. R-134a auto injector with hose and service coupler
69566	2 oz. R-134a auto injector with hose and service coupler
69567	4 oz. R-134a auto injector with hose and service coupler
69722	Replacement hose for 69560, 69561 and 69562
69724	Replacement hose for 69565, 69566 and 69567


69560

69561

69562

ERGONOMIC FINFIX™ COMBS
For 14 different fin sizes

Color-coded nylon fin combs are designed to easily straighten and clean fins on standard and high efficiency condensers and evaporators. Shape conforms to the hand and thumb for a more comfortable grip.

Available individually bagged or as a set of six assorted. One set of six covers 12 different fin sizes. 61157 is for high efficiency units.

Individual UPC#	Description	Fins per inch	Color	Bag of 25 UPC#
61151	FinFix 1	8 and 10	Orange	61161
61152	FinFix 2	9 and 15	Yellow	61162
61153	FinFix 3	11 and 13	Blue	61163
61154	FinFix 4	12 and 14	Green	61164
61155	FinFix 5	16 and 17	Lime	61165
61156	FinFix 6	18 and 20	Red	61166
61157	FinFix 7	21/22 and 23/24	Purple	61167
61158	Set of 6	8 to 20	Assorted	—

MECHANIX™ WORK GLOVES

Gloves feature a padded, two-way stretch lined spandex top for fit and flexibility.

- Smooth surface thumb and index finger improve grip
- Soft, flexible, durable and breathable synthetic leather palm
- Synthetic leather and lycra finger gussets
- Elastic cuff with adjustable hook and loop TPR closure

UPC#	Description
10057	Medium Mechanix™ work gloves
10058	Large Mechanix™ work gloves
10059	Extra large Mechanix™ work gloves

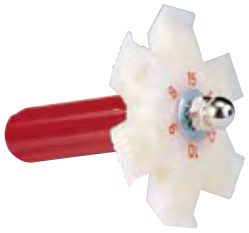
SAFETY GOGGLES

Helps protect your eyes against metal particles, sparks, refrigerant gases, etc. when working on HVAC/R systems.

Safety goggles are recommended any time you work on a system.

UPC#	Description
11002	Safety goggles
11003	Ventilated safety goggles

6-IN-1 FIN STRAIGHTENER



Fin straightener sizes are marked on the head - 8, 9, 10, 12, 14 and 15 fins per inch. Compact 4" length.

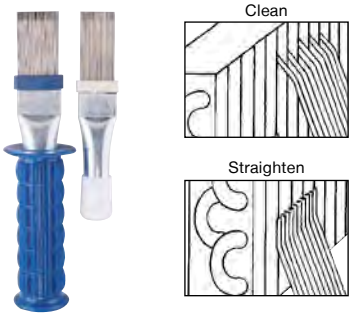
UPC#	Description
61171	6-in-1 Fin straightener
61172	Head only
61173	Handle only

STAINLESS TELESCOPING INSPECTION MIRRORS

- Check leaks in hard to see places
- Stainless steel mirror on ball joint rotates 360˚
- Handle extends to 28"

UPC#	Description
78100	Round 3-3/4" diameter
78101	Rectangular 3-3/4" x 2"
78102	Rectangular 2" x 1-1/4"

FIN STRAIGHTENERS



Fin straighteners straighten even severely damaged condenser and evaporator fins quickly and easily. Also clean away lint, rust, dirt and other debris.

Straightening wire tension is adjustable to accomodate various fin types. Wires are held by a sturdy metal body.

61170 includes a long comfort-grip handle, making straightener easier to use. Head is 20 percent wider than the 61150 to straighten more fins in one pass.

UPC#	Description
61150	Fin straightener
61170	Fin straightener with large handle

TELESCOPING GLASS MIRRORS

UPC#	Description	Extension
78094	2-1/4" round	9-1/4" to 14-1/4"
78097	2-1/4" round magnified (2X)	9-1/4" to 14-1/4"
With pocket clip and insulated head		
78098	1-1/4" round	7" to 19"
78099	1-1/4" round magnified (2X)	7" to 19"
78103	2" x 3-1/2" rectangular	11" to 15-1/2"
78104	1" x 2" oval	7" to 19"
Replacement mirrors only		
78105	2-1/4" round glass	
78106	2" x 3-1/2" rectangular glass	
78107	1" x 2" oval glass	

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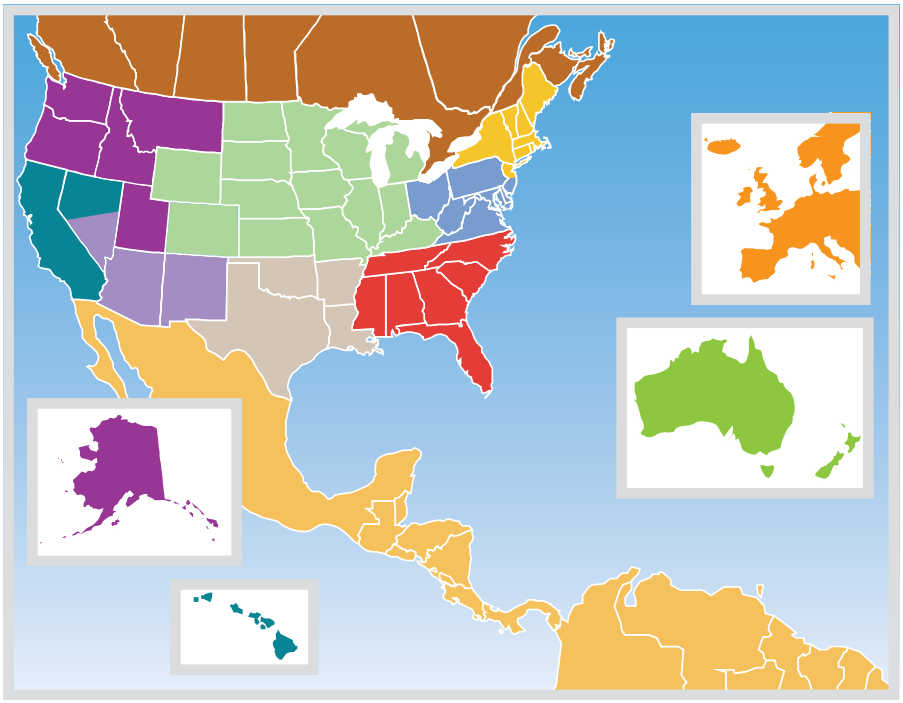

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