

YELLOW JACKET®

HVAC/R Service Tools

EDITION
FIFTY SIX



*Preferred
by leading
commercial
and residential HVAC/R
trade professionals
worldwide*



Ritchie®
ENGINEERING COMPANY INC.
www.yellowjacket.com

YELLOW JACKET®

HVAC/R and Automotive Service Tools



*Serving
the industry
since 1949*

At Ritchie Engineering Company, office personnel, engineers, assembly staff, quality control team, the shipping department and the sales professionals are expected to share the management philosophy established in 1949.

It's a philosophy simply stated in the company's business mission –

Give AC&R professionals the quality products they need at a competitive price in the necessary time; and with dependable follow-through.

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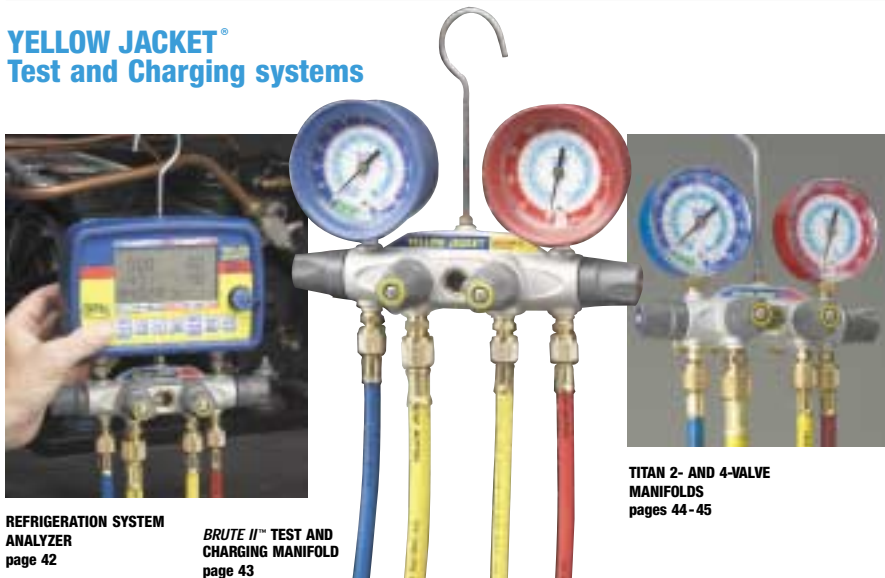
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YELLOW JACKET[®]
Recovery Machines —
for every refrigerant,
every size system



NEW
RecoverX™ Family
of Refrigerant Recovery
Machines

YELLOW JACKET® Refrigerant Recovery Machines – the growing line for every size system

When you see the YELLOW JACKET® name on a hose, you know you've got the genuine item for industry proven performance. Today, you'll also find the YELLOW JACKET name on a line of refrigerant recovery machines for the smallest appliance to the largest system.

All are backed by the experience of having more units in the field than the total of many different competitive units combined.

Building block approach to select a system for your needs

Make your selection based on system size, your budget, and performance features that build through the line. On this page, start with the high speed of the RecoverXL. Add automatic operation with the RecoverXLT and then subcooling with the RecoverXLS System.

RecoverXLT and RecoverXLS include a 3-Year warranty on compressor

Every unit is full-function tested in the factory to help insure trouble-free operation. Results and a full 1-year warranty (3 year compressor warranty on RecoverXLT and RecoverXLS) are included with each RecoverX model.

Call **1-800-769-8370** for technical support for as long as you own the equipment. Telephone calls typically solve 90% of problems without returns. Technical support is also available in Europe. Replacement parts are easy to install and readily available through your YELLOW JACKET wholesaler.

Since Federal laws prohibit venting or blowing off a charge during service, a recovery unit is mandatory.

See page 10 for selection chart.

RecoverXL REFRIGERANT RECOVERY MACHINES – fast recovery of most refrigerants including R-410A



The YELLOW JACKET RecoverXL Machine provides fast recovery of Class III, IV, and V refrigerants including R-410A. Features include all of the following:

- Durability with proven 1/2 hp oil-less direct drive compressor. Permanently lubricated cylinder walls eliminate oil maintenance and compatibility problems
- Built-in mesh particulate filter to protect unit from dirty systems
- “On-the-fly” purge with simple turn of a knob to remove residual refrigerant and help prevent cross contamination

The weight of all units balance away from the side of your leg for easier carrying on a long walk to the back of a house or a long climb to a roof top.

- Easy, intuitive use with single-valve set-up and no hose switching (patent pending)



UPC#	Description	Compressor
95740	RecoverXL 115/60 Hz	1/2 hp oil-less
95753	RecoverXL 230/50 Hz (Euro plug)	1/2 hp oil-less

RecoverXLT UNIVERSAL RECOVERY MACHINES – adds fully automatic operation to the full features of RecoverXL

- Quiet running with components nested to reduce vibration and noise. Oil-less compressor is inherently quiet. Tough HDPE case dampens vibration rather than amplify it like metal
- High volume air flow ducted over large condenser for cool running even in high ambient temperatures
- Controls and gauges inset for protection and angled for easy access and viewing
- High strength construction for rugged use, yet lightweight at less than 33 pounds. (14.78 kg). Rounded corners help protect you and your customers property from scrapes



Convenient cord storage.



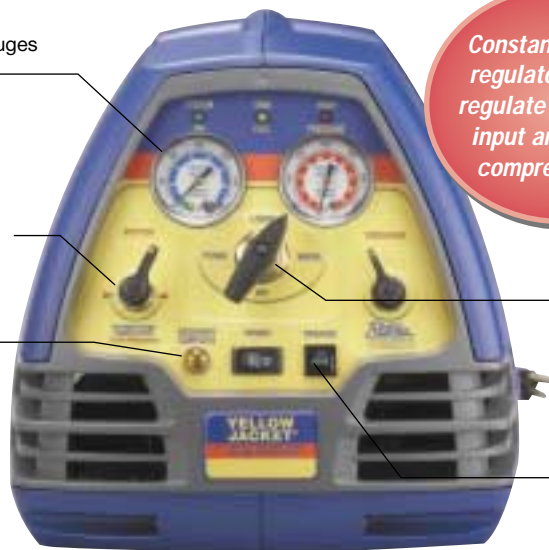
High efficiency fan keeps air moving across the condenser for cool running even in high temperature operating conditions.

R-410A ready color-coded gauges (500 low side; 800 high side)

Reusable mesh particulate filter inserts into suction port for protection

Recovery complete indicator

95762 (Shown)



Constant pressure regulator valve to regulate refrigerant input and protect compressor life.

Single valve control for easy changeover from liquid to vapor to purge (patent pending)

Circuit breaker

Start with the features of the RecoverX and add **fully automatic operation** for every refrigerant.

- Single valve control for easy changeover from liquid to vapor to purge (patent pending)
- CPR valve regulates refrigerant to the compressor. Eliminates the need for the technician to throttle the suction valve. Protects the life of your compressor, and your investment
- 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 15" of vacuum. Unit will automatically restart if system pressure rises
- LED signals recovery completion
- High efficiency fan keeps air moving across condenser for cool running even in hot weather

- Senses back pressure from tank and shuts off automatically at 520 psi for safety
- Single high pressure safety switch
- Reusable mesh particulate filter inserts into suction port for protection. Simple cleaning eliminates replacement due to clogging
- Color-coded hook-ups for proper use
- “On-the-fly” purge with simple turn of a knob to remove residual refrigerant and help prevent cross contamination
- Designed and manufactured in USA
- Tested by UL to ARI 740-98

See refrigerant ratings chart for all machines on page 10.

UPC#	Description	Compressor
95760	RecoverXLT 115/60 Hz	1/2 hp oil-less
95762	RecoverXLT with tank overfill switch 115/60 Hz	1/2 hp oil-less
95763	RecoverXLT 230/50 Hz (Euro plug)	1/2 hp oil-less
95767	RecoverXLT 230/50 Hz (UK plug)	1/2 hp oil-less

RecoverXLS UNIVERSAL RECOVERY MACHINES – adds *subcooling* to the RecoverXLT

Available in Spring 2007

When ambient temperatures go up at a service site, refrigerant in the recovery tank gets hot and expands to increase pressure, reducing recovery speed. You could either ice the tank to cool and condense the contents or just flip the subcooling switch on the new RecoverXLS Machine. The switch is faster and more convenient. Subcooling lowers the temperature of refrigerant below its dew point. In subcooling mode the RecoverXLS draws hot vapor from the recovery tank and it goes back through the condenser. The vapor is cooled and returned to the tank as a liquid to lower tank temp and pressure. With a cooler tank and lower pressure, you can fill the tank more quickly with more refrigerant on hot days, and help maximize compressor life.

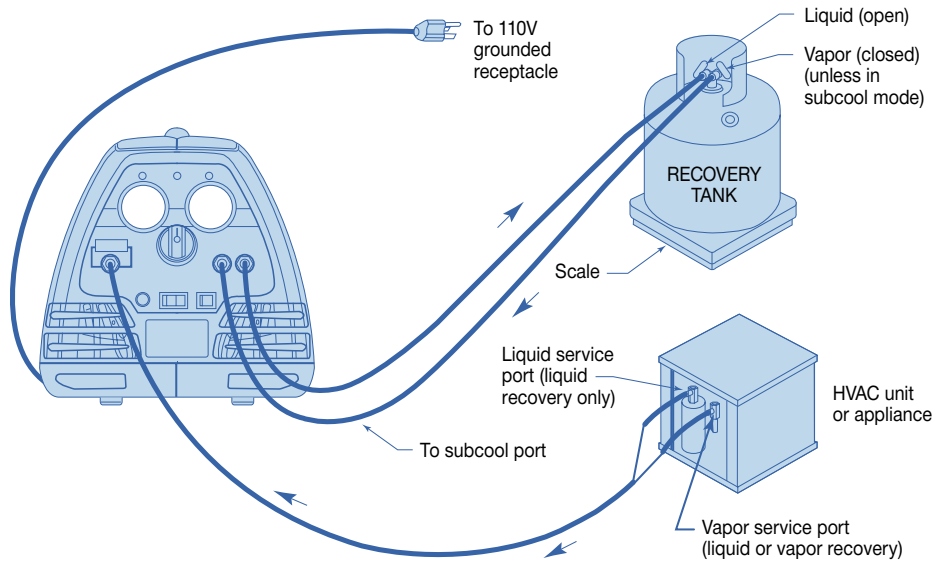
Set-up is a simple 3-hose hook-up when connecting the

RecoverXLS to the system and tank. Like the RecoverXLT recovery is automatic. Simply connect the “vapor out” from the recovery tank to the subcooling port on the RecoverXLS. No refrigerant will flow while the subcooling switch is “Off.”

Turn the suction valve to the “Off” position and the subcooling switch “On.” Vapors will be collected from

the recovery tank, circulated through the RecoverXLS condenser, and then returned to the recovery tank as cooled liquid to lower both tank temperature and pressure.

Simply flip the switch to the “Off” position when the tank has cooled to the desired level and continue the recovery process as usual.



RecoverX REFRIGERANT RECOVERY MACHINES – cost-effective for smaller systems and push/pull liquid applications



This economical recovery unit builds on the performance and success of the original YELLOW JACKET® RecoverX

Recovery Machine – over 50,000 sold. New features include the following:

- Maximum air flow and cool running even in high ambient temperatures. High efficiency fan keeps air moving across condenser
- High strength HDPE case for light weight 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
- Designed and manufactured in USA

See page 10 for performance and selection chart.

UPC#	Description	Compressor
95700	RecoverX 115/60 Hz	1/6 hp hermetic

R 100 SERIES REFRIGERANT RECOVERY MACHINES – the speed you need for larger commercial jobs

This is the high speed system for large quantity refrigerant transfer, junkyard transfer, supermarket rack systems, and other larger commercial jobs.

- Fast twin cylinder 1 hp oil-less compressor recovers direct liquid at up to 5 lbs./min., or .6 lbs./min. vapor per ARI 740-95
- High capacity 6" muffin fan and oversized 3/8" slit fin condenser with 3-pass path for cool running in high ambient temperatures
- Tank overflow sensor
- Built-in reusable mesh particulate filter to protect from dirty systems
- “On-the-fly” purge with simple turn of a knob to remove residual refrigerant and help prevent cross contamination
- Designed and manufactured in USA

See page 10 for performance and selection chart.



UPC#	Description	Compressor
95100	R 100 Refrigerant Recovery System 115/60 Hz	1 hp oil-less dual cylinders

MESH PARTICULATE FILTER



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 50a, R 70a Series (4 pk)
95136	Screens R 80a, R 100 Series (4 pk)
95139	Screens R 60 and R 60a Series (4 pk)
95141	Screens RST, R 50 (4 pk)
95457	Replacement filter screen for RecoverX family

RECOVERY BURNOUT FILTER for dirty systems



High capacity inline 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 RecoverXL 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
41125	Sight glass with 1/4" connections

MACHINE PARTS FOR R 50a, R 60a, R 70a, R 100 (old machine)

UPC#	Description
95121	Compressor kit for oil-less units
95122	Eccentric and bearing assembly for R 60/R 60a, R 70a
95123	Compressor service kit for R 50/R 50a
95124	Compressor service kit for R 100
95125	Eccentric and bearing assembly for R 50/R 50a, R 100
95126	Compressor overhaul kit for R 100
95148	Conversion for 3 pin Brad Harrison to Thermoflo adapter
95150	TOS 80% overfill kit for R 50a
95188	Shorting cap
95230	Head and valve plate assembly for oil-less machines
95287	Connecting rod for R 60/R 60a, R 70a .750 stroke
95341	Connecting rod for R 50/R 50a, R 100 .600 stroke
95342	Repl. brass bulkhead fitting for R 50a, R 60a, R 70a
95343	Repl. "O"-ring for R 50a, R 60a, R 70a (3-pk)

PARTS FOR RecoverX MACHINES

UPC#	Description
95156	Circuit breaker - 12 AMP
95190	Capacitor
95187	Relay
95188	Shorting cap for umbilical cord
95210	Large cord strain relief bushing
95215	Power cord
95216	Rocker switch
95218	Oil-less compressor 115V, 60 Hz
95248	Umbilical cord overfill sensor
95253	Solid state board w/ remote LED's
95291	Green LED light
95292	Yellow LED light
95293	Red LED light
95294	Fan clip
95325	High pressure switch
95338	Low pressure switch
95444	Case, front
95445	Case, rear
95446	Case half (both halves)
95447	Case, cord wrap
95448	Aluminum frame
95449	Compressor bracket grommet
95450	Condenser coil
95451	High pressure gauge
95452	Low pressure gauge
95453	Manifold assembly
95454	CPR valve
95455	Fan blade
95456	Neon lamp
95457	Replacement filter screen

REFRIGERANT RECOVERY PLIERS



See Page 109.

RECOVERY MACHINES AT A GLANCE



Domestic	RecoverX #95700	RecoverXL #95740	RecoverXLT #95760	R100 #95100								
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 hp oil-less twin cylinder								
Weight	29.0 lbs. (13.15 kg)	31.0 lbs (14.07 kg)	32.6 lbs. (14.78 kg)	48 lbs. (21.8 kg)								
Size LWH inches	19.3 x 12.4 x 12.5	19.3 x 12.4 x 12.5	19.3 x 12.4 x 12.5	14.7 x 12.1 x 12.7								
Size LWH mm.	490 x 315 x 317	490 x 315 x 317	490 x 315 x 317	373 x 308 x 348								
Refrigerant Compatibility	12, 22, 134a, 407C, 500, 502, HP, MP, blends	12, 22, 134a, 500, 502, HP, MP, blends	12, 22, 134a, 500, 407C, 410A, 502, HP, MP, blends	12, 22, 134a, 500, 502, HP, MP, blends and 407C, 410A and 407C,410A								
Volts/hertz	115V/60 Hz	115V/60 Hz or 230/50 Hz	115V/60 Hz or 230/50 Hz	115V/60 Hz								
Tank over-fill sensor	No	No	Standard on 95762	Standard								
Low pressure shut-off sensor	No	No	Standard	Standard								
Inlet mesh filter screen	No	Included	Included	Included								
Inlet filter dryer	Optional Filter available for use on contaminated and burn-out systems, use a filter of adequate size. See page 9.											
Suction and pressure gauges	Standard	Standard	Standard	Standard								
Upgraded higher pressure gauges Suction and pressure	No	Standard	Standard	No								
Upgraded single higher pressure switch	No	Standard	Standard	No								
External circuit breaker	Standard	Standard	Standard	Standard								
Warranty	1 year parts and labor	1 year parts and labor	1 year parts and labor; 3 years compressor	1 year parts and labor								
Certified to ARI standard	ARI 740-95	ARI 740-98	ARI 740-98	ARI 740-98								
Testing agency	UL	UL	UL	UL								
CUL listed	Yes	Yes	Yes	No								
Recovery ratings per ARI in lbs./min.	740-95			740-98			740-98			740-98		
	Vapor	Push/Pull	Liquid	Vapor	Push/Pull	Liquid	Vapor	Push/Pull	Liquid	Vapor	Push/Pull	Liquid
R-12	0.24	10.43	N/A	0.31	13.12	1.68	0.37	12.81	1.98	0.37	14.09	3.70
R-22	0.29	8.77	N/A	0.31	13.12	1.68	0.37	12.81	1.98	0.44	16.87	3.70
R-134a	0.20	9.33	N/A	0.31	13.12	1.68	0.37	12.81	1.98	0.31	15.04	3.51
R-407	N/A	N/A	N/A	0.95	11.88	1.65	N/A	N/A	N/A	N/A	N/A	N/A
R-410A	N/A	N/A	N/A	0.42	11.60	1.68	0.42	11.60	1.68	N/A	N/A	N/A
R-500	0.24	9.66	N/A	0.31	13.12	1.68	0.37	12.81	1.98	0.37	14.93	3.68
R-502	0.24	7.61	N/A	0.55	13.18	2.29	0.66	12.90	2.65	0.60	16.76	5.16
ARI ratings stated 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	8.40	357.00	45.60	10.20	348.60	54.00	0.17	6.39	1.68
R-22	7.80	238.80	N/A	8.40	357.00	45.60	10.20	348.60	54.00	0.20	7.65	1.68
R-134a	5.40	253.80	N/A	8.40	357.00	45.60	10.20	348.60	54.00	0.14	6.82	1.59
R-407	N/A	N/A	N/A	25.80	323.40	45.00	N/A	N/A	N/A	N/A	N/A	N/A
R-410A	N/A	N/A	N/A	11.40	315.60	45.60	11.40	315.60	45.60	N/A	N/A	N/A
R-500	6.60	262.80	N/A	8.40	357.00	45.60	10.20	348.60	54.00	0.17	6.77	1.67
R-502	6.60	207.00	N/A	15.00	358.80	62.40	18.00	351.00	72.00	0.27	7.60	2.34

* 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. Performance test results for all units can be found at www.ari.org/directories/r/rre/rre-directory.pdf

REFRIGERANT RECOVERY CYLINDERS

These gray/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. R-410A cylinder 400 psi
95007	50 lb. R-410A cylinder 400 psi
95012	30 lb. R-410A cylinder 400 psi with float switch
95013	50 lb. R-410A cylinder 400 psi with float switch
95008	"Y" valve for 30 lb. cylinder
95009	Liquid level switch for 30 and 50 lb. Worthington and Manchester cylinders only with 3-pin Brad Harrison connection
95010	Liquid level switch for 30 and 50 lb. Amtrol cylinders only with 3-pin Brad Harrison connection
95011	"Y" valve for 50 lb. cylinder

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

AUTOMOTIVE REFRIGERANT MANAGEMENT MACHINES (RMS) SERIES 800



Series 800 machines are the simplest, easiest-to-use A/C service centers helping technicians meet today's tough service standards. Operation is

quick and efficient, lowering A/C service costs.

The RMS 39800 Automatic and 39830 Automatic Plus provide full cycle recovery/recycle/evacuate/recharge to bring the vehicle back to factory spec with the press of one button. Both units offer:

- Oil injection
- Fast vacuum and powered charging
- Built-in self diagnostics
- Fully automatic air purging which constantly monitors and purges non-condensables
- Automatic shut-off
- Free training, set up, and lifetime technical support

- 50 pound storage tank

The “Plus” in the 39830 refers to the OEM-approved oil flush cycle that circulates refrigerant, removing oil for fast retrofits.

Choose the RMS 39810 (R-12) or RMS 39820 (R-134a) for the most economical automatic recovery/recycle solution. With these easy-to-use machines, just connect the quick-connect couplings to the vehicle and push the Recovery Recycle switch to complete the process. There are no confusing valves to remember to open or close. Rotate the vacuum timer to the vacuum time you select and the

optional YELLOW JACKET two-stage vacuum pump provides a deep vacuum. Scroll up the correct charge on the high visibility LCD and push the charge switch to quickly charge refrigerant.

Additional RMS 810/820 features:

- Automatic tank full and high pressure shut-offs
- 1/2 hp oil-filled hermetic compressor
- Advanced shock-resistant scale
- One touch Oil Injection
- One touch Oil Drain
- One touch Air Purge

UPC#	Description
39800	Fully automatic recover/recycle/evacuate/recharge/w/ 6 cfm vacuum pump 115V/60 Hz
39810	R-12 recover/recycle/recharge w/ 4 cfm vacuum pump 115V/60 Hz
39811	R-12 recover/recycle/recharge without vacuum pump 115V/60 Hz
39820	R-134a recover/recycle/recharge w/ 4 cfm vacuum pump 115V/60 Hz
39821	R-134a recover/recycle/recharge without vacuum pump 115V/60 Hz
39822	R-134a recover/recycle/recharge w/ 6 cfm vacuum pump 115V/60 Hz
39830	Fully automatic “plus” recover/recycle/flush/evacuate/recharge/w/ 6 cfm vacuum pump 115V/60 Hz
39831	39830 with refrigerant identifier
39832	39830 with printer
39833	39830 with refrigerant identifier and printer
39870	Fully automatic dual unit for R-12 and R-134a
38079	Protective cover for 39830
39052	Protective cover for 39870

Frequently Asked Questions

1. For what refrigerants are RecoverX family of Refrigerant Recovery Machines?

They are tested by UL to ARI 740-98 (740-95 for 95700) and approved for medium pressure refrigerants R-12, R-134a, R-401C, R-406A, R-500; medium high pressure refrigerants R-401A, R-409A, R-401B, R-412A, R-411A, R-407D, R-22, R-411B, R-502, R-407C, R-402B, R-408A, R-509; and high pressure refrigerants R-407A, R-404A, R-402A, R-507, R-407B, R-410A (RecoverXL and RecoverXLT).

2. Is ARI the only testing agency?

No. ARI is only a certifying agency that hires another agency to perform

the actual testing. UL is also EPA approved as a testing and certifying agency. YELLOW JACKET Machines are UL tested for performance. Some YELLOW JACKET Machines are tested to CSA, CUL, CE, and TÜV safety standards which go beyond the ARI performance standards.

3. Can I compare machines by comparing their ARI or UL ratings?

Yes. ARI and UL test standards should be the same. And remember that manufacturers can change the conditions under which they test their own machines to give the appearance of enhanced performance. Only ARI and UL test results provide consistent

benchmarks and controls on which to make objective comparisons.

4. How dependable are YELLOW JACKET Refrigerant Recovery Machines?

YELLOW JACKET equipment has been tested at thousands of cycles, and are backed with the experience of units in the field since 1992.

5. Is pumping liquid the fastest way to move refrigerant?

Yes, and the RecoverX, RecoverXL, RecoverXLT, RecoverXLS, and R 100 monitor liquid flow at a rate safe for the compressor. In YELLOW JACKET lab testing, over 80,000 pounds of

(Continued on next page.)

Frequently Asked Questions (continued)

liquid R-22 were continuously and successfully pumped. That's the equivalent of refrigerant in over 25,000 typical central AC systems.

6. What is the push/pull recovery method?

Many technicians use this recovery method, particularly on large jobs. By switching the RecoverX, RecoverXL, RecoverXLT, RecoverXLS, or R 100 discharge valve to "purge" during push/pull recovery, the condenser is by-passed, increasing the "push" pressure and speeding the recovery.

7. Why do the RecoverX through R 100 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. For your convenience, the RecoverX, RecoverXL, RecoverXLT, RecoverXLS, and R 100 Series incorporate a built-in 100-mesh filter that you can clean, and if necessary, replace. 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. The YELLOW JACKET filter is built-in to prevent breaking off like some competitive units with external filters. See page 9.

8. 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, tuning the unit off and on, or other time-consuming procedures. The RecoverX, RecoverXL, RecoverXLT, RecoverXLS, and R 100 can be quickly purged "on the fly" with a simple turn of the single control valve. In a few seconds,

all residual refrigerant is purged into the recovery tank and you're finished. Purging is completed without switching off the recovery unit.

9. Can increased airflow benefit recovery cylinder pressure?

Yes. For reliable performance in high ambient temperatures, YELLOW JACKET units 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.

10. Can I service a YELLOW JACKET System in the field?

Although YELLOW JACKET Machines feature a full one year warranty, there are times when a unit will need a tune-up. The service manual with every unit includes a wide variety of information such as tips to speed recovery, troubleshooting guides, and parts listings. On the side of every unit, you'll find hook-up instructions, a quick start guide, and simple tips for troubleshooting. And if ever in doubt, just call 1-800-769-8370 and ask for customer service.

All service and repair parts are readily available through your nearest YELLOW JACKET wholesaler.

11. Are there any recovery machines certified for R-410A?

The YELLOW JACKET RecoverXL, (95753 and 95756), RecoverXLT, and RecoverXLS series have also been UL tested and certified for high-pressure gases such as R-410A that are covered under ARI 740-98.

12. What features should I demand in a system to be used for R-410A?

Look for the following three features as a minimum:

- A) High volume air flow through a large condenser to keep the unit running cooler and help eliminate cut-outs in high ambient temperatures.
- B) Single automatic internal high pressure switch for simple operation.
- C) CPR valve rated to 600 psi for safety and it eliminates the need to monitor and regulate the unit during recovery.

13. What is a CPR valve?

The CPR (Constant Pressure Regulator) valve is the feature that makes the YELLOW JACKET RecoverXLT and RecoverXLS the first truly automatic recovery machines for every refrigerant. The 600 psi rated high pressure switch covers all refrigerants and eliminates the need for a control panel with two selector switches, one for R-410A and a second for medium pressure.


The CPR valve automatically reduces the pressure of the refrigerant being recovered. Regardless of which refrigerant, input is automatically regulated through a small orifice that allows refrigerant to flash into vapor for compression without slugging the compressor. Throttling is not required.

Under normal conditions, you could turn the single control valve to the "liquid" or "vapor" setting. The machine will complete the job while you work elsewhere.

14. With the YELLOW JACKET RecoverXLT design, do I have to manually reset a pressure switch between medium and high pressure gasses?

No. Some competitive machines require you to choose between medium and high pressure gas settings before recovery. You'll see the switch on their control panels. With the YELLOW JACKET RecoverXLT, the single internal automatic high pressure switch makes the choice for you. That's why only RecoverXLT is truly automatic.

Additional Information For additional questions and answers or more information, please contact the factory at the address on the back cover or visit our website at: www.yellowjacket.com



**YELLOW JACKET®
SUPEREVAC™ Systems –
faster calls,
fewer call backs**

Manufactured in U.S.A.

NEW
Vacuum Pump page 16

NEW
Digital Vacuum Gauge
page 21

YELLOW JACKET® SUPEREVAC™ Systems Approach – protect your profits, reputation and customer's system

Competition, increasing refrigerant cost and legislation, higher customer expectations...all that and more combine to squeeze your profits.

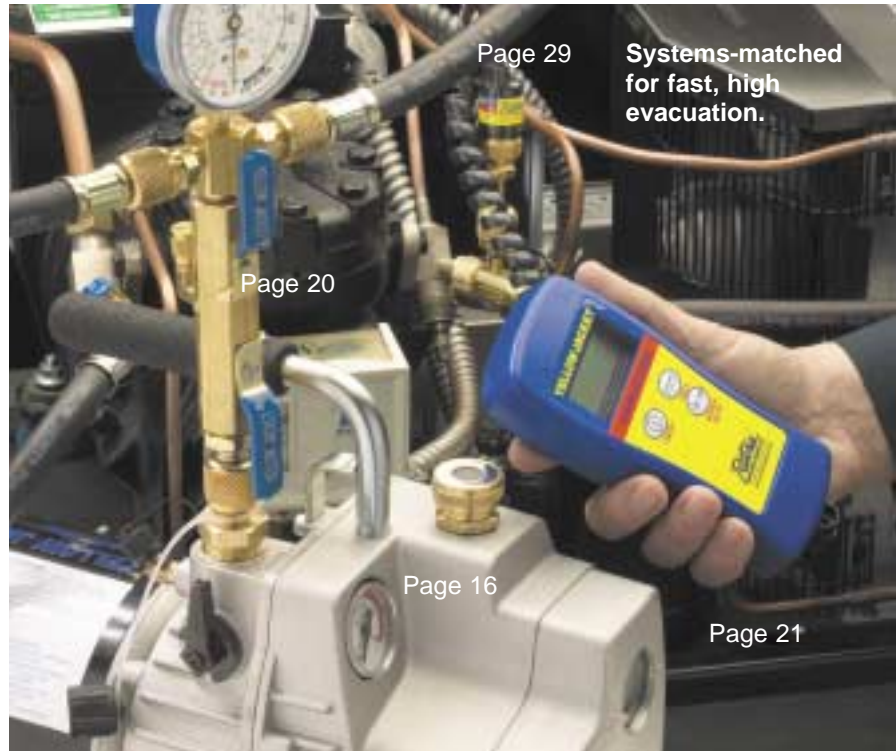
Plus, three more situations are now pressuring you to reconsider how to evacuate systems.

- Today's higher efficiency systems are more sensitive to damage from contaminants.
- Newer oils require deeper vacuum for contaminant removal.
- Triple evacuation and purging are considered venting.

With so many challenges to the success of your business, it's simply not enough to work hard. It's also a matter of working smarter by taking advantage of every advanced technology such as the **SuperEvac™ System**, that offer service techniques like **fast, low vacuum**.

The SuperEvac System pulls a fast vacuum to 15 microns and better. **Fast** gives you more time for more calls. And 15 microns and better is **deep** enough to get rid of contaminants that could cause system failure, customer dissatisfaction, and no-charge rework.

The heart of the system is the new, improved YELLOW JACKET pump. But not even the best pump can give



Page 29

Systems-matched for fast, high evacuation.

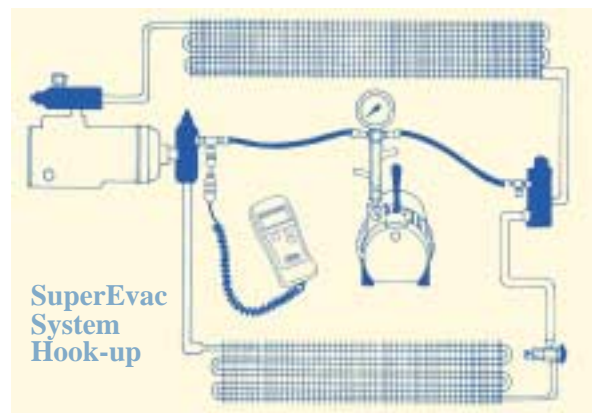
Page 20

Page 16

Page 21

you the most cost effective and efficient evacuation unless properly used.

Proper use begins with the systems approach with pump, manifold, hoses, valves, and more – all engineered and matched for fast, unrestricted evacuation.



Pump Design Details Matter

Attention to details makes a YELLOW JACKET Vacuum Pump your best long term investment:

- Large intake fitting to maximize flow and decrease vacuum time.
- Filter screen keeps large particles from entering the pump mechanism.
- Isolation valve to allow oil change during lengthy evacuations without losing vacuum.
- Internal check valve to prevent oil from backing up into the system during a power failure.
- Hardened drive shaft and large bearing contact areas extends pump service life.
- Precisely machined and fitted parts assembled with running clearances of less than .001" to generate a deep vacuum.
- Specially designed high-torque motor for starting when the pump is cold, or when an extension cord is used.

As the only manufacturer that completely tests and runs in every pump, Ritchie Engineering ships with the confidence that each pump will meet your expectations.

How and why one small drop dampens your profits.



A drop of moisture can hurt your profits and reputation. And with the increased moisture sensitivity of modern A/C and refrigeration systems, proper evacuation is essential. Most system complaints can be attributed to moisture. Here's how and why.

During new system set-up, all protective caps are removed allowing moisture and air into the system components.

If air – a non-condensable – remains in the system, it collects on the high side reducing system efficiency. This causes a rise in head pressure. The discharge valve gets hotter than normal and organic solids form causing compressor failure.

Moisture in the system can form ice

which closes off openings in expansion valves and cap tubes, and prevents adequate cooling.

Ultimately moisture and air combined with refrigerants containing chlorine can produce acids and sludge which could cause in-warranty failures.

During service and parts replacement, the same contaminants get in again, and you could be called back for repairs by a dissatisfied customer.

Moisture and air can even enter through system leaks. And as the moisture in the air increases, so does the amount of contamination. The higher the humidity, the bigger your problem.

A vacuum pump "pulls" air and moisture out of the system before the system is damaged. The deeper and

more complete the vacuum, the more moisture is removed. That's why the SuperEvac™ pump is specifically engineered for deep vacuums of 15 microns and better.

What is a micron as a unit of measurement for a vacuum?

When referring to microns as a unit of measurement for vacuum, the reference is to microns of mercury in the same way as you would refer to atmospheric pressure in inches of mercury on a barometer. One inch Hg is about 25,000 microns.

To help clarify terminology, remember that the deeper the vacuum, the more complete the vacuum; and the more complete the vacuum, the lower the number of microns.

Refer to www.yellowjacket.com for other technical articles.

Frequently Asked Questions

1. How can I select the right pump cfm?

The following guidelines are for domestic through commercial applications.

System size (tons)	Pump cfm
1-10	1.5
10-15	2.0
15-30	4.0
30-45	6.0
45-60	8.0
60 and above	11.0

2. How much of a vacuum should I pull?

A properly evacuated system is at 2500 microns or less. This is 1/10 of one inch and impossible to detect without an electronic vacuum gauge (see pages 21-22). For most refrigeration systems, ASHRAE recommends pulling vacuum to 1000 microns or less. Most system manufacturers recommend pulling to an even lower number of microns between 300 and 500.

3. Do I connect an electronic vacuum gauge to the system or pump?

To monitor evacuation progress, connect it *to the system* with a vacuum/charge valve (see page 20).

4. Why does the gauge micron reading rise after the system is isolated from the vacuum pump?


This indicates that water molecules are still detaching from the system interior surfaces. The rate of rise indicates the level of system contamination and if evacuation should continue.

5. Does extension cord length affect performance?

Increased length can decrease voltage, so use this as a voltage guide for selecting wire gauge.

Distance	Wire Gauge
25'	16
50'	14
100'	12

6. How can I speed evacuation?

- A. Use clean vacuum pump oil (see page 18). Milky oil is water saturated and limits pump efficiency.
- B. Remove valve cores from both high and low fittings with a vacuum/charge valve tool (see page 20) to reduce time through this orifice by at least 20%.
 
- C. Evacuate both high and low sides at the same time. Use short, 3/8" diameter and larger hoses.
- D. SuperEvac Systems (see page 20) can reduce evacuation time by over 50-60%. SuperEvac pumps are rated at 15 microns (or less) to pull a vacuum quickly.
- E. Use a heat gun (see page 19).

YELLOW JACKET® 4, 6, 8, and 11 CFM SUPEREVAC™ VACUUM PUMPS – designed inside and out for reliable performance day after day

FULL QUALITY CHECK

Each YELLOW JACKET pump is thoroughly “run in” and tested to insure that it meets or exceeds our quality specifications – and our customers’ expectations.

EXCLUSIVE

Built-in vacuum indicator gauge –

Every YELLOW JACKET pump features an exclusive built-in indicator gauge to monitor the evacuation progress down to the green (29"-30") range. If the reading stays in the mid range, there is either high contamination or a large leak in the system.



Gross leak

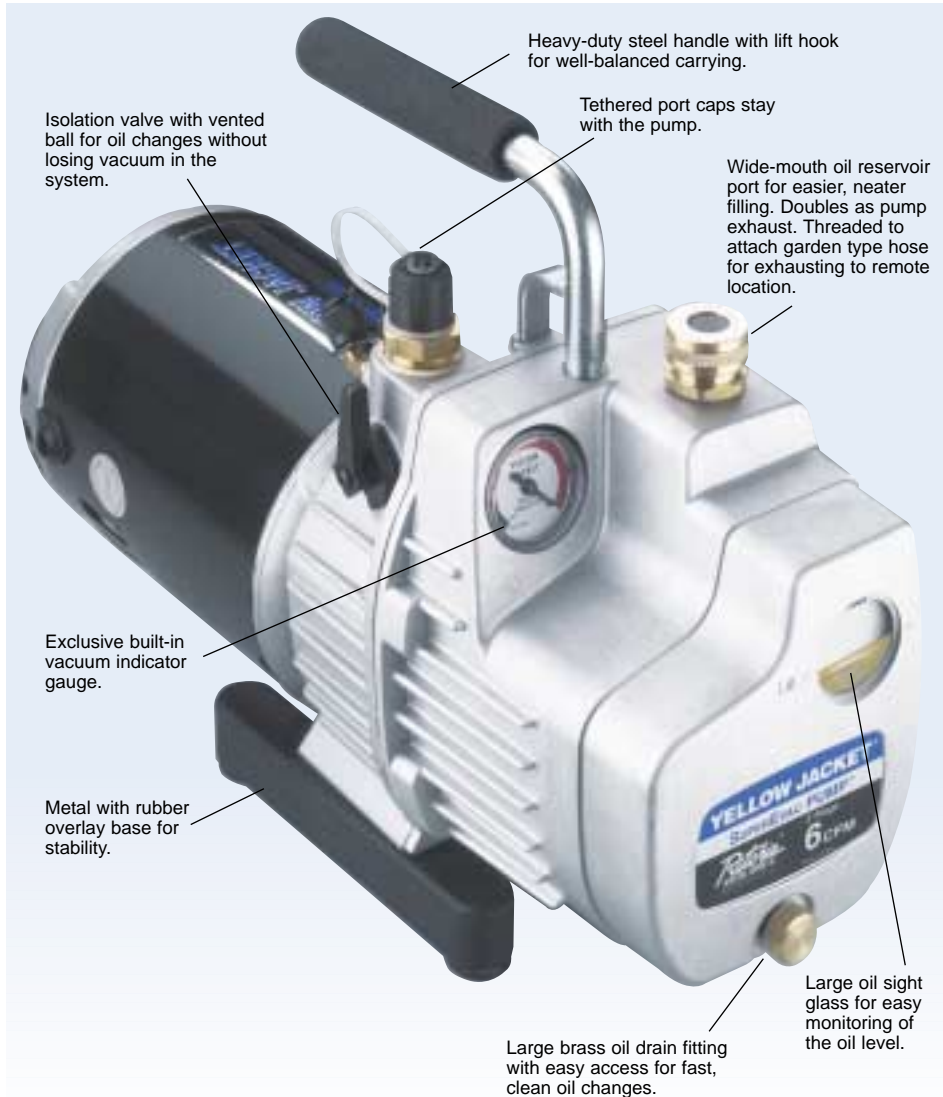
If you think there is excessive moisture, blow out the AC&R system with dry nitrogen before connecting the vacuum pump to the system wherever possible. This reduces the amount of contaminants that must be "pulled" into the pump and increases evacuation speed.

Use a nitrogen regulator valve with pressure limited to 150 psi, and a frangible disc device set at 175 psig.



Turn on electronic gauge.

When the indicator reaches the green (29"-30") range, the electronic micron gauge must be used for more precise readings. See pages 21-22.



Heavy-duty steel handle with lift hook for well-balanced carrying.

Isolation valve with vented ball for oil changes without losing vacuum in the system.

Tethered port caps stay with the pump.

Wide-mouth oil reservoir port for easier, neater filling. Doubles as pump exhaust. Threaded to attach garden type hose for exhausting to remote location.

Exclusive built-in vacuum indicator gauge.

Metal with rubber overlay base for stability.

Large oil sight glass for easy monitoring of the oil level.

Large brass oil drain fitting with easy access for fast, clean oil changes.

INSIDE

- **Internal intake check valve** prevents oil back-up into the system during a power failure.
- **Precisely machined and assembled** parts with tight clearances for a deep vacuum.
- **Hardened cap screws** keep the pumping mechanism tight.

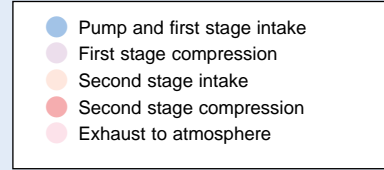
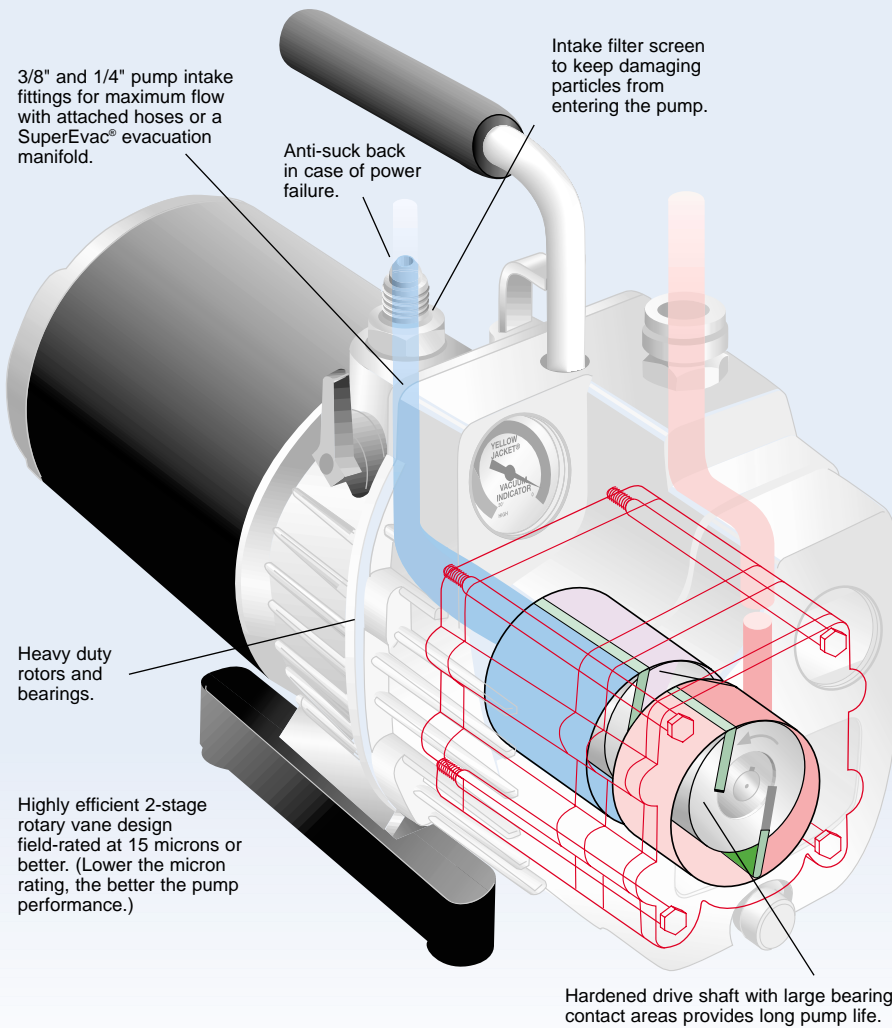
OUTSIDE

- **Rugged metal construction** for long-lasting durability in the field, with no flimsy plastic parts that are easily damaged.
- **Updated, lighter housing** with larger fins for cooler running.

OILING SYSTEM

- **Large oil reservoir** helps reduce operating temperature and dilute corrosive contaminants.
- **Gas ballast valve** keeps oil cleaner, longer during evacuation of wet systems.
- **YELLOW JACKET mineral-based vacuum pump oil** is recommended whether working with traditional or new alternative refrigerants, regardless of the oil used in the system.

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



DRIVE TRAIN

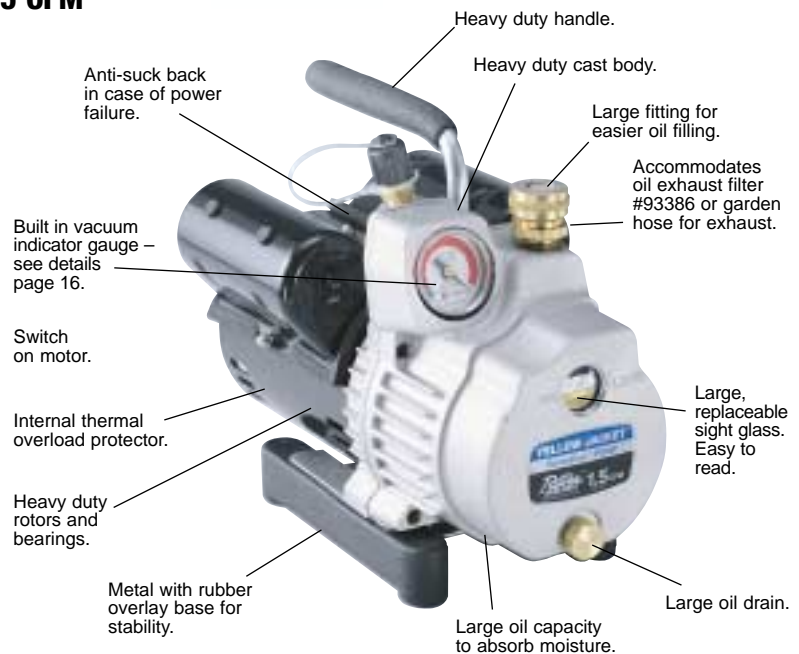
- **Heavy-duty, high torque 1/2 hp, 1725 rpm motor** assures cold weather starting.
- **Advanced engineering** for quieter operation.

YELLOW JACKET® SuperEvac™ PUMP 1.5 CFM

A more compact 2-stage 1.5 cfm vacuum pump for the smaller jobs such as appliance and small residential. Designed and built to the same quality specifications as the larger YELLOW JACKET pumps.

- Evacuate quickly to ultimate vacuum of 15 microns.
- Heavy duty construction includes all metal parts and a rugged 1/6 hp motor. Capacitor start.
- Compact size for easy handling.
- Offset vanes maximize capacity.
- Fully tested, inspected and run-in.
- Supplied with 3/8", 1/4" flare and 1/2" Acme intake fittings

Complete specifications on page 18.



YELLOW JACKET® SUPEREVAC PUMPS SPECIFICATIONS (4-11 CFM)

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
Internal capacitor thermal overload	Temperature rise 40° C	Temperature rise 40° C	Temperature rise 40° C	Temperature rise 40° C
Voltage (single phase)	115 Volt - 60 cycle	115 Volt - 60 cycle	115 Volt - 60 cycle	115 Volt - 60 cycle
Power cord	8' - motor mounted switch	8' - motor mounted switch	8' - motor mounted switch	8' - motor mounted switch
Oil capacity	36 oz.	34 oz.	43 oz.	39 oz.
Dimensions	15.25" L x 6.75" x 12" H	16.25" L x 6.75" x 12" H	16.75" L x 6.75" x 12" H	16.75" L x 6.75" x 12" H
Net weight	29.5 lbs. (13.4 kg)	31.5 lbs. (14.3 kg)	34.0 lbs. (15.4 kg)	31.0 lbs. (14 kg)

Export	Export	Export	Export	Export
Model #	93542 (95 L/M at 50 Hz) (113 L/M at 60 Hz)	93562 (142 L/M at 50 Hz) (170 L/M at 60 Hz)	93582 (190 L/M at 50 Hz) (225 L/M at 60 Hz)	93592 (260 L/M at 50 Hz) (310 L/M at 60 Hz)
Voltage	115/220V, 50/60 Hz	115/220V, 50/60 Hz	115/220V, 50/60 Hz	115/220V, 50/60 Hz
Model # ☪ Euro plug	93543 (95 L/M at 50 Hz) (113 L/M at 60 Hz)	93563 (142 L/M at 50 Hz) (170 L/M at 60 Hz)	93583 (190 L/M at 50 Hz) (225 L/M at 60 Hz)	93593 (260 L/M at 50 Hz) (310 L/M at 60 Hz)
Voltage	230V, 50 Hz	230V, 50 Hz	230V, 50 Hz	230V, 50 Hz
Model # ☪ UK plug	93547 (95 L/M at 50 Hz) (113 L/M at 60 Hz)	93567 (142 L/M at 50 Hz) (170 L/M at 60 Hz)	93587 (190 L/M at 50 Hz) (225 L/M at 60 Hz)	93597 (260 L/M at 50 Hz) (310 L/M at 60 Hz)
Voltage	230V, 50 Hz	230V, 50 Hz	230V, 50 Hz	230V, 50 Hz
Model #	93544 (95 L/M at 50 Hz) (113 L/M at 60 Hz)	93564 (142 L/M at 50 Hz) (170 L/M at 60 Hz)	93584 (190 L/M at 50 Hz) (225 L/M at 60 Hz)	93595 (260 L/M at 50 Hz) (310 L/M at 60 Hz)
Voltage	115/240V, 50/60 Hz	115/240V, 50/60 Hz	115/240V, 50/60 Hz	115/240V, 50/60 Hz

Will not work with ammonia.

YELLOW JACKET® VACUUM PUMP OIL – now available in pints

YELLOW JACKET vacuum pump oil is specially refined and formulated for extremely low vapor pressure and high pump efficiency at all temperature conditions. This means that with proper maintenance you will get a **continued return on your pump investment.**

UPC #	Description
93091	Pint of vacuum oil - 24 per case
93092	Quart of vacuum oil - 12 per case
93094	Gallon of vacuum oil - 4 per case
93095	55 gallon drum

MSDS sheet on website.



PUMP SPECIFICATIONS (1.5 CFM)

Domestic	Model 93350
Free air displacement	1.5 cfm
Number of stages	2 stage rotary vane
Field blankoff	15 microns
Intake	1/4" and 3/8" Male flares and 1/2" Acme Male
Motor	1/6 hp 1725 rpm
Thermal overload	Temperature rise 40° C
Voltage	115 Volt - 60 cycle
Power cord	8' foot cord
Oil capacity	16 oz.
Dimensions	10.5" L x 5.1" x 9.2" H
Net weight	20 lbs. (9.1 kg.)

Export	Export
Model	93352
Voltage	230V, 50 Hz

VACUUM FITTING SEALANT



Use vacuum sealant around threads, through flared connections, face joints, wherever metal

joins metal. Sets up quickly, and

remains flexible for easy disconnection. Seal to down to 1 micron. 4 ounce can with brush applicator.

UPC#	Description	Quantity
93090	Vacuum sealant	1 can
93089	Vacuum sealant	12/case

OIL EXHAUST FILTER

Screws onto the pump exhaust to eliminate oil mist. Use on 1.5, 2, 4, 6, 8 cfm pumps as well as new 11 cfm pump.



UPC#	Description
93386	Exhaust filter
93387	Replacement element

YELLOW JACKET SUPEREVAC REPLACEMENT PARTS

	OLD 1985-96 3, 5, 7.5 (Ritchie & cfm cast into cover)	1.5 —	Original 1996-97 4, 6, 8 (Ritchie only cast into cover)	Updated 1998-2005 4, 6, 8 (Label on front cover)	New 2005-present 4, 6, 8, 11 —	Large 1997-present 12, 18, 24 (Ritchie cast into cover)
Handle assembly	93042	—	93401	93370	93370	93401
Oil fill cap with seal	93041	93390	93390	93390	93390	—
Oil fill fitting	—	93391	93391	93391	93391	—
Oil sight glass	93039	93340	93403	93365	93365	93812
Oil drain plug	93040	93368	93402*	93368	93368	93368
4 cfm cartridge complete**	—	—	93441	93441	93441	—
6 cfm cartridge complete**	—	—	93461	93461	93461	—
8 cfm cartridge complete**	—	—	93481	93481	93481	—
11 cfm cartridge complete**	—	—	—	—	93591	—
Shaft seal	93031	93341	93031	93031	93031	93798
30" vacuum gauge	93011	93011	93011	93011	93011	93011
Vacuum gauge lens	93012	93012	93012	93012	93012	93012
Gas ballast gasket with "O"-ring	93098	93368	—	93368	93509	93402
O-ring for gas ballast	93032	93398	93398	93398	93398	93032
Intake port gasket	93027	—	93393	93393	93508	93799
Toggle style switch	93114	—	93114	—	—	93807
Rocker style switch	—	—	—	93117	93117	—
Oil cover gasket	93048	93344	93404	93369	93507	93810
Drive coupling	93047	—	93047	93047	93047	93811
Leg with screws	93034	93034	93034	93034	93034	93797

SUPEREVAC MODEL#	93420	93440	93460	93480
Set of (4) replacement vanes	93372	93374	93376	93378

* Discontinued **Complete cartridges with oil cover gasket. Completely assembled and pre-tested.

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
36019	3/8" pump adapter with 1/4" flare and 1/2" Acme male fittings
19011	3/8" replacement gaskets for 36019

HEAT GUN for faster vacuums

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, CE
69093	Heat gun kit 230V - Euro plug, CE

VACUUM PUMP INTAKE REDUCER ADAPTER



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

BELT DRIVE VACUUM PUMPS (.88-17.7 cfm) by Hyvac Products



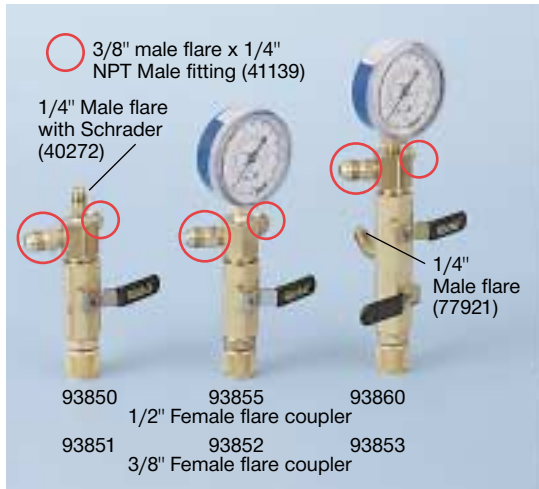
These 2-stage pumps are lab rated at .1 micron and feature

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)	.88 (25)	2.79 (79)	5.6 (160)	10.6 (310)	17.7 (500)
Ultimate vacuum (lab)	.1 micron	.1 micron	.1 micron	.1 micron	.1 micron
Stages	2	2	2	2	2
Motor hp (ODP)	1/4	1/3	1/2	1	1-1/2
Voltage (single phase)	115 - 60 Hz	115 - 60 Hz	115 - 60 Hz	115 - 60 Hz	115 - 60 Hz
Pump rpm	580	525	525	525	550
Oil capacity	1 quart	1-1/2 quart	5 quarts	7 quarts	9 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.

SUPEREVAC™ EVACUATION MANIFOLDS



SuperEvac 1/2" manifolds are engineered as system components for the SuperEvac pumps to help decrease

vacuum time by over 50% 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. (see pages 28 and 29).

- Flutterless™ gauge
- Non-restricting, full flow valves for fast vacuum
- Convenient 1/4 turn full flow
- Extra port for electronic gauge or charging cylinder (41139)

- Now includes step down adapter to connect to 3/8" pump intake

UPC #	Description
93851	Single valve with 1/4" Schrader mount with 3/8" Female flare
93852	Single valve with low side gauge mount with 3/8" Female flare
93853	Two valves with low side gauge mount with 3/8" Female flare
93850	Single valve with 1/4" Schrader mount with 1/2" Female flare
93855	Single valve with low side gauge mount with 1/2" Female flare
93860	Two valves with low side gauge mount with 1/2" Female flare
93854	1/2" flare connector
77921	1/4" flare x 1/8" NPT Male elbow
19096	Replacement handle for all 3 ball valves
19015	1/2" gasket (10-pak)
19133	Pump step-down adapter. 3/8" Female flare x 1/2" Male flare
19030	3/8" "O"-ring (10 pak)
93211	3/8" flare cap with gasket
40272	1/4" Male flare with Schrader for 93850
41139	3/8" Male flare x NPT Male fitting
49002	Blue compound °F gauge

SUPEREVAC EVACUATION SYSTEMS I, II & III



93865 System I

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

All systems include a 2-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 60% compared to using a regular 1/4" manifold and evacuating through only one side.

System II adds 69075 electronic gauge and service valve wrench to the basic System I.

System III adds a 6 cfm SuperEvac pump to System II.

UPC # for 3/8"	Description	UPC # for 1/2"
93865	System I: 2-valve manifold, two 16248 48" vacuum hoses. 2 valves	93866
93875	System II: all of above plus 69075 electronic vacuum gauge	93876
93885	System III: all of above plus a 6 cfm SuperEvac pump (93560)	93886 (8 cfm)
	1/2" "O"-ring gasket (10 pak)	19015
19030	3/8" "O"-ring gasket (10 pak)	

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



UPC #	Description
18971	Vacuum/charge ball valve
18975	Vacuum/charge valve w/side port

This versatile tool for the low or high 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.
- 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.

For more details see page 34.

MECHANICAL VACUUM GAUGES

Mechanical vacuum gauges for system installation. Bourdon tube type gauge. All feature 1/8" NPT Male bottom fitting. CAUTION: Handle gauges carefully to assure full service life. See page 64 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)

YELLOW JACKET® DIGITAL VACUUM GAUGE with seven units of vacuum for confidence



through a quick calibration process, and be back on the job within minutes

- Unique patented thermal conductivity sensor automatically compensates for temperature
- Replaceable, cleanable, plug-in sensor (Part #69087) handles 450 psi positive pressure

- Displays 7 different units of vacuum (microns, milliTor, Torr, millimeters of mercury, millibar, kiloPascal and Pascal)



This easy-to-use gauge helps you to be certain that air and moisture have been removed from the system. Simple push of a button changes the display readout between 7 units of vacuum. **Each displays down to the equivalent of 10 microns of vacuum to let you know that your vacuum pump is clean and performing properly.** If the sensor gets dirty, simply pull a new sensor out of your tool kit, plug it into the gauge, run



UPC #	Description
69086	Hand-held vacuum gauge with fabric carry pouch
69087	Replacement sensor
69091	Replacement fabric pouch for 69086

- 12" coiled sensor cord stretches to 24" for easy reach, connectivity, and readability of display
- Low battery indicator
- Automatic shut-off after 20 minutes
- Operating Temperature Range: 32° to 122°F (0° to 50°C)
- Weight: 12 oz. (340 g) with battery
- Calibration standards traceable to (NIST)
- Battery Life: Approximately 25 hours continuous use

YELLOW JACKET® DIGITAL LCD ECONOMY VACUUM GAUGE



Versatile — 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 (at right and on page 34).

For peace of mind, this gauge shows you that air and moisture have been removed from the system. The lower the number of microns, the more complete the vacuum and less chance for no-charge call-backs. Track down 14 increments from atmosphere to 25 microns to know that the system is clean and your vacuum pump is performing properly.



- 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 the National Institute of Standards and Technology (NIST)
- Patented technology

Packaged complete with 9V alkaline battery and hanging hook

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

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

Compact design with storage for sensor, cable and brass connector.



YELLOW JACKET LCD vacuum gauges combine thermocouple sensor technology with advanced electronics for precise readings and repeatability not found with thermistor sensors or analog meters. The result - accurate readings from atmosphere to 1 micron without recalibration on job after job.

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.

Thermocouple sensor features:

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

LCD gauge features:

- Normal handling and jarring will not affect the LCD reading
- Rugged molded case protects electronic circuitry and sensor
- Calibration standards traceable to (NIST)

- Precision circuitry controls sensor and translates sensor input into micron readings on the easy-to-read LCD

Specifications

- Response time:** 3 seconds
- Calibration:** Automatic
- Warm up:** 3 seconds
- Sensor cable:** 5.5 feet (167 cm) coiled
- Sensor connection:** 1/4" Male flare
- Operating temperatures:** 32° to 120°F (0° to 49°C)
- Power:** 1 "D" cell battery
- Battery life:** 70 hrs continuous
- Battery check:** On LCD display
- Dimensions:** 9" x 12.25" x 2.37" (230 x 310 x 60 mm)
- Accuracy:** ± 20% of reading

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

YELLOW JACKET® DELUXE LED VACUUM GAUGE – AC powered



Professional laboratory type instrument with .56" high bright LED readout is 100% automatic.

- Thermocouple sensor technology for precise and repeatable accuracy
- Improved software expands sensing range from atmospheric pressure to 1 micron.
- Calibration standards traceable to (NIST)

Complete unit includes aluminum LED display unit, sensor with valve, cable, brass connector and carrying case.

Specifications

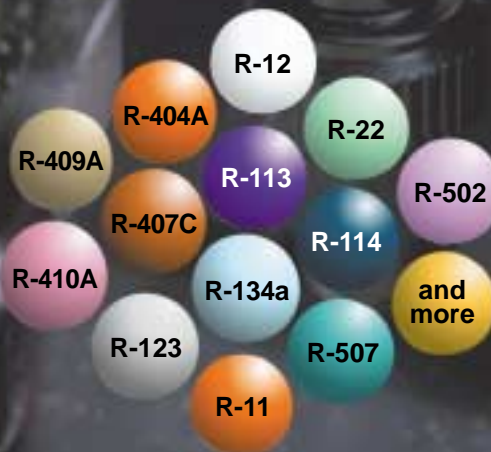
- Response time:** 3 seconds
- Calibration:** Automatic
- Warm up:** 3 seconds
- Sensor cable:** 9 feet (274 cm)
- Sensor connection:** 1/4" Male flare with isolation valve
- Operating temperatures:** -30° to 150°F (-34° to 65°C)
- Storage temperatures:** -30° to 160°F (-34° to 65°C)
- Power:** 115V 60 Hz (230V available)
- Power cord:** 6 foot
- Dimensions:** 4.25" x 5.5" x 1.5" (108 x 140 x 38 mm)
- Carrying case:** Heavy duty plastic 12.25" x 8" x 3.5" (310 x 203 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
15006	Optional vibration isolation hose

Compact,
ergonomic ball valve
with zero restriction
for refrigerant flow.

YELLOW JACKET[®] **Vacuum and Charging** **Hoses – industry** **proven performance**

Featuring *PLUS II[™]*
Hoses with double
barrier construction
for the environment.



Hoses for most
commonly used
refrigerants, plus
new refrigerants,
blends and
azeotropes.

UL recognized assemblies
Rated at 4000 psi burst,
800 psi working pressure
File SA9737

IMPROVED
PLUS II[™] 3/4" Heavy Duty
Charging Hose page 30

YELLOW JACKET® HOSES – there's one for every job with the name you know, the performance you want.

1/4" Flexible Hoses		3/8" Flexible Hoses		1/2" and 5/8" Flexible Hoses	
<ul style="list-style-type: none"> Easily connects to 1/4" Male flare access fitting on system 		<ul style="list-style-type: none"> Evacuates and charges 4 times faster than 1/4" hose 		<ul style="list-style-type: none"> Evacuates and charges 8 times faster than 1/4" hose Allows you to pull a deeper vacuum More efficient job of removing moisture and contaminants from the system 	
YELLOW JACKET Original 1/4" Charging Hose	YELLOW JACKET PLUS II™ 1/4" Charging Hose (Seal Right™, FlexFlow and Ball-Valve ends)	YELLOW JACKET PLUS II™ 3/8" Charging Hose	YELLOW JACKET PLUS II™ 1/2" and 5/8" Charging Hose		
<ul style="list-style-type: none"> All-weather flexible Dependable Adjust-a-Valve™ Opener – Patented valve core depressor allows you to easily open all troublesome, out of tolerance Schrader valves. 	<ul style="list-style-type: none"> Adjust-a-Valve™ Opener – Patented valve core depressor. Easily open all out of tolerance Schrader valves. (SealRight hoses offer different technology.) PLUS II™ hoses offer double barrier protection: <ul style="list-style-type: none"> Nylon permeation barrier meets UL requirements. Moisture barrier provides improved resistance to moisture migration which contaminates expensive refrigerants. Rubber layer for permeation, braid for strength, and outer cover for protection. Fully UL recognized assemblies (File SA9737). 	<ul style="list-style-type: none"> PLUS II™ Hoses with double barrier protection: <ul style="list-style-type: none"> Nylon barrier meets UL permeation requirements. Moisture barrier provides improved resistance to moisture migration which contaminates expensive refrigerants. Higher working pressure. 	<ul style="list-style-type: none"> PLUS II™ Hoses: <ul style="list-style-type: none"> Nylon barrier meets UL permeation requirements. Moisture barrier provides improved resistance to moisture migration which contaminates expensive refrigerants. Large ID reduces vacuum time substantially over 1/4" or 3/8" hose – allowing techs to pull a faster vacuum. Faster refrigerant transfer and faster charging on large systems. Wide selection of fittings are available. Operating temperature -20° to 200°F. 		
Temp: -20° to 180°F (-28.8° to 82.2°C)	Temp: -20° to 180°F (-28.8° to 82.2°C)	Temp: -20° to 200°F (-28.8° to 93.3°C)	Temp: -20° to 200°F (-28.8° to 93.3°C)		
Burst: 2500 psi (172 bar) minimum	Burst: 4000 psi (276 bar) minimum	Burst: 3000 psi (207 bar) minimum	Burst: 3000 psi (207 bar) minimum		
Working: 500 psi (34 bar) maximum	Working: 800 psi (55 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: 6 inches to 100 feet	Available Lengths: 12 inches to 100 feet	Available Lengths: 12 inches to 100 feet	Available Lengths: 12 inches to 100 feet		

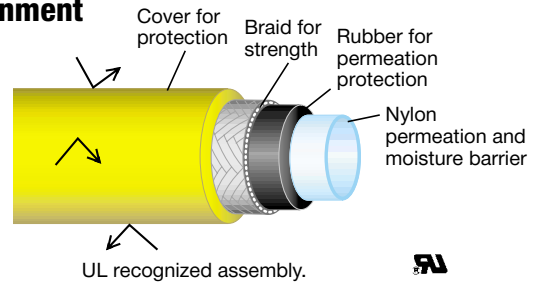
YELLOW JACKET PLUS II™ CHARGING HOSES for the environment

YELLOW JACKET PLUS II Hoses feature multi-laminate construction with double barrier protection to help contain the smaller molecules of newer refrigerants.

1. Nylon permeation barrier meets SAE requirements J2196 for

CFC, HCFC and HFC control and system performance.

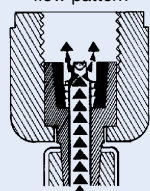
2. Moisture barrier provides maximum resistance to moisture migration which contaminates expensive refrigerants.



Technical paper available on www.yellowjacket.com

Adjust-A-Valve-Opener™

High volume flow pattern



With this patented valve core depressor, you easily open all troublesome out-of-tolerance Schrader valves. Simply adjust height with needle nose pliers. Use again and again. Replacement is convenient.

Hose safety inspection –

Inspect your hoses on a regular basis. If your hoses are more than 5 years old, we recommend that you replace them.

Since 1964, YELLOW JACKET 1/4" Charging Hoses have "year of manufacture" coded on the rim of the nut. A series of dots, I's, X's, O's or A's following YELLOW JACKET indicates the years as follows:

6	1964	5	BBBBB	1996
1	1970	4	BBBB1997	
6	IIIIII	3	BBB	1998
1	I	2	BB	1999
6	XXXXXX	1	B	2000
1	X	6	CCCCCC	2001
6	OOOOOO	5	CCCCC	2002
1	O	4	CCCC	2003
6	AAAAAA	3	CCC	2004
1	A	2	CC	2005
6	BBBBBB	1	C or	2006

YELLOW JACKET® ORIGINAL 1/4" CHARGING HOSES



The YELLOW JACKET original charging hose has been the standard of the industry for more than 50 years. Features in addition to the individual hose inspection, full size brass nuts, adjustable valve opener, and other features and benefits on page 24 –

- 2500 psi (172 bar) min. burst and 500 psi (34 bar) max. working pressure mean a 5-to-1 safety factor
- 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
- 6" to 100' lengths in yellow, red, blue, and white. Longer lengths are available
- Brass fittings
- Operating temperature -20° to 180°F (-28.8° to 82.2°C)

3 Paks

- Each hose color-coded for your convenience

- 1/4" straight x 1/4" 45° angle fitting

NOTE: Not all hose products shown are stocked; many are made-to-order with a lead time of 2-3 days.

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)

L.	Y - yellow		B - blue		W - white		R - red		3 - Pak		
	Part #	Part #	Part #	Part #	Part #	Part #	Part #	Part #	Y, B, W*	R, Y, B	R, W, B
12"	11012	HA12Y	11212	HA12B	11412	HA12W	11612	HA12R			
24"	11024	HA24Y	11224	HA24B	11424	HA24W	11624	HA24R			
36"	11036	HA36Y	11236	HA36B	11436	HA36W	11636	HA36R	11963	11983	11973
48"	11048	HA48Y	11248	HA48B	11448	HA48W	11648	HA48R	11964	11984	11974
60"	11060	HA60Y	11260	HA60B	11460	HA60W	11660	HA60R	11965	11985	11975
72"	11072	HA72Y	11272	HA72B	11472	HA72W	11672	HA72R	11966	11986	11976
96"	11096	HA96Y	11296	HA96B	11496	HA96W	11696	HA96R	11968	11988	11978
10'	11110	HA120Y	11310	HA120B	11510	HA120W	11710	HA120R			
12'	11112	HA144Y	11312	HA144B	11512	HA144W	11712	HA144R			
25'	11125	HA300Y	11325	HA300B	11525	HA300W	11725	HA300R			
50'	11150	HA600Y	11350	HA600B	11550	HA600W	11750	HA600R			
75'	11175	HA900Y	11375	HA900B	11575	HA900W	11775	HA900R			
100'	11200	HA1200Y	11399	HA1200B	11599	HA1200W	11799	HA1200R			

* Color-coded: Y - yellow; B - blue; W - white; R - red

SPECIAL 1/4" ORIGINAL CHARGING HOSES

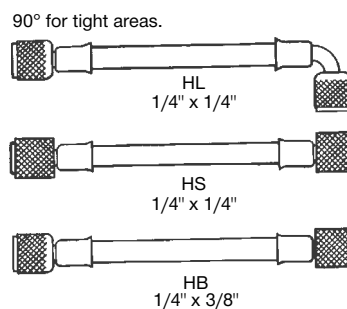
YELLOW JACKET 1/4" yellow charging hoses with special fittings include

straight, 3/8" and 90° fittings. Other colors are available.

L.	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.

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)



FITTINGS AVAILABILITY FOR 1/4" PREMIUM 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.

YELLOW JACKET® PLUS II™ 1/4" CHARGING HOSES with double barrier protection



UL recognized assemblies (File SA9737)

YELLOW JACKET PLUS II Hoses have proven performance benefits of the original line, plus double barrier protection for CFC, HCFC and HFC (R-404A, R-134a, R-507, R-407C, R-410A, etc.).

1. Nylon permeation barrier meets UL requirements. 1/4" PLUS II

hose is also a UL 1963 recognized component for R-12, R-22, R-500, R-502 and R-134a.

2. **Moisture barrier** provides improved resistance to moisture migration which contaminates expensive refrigerant.

Other features include 4000 psi (276 bar) min. burst and 800 psi (55 bar) max. working pressure for a 5-to-1 safety factor.

Color-coded 3-Pak

- Operating temperature -20° to 180°F (-28.8° to 82.2°C)

PLUS II Hoses - standard 1/4" fittings

L.	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 3-Paks - 21982 two 36", one 60"
21981 two 36", one 72"

UPC#	Description
19020	Replacement gasket (10 pak)
19302	Adjust-a-Valve Opener (10 pak)

YELLOW JACKET PLUS II 1/4" HOSE with FlexFlow™ valve



UL recognized assemblies (File SA9737)

- Valve handle position shows when valve is opened or closed
- Improved smaller ergonomic valve with zero restriction for maximum flow. Metal handle
- Flexible length of hose between valve and fitting makes access easier to tight areas
- 4000 psi (276 bar) min. burst and 800 psi (55 bar) max. working pressure
- Operating temperature -20° to 180°F (-28.8° to 82.2°C)

FlexFlow valve 8" from angle end

L.	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	-

UPC#	Description
19020	Replacement gasket (10 pak)
19302	Adjust-a-Valve Opener (10 pak)

9" FLEXFLOW™ AND LOW LOSS ADAPTER HOSES



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)

Compact Ball Valve Assemblies		
UPC#	Description	
29001	1/4" yellow ball valve adapter	UL
29201	1/4" blue ball valve adapter	UL
29601	1/4" red ball valve adapter	UL
29980	3-pak: 29001, 29201, 29601	UL
93842	1/4" compact ball valve - 3 Pak	UL
93843	1/4" compact ball valve - 45°	UL

*93842 is a 3 pak of 93843.

UPC#	Description
19011	3/8" Replacement gasket (10 pak)
19026	3/8" "O"-ring (10 pak)
19020	1/4" Replacement gasket (10 pak)
19302	Adjust-a-Valve Opener (10 pak)

FlexFlow™ Assemblies

UPC#	Description	
25002	1/4" yellow FlexFlow adapter	UL
25202	1/4" blue FlexFlow adapter	UL
25602	1/4" red FlexFlow adapter	UL
25980	3-pak: 25002, 25202, 25602	UL
25802	1/4" heavy duty FlexFlow adapter	
26002	3/8" heavy duty FlexFlow adapter	
26202	Yellow std. "B" FlexFlow adapter	
27002	Acme 1/2" yellow FlexFlow adapter	
19095	Set of 2 handles and screws	
93833	1/4" replacement ball valve only	
93832	3/8" replacement ball valve only	
25001	Replacement yellow hose only	UL
25201	Replacement blue hose only	UL
25601	Replacement red hose only	UL

UL Underwriters Laboratories Inc. Registered Component Mark.

YELLOW JACKET® PLUS II™ 1/4" HOSE with compact ball valve end



UL recognized assemblies (File SA9737)

- Improved compact design ball valve with metal handle at end of hose fits tight areas and traps all the gas.

- Full flow valve for faster recovery
- Low loss fitting
- Hose and ball valve rated for higher pressure. 4000 psi (276 bar) min. burst and 800 psi (55 bar) max. working pressure uses standard gasket and valve opener
- Operating temperature -20° to 180°F (-28.8° to 82.2°C)

UPC#	Description
19020	Replacement gasket (10 pak)
19302	Adjust-a-Valve Opener (10 pak)

PLUS II hose with ball valve end				
L.	Yellow	Blue	Red	3 - Pak
36"	29036	29236	29636	29983
48"	29048	29248	29648	29984
60"	29060	29260	29660	29985
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	-

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



UL recognized assemblies (File SA9737)

- Low loss anti-blowback 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 CFCs, plus new HFC refrigerants and oils
- Available with SealRight fittings on both ends
- Operating temperature -20° to 180°F (-28.8° to 82.2°C)
- 4000 psi (276 bar) min. burst, 800 psi (55 bar) max. working pressure

See page 106 for pliers for disassembling end.

Use PLUS II hose with compact ball valve for R-410A, (see above, below and page 34).

UPC#	Description
19020	Replacement gasket (10 pak)
19037	SealRight "O"-ring (10 pak)
19302	Adjust-a-Valve Opener (10 pak)

45° SealRight fitting at one end				
L.	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	-

Multi-length 3-Paks - 22982 two 36", one 60"
22981 two 36", one 72"

UL recognized assemblies (File SA9737)

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



UL recognized assemblies (File SA9737)

- Available with standard fittings or compact ball valve
- 4000 psi (276 bar) min. burst and 800 psi (55 bar) max. working pressure
- Moisture barrier provides maximum resistance to moisture migration which contaminates expensive refrigerants

- Compatible with both POE and PVE oils
- Operating temperature -20° to 180°F (-28.8° to 82.2°C)

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				
L.	Yellow	Blue	Red	3 - Pak
36"	21403	21423	21463	21483
60"	21405	21425	21465	21485
72"	21406	21426	21466	21486

Compact ball valve (R&B 1/4" x 5/16" BV) (Y 1/4" x 1/4" BV)

L.	Yellow	Blue	Red	3 - Pak
36"	29403	29423	29463	29483
60"	29405	29425	29465	29485
72"	29406	29426	29466	29486

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				
L.	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" BV) (Y 1/4" x 1/4" BV)

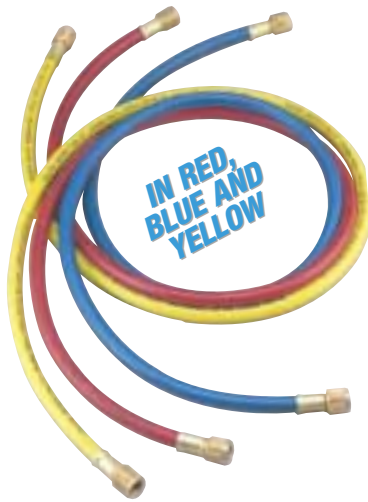
L.	Yellow	Blue	Red	3 - Pak
36"	29003	29203	29603	29993
60"	29005	29205	29605	29995
72"	29006	29206	29606	29996

Replacement parts

Size	Repl. Gasket	Adjust-a-Valve Opener
1/4" and 5/16"	19020	19302

YELLOW JACKET PLUS II™ 3/8" "B" CHARGING HOSE

Special design puts YELLOW JACKET features in a larger volume hose for fast, high vacuum or charging.



Hose uses PLUS II hose technology which includes double barrier and higher working pressure.

- Burst pressure is 3000 psi (207 bar) min. burst with 600 psi (41 bar) max. working pressure

- Operating temperature -20° to 200°F (-28.8° to 93.3°C)
- Larger selection of fittings to fit customer needs

UPC#	Description
19011	3/8" Replacement gasket (10 pak)
19026	3/8" "O"-ring (10 pak)

L.	Most commonly selected					Other selections				
	3/8" fl. str. x 3/8" fl. str			3/8" fl. x Flex-Flow	3/8" fl. str. x 3/8" 45°			3/8" fl. x 3/8" 90°	1/4" fl.str. x 1/4" fl. 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

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.

- Operating temperature -20° to 200°F (-28.8° to 93.3°C)
- 3/8" hose 3000 psi (207 bar) min. burst, 600 psi (41 bar) max. working pressure
- 1/4" heavy duty hose 3500 psi (241 bar) min. burst, 900 psi (62 bar) max. working pressure

L.	UPC #	Part #	Type	Fittings
12"	18612	CVX-12	1/4" heavy duty	1/4" Male flare x 3/4" NPS
12"	18912	CVY-12	3/8" heavy duty	3/8" Male flare x 3/4" NPS
72"	18072	CVH-72	1/4" original	1/4" Female flare x 3/4" NPS
72"	18372	CVB-72	3/8" standard	3/8" Female flare x 3/4" NPS

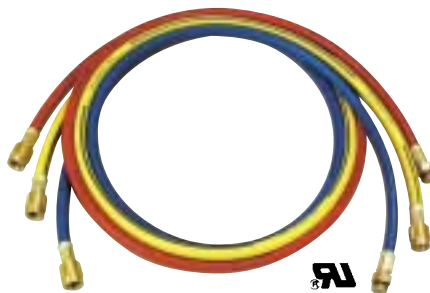
Cylinder valve adapters only. See page 36.

UPC#	Description
18001	Replacement gasket (10 pak)

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

Hose	R-12	R-22	R-502	R-134a	R-404A	R-410A
1/4" Original	.34	.31	.32	.31	.28	.28
1/4" PLUS II	.36	.33	.34	.33	.29	.29
3/8" Standard	.85	.77	.78	.77	.68	.68
3/8" Heavy Duty	.70	.63	.64	.64	.56	.56

YELLOW JACKET AUTOMOTIVE MANIFOLD HOSES for R-134a systems



UL recognized assemblies (File SA 9737)

manufactured specifically for automotive applications. Threads are 1/2" Acme Female, 14 mm Male and 1/2" Acme SealRight™ fittings.

- 4000 psi (276 bar) min. burst, 800 psi (55 bar) max. working pressure
- Operating temperature -20° to 180°F (-28.8° to 82.2°C)

L.	Yellow SealRight Straight x 45°	Red 1/2" Fe. Acme x 14 mm Male	Blue 1/2" Fe. Acme x 14 mm Male	3 - Pak
36"	27436	27636	27236	—
48"	27448	27648	27248	—
60"	27460	27660	27260	27102
72"	27472	27672	27272	27101
96"	27496	27696	27296	27104
10'	27510	27710	27310	27103

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

Longer lengths available. Please specify. These fittings are not suitable for regular HVAC&R applications.

These 1/4" hoses combine PLUS II hose with Acme fittings to meet SAE requirements. You get PLUS II double-barrier protection in a hose

NOTE: These hoses meet SAE requirements J2196 and are UL 1963 recognized components for refrigerants R-12, R-22, R-500, R502 and R-134a.

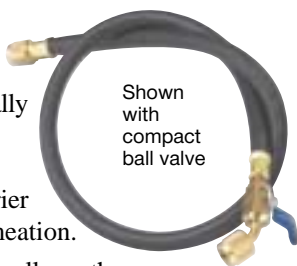
YELLOW JACKET® PLUS II™ 1/4" HEAVY DUTY CHARGING HOSE

Heavy-duty construction for substantially increased service life.

PLUS II barrier reduces permeation.

Flexibility for all-weather easy handling.

- 3500 psi (241 bar) min. burst, 900 psi (62 bar) max. working pressure.
- Operating temperature -20° to 200°F (-28.8° to 93.3°C)



Shown with compact ball valve

L.	Most commonly selected			Other selections	
	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. The position of the new FlexFlow valve lets you know for sure when it's fully opened securely closed or anywhere between.	
12'	15112 HCA-144"	25912	29912		
25'	15125 HCA-300"	25925	29925		
50'	15150 HCA-600"	25950	29950		
75'	15175 HCA-900"	25875	29975		
100'	15199 HCA-1200"	25999	29999		

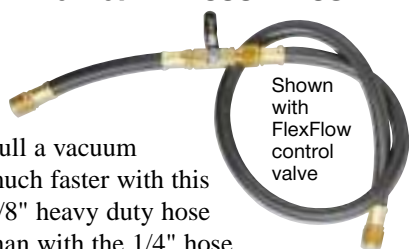
- Pulls 75 micron vacuum or better on 36" hose

UPC#	Description
19020	Replacement gasket (10 pak)

YELLOW JACKET PLUS II 3/8" HEAVY DUTY COMBINATION CHARGING/HI-VACUUM HOSE

Pull a vacuum much faster with this 3/8" heavy duty hose than with the 1/4" hose.

- Permeation resistant PLUS II barrier



Shown with FlexFlow control valve

- Operating temperature -20° to 200°F (-28.8° to 93.3°C)
- 3000 psi (207 bar) min. burst, 600 psi (41 bar) max. working pressure

L.	Most commonly selected			Other selections			
	3/8" fl. str. x 3/8" fl. str.	3/8" fl. str. & 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 on hose in this chart. 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		

UPC#	Description
19026	"O"-ring
19011	Replacement gasket

YELLOW JACKET® PLUS II™ 1/2" and 5/8" HEAVY DUTY COMBINATION CHARGING/HI-VACUUM HOSE



Heavy-use construction with PLUS II barrier technology for use with most refrigerants. Reduces permeation and vacuum loss. Features:

- Large ID 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) min. burst, 600 psi (41 bar) max. working pressure 1/2" and 5/8" assemblies
- Various fittings available on request
- 1/4" access valve connection standard on one end of CA and DA hoses
- Operating temperature -20° to 200°F (-28.8° to 93.3°C)

L.	Most commonly selected		Other selections			
	"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 3/8" 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.		19310	20710
12'	15912 C-144"	16112 D-144"			19312	20712
25'	15925 C-300"	16125 D-300"	Hoses longer than 8' not recommended for evacuation.		19325	20725
50'	15950 C-600"	16150 D-600"			19350	20750

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

UPC#	Description
19015	1/2" and 5/8" Replacement gaskets
19020	1/4" Replacement gasket
19011	3/8" Replacement gasket

YELLOW JACKET 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.

- Now with *PLUS II* barrier technology to reduce permeation
- Constructed for heavy duty use with most refrigerants
- 3000 psi (207 bar) min. burst, 600 psi (41 bar) max. working pressure
- Now available with hex fittings
- Available with steel 3/4" Female, 3/4" Male flares or 3/4" Male pipe
- Operating temperature -20° to 200°F (-28.8° to 93.3°C)

L	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

UPC#	Description
19012	Replacement gasket (10 pak)

YELLOW JACKET® AMMONIA CHARGING HOSE

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

- Regular CH20 gaskets for 1/4" gasket (19010, 19020). CH11 gaskets for 3/8" (19011)
- 1/4" – 3500 psi (241 bar) min. burst, 900 psi (62 bar) max. working pressure
- 3/8" – 3000 psi (207 bar) min. burst, 900 psi (62 bar) max. working pressure



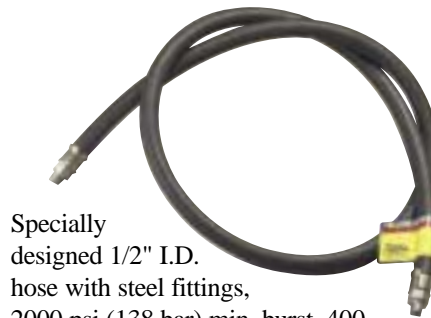
- Operating temperature -20° to 180°F (-28.8° to 82.2°C)

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

Steel half union ammonia fittings	
UPC# 16801 (44372) – 1/4" Male fl. x 1/4" NPT Male Str	
UPC# 16802 (44376) – 1/4" Male fl. x 1/4" NPT Male 90°	
UPC# 16803 – 3/8" Male fl. x 1/4" NPT Male	

NH₃ manifolds pages 51 and 58.

AMMONIA HOSE – (permanent installation)



Specially designed 1/2" I.D. hose with steel fittings, 2000 psi (138 bar) min. burst, 400 psi (28 bar) max. working pressure.

Operating temperature -20° to 180°F (-28.8° to 82.2°C).

L.	UPC# 1/4" NPT Male	UPC# 3/8" NPT Male	UPC# 1/2" NPT Male
6'	78506	78406	78306
8'	78508	78408	78308
10'	78510	78410	78310
12'	78512	78412	78312

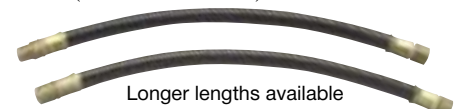
Other lengths up to 50' available. Please specify length and size.

YELLOW JACKET 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.

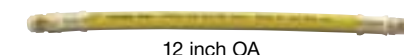
- 1250 psi (86 bar) min. burst, 250 psi (17 bar) max. working pressure
- Operating temperature -20° to 180°F (-28.8° to 82.2°C)



UPC #	Description	Fittings	Lengths
78041	Pump to nozzle connector	3/16" Fe. fl. x 3/16" Fe. fl.	12"
78042	Pump to nozzle connector	1/4" Fe. fl. x 1/4" Fe. fl.	12"
78112	Pump to nozzle connector or gauge to pump	1/8" NPT Fe. swivel x 1/8" NPT Male	12"
78043	Pump to nozzle connector	3/16" Fe. fl. x 3/16" Fe. fl.	18"
78044	Pump to nozzle connector	1/4" Fe. fl. x 1/4" Fe. fl.	18"

OIL PUMP VIBRATION ELIMINATOR

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



12 inch OA

- 1250 psi (86 bar) min. burst, 250 psi (17 bar) max. working pressure.
- Operating temperature -20° to 180°F (-28.8° to 82.2°C).

UPC #	Description	Fittings
78012	Oil burner connector	3/8" Male flare x 1/4" NPT Male

General info and specs for all stainless steel hose assemblies below

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.

Standard and custom length assemblies are made to order. Allow 2-3 days for shipment. Minimum length 12".

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
3/8"	1000 (69 bar)	6.5"	1-1/4"	200°F – .86
1/2", 5/8"	1200 (83 bar)	8.5"	1-1/2"	300°F – .80
3/4", 7/8"	725 (50 bar)	10"	2"	400°F – .78
1", 1-1/8"	700 (48 bar)	11.5"	2-3/4"	500°F – .77
1-1/4", 1-3/8"	550 (38 bar)	13"	3-1/4"	800°F – .76
1-1/2"	450 (31 bar)	15"	3-3/4"	900°F – .74
2"	450 (31 bar)	17.5"	5"	1000°F – .70
2-1/2"	300 (21 bar)	21"	7"	
3"	350 (24 bar)	23"	9"	

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

Applications: vacuum and charging, vibration isolation, movable components, and permanent application.

QUICK COUPLER ASSEMBLY – for vacuum & charging

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

Other features:

- 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"



OAL	Str. x 45° 1/4" I.D.	Str. x 45° 3/8" I.D.	Str. x Str. 1/2" I.D.	Str. x Str. 1/2" 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

FLARE ASSEMBLY for display cases etc.



Stainless steel assemblies are made with a combination of male and female flares. Custom assemblies can be made.

SWEAT FITTING ASSEMBLY



Manufactured with copper sweat ends.

- Male sweat to fit inside mating tube

Straight Only			
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"

- Female sweat to fit outside mating tube

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 (pg. 31) and Teflon (pg. 32) hoses are made-to-order; lead-time 2-3 working days.

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

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.

YELLOW JACKET® HIGH PRESSURE CONTROL HOSE for HFC, HCFC and CFC refrigerants



YELLOW JACKET pressure control hose is constructed of a thermoplastic polymer inner tube and cover to eliminate the vibration failures of copper capillary tube installations.

- The higher temperature ratings up to 266°F eliminate the failures caused by maximum loads on rubber hoses
- Polyester braid reinforcement with high tensile strength and high modulus withstand higher pressures

- Clear zinc chromate finish
- Yellow color makes hose easily visible inside system
- 3000 psi (207 bar) min. burst 600 psi (41 bar) max. working pressure
- Hex style fittings with 1/4" SAE thread. Straight or 90° with copper gaskets
- Operating temperature -20° to 266°F (-28.8° to 130°C)

Yellow Hose			
Length* (assembly)	UPC Part Numbers		
	Str. End	Str. End	Str. End x 90° End
12"	78612		78712
18"	78618		78718
24"	78624		78724
30"	78630		78730
36"	78636		78736
48"	78648		78748
60"	78660		78760
72"	78672		78772

UPC#	Description
59652	1/4" replacement copper gasket (10 pak)

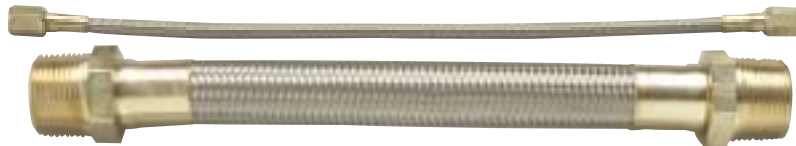
ORIGINAL PRESSURE CONTROL HOSE



Black Hose		
1/4" Hex Fittings Assemblies Operates to 600 psi and 200°F		
L.	Str. x Str.	Str. x 90°
12"	78212	78113
18"	78218	78118
24"	78224	78124
30"	78230	78130
36"	78236	78136
48"	78248	78148
60"	78260	78160
3/8" Hex Fittings Assemblies Operates to 500 psi and 200°F		
12"	00101	N/A
18"	00102	N/A
24"	00103	N/A
36"	00104	N/A
48"	00105	N/A
60"	00438	N/A

* Special lengths are readily available

YELLOW JACKET® PTFE HOSE for wide variety of industrial applications including CO²



Specially-designed hose provides strength with stainless steel braid over a PTFE core. Features:

- Resistance to most corrosive materials
- Temperature range from -65° to 450°F (-53.9° to 232.2°C)
- Variety of applications – high and low pressure chemical lines, hot water, steam, oil, air, petroleum

products, food processing and more

- 3/16" – 3/4" Female flare swivel brass fittings; 1/8" – 1" NPT Male brass fittings
- 1/4" 90° x 1/4" straight flare
- Minimum length 12"

UPC#	Description
59652	Replacement gasket (10 pak)

Hose specifications				Brass Fe. flare swivels each end					Brass male pipe each end						
Hose I.D.	Min. burst	Max. W.P.	Min. bend	Flare size	Thread size	UPC# – overall length					Pipe thd.	UPC# – overall length			
						12"	18"	24"	36"	48"	12"	18"	24"	36"	
1/8"	12000	3000	2"	3/16"	3/8-24	31112	31118	31124	31136	31148	–	–	–	–	
3/16"	12000	3000	2"	1/4"	7/16-20	31212	31218	31224	31236	31248	1/8"	32212	32218	32224	32236
3/16"	12000	3000	3"	1/4"	7/16-20 (1)	31012	31018	31024	31036	31048	–	–	–	–	
1/4"	12000	3000	3"	5/16"	1/2-20	31312	31318	31324	31336	31348	–	–	–	–	
5/16"	12000	3000	4"	3/8"	5/8-18	31412	31418	31424	31436	31448	1/4"	32412	32418	32424	32436
13/32"	8000	2000	5.2"	1/2"	3/4-16	31512	31518	31524	31536	31548	3/8"	32512	32518	32524	32536
1/2"	8000	2000	6.5"	5/8"	7/8-14	31612	31618	31624	31636	31648	1/2"	32612	32618	32624	32636
5/8"	6000	1500	7.7"	3/4"	1-1/16-14	31712	31718	31724	31736	31748	3/4"	32712	32718	32724	32736
7/8"	4400	1100	8.7"	–	–	–	–	–	–	–	1"	32812	32818	32824	32836

NOTE: Not recommended for refrigerants because of permeation rate.

Brass fittings standard. Stainless available if specified, except for 3/8" and 3/4" flare.

Brass fittings standard. Stainless fittings available if specified.

Note: Above pressures in psi

(1) 1/4" 90° x 1/4" straight hose



YELLOW JACKET®
Hose Adapters,
Valves, and Parts —
right to the last detail

NEW
Valve core tool page 35

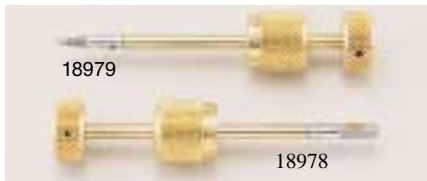
*EXPANDED
LINE*

Quick couplers
page 36

1/4" 4-IN-1 BALL VALVE TOOL for vacuum, charge, cores and recovery



Remove and replace Schrader cores without losing charge.



Related product SuperHeat kits on page 76.

- 1. Vacuum valve.** Extra 1/4" side port on 18975 to attach electronic micron vacuum gauge right at system for greater accuracy.
- 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 allows recovery unit to work at maximum efficiency, speeding the recovery process.

UPC #	Description
18975	Vacuum/charge ball valve w/side port
18971	Vacuum/charge valve w/o side port
18980	Accessory set - 2 piece
18978	Schrader rethreading accessory
18979	Broken Schrader remover acc.
18997	Grapppler rod/nut assembly
18973	Gasket for 18975 (5 pk.)
18974	Seal Kit includes core, cap, 4 "O"-rings, gasket

5/16" 4-IN-1 BALL VALVE TOOL for R-410A systems with 5/16" access ports



Similar to the 4-in-1 core tool above but with 5/16" flare fittings and for use with R-410A.

UPC #	Description
18985	5/16" vacuum/charge valve-side port
18981	5/16" vacuum/charge valve w/o side port
18988	5/16" rethread accessory
18989	5/16" Schrader rethreader

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, securely closed and anywhere between. Use gaskets on page 37.

	M. fl. x M. fl.	M. fl. x Fe. fl.	M. fl. x 1/4" FPT	"O"-rings
1/4" SAE*	93834	93844	93833	19000
5/16" SAE	-	93827	-	-
3/8" SAE*	93836	93846	93832	19011
1/2" SAE	93838	93848	-	19015
Acme 1/2"	93830	93840	93831	19020
19095	Replacement handle/screw for all 1/4", 3/8" & Acme valves			
19096	Replacement handle/screw for all 1/2" flare valves			

* U.L. Listed

COMPACT BALL VALVES 1/4" for full flow



Now a smaller ball valve more compact – still features full flow. Metal valve handle, add to hoses for charging and recovery.

- UL recognized assembly to 4000 psi (276 bar) min. burst, 800 psi (55 bar) max. working pressure.

UPC #	Description
93844	1/4" compact ball valve – straight
93843	1/4" compact ball valve – 45°
93842	Set of 3 – 45° compact ball valves

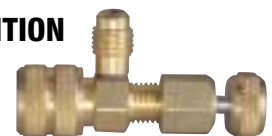
5/16" for Special R-410A Applications

Compact ball valves are available with 5/16" flares for R-410A applications where 5/16" system ports are used.

- UL recognized assembly to 4000 psi (276 bar) min. burst, 800 psi (55 bar) max. working pressure

UPC #	Description
93825	5/16" compact ball valve 5/16" Fe. fl. x 1/4" Male fl.
93826	5/16" compact ball valve 1/4" Fe. fl. x 5/16" Male fl.
93827	5/16" compact ball valve 5/16" Fe. fl. x 5/16" Male fl.

GAS RETENTION VALVE



Sturdy valve controls refrigerant flow from access fitting. Closes Schrader before disconnecting. New back seat valve feature to retain gas in hose when disconnecting.

1/4" female fl. x 1/4" male fl.	
UPC #	Description
18993	Gas control valve
18995	"O"-ring set

MODIFIED NEEDLE VALVE

In-line control.



UPC #	Description
69670	Needle type bleed valve 1/4" flare
19020	Gaskets (10 pkg)

SealRight™ QUICK COUPLERS



Innovative 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% in time compared to 2-piece quick couplers. Works with or without Schrader core. Gaskets resist deterioration from

CFC, HCFC, HFC refrigerants, and new oils. Field serviceable. **Not recommended for R-410A systems.**

UPC #	Description
19109	1/4" SealRight Str. x 1/4" Male fl.
19208	1/4" SealRight 45° x 1/4" Male fl.
19209	1/4" SealRight 90° x 1/4" Male fl.
19100	Set of 19109 and 19209
19117	1/4" SealRight Str. x 3/8" Male fl.
19217	1/4" SealRight 90° x 3/8" Male fl.
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 fl.

SealRight repair assembly components

19037	Pkg. of 10 "O"-rings (1)
19038	Plug assembly with all seals (2)
19039	Nut and clip (3)
19040	Rebuild kit includes #4
19041	Overhaul kit with all above parts
19045	Gasket set

VALVE CORE TOOL

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

UPC #	Description
19306	Valve core tool



Snap-It™ COUPLER

- Snaps on over 1/4" flare threads with Schrader cores
- Forms tight connection immediately
- Instantly activates the Schrader in access fitting
- Instantly shuts off end of hose when sleeve is pulled back and coupler pops off access fitting

- Virtually no gas release to atmosphere. Eliminates frostbite
- One piece construction
- For up to 600 psi



UPC #	Description
19090	Snap-it™ Coupler
19094	"O"-ring for coupler (10 pak)

MANIFOLD PARTICULATE FILTER



These fittings trap the particles 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 VALVES

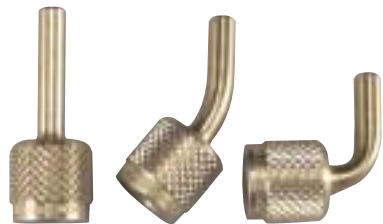


Individual manifolds for high and low sides of system. Available on page 51.

Individual valves are available in two or three port versions. Nylon seals with double "O" rings.

UPC #	Description
40317	Hi-side manifold with gauge
40318	Lo-side manifold with gauge & hook
40315	2 port valve - 1/8" NPT Female x 1/4" Male flare
40325	3 port valve - 1/8" NPT Female x two 1/4" Male flares
40350	2 port valve - 1/4" QC Female with CH14 depressor x 1/4" Male flare with Schrader

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. Fe. fl. w/CH20 gasket
19083	1/4" 45° Fe. fl. w/CH20 gasket
19084	1/4" 90° Fe. fl. w/CH20 gasket
19085	3/8" str. Fe. fl. w/CH11 gasket
19086	3/8" 45° Fe. fl. w/CH11 gasket
19087	3/8" 90° Fe. fl. w/CH11 gasket
19088	1/2" str. only Fe. w/quad ring

Use 19020 (CH20), 19011 (CH11) and 19027 seals (quad ring).

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

YELLOW JACKET (QC) QUICK COUPLERS – expanded line



Full size with deep knurling for easy handling. Special features include patented 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.

UPC#	Description
Straight Quick Couplers	
19125	1/8" Female QC x 1/4" Male fl. (Ford)
19120	3/16" Female QC x 1/4" Male fl. (GM)
19101	1/4" Female QC x 1/4" Male fl.
19102	1/4" Female QC x 3/8" Male fl.
19111	1/4" Fe. QC Str. x 1/8" NPT Male
19116	1/4" Fe. QC Str. x 1/4" NPT Male
19118	1/4" Fe. QC Str. x 1/4" NPT Female
19103	3/8" Fe. QC x 3/8" Male fl.
19104	3/8" Fe. QC x 1/4" Male fl.
19115	1/2" Female QC x 3/8" Male fl.
19114	3/8" Female QC x 1/2" Male fl.
R-410A couplers – 45° – with schrader valve core	
19173	5/16" Fe. QC x 1/4" M. fl. w/Schrader
19174	1/4" Fe. QC x 5/16" M. fl. w/Schrader

UPC#	Description
90° Quick Couplers	
19220	3/16" Fe. QC 90° x 1/4" Male fl.
19201	1/4" Female QC 90° x 1/4" Male fl.
19202	1/4" Female QC 90° x 3/8" Male fl.
19203	3/8" Female QC 90° x 3/8" Male fl.
19214	3/8" Female QC 90° x 1/2" Male fl.
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 fl.
19221	5/16" QC 90° x 1/4" Male fl.
19122	1/4" QC Str. x 5/16" Male fl.
19222	1/4" QC 90° x 5/16" Male fl.
ACME 1/2" Couplers – Auto Straight	
19161	1/4" Fe. QC x 1/2" Male Acme
19162	1/4" Fe. hex x 1/2" Male Acme for permanent applications
19166	1/2" Acme Male x 1/2" Acme Female
19165	1/2" Acme Female x 1/4" Male fl.
19168	1/2" Acme Female x 1/8" NPT Male
19158	1/2" Acme Female x 14 mm Male

125 AND 145 LB. CYLINDER VALVE ADAPTER

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



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

ADD-A-HOSE COUPLERS UNIONS



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

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

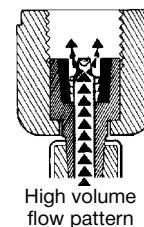
YELLOW JACKET® QUICK COUPLERS (Schrader core in male end)



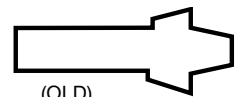
All couplers have Schrader valve cores in male flare end. Female coupler end has deep knurling for easy handling. Patented CH14 "Adjust-a-Valve" Opener in all 1/4" female ends.

UPC#	Description
Straight Quick Couplers	
19171	1/4" Female QC x 1/4" Male fl.
19172	3/8" Female QC x 1/4" Male fl.
90° Bend Quick Couplers	
19191	1/4" Female QC x 1/4" Male fl.
19192	3/8" Female QC x 1/4" Male fl.
R-410A couplers – 45° – with schrader valve core	
19173	5/16" Fe. QC x 1/4" M. fl. w/Schrader
19174	1/4" Fe. QC x 5/16" M. fl. w/Schrader
19175	5/16" Female QC x 5/16" Male fl.

YELLOW JACKET ADJUST-A-VALVE™ OPENERS



High volume flow pattern



(OLD) CH75



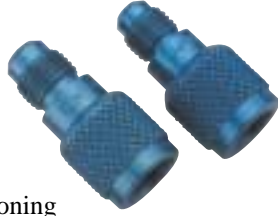
(CURRENT) CH14

The patented "Adjust-a-Valve" opens 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. When finished, rotate back. (Pat. No. 3592439). "Adjust-a-Valve" for 1/4" and 5/16" hoses is the same.

UPC #	Part	Description
19302	CH14	Adjust-a-Valve openers (10)
19301	CH75	1/4" valve openers (10)
19304	–	1/8" valve openers (10)

YELLOW JACKET® LIQUID CHARGING ADAPTER (Convert liquid to saturated vapor)

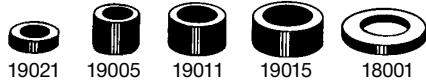
Liquid charging is recommended when charging blends into refrigeration and air conditioning systems. Since compressors cannot compress liquids you need a liquid charger adapter for safe and fast liquid (saturated vapor) charging through the low pressure side of a system. The YELLOW JACKET adapter connects to the cylinder valve or refrigerant can.



- 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
- Blue color-coded aluminum.

UPC#	Description
41123	1/4" liquid charging adapter
41124	5/16" liquid charging adapter
41132	Repl. "O"-ring/orifice for 1/4" adapter
41138	Repl. "O"-ring/orifice for 5/16" adapter

QUICK COUPLER GASKETS & "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	Qty.	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**	Cylinder Valve	10	Cylinder Valve
19021	3/16" Gasket	10	1/8" Coupler
19022		-	5 For 60667 recovery pliers
19010	CH20 and CH14	6 3	1/4" hose opener
UPC#	"O"-ring	Qty.	Application
19025*	-	10	1/4" "O"-ring
19026*	-	10	3/8" "O"-ring
19027*	-	10	1/2" "O"-ring
19034	-	10	"O"-ring for 14 mm Male
19037	-	10	1/4" SealRight "O"-ring
19094	-	10	Snap-It "O"-rings
UPC#	Size	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 & EMPTY BOXES



19003 COMPLETE KIT includes following gaskets, valve openers and SealRight parts in a 12 compartment case.

- Five 1/8" gaskets
- Five 1/8" valve openers
- 100 3/16"-1/4" gaskets
- Ten 1/4" adjustable CH14 valve openers
- Ten 1/4" CH75 flat valve openers
- Ten 3/8" CH11 gaskets
- Ten 1/2"-5/8" CH80 gaskets
- Ten cylinder valve flat gaskets
- Ten SealRight "O"-rings
- Four SealRight plug and seal assemblies
- Four 1/4" SealRight nut and clip

EMPTY PARTS BOXES

UPC#	Size	Description
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

VACUUM PUMP INTAKE ADAPTER



Reducing adapters 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" R-12 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

WRAP-AROUND HEATER FOR REFRIGERANT CYLINDER



Fits 30/50-125 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; 6' cord.

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

HOSE ADAPTERS, VALVES AND PARTS

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
40311	14 mm Fe, str. high side auto coupler
40312	14 mm Fe, str. low side auto coupler
40321	14 mm Fe, 90° high side auto coupler
40322	14 mm Fe, 90° low side auto coupler
40313	1/4 M. Fl., str. high side auto coupler
40314	1/4 M. Fl., str. low side auto coupler
40323	1/4 M. Fl., 90° high side auto coupler
40324	1/4 M. Fl., 90° low side auto coupler
40347	High side x 3/8" Male flare auto coupler
40348	Low side x 3/8" Male flare auto coupler
40316	Replacement "O"-rings (2 pak)

AUTOMOTIVE R-134a A/C COUPLERS – ECONOMY



A basic R-134a service coupler with no control valve. Snaps on for instant flow. Professionals should use couplers above.

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

AUTOMOTIVE R-134a 3-IN-1 VACUUM/CHARGE RECOVER CORE TOOL



1. **Core removal** for vacuum and charges. Lets you evacuate and charge through an unrestricted line for increased speed and higher vacuum.
3. **Core replacement.**
4. **Recovery valve.** Core removal allows recovery unit to work at maximum efficiency, speeding the recovery process.

UPC #	Description
18962	Low-side R-134a auto valve core tool
18961	High-side R-134a auto valve core tool
41300	"O"-ring kit for above

AUTOMOTIVE A/C FITTINGS COUPLERS



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

UPC #	Description
19157	14 mm M. x 1/4" Male fl.
19156	14 mm M. x 3/8" Male fl.
19161	1/2" Acme M. x 1/4" Fe. fl.
19165	1/2" Acme Fe. x 1/4" Male fl.
19158	1/2" Acme Fe. x 14 mm Male
19162	1/2" Acme M. x 1/4" Fe. fl. Hex
19168	1/2" Acme Fe. x 1/8" Male pipe
19169	1/2" Acme M. x 1/2" Acme SealRight™
19163	1/2" Acme SealRight x 1/4" M. fl.
19166	1/2" Acme Fe. x 1/2" Acme Male
40265	1/2" Acme M. x 1/8" NPT Male Half Union
19142	1/2" Acme Union
19153	1/2" Acme Fe. Hex x 13 mm R-134a low side Male for A/C system not shown

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

AUTOMOTIVE R-134a and R-12 CAN TAPS




With side tap, handles slip around and close to pierce the can. Small inserts for use with lubricant cans.

Check valve on side taps help prevent back pressure into can.

Not for use with other refrigerants.

UPC #	Description
36192	R-134a side can tap
36193	R-12 side can tap
36194	Gaskets for side can tap (10 pak)

A close-up photograph of a Yellow Jacket BRUTE II Manifold. The manifold is silver with a grey handle on the left. It features two gauges: a large blue one on the left and a smaller red one on the right. Both gauges have multiple scales for pressure and temperature. Four hoses are connected to the manifold: a blue one on the far left, a yellow one, another yellow one, and a red one on the far right. The hoses have brass fittings and are labeled with 'YELLOW JACKET' and 'BRUTE II'. The background shows a metal coil, likely part of an HVAC system.

YELLOW JACKET®
Charging Systems –
for just the right
measure of refrigerant

NEW
BRUTE II™ Manifold page 43

NEW
Digital Refrigerant Analyzer
page 42

YELLOW JACKET® Charging Systems – technology and tools to accurately measure and conserve refrigerant.

With too little or too much refrigerant, systems run inefficiently, using more electricity than necessary. And now with the soaring cost of refrigerant, energy, and labor, accurate measurement is more important than ever. That's why YELLOW JACKET® Charging Manifolds and gauges are carefully assembled and fully inspected for accuracy in all of these jobs:

- Check system pressure
- Charge vapor refrigerant into systems
- Charge liquid refrigerant into high side
- Purge condenser
- Charge oil into compressor
- Pull vacuum
- Test for leaks
- Set controls

From the full line of YELLOW JACKET® 2- and 4-Valve Charging Systems you can find just what you need for your business and budget. And all are built to last.

With either models you have full capabilities for every application. 4-valve models add a fourth hose and the following capabilities for increased efficiency and speed.

- Simultaneously connect to high and low sides, vacuum pump and recovery unit or refrigerant tank
- Diagnose, evacuate, and charge without switching hoses

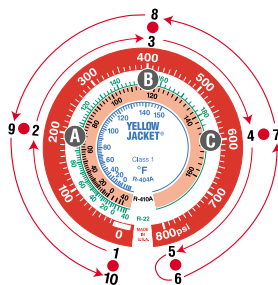
Certified Gauges for your confidence and convenience



You make decisions based on what your gauge is telling you. Now you can have greater confidence in your measurements and

decisions with a line of certified YELLOW JACKET Class I Replacement Manifold Gauges and Manifolds with Class I gauges.

YELLOW JACKET gauges have always been manufactured and calibrated to NIST standards (National Institute of Standards and Technology). The standard Ritchie 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)



Now, the Ritchie certification process documents the NIST calibration plus compliance to ANSI Z540.1 and ISO 10012 standards. The certification is good for one year and then recalibration is recommended. Serialized, dated certificates are packed with each certified unit.

Certification benefits:

- Convenience and time savings

In the past when you wanted certification, you had to purchase the gauge at one location and then take it to a calibration house. Now you save the time of the second step.

- Easy compliance with a quality policy

Certified gauges help achieve and prove the level of quality that your employer or customer expects.

- Accuracy assurance

Feel confident even if you are servicing critical applications such as ice machines or other equipment with precise charging requirements.

- Convenient documentation to help meet ISO requirements



A calibration certificate accompanies each Calibrated Gauge and the back of each Certified Gauge is clearly identified with a label applied by the certifying Ritchie technician.

Calibration Certificate Information

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 sale as a back up to your records.

A calibration certificate contains information for necessary traceability.

The following YELLOW JACKET Manifolds include certified gauges:

Series 41 Manifolds 49271, 49272

TITAN™ Manifolds 49281, 49282, 49283

BRUTE II™ Manifolds 49291, 49292

Range of performance for your business and budget



Choice of brass or forged aluminum alloy



Choice of analog or digital gauges



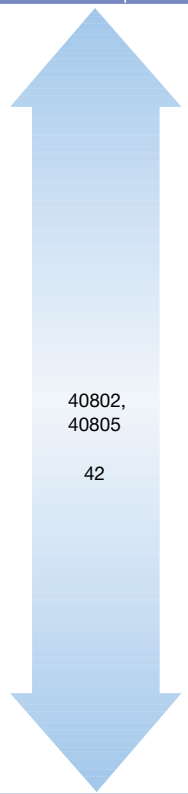
Reliability and durability across the line



A pattern of ongoing innovation

Refrigerant	Series 41			TITAN™ 2-valve		TITAN™ 4-valve		BRUTE II™ 4-valve		Digital Analyzer				
	UPC#		Page	UPC#	Page	UPC#	Page	UPC#	Page	UPC#	Page			
R-12, R-22, R-134a	41842	42007	48											
	41846													
R-12, R-22, R-502	41212	41219	42233	43233	44233	47,	49282	45	49902	44	46020	46081	43	
	41213	41220	42235	43235	44235	48	49801		49905		46021	46082		
	41214	42000	43213	44213	45213		49802		49922		46022	46084		
	41232	42020	43214	44214	45214		49805		49925		46026	49292		
	41233	42213	43215	44215	45215						46080			
	41235	42215	43219	44219	45219									
	41215	42219	43220	44220	45220									
R-134a							49847	45						
R-22, R-134a, R-404A	42005					48	49883	45	49983	44	46040	46090	43	
	42006						49887		49987		46041	46091		
	49272						49889		49993		46042	46092		
									49997		46043	46094		
											46048			
R-22, R-404A, R-410A	42001					48	49281	45	49283	49968	44	46010	46013	43
	42004						49863		49963	49973		46011	49291	
	49271						49867		49967	49977				
							49868							
R-134a, R-404A, R-407C							49831	45	49932	49952	44	46030	46032	43
							49832		49935	49955		46031	46038	
							49835							
R-134a, R-404A, R-507	41311	42010	42435	44311	45314	47,								
	41312	42011	42436	44313	45315	48								
	41313	42313	43311	44314	45319									
	41314	42315	43313	44315										
	41315	42332	43314	44319										
	41319	42333	43315	45311										
	41372	42335	43319	45313										
R-410A	41703	41711	42030			47	49860	45	49960	49965	44	46000		43
	41709	41712	42715				49862		49962	49982		46001		
	41710	41715					49865					46003		

CHARGING SYSTEMS



For metric see page 52.

YELLOW JACKET® DIGITAL REFRIGERATION SYSTEM ANALYZER with system modulation bar graph for fast, accurate diagnostics

For time-saving diagnostics, the easy-to-read pressure bar graphs of this patented unit quickly tell you more than you could ever see with the vibrating needle of a typical pressure gauge. You see pressure dynamics to readily know if the system's thermostatic expansion valve is modulating properly, if liquid is flooding back into the systems, and more. Saturation, subcooling, and superheat readings are automatic to eliminate fishing in your wallet for reference cards. This almost immediate knowledge of system behavior and faults can help save up to 10 minutes and more on many jobs.



Features:

- Profiles 22 common refrigerants:

R-12	R-404A	R-416A
R-22	R-406A	R-417A
R-134a	R-407C	R-420A
R-290	R-408A	R-502
R-401A	R-409A	R-507
R-401B	R-410A	R-508B
R-402A	R-414B	R-600A
R-402B		

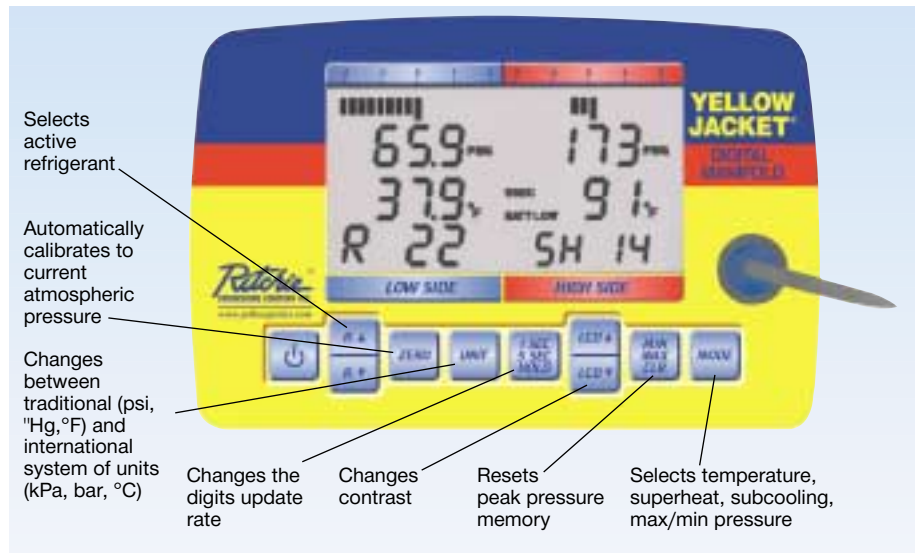
 (Upgradeable for new refrigerants)
- Integrated temperature probe for automatic superheat and subcooling readings
- Max and min pressure monitoring for control set-up
- Auto zero key to eliminate manual recalibration
- Vacuum detection inHg
- Easy-to-read LCD screen with large 3/8" digits

- Rugged case construction with rubber boot to tolerate impact and resist typical oils, acids, and sunlight

Easy to Use:

- Bar graph segments shows changes from digital reading (range of ± 2 psi on low-side, ± 8 psi on high-side)

- Digital readings show resolution of 1/4 psi on low side, 1 psi on high side
- Temperature in middle is corresponding bubble and dew points for current pressures
- Temperature, superheat or subcooling shown on lower right (eg. 14°F superheat)



Specifications:

Pressure accuracy:

0.5% F.S. ± 1 least significant digit, calibration traceable to NIST

Pressure ports:

Two 1/8" acting as low and high side gauges

Working pressure:

Low side: 0-200 psi (1350 kPa, 13.5 bar)
High side: 0-550 psi (3790 kPa, 37.9 bar)

Proof pressure:

Low side: 600 psi (4100 kPa, 41 bar)
High side: 1500 psi (10300 kPa, 103 bar)

Burst pressure:

Low side: 2000 psi (13500 kPa, 135 bar)
High side: 5000 psi (34500 kPa, 345 bar)

Temperature sensor range:

-40° to 250°F (-40° to 125°C)

Temperature accuracy:

$\pm 0.9^\circ\text{F}$ ($\pm 0.5^\circ\text{C}$) between 32° to 158°F (0° to 70°C)

Usage environment:

Indoor/Outdoor dew, splash and rain resistant; do not immerse in water

Storage and operational temperature:

-4° to 122°F (-20° to 50°C)

Power supply:

4 AA Batteries (approx. 6 months under normal use)

Weight:

1.6 lb. (.725 kg)

Dimensions:

6.7 x 4.8 x 2.5" (17 x 12.2 x 6.4 cm)

UPC #	Description
40801	R-410A adapter kit - 1/4" to 5/16" service fitting
40802	Digital analyzer on TITAN™ 4-valve manifold
40805	40802 with 1/4" x 60" RYB and 3/8" x 60" yellow PLUS II™ hoses
41067	Temperature Probe
41068	Extended Manifold Hook
41069	Rubber Boot

Replacement parts for manifold on page 46.

YELLOW JACKET BRUTE II™ 4-Valve Test & Charging Manifold - °F

Forged aluminum alloy body with full 3/8" bore for faster vacuum and charging

The new *BRUTE II*™ 4-Valve Test and Charging Manifold has been trimmed down for lighter weight but with the same powerful performance of the original model. This streamlined unit continues to provide the flow that's proven faster than any conventional manifold. And even though sleeker and more compact, the aluminum alloy is forged for strength and reliability with 3/8" bores through the body to speed the job.

Other Features and Benefits:

- Fourth hose enables connection to hi/lo sides, refrigerant tank, and recovery unit or vacuum pump for diagnostics, evacuation and charging without switching hoses
 - 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
- Proven, 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 YELLOW JACKET® 3-1/8" (80 mm) red and blue liquid-filled gauges




Large, easy-to-read 3-1/8" (80 mm) red and blue steel case

1% accuracy (Class 1) gauges with protective boots;

	New UPC#	Vac. Port	Hi, Lo Charge	Gauge	Hoses	Discontinued BRUTE UPC #
BRUTE II 4-VALVE with 3/8" Vacuum Port						
R-410A	46000	3/8"	1/4"	Red/Blue	Manifold Only	47722
	46001	3/8"	1/4"	Liquid	Manifold Only	46822
	46003	3/8"	1/4"	Red/Blue	60" PLUS II™ Compact Ball Valve - RYB & 3/8" x 45°	n/a
R-22	46010	3/8"	1/4"	Red/Blue	Manifold Only	n/a
	49291*	3/8"	1/4"	Red/Blue	Manifold Only	n/a
	46011	3/8"	1/4"	Liquid	Manifold Only	n/a
R-404A	46013	3/8"	1/4"	Red/Blue	60" PLUS II™ Compact Ball Valve - RYB & 3/8" x 45°	n/a
	46020	3/8"	1/4"	Red/Blue	Manifold Only	n/a
	49292*	3/8"	1/4"	Red/Blue	Manifold Only	46422
R-12, R-22, R-502,	46021	3/8"	1/4"	Liquid	Manifold Only	46812
	46022	3/8"	1/4"	Red/Blue	60" PLUS II™ RYB & 3/8" x 45°	n/a
	46026	3/8"	1/4"	Liquid	72" PLUS II™ RYB & 3/8" x 45°	48819
BRUTE II 4-VALVE COMMERCIAL with increased capacity—larger ports						
R-12, R-22, R-502,	46080	3/8"	3/8"	Red/Blue	Manifold Only	n/a
	46081	1/2"	3/8"	Liquid	Manifold Only	46903
	46082	3/8"	3/8"	Red/Blue	4 @ 3/8" x 60" Heavy Duty - Str. x 45°	n/a
	46084	1/2"	3/8"	Liquid	3 @ 3/8" x 60" Heavy Duty - Str. x 45° 1 @ 1/2" x 60" Heavy Duty - Str. x Str.	46907
BRUTE II 4-VALVE with 3/8" Vacuum Port						
R-134a	46030	3/8"	1/4"	Red/Blue	Manifold Only	n/a
	46031	3/8"	1/4"	Liquid	Manifold Only	n/a
	46032	3/8"	1/4"	Red/Blue	60" PLUS II™ RYB & 3/8" x 45°	n/a
	46038	3/8"	1/4"	Liquid	72" PLUS II™ RYB & 3/8" x 45°	n/a
BRUTE II 4-VALVE with 3/8" Vacuum Port						
R-404A	46040	3/8"	1/4"	Red/Blue	Manifold Only	n/a
	46041	3/8"	1/4"	Liquid	Manifold Only	n/a
	46042	3/8"	1/4"	Red/Blue	60" PLUS II™ RYB & 3/8" x 45°	n/a
	46043	3/8"	1/4"	Red/Blue	60" PLUS II™ Compact Ball Valve - RYB & 3/8" x 45°	n/a
	46048	3/8"	1/4"	Liquid	72" PLUS II™ RYB & 3/8" x 45°	n/a
BRUTE II 4-VALVE COMMERCIAL with increased capacity—larger ports						
R-22, R-134a	46090	3/8"	3/8"	Red/Blue	Manifold Only	n/a
	46091	1/2"	3/8"	Liquid	Manifold Only	n/a
	46092	3/8"	3/8"	Red/Blue	4 @ 3/8" x 60" Heavy Duty - Str. x 45°	n/a
	46094	1/2"	3/8"	Liquid	3 @ 3/8" x 60" Heavy Duty - Str. x 45°	n/a
					1 @ 1/2" x 60" Heavy Duty - Str. x Str.	

For metric see page 54.

For replacement parts see page 46.

*  Manifold comes standard with certified gauges. For more information on the certification of 3-1/8" gauges, see page 40.

YELLOW JACKET TITAN™ 4-Valve Test & Charging Manifold - °F

Forged aluminum alloy body for increased strength and reliability

The new TITAN™ Test and Charging Manifold is the first forged aluminum manifold in the industry. Special aluminum alloy body makes this unit lightweight for handling ease with the durability and reliability required for repeated, rugged use.

Features/Benefits

- 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; optional protective gauge boots available
- Proven, double "O"-ring piston for reliability and long service life



Contoured easy-grip handles for positive control; color coded for ready identification

- Exclusive 100 mesh filter in-line on all flare fittings helps keep out particulate material and extend the life of the seats
- Sight glass to easily view refrigerant movement and condition during charging and recovery
- Heavy duty hook won't pull out


4-Valve Features/Benefits

- 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 on unit are 1/4")
- Also available with YELLOW JACKET® 3-1/8" (80 mm) red and blue liquid-filled gauges

	UPC#	Gauges	Hoses	Replaces Bantam#
R-410A	49962	Red/Blue	No hose	45962
	49982	Liquid	No hose	45982
	49960	Red/Blue	60" PLUS II™ Compact Ball Valve - RYB & 3/8" x 45°	45960
	49965	Red/Blue	60" PLUS II™ - RYB & 3/8" x 45°	45965
R-22 R-404A R-410A	49963	Red/Blue	No hose	n/a
	49283*	Red/Blue	No hose	n/a
	49967	Red/Blue	60" PLUS II™ - RYB & 3/8" x 45°	n/a
	49968	Red/Blue	60" PLUS II™ Compact Ball Valve - RYB & 3/8" x 45°	n/a
	49973	Liquid	No hose	n/a
R-12 R-502	49977	Liquid	60" PLUS II™ - RYB & 3/8" x 45°	n/a
	49902	Red/Blue	No hose	45902
	49905	Red/Blue	60" PLUS II™ - RYB & 3/8" x 45°	45905
	49922	Liquid	No hose	45922
R-134a R-404A R-407C	49925	Liquid	60" PLUS II™ - RYB & 3/8" x 45°	45925
	49932	Red/Blue	No hose	45932
	49935	Red/Blue	60" PLUS II™ - RYB & 3/8" x 45°	45935
	49952	Liquid	No hose	45952
R-22 R-134a R-404A	49955	Liquid	60" PLUS II™ - RYB & 3/8" x 45°	45955
	49983	Red/Blue	No hose	n/a
	49987	Red/Blue	60" PLUS II™ - RYB & 3/8" x 45°	n/a
	49993	Liquid	No hose	n/a
	49997	Liquid	60" PLUS II™ - RYB & 3/8" x 45°	n/a

For metric see page 55.

For replacement parts see page 46.

*  Manifold comes standard with certified gauges. For more information on the certification of 3-1/8" gauges, see page 40.

YELLOW JACKET TITAN™ 2-Valve Test & Charging Manifold - °F

Forged aluminum alloy body and large easy-to-read gauges

The new TITAN™ Test and Charging Manifold is the first forged aluminum manifold in the industry. The special aluminum alloy construction of the manifold body makes this unit lightweight for handling ease with the durability and reliability required for repeated, rugged use.

Features/Benefits


- 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; optional protective gauge boots available
- Proven, 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
- Heavy duty hook won't pull out



	New UPC#	Gauges	Hoses	Discontinued Bantam UPC #
R-410A	49862	Red/Blue	No hose	45862
	49865	Red/Blue	60" PLUS II™ - RYB	45865
	49860	Red/Blue	60" PLUS II™ Compact Ball Valve - RYB	45860
R-22 R-404A R-410A	49863	Red/Blue	No hose	n/a
	49281 *	Red/Blue	No hose	n/a
	49867	Red/Blue	60" PLUS II™ - RYB	n/a
	49868	Red/Blue	60" PLUS II™ Compact Ball Valve - RYB	n/a
R-12 R-22 R-502	49802	Red/Blue	No hose	45802
	49282 *	Red/Blue	No hose	45802
	49805	Red/Blue	60" PLUS II™ - RYB	45805
	49801	Red/Blue	60" PLUS II™ SealRight™ - RYB	45754
R-134a R-404A R-407C	49832	Red/Blue	No hose	45832
	49835	Red/Blue	60" PLUS II™ - RYB	45835
	49831	Red/Blue	60" PLUS II™ SealRight™ - RYB	45774
R-22 R-134a R-404A	49883	Red/Blue	No hose	n/a
	49887	Red/Blue	60" PLUS II™ - RYB	n/a
	49889	Red/Blue	60" PLUS II™ SealRight™ - RYB	n/a
R-134a	49847	Red/Blue	72" PLUS II™ Acme fittings - RYB	n/a

For metric see page 56.

For replacement parts see page 46.

*  Manifold comes standard with certified gauges. For more information on the certification of 3-1/8" gauges, see page 40.

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

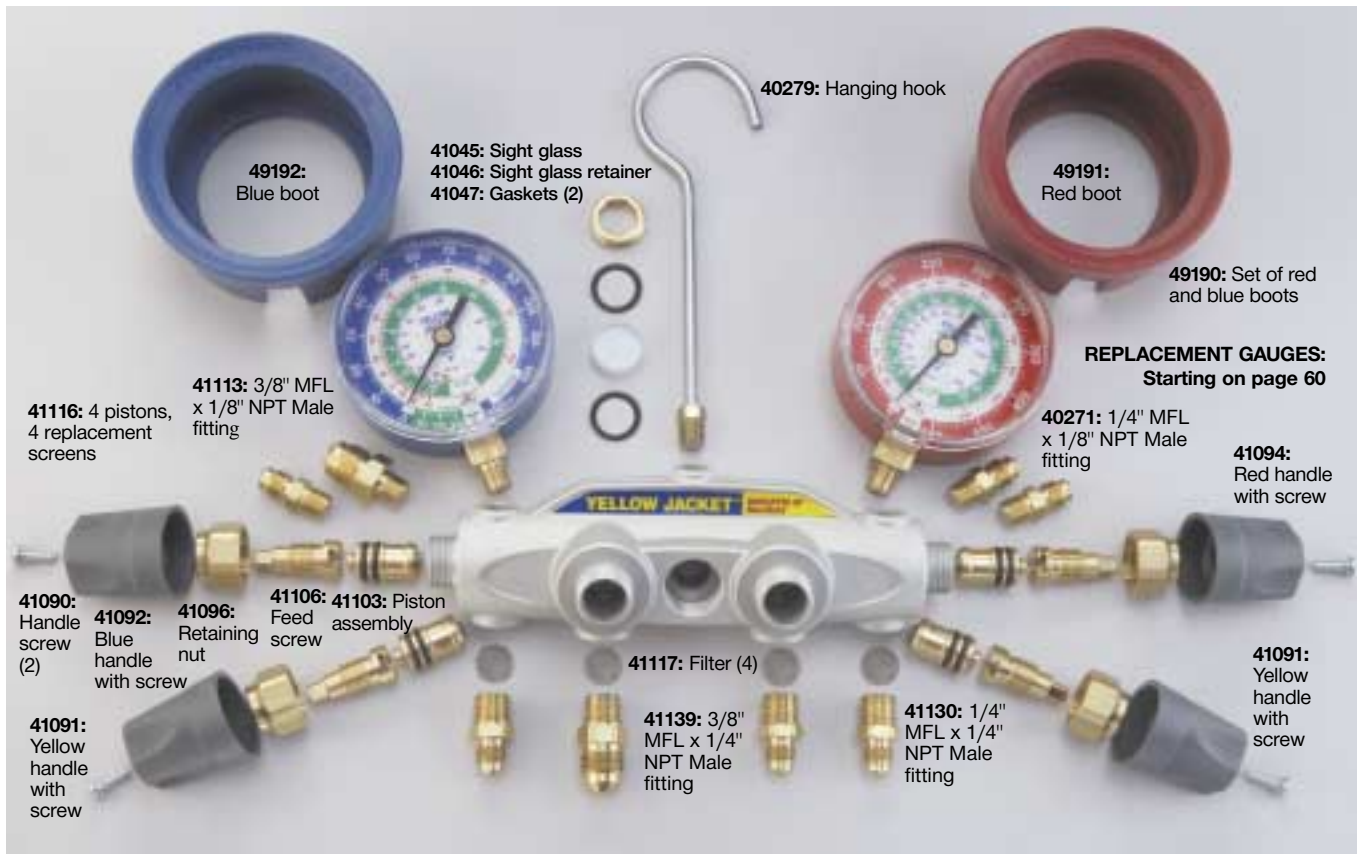
Rubber boots slip easily around gauges to cushion and protect them from impact.

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



UPC #	Size	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

BRUTE II™ MANIFOLD REPLACEMENT PARTS



TITAN™ MANIFOLD REPLACEMENT PARTS

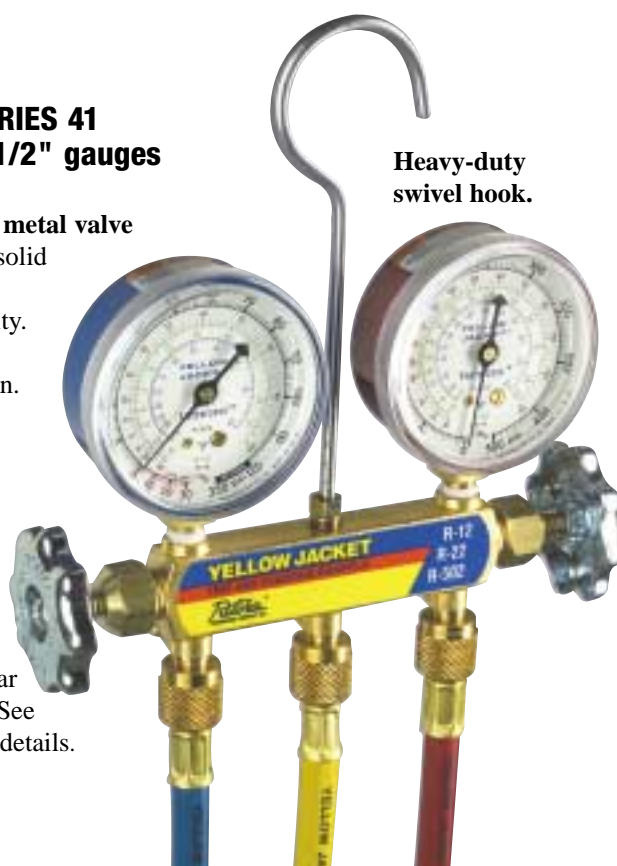


YELLOW JACKET® SERIES 41 MANIFOLDS with 2-1/2" gauges

Forged brass body with metal valve handles. 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°.

Pretested. Every manifold is individually tested for reliability before shipping.

Limited Lifetime Warranty on manifold bar and valves – not gauges. See manifold instructions for details.



Heavy-duty swivel hook.

Flutterless™ Technology. Surge protector and silicone dampened movement helps minimize needle pulsation for easier, more accurate readings.



Flutterless

Standard

Sliding double "O"-ring pistons. Non-rotating design reduces wear. Only 1-1/2 turns give you full flow. Long-life nylon seat is also for vacuum and R-134a, R-404A, R-507, R-407C, R-410A, etc.

YELLOW JACKET Hoses. Most manifolds include color-coded YELLOW JACKET charging hoses.

Easy-to-read 2-1/2" steel case gauges (°F) with 3-2-3% accuracy.

- 1 Manifold with original HA hose
- 2 Manifold with PLUS II with standard fittings
- 3 Manifold with PLUS II with SealRight™ fittings
- 4 Manifold with PLUS II with FlexFlow™ fittings
- 5 Manifold with PLUS II with compact ball valve

NOTES: Manifolds with some other hose combinations available.

* Special R-410A hose – R&B hose is 1/4" x 45° 5/16" end; Y hose is 1/4" x 45° 1/4" end. See page 57 for R-410A manifolds with 5/16" hose holder fittings.

Refrigerants	Description	No hose	1	2	3	4	5
R-12, R-22, R-502	Basic unit: manifold, gauges, hook and anchors	41212	–	–	–	–	–
	36" RYB hoses	–	41213	43213	44213	45213	42213
	48" RYB hoses	–	41220	43220	44220	45220	–
	60" RYB hoses	–	41215	43215	44215	45215	42215
	72" RYB hoses	–	41219	43219	44219	45219	42219
	36" RYB hoses and case	–	41214	43214	44214	45214	–
R-134a, R-404A, R-507	Basic unit: manifold, gauges, hook and anchors	41312	–	–	–	–	–
	36" RYB hoses	–	41313	43313	44313	45313	42313
	48" RYB hoses	–	41311	43311	44311	45311	–
	60" RYB hoses	–	41315	43315	44315	45315	42315
	72" RYB hoses	–	41319	43319	44319	45319	–
	36" RYB hoses and case	–	41314	43314	44314	45314	–
R-410A	Basic unit: manifold, gauges, hook and anchors	41712	–	–	–	–	–
	60" RYB hoses	–	–	41709	–	41703	42715
	60" RYB hoses special*	–	–	41715	–	–	41711
	HCA 60" hose	–	–	41710	–	–	–

SERIES 41 MANIFOLDS with 2-1/2" gauges (no hose)



Display package

Refrigerants	UPC#	Description	Packaging
R-12, R-22, R-502	41212	Red & blue gauges	Boxed
	42000	Red & blue gauges	Clamshell
	41232	Brass gauges	Boxed
	42020	Brass gauges	Clamshell
R-134a, R-404A, R-507	41312	Red & blue gauges	Boxed
	42010	Red & blue gauges	Clamshell
	41372	Brass gauges	Boxed
	42011	Brass gauges	Clamshell
R-410A	41712	Red & blue gauges	Boxed
	42030	Red & blue gauges	Clamshell

YELLOW JACKET® SERIES 41 MANIFOLDS with 3-1/8" gauges




This field-proven manifold line has now been expanded to include larger, easier to read 3-1/8" color-coded gauges in rugged steel cases with polycarbonate crystals.

Most importantly, these gauges feature 1% accuracy for an exact reading in critical charge systems.

Features

- Wide choice of refrigerant combinations including:
 - R-22, R-134a, R-404A
 - R-12, R-22, R-134a
 - R-22, R-404A, R-410A
- Color-coded scales with bold, easy to read dials.
- Dials with 1% accuracy (Class 1) 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.
- 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.

Refrigerants	UPC#	Gauge	RYB Hose
R-12, R-22, R-134A	41842	3-1/8" Red/Blue	None
	42007	3-1/8" Red/Blue	60" PLUS II™ standard fittings
	41846	3-1/8" Red/Blue	72" PLUS II™ with couplers
R-22, R-404A, R-410A	42001	3-1/8" Red/Blue	None
	49271 *	3-1/8" Red/Blue	None
	42004	3-1/8" Red/Blue	60" PLUS II™ standard fittings
R-22, R-134a, R-404A	42005	3-1/8" Red/Blue	None
	49272 *	3-1/8" Red/Blue	None
	42006	3-1/8" Red/Blue	60" PLUS II™ standard fittings

*  Manifold comes standard with certified gauges. For more information on the certification of 3-1/8" gauges, see page 40.

SERIES 41 DELUXE MANIFOLDS – Class 1 (1% accuracy) brass gauges



These manifolds have all the same features as the regular "Series 41" and an important upgrade – the gauges. Manifolds are also available with a variety of hoses.

What makes YELLOW JACKET® brass gauges superior?

YELLOW JACKET is the only U.S.-made manifold to incorporate all the following important features into a truly premium gauge.

1. Upgraded movement with phosphor bronze plates, stainless gears and

pinions. Dissimilar parts create less friction and last longer. FlutterLess™ technology included.

2. Movement calibrated at more points with tighter tolerances for full range Class 1 (1% accuracy).

3. Polished solid brass case.

2-valve manifold – deluxe brass gauges

Refrigerants	Description	No hose	1	2	3	4
R-12, R-22, R-502	No hose	41232	—	—	—	—
	with 36" hose	—	41233	43233	44233	42233
	with 60" hose	—	41235	43235	44235	42235
R-134a, R-404A, R-507	with no hose	42332	—	—	—	—
	with 36" hose	—	42333	—	—	—
	with 60" hose	—	42335	42435	—	42436

1 Manifold with original HA hose

2 Manifold with PLUS II with standard fittings

3 Manifold with PLUS II with SealRight™ fittings

4 Manifold with PLUS II with compact valve

LIQUID CHARGER



Liquid charging is recommended when charging blends into refrigeration and air

conditioning systems. Since compressors cannot compress liquids, however, you need a liquid charger adapter for safe and fast liquid charging through the low pressure side of a system. The YELLOW JACKET adapter connects to the cylinder valve or refrigerant can.

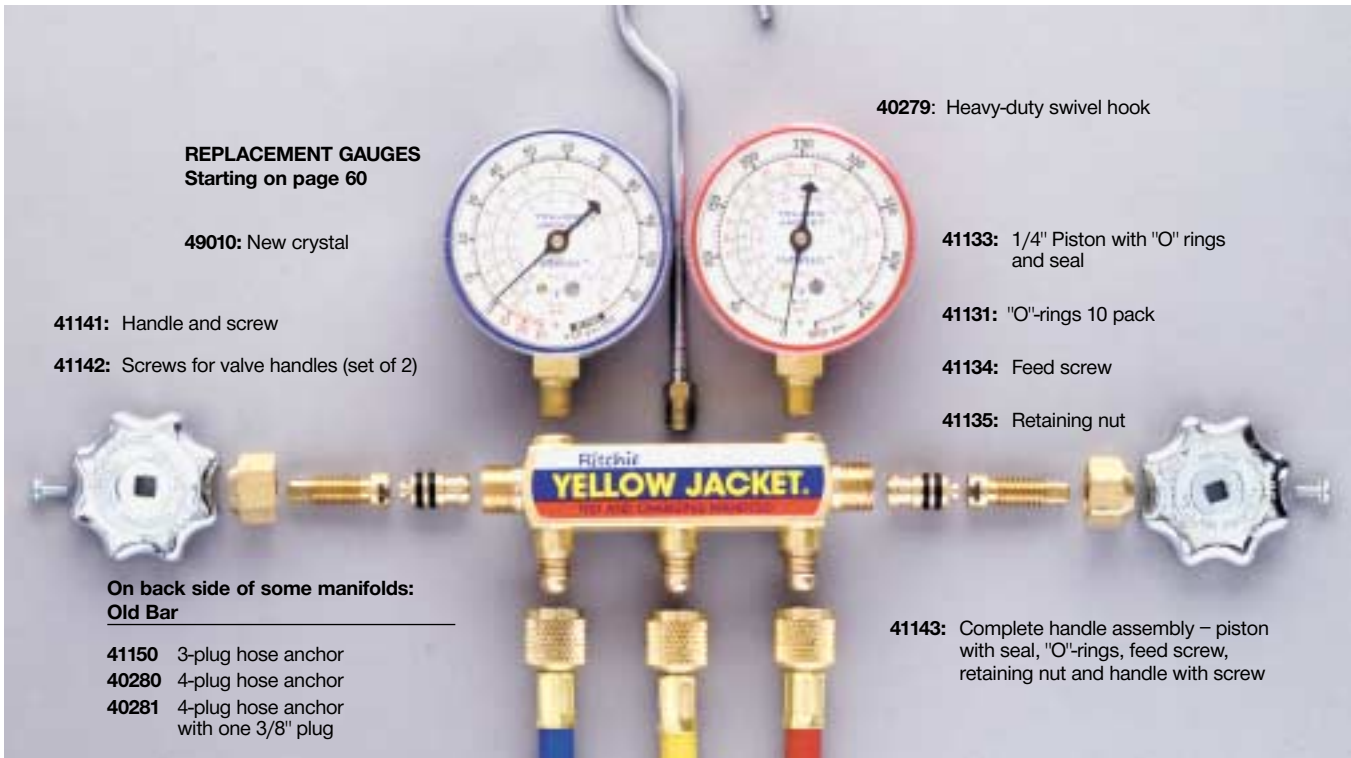
- To protect the compressor, adapter

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

SERIES 41 MANIFOLD REPLACEMENT PARTS



REPLACEMENT GAUGES
Starting on page 60

49010: New crystal

41141: Handle and screw

41142: Screws for valve handles (set of 2)

On back side of some manifolds:
Old Bar

- 41150 3-plug hose anchor
- 40280 4-plug hose anchor
- 40281 4-plug hose anchor with one 3/8" plug

40279: Heavy-duty swivel hook

41133: 1/4" Piston with "O" rings and seal

41131: "O"-rings 10 pack

41134: Feed screw

41135: Retaining nut

41143: Complete handle assembly – piston with seal, "O"-rings, feed screw, retaining nut and handle with screw

YELLOW JACKET® PLUS II™ 1/4" CHARGING HOSES with double barrier protection



YELLOW JACKET PLUS II Hoses have proven performance benefits of the original line, plus double barrier protection for CFC, HCFC and HFC (R-134a, R-404A, R-407C, R-410A, R-507, etc.).

- UL recognized assemblies (File SA9737).

1. Nylon permeation barrier meets UL requirements. 1/4" PLUS II hose is UL 1963 recognized component for R-12, R-134a, R-22, R-500, and R-502 .

2. Moisture barrier provides improved resistance to moisture migration which contaminates expensive refrigerant.

Other features include 4000 psi minimum burst and 800 psi maximum

working pressure for a 5 to 1 safety factor.

Color-coded 3-Pak

Standard 1/4" fitting or 45° with SealRight fitting at one end.

- Operating temperature -20° to 180°F.

Plus II Hoses - standard 1/4" fittings				
L.	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 3-Paks - 21982 two 36", one 60"
21981 two 36", one 72"

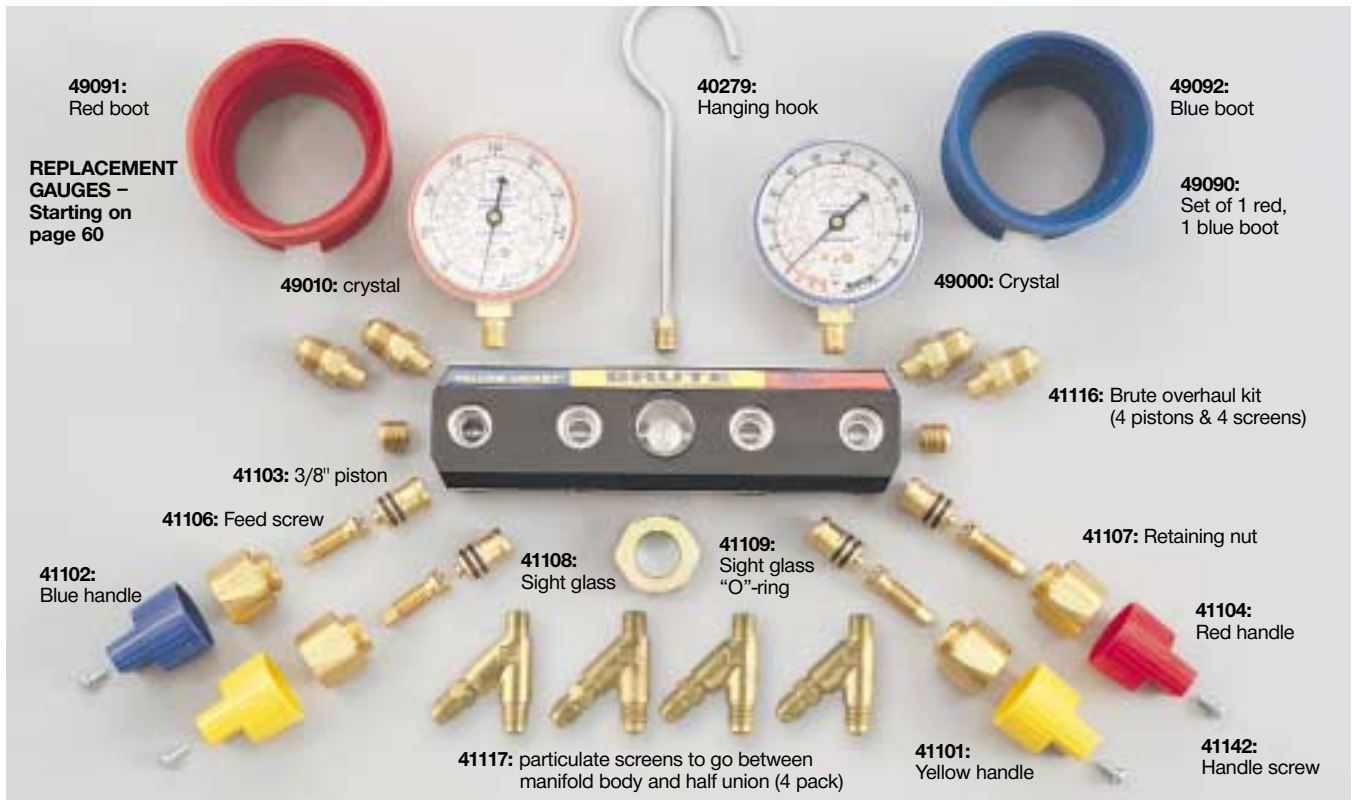
Hoses with 5/16" service end for R-410A on page 27.

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

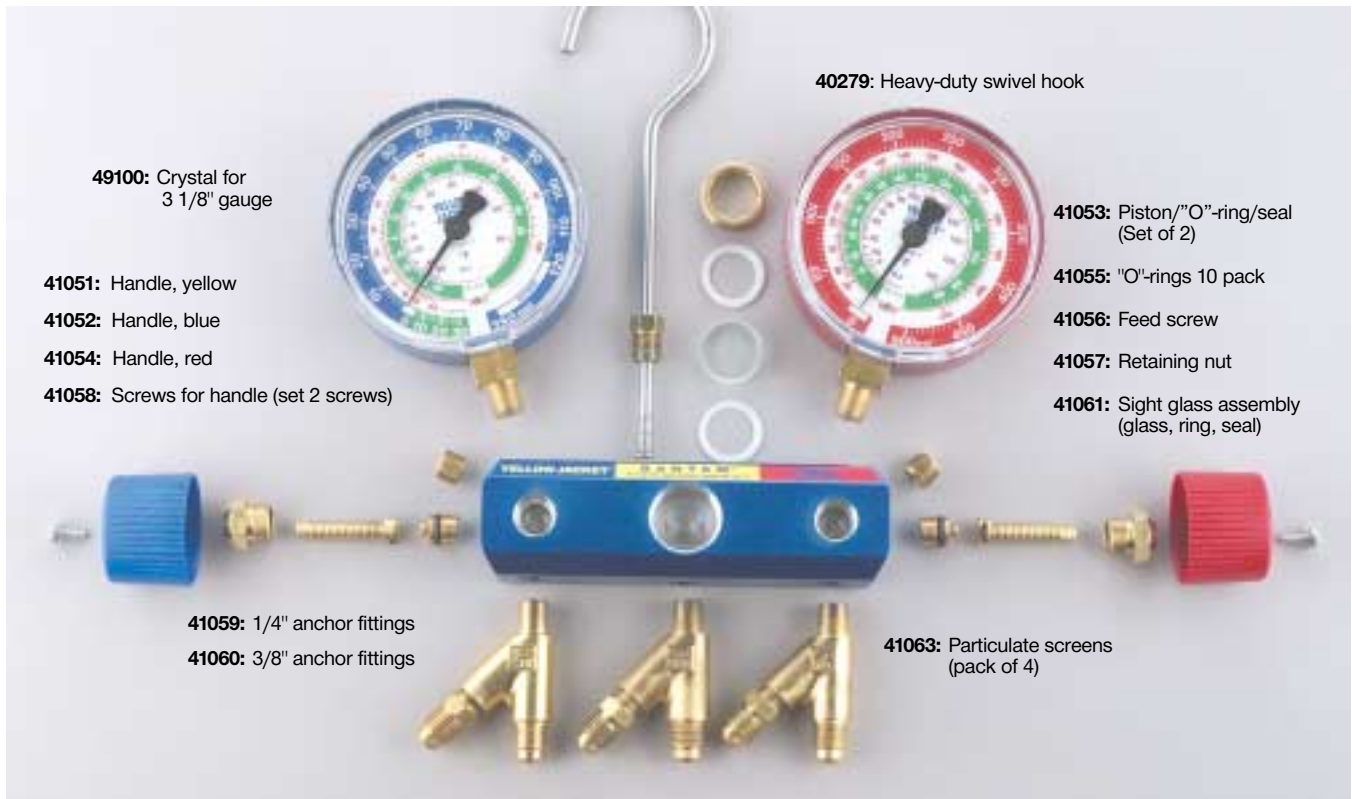


UPC#	Description	Qty.
41099	Complete Kit	1
41105	Box only with label	1
Kit contents		
41041	Yellow Handle with Screw - TITAN	4
41042	Blue Handle with Screw - TITAN	3
41044	Red Handle with Screw - TITAN	3
41043	Piston - TITAN	8
41048	Handle Screws (2) - TITAN	6
41049	Valve Retaining Nut - TITAN	4
41056	Feed Screw - TITAN	4
41061	Sight Glass (1), Retainer (1), Gaskets (2) - BRUTE II/TITAN	4
41090	Handle Screws (2) - BRUTE II	6
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
41133	1/4" Piston - Series 41 & TITAN	6

BRUTE™ MANIFOLD REPLACEMENT PARTS



BANTAM™ MANIFOLD REPLACEMENT PARTS



AUTOMOTIVE R-134a MANIFOLD



“Series 41” automotive manifold comes complete with R-134a gauges, environmental *PLUS II* hoses, and special R-134a A/C couplers with



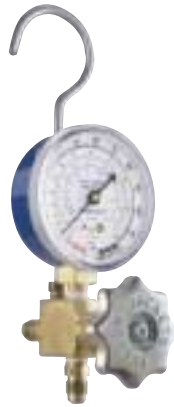
control valves. The hoses meet SAE J2196 and are UL 1963 recognized. Additional hose construction

improvements increase working pressure for increased safety. Hoses available with Acme and 14 mm male fittings. Available 5' or 10' hoses.

UPC #	Description
41343	Auto only R-134a manifold 60" hose with 1/2" Acme fittings and 14 mm fittings, hose anchors
41345	Above with R-134a couplers
41346	Above with carrying case
41340	Auto only R-134a manifold 10' hoses with 1/2" Acme fittings, 14 mm fittings, hose anchors, and R-134a couplers

SINGLE GAUGE MANIFOLD

Single gauge manifold. Check pressure on low side of system. Nylon seals. Double O-ring pistons.



UPC#	Description
40318	Low side manifold R-12, R-22, R-502
40319	Low side manifold R-404A, R-407C, R-134A
40320	Low side manifold R-410A

SINGLE TEST GAUGES

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



UPC #	Description
Gauge w/ QC & 12" hose - angle CPLG	
40341	Red pressure °F
40342	Blue compound °F
14811	12" red hose 1/4" M. fl x 45° QC
Gauge with 19110 quick coupler for recovery tank pressure checks	
40331	Red pressure °F
40332	Blue compound °F
19110	Quick coupler only (see page 35)
14821	12" blue hose 1/4" M. fl x 45° QC

MANIFOLD CARRYING CASES



Blue heavy-duty blow molded case to protect manifold and tools. Long lasting hinge. Handle for easy carrying.

UPC #	Case description L x W x H
40261	Series 41 – 13-1/2" x 10" x 3-1/2"
40262	Series 41 – 12-1/4" x 8" x 3-1/2"
40263	Series 41 – 12-1/4" x 8" x 4-1/4"
41111	Bantam™, BRUTE™ and TITAN™
41112	BRUTE™, BRUTE II™ and Digital Analyzer

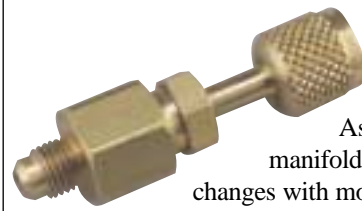
“O”-RING LUBRICANT

To lubricate “O”-rings in manifolds when pistons or “O”-rings are being replaced. Use sparingly.



UPC #	Description
41118	“O”-ring lubricant (.75 oz.)

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 pk.)

YELLOW JACKET NH³ AMMONIA MANIFOLD and Hose



This heavy-duty manifold features cast iron body and full size metal handles. Other features:

- Finger-tight one-piece valve stem for positive seal on nylon seat.
- Easy, accurate valve adjustment.

Dual temperature/pressure R717 gauge has bar with °C and psi with °F ammonia scales.

UPC #	Description
40190	Manifold body with valves
40192	Manifold above and gauges
40193	Above with three NHA 48 hoses
40199	Replacement valve assembly

Range of performance for your business and budget



Choice of copper or forged aluminum alloy



Choice of analog or digital gauges



Reliability and durability across the line



A pattern of ongoing innovation

Refrigerant	Series 41		TITAN™ 2-valve		TITAN™ 4-valve		BRUTE II™ 4-valve		Digital Analyzer	
	UPC#	Page	UPC#	Page	UPC#	Page	UPC#	Page	UPC#	Page
R-12, R-134a, R-413A	41632	57								
R-12, R-22, R-502	41222 41283 41295 44225 41223 41285 43225 44285 41225 41292 43285 44295 41282 41293 43295	57	49806 49816	56	49906 49916	55	46120 46180	54		
R-22, R-134a, R-404A	41622	57	49833	56	49933	55	46140	54	<div style="font-size: 2em; color: yellow;">↑</div> 40802, 40805 53 <div style="font-size: 2em; color: yellow;">↓</div>	
R-22, R-134a, R-407C	41642	57	49803	56	49903	55	46150	54		
R-134a, R-404A, R-407C	41332	57	49836 49856	56	49936 49956	55	49130 46190	54		
R-134a, R-404A, R-507	41353 41365 43355 44355 41355 41382 43365 41363 41392 44365	57								
R-410A	40944 41780 41652 41781	57	49869 49870	56	49969 49970	55	46160 46170	54		

For °F see page 41.

YELLOW JACKET® DIGITAL REFRIGERATION SYSTEM ANALYZER with system modulation bar graph for fast, accurate diagnostics



For time-saving diagnostics, the easy-to-read pressure bar graphs of this patented unit quickly tell you more than you could ever see with the vibrating needle of a typical pressure gauge. You see pressure dynamics to readily know if the system's thermostatic expansion valve is modulating properly, if liquid is flooding back into the systems, and more. Saturation, subcooling, and superheat readings are automatic to eliminate fishing in your wallet for reference cards. This almost immediate knowledge of system behavior and faults can help save up to 10 minutes and more on many jobs.

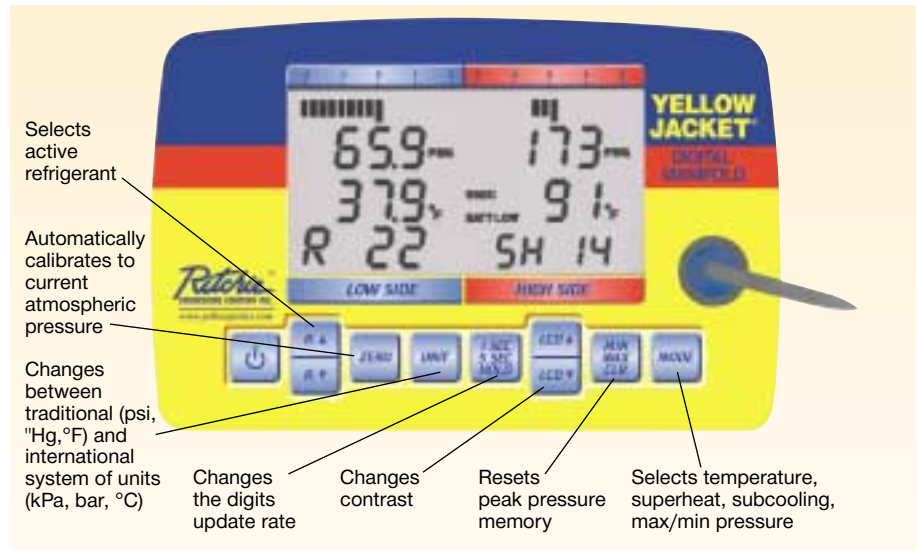


- Rugged case construction with rubber boot to tolerate impact and resist typical oils, acids, and sunlight

Easy to Use:

- Bar graph segments shows changes from digital reading (range of ± 2 psi on low-side, ± 8 psi on high-side)

- Digital readings show resolution of 1/4 psi on low side, 1 psi on high side
- Temperature in middle is corresponding bubble and dew points for current pressures
- Temperature, superheat or subcooling shown on lower right (eg. 10°F superheat).



Features:

- Profiles 22 common refrigerants:

R-12	R-404A	R-416A
R-22	R-406A	R-417A
R-134a	R-407C	R-420A
R-290	R-408A	R-502
R-401A	R-409A	R-507
R-401B	R-410A	R-508B
R-402A	R-414B	R-600A
R-402B		

 (Upgradeable for new refrigerants)
- Integrated temperature probe for automatic superheat and subcooling readings
- Max and min pressure monitoring for control set-up
- Auto zero key to eliminate manual recalibration
- Vacuum detection inHg
- Easy-to-read LCD screen with large 3/8" digits

Specifications:

Pressure accuracy:

0.5% F.S. ± 1 least significant digit, calibration traceable to NIST

Pressure ports:

Two 1/8" acting as low and high side gauges

Working pressure:

Low side: 0-200 psi (1350 kPa, 13.5 bar)
High side: 0-550 psi (3790 kPa, 37.9 bar)

Proof pressure:

Low side: 600 psi (4100 kPa, 41 bar)
High side: 1500 psi (10300 kPa, 103 bar)

Burst pressure:

Low side: 2000 psi (13500 kPa, 135 bar)
High side: 5000 psi (34500 kPa, 345 bar)

Temperature sensor range:

-40° to 125°C (-40° to 250°F)

Temperature accuracy:

$\pm 0.5^\circ\text{C}$ ($\pm 0.9^\circ\text{F}$) between 0° to 70°C (32° to 158°F)

Usage environment:

Indoor/Outdoor dew, splash and rain resistant; do not immerse in water

Storage and operational temperature:

-20° to 50°C (-4° to 122°F)

Power supply:

4 AA Batteries (approx. 6 months under normal use)

Weight:

.725 kg (1.6 lb.)

Dimensions:

17 x 12.2 x 6.4 cm (6.7 x 4.8 x 2.5")

UPC #	Description
40801	R-410A adapter kit – 1/4" to 5/16" service fitting
40802	Digital analyzer on TITAN™ 4-valve manifold
40805	40802 with 1/4" x 60" RYB and 3/8" x 60" yellow PLUS II™ hoses
41067	Temperature Probe
41068	Extended Manifold Hook
41069	Rubber Boot

YELLOW JACKET BRUTE II™ 4-valve Test & Charging Manifold - °C



Forged aluminum alloy body with full 3/8" bore for faster vacuum and charging

The new BRUTE II™ 4-Valve Test and Charging Manifold has been trimmed down for lighter weight but with the same powerful performance of the original model. This streamlined unit continues to provide the flow that's proven faster than any conventional manifold. And even though sleeker and more compact, the aluminum alloy is forged for strength and reliability with 3/8" bores through the body to speed the job.

Other Features and Benefits:

- Fourth hose enables connection to hi/lo sides, refrigerant tank, and recovery unit or vacuum pump for diagnostics, evacuation and charging without switching hoses.
 - 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.
- Proven, double "O"-ring piston for reliability and long service life.



For °F see page 43.

For replacement parts see page 46.



- 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 YELLOW JACKET® 80 mm (3-1/8") red and blue liquid-filled gauges.

Refrigerants	UPC #	Scale	Manifold Fittings	Hose Holder Fittings
R-22/134a/407C	46150	bar/psi	1/4 - 3/8 - 1/4 - 1/4"	1/4 - 3/8 - 1/4 - 1/4"
R-12/22/502	46120	bar/MPa	1/4 - 3/8 - 1/4 - 1/4"	1/4 - 3/8 - 1/4 - 1/4"
	46180	bar/psi	1/4 - 3/8 - 1/4 - 1/4"	1/4 - 3/8 - 1/4 - 1/4"
R-22/134a/404A	46140	bar/psi	1/4 - 3/8 - 1/4 - 1/4"	1/4 - 3/8 - 1/4 - 1/4"
R-134a/404A/407C	46130	bar/MPa	1/4 - 3/8 - 1/4 - 1/4"	1/4 - 3/8 - 1/4 - 1/4"
	46190	bar/psi	1/4 - 3/8 - 1/4 - 1/4"	1/4 - 3/8 - 1/4 - 1/4"
R-410A	46160	bar/psi	1/4 - 3/8 - 1/4 - 1/4"	5/16 - 3/8 - 1/4 - 5/16"
	46170	bar/psi	5/16 - 3/8 - 5/16 - 5/16"	5/16 - 3/8 - 5/16 - 5/16"



For information on the certification of 3-1/8" gauges, see page 40.

PROTECTIVE GAUGE BOOTS for 63.5 mm (2-1/2") and 80 mm (3-1/8") 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 #	Size	Description
49090	63.5 mm (2-1/2")	Set of gauge boots
49091	63.5 mm (2-1/2")	Red protective gauge boot
49092	63.5 mm (2-1/2")	Blue protective gauge boot
49190	80 mm (3-1/8")	Set of gauge boots
49191	80 mm (3-1/8")	Red protective gauge boot
49192	80 mm (3-1/8")	Blue protective gauge boot

YELLOW JACKET TITAN™ 4-Valve Test & Charging Manifold - °C **METRIC**

Forged aluminum alloy body for increased strength and reliability

The new TITAN™ Test and Charging Manifold is the first forged aluminum manifold in the industry. Special aluminum alloy body makes this unit lightweight for handling ease with the durability and reliability required for repeated, rugged use.

Features/Benefits

- Large, easy-to-read 80 mm (3-1/8") steel case red and blue, Class 1 (1% accuracy) gauges; front access for easy field recalibration; optional protective gauge boots available.
- Proven, 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.
- Heavy duty hook won't pull out.

4-Valve Features/Benefits

- 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.

For °F see page 44.

For replacement parts see page 46.



- 3/8" vacuum port for use with larger hose to cut evacuation time by up to 33% (all other fittings on unit are 1/4").
- Also available with YELLOW JACKET® 80 mm (3-1/8") red and blue liquid-filled gauges.

Refrigerants	UPC #	Scale	Manifold Fittings	Hose Holder Fittings
R-22/134a/407C	49903	bar/psi	1/4 - 3/8 - 1/4 - 1/4"	1/4 - 3/8 - 1/4 - 1/4"
R-12/22/502	49906	bar/MPa	1/4 - 3/8 - 1/4 - 1/4"	1/4 - 3/8 - 1/4 - 1/4"
	49916	bar/psi	1/4 - 3/8 - 1/4 - 1/4"	1/4 - 3/8 - 1/4 - 1/4"
R-22/134a/404A	49933	bar/psi	1/4 - 3/8 - 1/4 - 1/4"	1/4 - 3/8 - 1/4 - 1/4"
R-134a/404A/407C	49936	bar/MPa	1/4 - 3/8 - 1/4 - 1/4"	1/4 - 3/8 - 1/4 - 1/4"
	49956	bar/psi	1/4 - 3/8 - 1/4 - 1/4"	1/4 - 3/8 - 1/4 - 1/4"
R-410A	49969	bar/psi	1/4 - 3/8 - 1/4 - 1/4"	5/16 - 3/8 - 1/4 - 5/16"
	49970	bar/psi	5/16 - 3/8 - 5/16 - 5/16"	5/16 - 3/8 - 5/16 - 5/16"



For information on the certification of 3-1/8" gauges, see page 40.

YELLOW JACKET TITAN™ 2-Valve Test & Charging Manifold - °C **METRIC**

Forged aluminum alloy body and large easy-to-read gauges

The new TITAN™ Test and Charging Manifold is the first forged aluminum manifold in the industry. The special aluminum alloy construction of the manifold body makes this unit lightweight for handling ease with the durability and reliability required for repeated, rugged use.

Features/Benefits

- Large, easy-to-read 80 mm (3-1/8") steel case red and blue, Class 1 (1% accuracy) gauges; front access for easy field recalibration; optional protective gauge boots available.
- Proven, 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.
- Heavy duty hook won't pull out.



Refrigerants	UPC #	Scale	Manifold Fittings	Hose Holder Fittings
R-22/134a/407C	49803	bar/psi	All fittings 1/4"	All fittings 1/4"
R-12/22/502	49806	bar/MPa	All fittings 1/4"	All fittings 1/4"
	49816	bar/psi	All fittings 1/4"	All fittings 1/4"
R-22/134a/404A	49833	bar/psi	All fittings 1/4"	All fittings 1/4"
R-134a/404A/407C	49836	bar/MPa	All fittings 1/4"	All fittings 1/4"
	49856	bar/psi	All fittings 1/4"	All fittings 1/4"
R-410A	49869	bar/psi	All fittings 1/4"	5/16 - 1/4 - 5/16"
	49870	bar/psi	All fittings 5/16"	All fittings 5/16"

For °F see page 45.

For replacement parts see page 46.



For information on the certification of 3-1/8" gauges, see page 40.

YELLOW JACKET® SERIES 41 MANIFOLDS with 63.5 mm (2-1/2") gauges **METRIC**



Heavy-duty swivel hook.

pulsation for easier, more accurate readings.



Flutterless Standard

Limited Lifetime Warranty on manifold bar and valves – not gauges. See manifold instructions for details.

Sliding double "O"-ring pistons. Non-rotating design reduces wear.

Only 1-1/2 turns give you full flow. Long-life nylon seat is also for vacuum and R-134a, R-404A, R-507, R-407C, R-410A, etc.

YELLOW JACKET Hoses. Most manifolds include color-coded YELLOW JACKET charging hoses.

Easy-to-read 63.5 mm (2-1/2") steel case gauges (°C) with 3-2-3% accuracy.

For °F see page 47.

For replacement parts see page 49.

Forged brass body with metal valve handles. 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°.

Pretested. Every manifold is individually tested for reliability before shipping.

Flutterless™ Technology. Surge protector and silicone dampened movement helps minimize needle

	UPC# bar/psi	UPC# kPa/psi	UPC# kg/cm ² /psi	Hoses/hose holder fittings
R-12, R-22, R-502	41282	41222	41292	None – 1/4" – 1/4" – 1/4"
	41283	41223	41293	HA36 RYB – 1/4" – 1/4" – 1/4"
	41285	41225	41295	HA60 RYB – 1/4" – 1/4" – 1/4"
	43285	43225	43295	PLUS // 60" RYB – 1/4" – 1/4" – 1/4"
	44285	44225	44295	PLUS // SealRight 60" – 1/4" – 1/4" – 1/4"
R-134a, R-404A, R-507	41382	–	41392	None – 1/4" – 1/4" – 1/4"
	41353	–	41363	HA36 RYB – 1/4" – 1/4" – 1/4"
	41355	–	41365	HA60 RYB – 1/4" – 1/4" – 1/4"
	43355	–	43365	PLUS // 60" RYB – 1/4" – 1/4" – 1/4"
	44355	–	44365	PLUS // SealRight 60" – 1/4" – 1/4" – 1/4"
R-134a, R-404A, R-407C	41332	–	–	None – 1/4" – 1/4" – 1/4"

R-410A manifolds can have a variety of fitting and hose holders on them

	bar/MPa	Hi/Lo ports	Center port	Hoses/hose holder fittings
R-410A	40944	1/4"	1/4" T-fitting	All 5/16"
	41781	5/16"	5/16"	None – 5/16" – 5/16" – 5/16"
	41780	1/4"	1/4"	None – 1/4" – 1/4" – 1/4"



For information on the certification of 3-1/8" gauges, see page 40.

CHARGING SYSTEMS

YELLOW JACKET® SERIES 41 MANIFOLDS with 80 mm (3-1/8") gauges **METRIC**

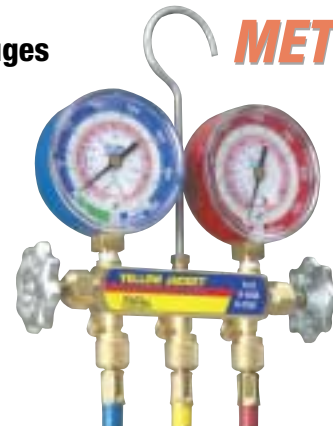
This field-proven manifold line has now been expanded to include larger, easier to read 80 mm (3-1/8") color-coded gauges in rugged steel cases with polycarbonate crystals.

Most importantly, these gauges feature 1% accuracy for an exact reading in critical charge systems.

Features

- Wide choice of refrigerant combinations including:
 - R-22, R-134a, R-404A
 - R-12, R-22, R-134a
 - R-22, R-404A, R-410A

- Color-coded scales with bold, easy to read dials.
- Dials with Class 1 (1% accuracy) 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.
- Some models include color-coded, 60" PLUS II™ hoses with standard 1/4" flare fittings.



- Hose assemblies UL recognized for 275 bar (4000 psi) burst and 55 bar (800 psi) working pressure. File# SA9737.

Refrigerants	UPC#	Gauge	Scale	Manifold Fittings	Hose Holder Fittings
R-410A	41652	80 mm (3-1/8") Red/Blue	bar/psi	1/4-1/4 T-fitting-1/4"	All 5/16"
R-22/134a/407C	41642	80 mm (3-1/8") Red/Blue	bar/psi	All 1/4"	All 1/4"
R-22/134a/404A	41622	80 mm (3-1/8") Red/Blue	bar/psi	All 1/4"	All 1/4"
R-12/134a/413A	41632	80 mm (3-1/8") Red/Blue	bar/psi	All 1/4"	All 1/4"



For information on the certification of 3-1/8" gauges, see page 40.

For °F see page 48. For replacement parts see page 49.

AUTOMOTIVE R-134a MANIFOLD



“Series 41” automotive manifold comes complete with R-134a gauges, environmental *PLUS II* hoses, and special R-134a A/C couplers with control valves. The hoses meet SAE J2196 and are UL 1963 recognized. Additional hose construction improvements increase working

pressure for increased safety. Hoses available with Acme and 14 mm male fittings. Available 5' or 10' hoses.

UPC #	Description
41343	Auto only R-134a manifold 60' hose with 1/2" Acme fittings and 14 mm fittings, hose anchors
41345	Above with R-134a couplers
41346	Above with carrying case
41340	Auto only R-134a manifold 10' hoses with 1/2" Acme fittings, 14 mm fittings, hose anchors, and R-134a couplers

YELLOW JACKET NH₃ AMMONIA MANIFOLD and Hose



This heavy-duty manifold features cast iron body and full size metal handles. Other features:

- Finger-tight one-piece valve stem for positive seal on nylon seat.
- Easy, accurate valve adjustment.

Dual temperature/pressure R717 gauge has bar with °C and psi with °F ammonia scales.

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

LIQUID CHARGER



Liquid charging is recommended when charging blends into refrigeration and air conditioning systems. Since compressors cannot compress liquids, however, you need a liquid charger adapter for safe and fast liquid charging through the low pressure side of a system. The YELLOW JACKET 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

MANIFOLD CARRYING CASES



Blue heavy-duty blow molded cases are available in four different sizes for all the different manifold/hose configurations. Includes handle and a long life top hinge.

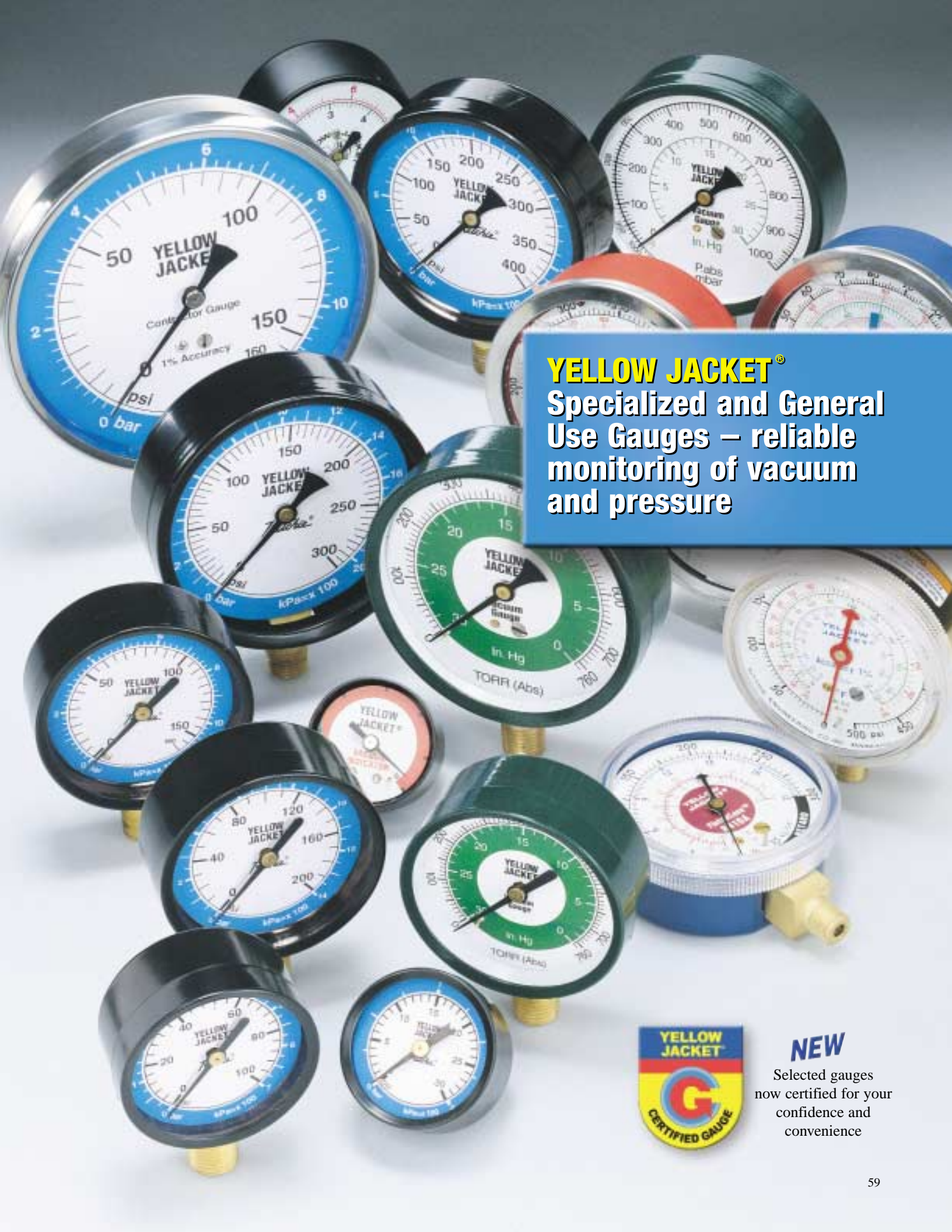
UPC #	Case description	L x W x H
40261	Series 41 – 13-1/2" x 10" x 3-1/2"	
40262	Series 41 – 12-1/4" x 8" x 3-1/2"	
40263	Series 41 – 12-1/4" x 8" x 4-1/4"	
41111	Bantam™, BRUTE™ and TITAN™	
41112	BRUTE™, BRUTE II™ and Digital Analyzer	

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 pk.)



YELLOW JACKET®
Specialized and General
Use Gauges – reliable
monitoring of vacuum
and pressure



NEW

Selected gauges
now certified for your
confidence and
convenience

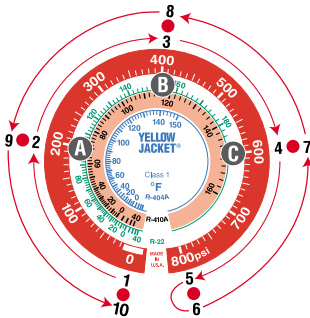
YELLOW JACKET® Certified Gauges – 10-point measurement and documentation for your confidence and convenience



You make decisions based on what your gauge is telling you. Now you can have greater confidence in your measurements and

decisions with a line of certified YELLOW JACKET Class I Replacement Manifold Gauges and Manifolds with Class I gauges.

YELLOW JACKET gauges have always been manufactured and calibrated to NIST standards (National Institute of Standards and Technology). The standard Ritchie 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).



Now, the Ritchie certification process documents the NIST

calibration plus compliance to ANSI Z540.1 and ISO 10012 standards. The certification is good for one year and then recalibration is recommended. Serialized, dated certificates are packed with each certified unit.

Certification benefits:

• Convenience and time savings



In the past when you wanted certification, you had to purchase the gauge at one location and then take it to a calibration house. Now you save the time of the second step.

• Easy compliance with a quality policy

Certified gauges help achieve and prove the level of quality that your employer or customer expects.

• Accuracy assurance

Feel confident even if you are servicing critical applications such as ice machines or other equipment with precise charging requirements.

• Convenient documentation to help meet ISO requirements

A calibration certificate accompanies each Calibrated Gauge and the back of each Certified Gauge is clearly identified with a label applied by the certifying Ritchie technician.

Calibration Certificate Information

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 sale as a back up to your records.

A calibration certificate contains information for necessary traceability:

- Establish the identity and credibility of the calibrating laboratory
- Uniquely identify the instrument and its owner
- Identify the measurements made
- Provide a definite statement of the results, including an uncertainty statement

LARGE 4" MANIFOLD GAUGES (°F) RED AND BLUE with 1% accuracy (Class 1) calibration

Color-coded blue for compound and red for pressure (not shown here)

Color-coded four refrigerant types: R-22, R-134a, R-404A, R-410A



For reliable performance and durability, these 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.

Several features combine for improved accuracy: Flutterless™ technology with brass surge protector to minimize needle pulsation; brass gauge movement, and copper alloy bourdon tube.

- 1/8" NPT Male connection.
- Calibrated to 1% accuracy at the plant.

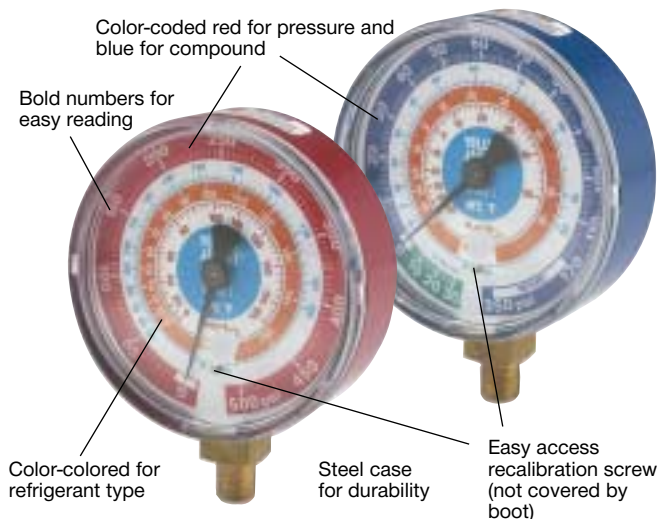
°C gauges on page 65.



UPC#	Size	Description	Press. Scale	Refrigerants
49185	4"	Red pressure	0 - 500 psi	R-22, 134a, 404A, 410A
49186	4"	Blue compound	30"-0-120* psi	R-22, 134a, 404A, 410A

*Features retard protection to 500 psi

LARGE 3-1/8" DRY MANIFOLD GAUGES (°F) RED AND BLUE with 1% accuracy (Class 1) calibration



For reliable performance and durability, these 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.

Several features combine for improved accuracy: Flutterless™ technology with brass surge protector to minimize needle pulsation; brass gauge movement, and copper alloy bourdon tube.

- 1/8" NPT Male connection.
- Calibrated to 1% accuracy at the plant.

UPC#	Size	Description	Press. 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	R-12, 22, 502
49103	3-1/8"	Red pressure	0 - 500 psi	R-12, 22, 134a
49104	3-1/8"	Blue compound	30"-0-120** psi	R-12, 22, 134a
49105	3-1/8"	Red pressure	0 - 500 psi	R-22, 134a, 404A
49106	3-1/8"	Blue compound	30"-0-120** psi	R-22, 134a, 404A
49135*	3-1/8"	Red pressure	0 - 800 bar/psi	R-410A
49136*	3-1/8"	Blue compound	30"-0-300*** bar/psi	R-410A
49137	3-1/8"	Red pressure	0 - 500 psi	R-22, 404A, 410A
49138	3-1/8"	Blue compound	30"-0-120** psi	R-22, 404A, 410A
49151	3-1/8"	Red pressure	0 - 500 psi	R-134a, 404A, 407C
49152	3-1/8"	Blue compound	30"-0-120** psi	R-134a, 404A, 407C

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	R-12, 22, 502
49203	3-1/8"	Red pressure	0 - 500 psi	R-12, 22, 134a
49204	3-1/8"	Blue compound	30"-0-120** psi	R-12, 22, 134a
49205	3-1/8"	Red pressure	0 - 500 psi	R-22, 134a, 404A
49206	3-1/8"	Blue compound	30"-0-120** psi	R-22, 134a, 404A
49235*	3-1/8"	Red pressure	0 - 800 bar/psi	R-410A
49236*	3-1/8"	Blue compound	30"-0-300*** bar/psi	R-410A
49237	3-1/8"	Red pressure	0 - 500 psi	R-22, 404A, 410A
49238	3-1/8"	Blue compound	30"-0-120** psi	R-22, 404A, 410A
49251	3-1/8"	Red pressure	0 - 500 psi	R-134a, 404A, 407C
49252	3-1/8"	Blue compound	30"-0-120** psi	R-134a, 404A, 407C
49100		Replacement crystal		

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

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. 1% accuracy (Class 1) calibration. Flutterless™ technology with brass surge protector to minimize needle pulsation.

- 1/8" NPT Male connection.
- Calibrated to 1% accuracy at the plant.

UPC#	Size	Description	Press. Scale	Refrigerants
49047	2-1/2"	Brass pressure	0 - 500 psi	R-12, 22, 502
49048	2-1/2"	Brass compound	30"-0-120* psi	R-12, 22, 502
49067	2-1/2"	Brass pressure	0 - 500 psi	R- 22, 134a, 404A
49068	2-1/2"	Brass compound	30"-0-120* psi	R- 22, 134a, 404A
49049		Set of 49047, 49048		
49069		Set of 49067, 49068		

Certified Gauges

49197	2-1/2"	Brass pressure	0 - 500 psi	R-12, 22, 502
49198	2-1/2"	Brass compound	30"-0-120* psi	R-12, 22, 502
49199	2-1/2"	Brass pressure	0 - 500 psi	R- 22, 134a, 404A
49200	2-1/2"	Brass compound	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
 Calibration traceable to NIST standards

Note: Gauges on this page are not meant to be used with nitrogen.

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".

YELLOW JACKET® 2-1/2" MANIFOLD GAUGES (°F) RED AND BLUE (Class B)

STEEL CASES

All YELLOW JACKET gauges feature bold 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



UPC#	Size	Description	Press. Scale	Refrigerants
49001	2-1/2"	Red pressure	0 - 500 psi	R-12, 22, 502
49002	2-1/2"	Blue compound	30"0-120** psi	R-12, 22, 502
49008	Set red and blue gauges			R-12, 22, 502
49013	2-1/2"	Red pressure	0 - 500 psi	R-12, 22, 134a
49014	2-1/2"	Blue compound	30"0-120** psi	R-12, 22, 134a
49015	2-1/2"	Red pressure	0 - 500 psi	R-22, 134a, 404A
49016	2-1/2"	Blue compound	30"0-120** psi	R-22, 134a, 404A
49035*	2-1/2"	Red pressure	0 - 800 kg/cm ² /psi	R-410A
49036*	2-1/2"	Blue compound	30"0-300*** kg/cm ² /psi	R-410A
49051	2-1/2"	Red pressure	0 - 500 psi	R-134a, 404A, 507
49052	2-1/2"	Blue compound	30"0-120** psi	R-134a, 404A, 507
49000	Replacement crystal for gauges from 1984 and earlier			
49010	Replacement crystal			

* These gauges have C and F on dial

** Features retard protection to 350 psi

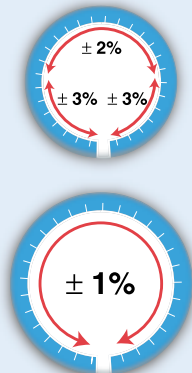
***Features retard protection to 500 psi

Note: Small screw in back is 6/32" x 5/32" Phillips pan head screw.

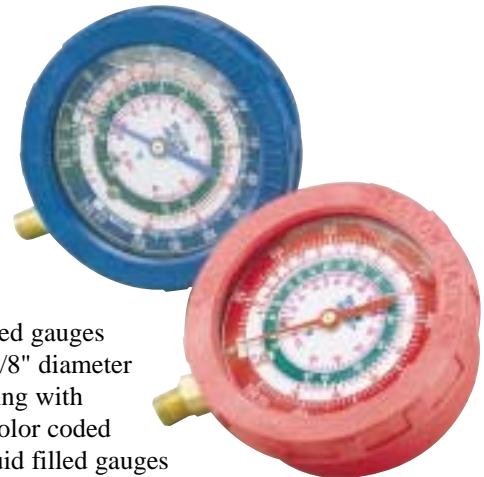
Note: Gauges not meant to be used with nitrogen.

The growing preference for 3-1/8" gauges

3-1/8" gauges are fast becoming the market preference. Why? Larger dials with 1% accuracy (Class 1) full scale movements give a more accurate reading of the pressure in the system (the most common gauges are 2-1/2" with 3-2-3 accuracy). And the color-coded temperature dials are easier to read.



LIQUID-FILLED 3-1/8" MANIFOLD GAUGES (°F) RED AND BLUE (Class B)



Glycerine filled gauges are larger 3-1/8" diameter for easy reading with refrigerants color coded on dials. Liquid filled gauges dampen pulsation. Gauges calibrated to 3-2-3 (Class B) accuracy. Back recalibrator screw. 1/8" NPT Male connection.

UPC#	Size	Description	Press. Scale	Refrigerants
49071	3-1/8"	Red pressure	0 - 500 psi	R-134a, 404A, 407C
49072	3-1/8"	Blue compound	30"0-120** psi	R-134a, 404A, 407C
49079	3-1/8"	Red pressure	0 - 500 psi	R-22, 134a, 404A
49080	3-1/8"	Blue compound	30"0-120** psi	R-22, 134a, 404A
49081	3-1/8"	Red pressure	0 - 500 psi	R-12, 22, 502
49082	3-1/8"	Blue compound	30"0-120** psi	R-12, 22, 502
49083	3-1/8"	Red pressure	0 - 500 psi	R-12, 22, 134a
49084	3-1/8"	Blue compound	30"0-120** psi	R-12, 22, 134a
49177*	3-1/8"	Red pressure	0 - 800 bar/psi	R-410A
49178*	3-1/8"	Blue pressure	30"0-350*** bar/psi	R-410A
49179	3-1/8"	Red pressure	0 - 500 psi	R-22, 404A, 410A
49180	3-1/8"	Blue compound	30"0-120** psi	R-22, 404A, 410A
49095	Replacement glycerine 6 oz. - will fill one gauge			
49096	Filler caps for liquid gauges			

* These gauges have °C and °F on dial

** Features retard protection to 240 psi

***Features retard protection to 500 psi

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



UPC #	Size	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

STAINLESS 4-1/2" CONTRACTOR GAUGE



Large 4-1/2" dial for easy reading. Stainless steel case. Brass movement and 1/4" NPT Male socket bottom mount. Gauge has recalibrator screw. A surge protector to help dampen needle pulsation. 1% accuracy (Class 1) calibration full scale.

4-1/2" dial 1/4" NPT Male lower connection		
UPC #	Range psi - bar	
49440	0-15 psi	(0-1 bar)
49441	0-30 psi	(0-2 bar)
49442	0-60 psi	(0-4 bar)
49444	0-100 psi	(0-7 bar)
49445	0-160 psi	(0-11 bar)
49446	0-200 psi	(0-14 bar)
49447	0-300 psi	(0-20 bar)
49453	0-30 inHg VAC	(0 to -1 bar)
49455	30"-0-30 psi	(-1-0-2 bar)
49456	30"-0-60 psi	(-1-0-4 bar)
49457	30"-0-100 psi	(-1-0-7 bar)
49458	30"-0-150 psi	(-1-0-10 bar)

Note: Can be used for oil pressure.

DIAPHRAGM 2-1/2" GAUGES – LOW PRESSURE



The bronze diaphragm is designed for better protection on incidental overpressure. Intended for low pressure applications only. Black steel case.

UPC#	Size	Range	Connection
78056	2-1/2"	0-10" W.C.	barb type
78061	2-1/2"	0-35" W.C.	barb type
78057	2-1/2"	0-10" W.C.	1/4" NPT Male
78066	2-1/2"	0-35" W.C.	1/4" NPT Male

Note: Cannot be recalibrated.

YELLOW JACKET® 1-1/2" to 3-1/2" GAUGES



General use gauges for multiple application where pressure or vacuum gauges are required. Brass internals are suitable for air, gas, water and oil plus many more industry applications.

- No restrictor
- Recalibration feature is standard on 2-1/2" and 3-1/2" gauges
- Steel cases painted black with glass crystal and metal ring
- Gauge accuracy is 3-2-3%

Contact the factory for special applications.

1-1/2" dial 1/8" NPT Male lower connection		
UPC #	Range psi - bar	
49301	0-30 psi	(0-2 bar)
49302	0-60 psi	(0-4 bar)
49304	0-100 psi	(0-7 bar)
49305	0-160 psi	(0-11 bar)
49306	0-200 psi	(0-14 bar)

1-1/2" dial 1/8" NPT Male lower connection		
UPC #	Range psi - bar	
49321	0-30 psi	(0-2 bar)
49322	0-60 psi	(0-4 bar)
49324	0-100 psi	(0-7 bar)
49325	0-160 psi	(0-11 bar)
49326	0-200 psi	(0-14 bar)

2" dial 1/4" NPT Male lower connection		
UPC #	Range psi - bar	
49360	0-15 psi	(0-1 bar)
49361	0-30 psi	(0-2 bar)
49362	0-60 psi	(0-4 bar)
49364	0-100 psi	(0-7 bar)
49365	0-160 psi	(0-11 bar)
49366	0-200 psi	(0-14 bar)
49367	0-300 psi	(0-20 bar)
49373	0-30 inHg VAC	(0 to -1 bar)
49375	30"-0-30 psi	(-1-0-4 bar)
49377	30"-0-100 psi	(-1-0-10 bar)

2" dial 1/8" NPT Male lower connection		
UPC #	Range psi - bar	
49340	0-15 psi	(0-1 bar)
49341	0-30 psi	(0-2 bar)
49342	0-60 psi	(0-4 bar)
49344	0-100 psi	(0-7 bar)
49345	0-160 psi	(0-11 bar)
49346	0-200 psi	(0-14 bar)
49347	0-300 psi	(0-20 bar)
49353	0-30 inHg VAC	(0 to -1 bar)
49355	30"-0-30 psi	(-1-0-2 bar)
49357	30"-0-100 psi	(-1-0-7 bar)

2-1/2" dial 1/4" NPT Male lower connection		
UPC #	Range psi - bar	
49380	0-15 psi	(0-1 bar)
49381	0-30 psi	(0-2 bar)
49382	0-60 psi	(0-4 bar)
49384	0-100 psi	(0-7 bar)
49385	0-160 psi	(0-11 bar)
49386	0-200 psi	(0-14 bar)
49387	0-300 psi	(0-20 bar)
49388	0-400 psi	(0-28 bar)
49393	0-30 inHg VAC	(0 to -1 bar)
49395	30"-0-30 psi	(-1-0-2 bar)
49396	30"-0-60 psi	(-1-0-4 bar)
49397	30"-0-100 psi	(-1-0-7 bar)
49398	30"-0-150 psi	(-1-0-10 bar)

3-1/2" dial 1/4" NPT Male lower connection		
UPC #	Range psi - bar	
49420	0-15 psi	(0-1 bar)
49421	0-30 psi	(0-2 bar)
49422	0-60 psi	(0-4 bar)
49424	0-100 psi	(0-7 bar)
49425	0-160 psi	(0-11 bar)
49426	0-200 psi	(0-14 bar)
49427	0-300 psi	(0-20 bar)
49428	0-400 psi	(0-28 bar)
49433	0-30 inHg VAC	(0 to -1 bar)
49435	30"-0-30 psi	(-1-0-2 bar)
49436	30"-0-60 psi	(-1-0-4 bar)
49437	30"-0-100 psi	(-1-0-7 bar)
49438	30"-0-150 psi	(-1-0-10 bar)

Note: Warranty on gauges does not cover damage due to excessive pressure.

MECHANICAL VACUUM GAUGES – 1-1/2" and 3-1/8"



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

3-1/8" gauges are larger to show vacuum more accurately in inches of mercury and Torr (or millibar).

1-1/2" gauges are used on YELLOW JACKET vacuum pumps.

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

UPC#	Size	Scale	Connection	Case
93011	1-1/2"	Red/green arc	1/8" NPT Male back	Black/steel
69044	3-1/8"	0-30" Hg & 760-0 Torr	1/8" NPT Male lower	Green/steel
69045	3-1/8"	1000-0 millibar & 30-0" (Euro.)	1/8" NPT Male lower	Green/steel

AMMONIA GAUGES 2-1/2" and 3-1/2" 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 sockets are steel. The dials show dual temperature and pressure scales. All gauges are

equipped with restrictors to protect the gauges against pulsating pressure. Steel gauge cases are painted black. Gauges calibrated to 3-2-3% accuracy.

1/4" NPT Male connection.

UPC#	Size	Description	Range
40201	2-1/2"	Gauge with twist on polycarbonate crystal	30" - 0 - 400 psi °F and 76-0-28 kg/cm ² °C
40202	2-1/2"	Gauge with twist on polycarbonate crystal	30" - 0 - 150 psi °F and 76-0-10 kg/cm ² °C
40206	3-1/2"	Gauge with metal ring and lens	30" - 0 - 300 psi °F and 76-0-22 kg/cm ² °C
40205	3-1/2"	Gauge with metal ring and lens	30" - 0 - 150 psi °F and 76-0-10 kg/cm ² °C
49010	2-1/2"	Replacement crystal	
49495	3-1/2"	Replacement lens	

Recalibrate for atmospheric pressure variations?

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 re-calibration may be required.

The *easiest way* for a service technician to re-calibrate a gauge is to connect it to a source of known, pure refrigerant, and then adjust the re-calibration screw on the gauge to

the appropriate pressure reading based on refrigerant temperature.

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

LARGE 80 mm (3-1/8") DRY (°C) RED AND BLUE with Class 1 (1% accuracy) calibration



Housed in a red or blue steel case for durability. Colored temperature scales are easy to read through polycarbonate crystal. Several features combine for improved accuracy: Flutterless™ technology with brass surge protector to minimize needle pulsation, brass gauge movement, and copper alloy bourdon tube.

METRIC

UPC#	Size	Description	Press. Scale	Refrigerants
49131	3-1/8"	Red pressure	bar and psi	R-134a, 404A, 407C
49132	3-1/8"	Blue compound	bar and psi	R-134a, 404A, 407C
49135*	3-1/8"	Red pressure	bar and psi	R-410A
49136*	3-1/8"	Blue compound	bar and psi	R-410A
49143	3-1/8"	Red pressure	bar and MPa	R-12, 22, 502
49144	3-1/8"	Blue compound	bar and MPa	R-12, 22, 502
49145	3-1/8"	Red pressure	bar and psi	R-12, 22, 502
49146	3-1/8"	Blue compound	bar and psi	R-12, 22, 502
49153	3-1/8"	Red pressure	bar and MPa	R-410A
49154	3-1/8"	Blue compound	bar and MPa	R-410A
49163	3-1/8"	Red pressure	bar and MPa	R-134a, 404A, 407C
49164	3-1/8"	Blue compound	bar and MPa	R-134a, 404A, 407C
49165	3-1/8"	Red pressure	bar and psi	R-12, 134a, 413A
49166	3-1/8"	Blue compound	bar and psi	R-12, 134a, 413A
49167	3-1/8"	Red pressure	bar and psi	R-22, 134a, 407C
49168	3-1/8"	Blue compound	bar and psi	R-22, 134a, 407C
49169	3-1/8"	Red pressure	bar and psi	R-22, 134a, 404A
49170	3-1/8"	Blue compound	bar and psi	R-22, 134a, 404A

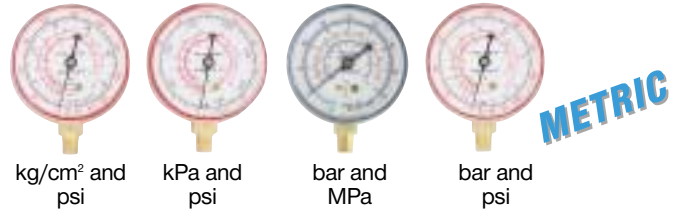
Certified Gauges



49231	3-1/8"	Red pressure	bar and psi	R-134a, 404A, 407C
49232	3-1/8"	Blue compound	bar and psi	R-134a, 404A, 407C
49235*	3-1/8"	Red pressure	bar and psi	R-410A
49236*	3-1/8"	Blue compound	bar and psi	R-410A
49243	3-1/8"	Red pressure	bar and MPa	R-12, 22, 502
49244	3-1/8"	Blue compound	bar and MPa	R-12, 22, 502
49245	3-1/8"	Red pressure	bar and psi	R-12, 22, 502
49246	3-1/8"	Blue compound	bar and psi	R-12, 22, 502
49253	3-1/8"	Red pressure	bar and MPa	R-410A
49254	3-1/8"	Blue compound	bar and MPa	R-410A
49263	3-1/8"	Red pressure	bar and MPa	R-134a, 404A, 407C
49264	3-1/8"	Blue compound	bar and MPa	R-134a, 404A, 407C
49265	3-1/8"	Red pressure	bar and psi	R-12, 134a, 413A
49266	3-1/8"	Blue compound	bar and psi	R-12, 134a, 413A
49267	3-1/8"	Red pressure	bar and psi	R-22, 134a, 407C
49268	3-1/8"	Blue compound	bar and psi	R-22, 134a, 407C
49269	3-1/8"	Red pressure	bar and psi	R-22, 134a, 404A
49270	3-1/8"	Blue compound	bar and psi	R-22, 134a, 404A
49100		Replacement crystal		

*These gauges have °C and °F on dial

YELLOW JACKET® 68 mm (2-1/2") MANIFOLD GAUGES (°C) RED AND BLUE (Class B)



All YELLOW JACKET gauges feature bold high-visibility dials with color coded temperature scales for easy reading. And Flutterless™ technology with surge protector minimizes the needle pulsation for improved accuracy.

Compound gauges feature over-pressure protection to 350 pounds. 1/8" NPT Male lower mount fitting.

- Steel cases
- Class B (3-2-3% accuracy)
- Calibration traceable to NIST standards

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

*These gauges have °C and °F dials

LARGE 102 mm (4") MANIFOLD GAUGES (°C) RED AND BLUE with Class 1 (1% accuracy) calibration

Color-coded red for pressure and blue for compound (not shown here)

Color-coded four refrigerant types: R-22, R-134a, R-404A, R-407C



For all features see page 60.

UPC#	Size	Description	Press. Scale	Refrigerants
49183	4"	Red pressure	bar and psi	R-22, 134a, 404A, 407C
49184	4"	Blue compound	bar and psi	R-22, 134a, 404A, 407C

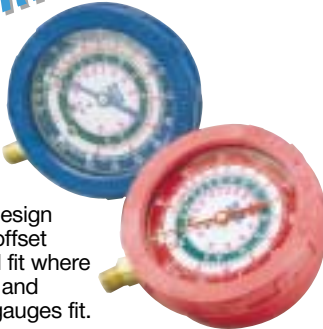
LIQUID-FILLED 80 mm (3-1/8") MANIFOLD GAUGES (° C) RED AND BLUE (Class B)

Large 80 mm diameter for easy reading with refrigerants color-coded on dials. Liquid-filled gauges calibrated

to Class B (3-2-3) accuracy and feature a recalibrator screw. Rugged case features beefed-up rings for sealing reliability. Unique design

allows gauge attachment to most manifolds even where room is a consideration. 1/8" NPT Male lower connection.

METRIC



Gauge design with 7° offset stem will fit where most 60 and 68 mm gauges fit.

UPC#	Size	Description	Press. Scale	Refrigerants
49171	3-1/8"	Red liquid pressure	bar and MPa	R-12, 22, 502
49172	3-1/8"	Blue liquid compound	bar and MPa	R-12, 22, 502
49173	3-1/8"	Red liquid pressure	bar and MPa	R-134a, 404A, 407C
49174	3-1/8"	Blue liquid compound	bar and MPa	R-134a, 404A, 407C
49175	3-1/8"	Red liquid pressure	bar and MPa	R-410A
49176	3-1/8"	Blue liquid compound	bar and MPa	R-410A
49177*	3-1/8"	Red liquid pressure	bar and psi	R-410A
49178*	3-1/8"	Blue liquid compound	bar and psi	R-410A
*These gauges have °C and °F on dial				
49095	Replacement glycerine 6 oz.			
49096	Filler caps for liquid gauges			

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
	49083		3-1/8"	Liquid	Red	F	psi
	49084		3-1/8"	Liquid	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/cm ² /psi
	49028		2-1/2"	Steel	Blue	C	kg/cm ² /psi
	49047	49197	2-1/2"	Brass		F	psi
	49048	49198	2-1/2"	Brass		F	psi
	49049		Set 49047/48				
	49081		3-1/8"	Liquid	Red	F	psi
	49082		3-1/8"	Liquid	Blue	F	psi
	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	
49171		3-1/8"	Liquid	Red	C	bar/MPa	
49172		3-1/8"	Liquid	Blue	C	bar/MPa	
134a/ 404A/ 407C	49063		2-1/2"	Steel	Red	C	bar/psi
	49064		2-1/2"	Steel	Blue	C	bar/psi
	49071		3-1/8"	Liquid	Red	F	psi
	49072		3-1/8"	Liquid	Blue	F	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
	49173		3-1/8"	Liquid	Red	C	bar/MPa
	49174		3-1/8"	Liquid	Blue	C	bar/MPa

Gases	UPC #	Certified	Size	Type	Color	F/C	Scale	
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/cm ² /psi	
	49058		2-1/2"	Steel	Blue	C	kg/cm ² /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					
49079			3-1/8"	Liquid	Red	F	psi	
49080			3-1/8"	Liquid	Blue	F	psi	
49105		49205	3-1/8"	Steel	Red	F	psi	
49106	49206	3-1/8"	Steel	Blue	F	psi		
49169	49269	3-1/8"	Steel	Red	C	bar/psi		
49170	49270	3-1/8"	Steel	Blue	C	bar/psi		
22/134a/ 404A/407C	49183		4"	Steel	Red	C	bar/psi	
	49184		4"	Steel	Blue	C	bar/psi	
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	
	49179		3-1/8"	Liquid	Red	F	psi	
	49180		3-1/8"	Liquid	Blue	F	psi	
410A	49035		2-1/2"	Steel	Red	C/F	kg/cm ² /psi	
	49036		2-1/2"	Steel	Blue	C/F	kg/cm ² /psi	
	49053		2-1/2"	Steel	Red	C	bar/MPa	
	49054		2-1/2"	Steel	Blue	C	bar/MPa	
	49135	49235	3-1/8"	Steel	Red	C/F	bar/psi	
	49136	49236	3-1/8"	Steel	Blue	C/F	bar/psi	
	49153	49253	3-1/8"	Steel	Red	C	bar/MPa	
	49154	49254	3-1/8"	Steel	Blue	C	bar/MPa	
	49175		3-1/8"	Liquid	Red	C	bar/MPa	
	49176		3-1/8"	Liquid	Blue	C	bar/MPa	
	49177		3-1/8"	Liquid	Red	C/F	bar/psi	
	49178		3-1/8"	Liquid	Blue	C/F	bar/psi	



YELLOW JACKET®
Electronic Instruments —
finding the facts needed
for the job

IMPROVED
AccuProbe™ Leak Detector
page 68
NEW
Refrigerant Analyzer
page 71

YELLOW JACKET® AccuPROBE™ LEAK DETECTOR – heated sensor and Smart Alarm™ to find every leak fast and sure, and know how big

Building on the field-proven original, this improved unit is the only tool you need for fast, easy, and certain leak detection. The heated sensor tip of the YELLOW JACKET® ACCUPROBE™ Leak Detector positively identifies the leak source for all refrigerants even those that other detectors miss. That includes HCFCs such as R-22 as small as 0.03 oz./yr., HFC leaks of 0.06 oz./yr., even R-404A and R-410A, and CFC – R-12 and R-502.

R-22 R-409A R-410A
R-134a R-404A
R-507 R-407C more



Frequency of flashes in the tip and audible beeping increases the closer you get to the leak source. You zero-in and the exclusive Smart Alarm™ LED shows how big or small the leak on a scale of 1 to 9. Maximum value helps you determine if the leak needs immediate repair.

Service life of the replaceable heated electro-chemical sensor is more than 300 hours with minimal cleaning and no adjustments. Replaceable filters help keep out moisture and dust that can trigger false sensing and alarms.

Independent of the Smart Alarm LED, the unit combines three sensitivity levels with visual and audible signalling, including ultra-high to detect leaks that could be missed with other detection systems.

- Position probe for close-up or extended 18" detection
- Lightweight for handling comfort
- Replaceable filters help keep out dust and moisture
- Sensor failure mode
- Automatic calibration (no manual recalibration required)
- Leak Standard bottle of non-ozone depleting chemical included to verify proper functioning of sensor and electronic circuitry
- 2-year limited warranty (1-year warranty on sensor)
- Sensor not poisoned by large amount of refrigerant

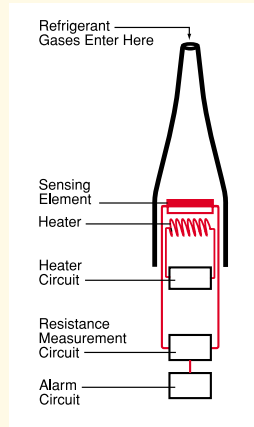
Unit is preset at normal sensitivity, but you can switch to high or low. If there is no response from the flashing tip or beeping signal at normal sensitivity in the general area of a suspected leak, select high sensitivity. This will detect even low levels in the general area and confirm your suspicions. Use low sensitivity as you move the tip over more defined areas of a system, and you will be alerted when the tip encounters the concentration at the leak source.

The frequency of flashing from the heated sensor tip increases as you get closer to a leak and refrigerant concentration increases. You can also turn on the audible alert. Beeping increases in frequency and duration as concentration increases.

Technology Comparison – Heated Sensor or Negative Corona?

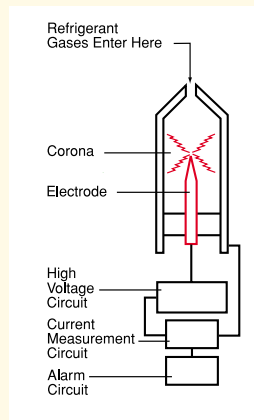
Heated Sensor Leak Detectors

When the heated 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, HCFCs, and CFCs and minimal chance of false alarms. When exposed to large amounts of refrigerant which could poison other systems, the heated sensor clears quickly and does not need recalibration before reuse.



Negative Corona Leak Detectors

In the sensor of an old-style 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. This technology has good sensitivity to R-12 and R-22, but only fair for R-134a, and poor for R-410A, R-404A, and R-407C. Sensitivity decreases with exposure to dirt, oils and water. And 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.



Specifications

Max sensitivity : 0.06 oz. (1.7 g)/yr.
HFC's R-134a

Max sensitivity : 0.03 oz. (0.9 g)/yr.
HCFC's R-22

Heated semiconductor sensor: Over 300 hours life

Maintenance required: No

Affected by humidity: No

Response time: Very fast

Body length: 10 inches (25.4 cm)

Probe length: 18 inches (46 cm)

Weight: 20 ounces (0.6 L)

Warm up time: 25 seconds or less

Battery type continuous life: 4 AA alkaline, 8 hours

Operating temp. range: 24° to 110°F (-4° to 43°C)

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

Approvals : SAE J1627, CE



UPC#	Description
69365	Heated AccuProbe
69366	Heated AccuProbe European
69367	Heated AccuProbe Japan
69368	Heated AccuProbe Australia/New Zealand
69378	(std w/69368) AC Adapter 230V/50-60 Hz
69380	(std w/69365) AC adapter – 115V/60 Hz
69381	(std w/69366) AC adapter – 230V/50 Hz
69382	(std w/69367) AC adapter – 100V/50-60 Hz

Accessories and Parts	
69383	Kit—sensor, filters and bottle
69384	Replacement sensor and filter
69385	Package 5 sensor filters
69386	Leak sensor bottle
69387	Carrying case with inserts
69388	Carrying holster with clip
69389	Battery cover and screw

Tips for detecting system leaks

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 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.
9. Use heated sensor type detector for difficult-to-detect R-134a, R-410A, R-407C, and R-404A.

YELLOW JACKET® COMBUSTIBLE GAS DETECTOR –with ultra-sensitive, long life sensor



Hand-held precision equipment detects all hydrocarbon and other combustible gases including propane, methane, butane, industrial solvents, and more. See page 79 for details.

YELLOW JACKET® DIGITAL ELECTRONIC CHARGING SCALES



- Eliminate charging cylinders with a touch.
- Save time with any refrigerant in any system.
- Designed within UL and CE guidelines



Put this rugged scale to work with any refrigerant in any system and eliminate the time and cost of charging cylinders. The time-saving process also eliminates refrigerant transfer from tank to cylinder to system. You weigh the refrigerant container and charge directly into the system or recover from the system. No concern about residual refrigerant in a charging cylinder.

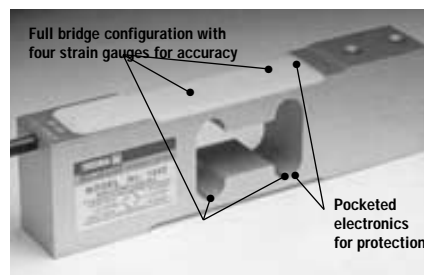
Self-contained, the scale is ready to use in the carrying case or removed and set on a level surface. Select 110 or 220-lb. capacity (50 or 100 kg).

- Calibration standards traceable to the National Institute of Standards and Technology (NIST)
- Large heavy duty metal platform and over sized strain gauge bridge for rigidity, repeatability, and accuracy of ± 0.5 oz., ± 0.03 lb., ± 0.015 kg, or 0.1% of reading, whichever greater
- Resolution 0.1 oz., 0.01 lb., 0.01 kg

- On-the-job convenience with removable control module on retractable 5 foot coiled cord
- Water and environmental resistance with sealed LCD display and control module touchpad
- Industrial grade circuitry for long life performance
- Mechanical overload protection and "OL" alert on LCD
- Minus (-) reading shows weight removed from the platform
- Large easy-to-read 0.5" numbers even in brightly lighted areas
- "Low" battery icon on LCD for 9V alkaline battery
- Measures pounds/ounces, or pounds in decimal and kilograms

- Designed within UL and CE guidelines

Single point load cell strain gauge for accuracy and long term stability



- Durability of solid aluminum block and largest strain gauge available
- IP66 protection from moisture
- Temperature compensated
- NIST traceable calibration
- NTEP approved
- Engraved with serial number for QC tracking and assurance

DIGITAL PROGRAMMABLE CHARGING SCALE



Programmable charging scales have the same features as at left but with added capabilities for automated, and even faster, more economical charging. Simply enter the charging weight on the control touchpad. When weight has been dispensed, scale automatically signals to shut-off refrigerant flow.

- 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

Larger carrying case contains charging module, control/programming module, either a 110 or 220-lb. capacity platform (50 or 100 kg), and an AC power pack for solenoid power during charging.

Convert scale to programmable with upgrade kits 68804 and 68805

With one of these kits, standard 68802 or 68800 scales can be upgraded with programmable charging capability. Each kit includes a charging module, power pack, instruction manual, and larger carrying case to hold all parts.

Basic principle of electronic charging scales

The cylinder and refrigerant in it are weighed before and after charging. The difference will be a very accurate measurement of the refrigerant used.

A digital scale shows the progress of the charge as it is happening so you know when to close the valves and stop the charge.

With the programmable scale, you can also program the stopping point so valves will close automatically.

Compared to charging cylinders – or especially bathroom scales or hanging scales – the electronic scale is faster, easier, safer, and more accurate.

Scale Specifications 110 lb. scale

Capacity: 110 lbs. (50 kg)

Resolution: 0.1 Ounce / 0.01 lb./ 0.01 kg

Accuracy: ± 0.5 oz. } Or 0.1%
 ± 0.03 lb. } of reading,
 ± 0.015 kg } whichever is greater

Total unit weight: 9 lbs. (4.1 kg)

Case Size: 15.5" L x 12.25" W x 3.25" H (394 x 311 x 83 mm)

Module display: Sealed LCD with high resolution 0.5" characters

Keypad: moisture resistant membrane keypad with tactile metal domes

Components: Industrial grade

Operation method: Oversized strain gauge bridge

Platform size: 9" x 9" (228 x 228 mm)

Battery: 25 hours (continuous use approx.)

Battery: 9V alkaline

Operating temp: 32° to 122°F (0° to 50°C)

Storage temp: -4° to 158°F (-20° to 70°C)

220 lb. scale

Capacity: 220 lbs. (100 kg)

Total unit weight: 12 lbs. (5.4 kg)

Case Size: 18" x 13" x 4.25" 457 x 330 x 108 mm)

Platform size: 12" x 12" (304 x 304 mm)

UPC#	Description
68802	Electronic scale 110 lbs. (50 kg)
68812	Electronic scale 220 lbs. (100 kg)
68803	Programmable electronic scale 110 lbs. (50 kg)
68813	Programmable electronic scale 220 lbs. (100 kg)
68800	Metric electronic scale 50 kg (110 lbs.)
68810	Metric electronic scale 100 kg (220 lbs.)
68801	Metric programmable scale 50 kg (100 lbs.)
68811	Metric programmable scale 100 kg (50 lbs.)
68804	Scale upgrade kit 115V
68805	European upgrade kit 230V
68806	AC power pack 115V
68807	European power pack 230V
68818	UK power pack 230V

YELLOW JACKET® REFRIGERANT ANALYZER for speed, accuracy, and portability



- Quickly and automatically determines purity of R-12 and R-134a to help eliminate potential of human error
- Large graphing display is easy to read

- Rechargeable battery lasts all day

Unit comes in a rugged portable case with R-12 and R-134a sample hoses

This portable unit delivers the features and benefits professional A/C technicians want for assurance, ease, and profitability.

- Dispersive infrared (NDIR) technology quickly determines the weight concentrations of R-12, R-134a, R-22, hydrocarbons and air
- Analytical software identifies all EPA S.N.A.P. approved blends, as well as illegal replacements and blends including propane and butane



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

Specifications:

Weight: 8.0 lbs.

Power requirements: 12VDC, via battery clips (optional power supply available)

Output: Digital display and LEDs, Optional printer module (internal)

Refrigerant: R-12, R-134a, R-22, HC, and EPA S.N.A.P. approved blends

Display: 128 x 64 Pixel Graphing

Resolution: 0.1%

Operating humidity: 0-95% RH non-condensing

Operating temperature: 40° to 130°F

Start to finish: 60 seconds

UPC #	Description
68945	Refrigerant analyzer
68947	Refrigerant analyzer with printer
68948	Optional internal rechargeable battery kit with battery and 110 VAC charger
68949	Optional 110/220 VAC power adapter

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

Compact design with storage for sensor, cable and brass connector.



YELLOW JACKET LCD vacuum gauges combine thermocouple sensor technology with advanced electronics for precise readings and repeatability not found with thermistor sensors or analog meters. The result - accurate readings from atmosphere to 1 micron without recalibration on job after job.

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.

Thermocouple sensor features:

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

LCD gauge features:

- Normal handling and jarring will not affect the LCD reading
- Rugged molded case protects electronic circuitry and sensor
- Calibration standards traceable to (NIST)

- Precision circuitry controls sensor and translates sensor input into micron readings on the easy-to-read LCD

Specifications

- Response time:** 3 seconds
- Calibration:** Automatic
- Warm up:** 3 seconds
- Sensor cable:** 5.5 feet (167 cm) coiled
- Sensor connection:** 1/4" Male flare
- Operating temperatures:** 32° to 120°F (0° to 49°C)
- Power:** 1 "D" cell battery
- Battery life:** 70 hrs continuous
- Battery check:** On LCD display
- Dimensions:** 9" x 12.25" x 2.37" (230 x 310 x 60 mm)
- Accuracy:** ± 20% of reading

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

YELLOW JACKET® DELUXE LED VACUUM GAUGE – AC powered



Professional laboratory type is 100% automatic instrument with .56" high bright LED readout.

- Thermocouple sensor technology for precise and repeatable accuracy
- Improved software expands sensing range from atmospheric pressure to 1 micron.
- Calibration standards traceable to (NIST)

Complete unit includes aluminum LED display unit, sensor with valve, cable, brass connector and carrying case.

Specifications

- Response time:** 3 seconds
- Calibration:** Automatic
- Warm up:** 3 seconds
- Sensor cable:** 9 feet (274 cm)
- Sensor connection:** 1/4" Male flare with isolation valve
- Operating temperatures:** -30° to 150°F (-34° to 65°C)
- Storage temperatures:** -30° to 160°F (-34° to 65°C)
- Power:** 115V 60 Hz (230V available)
- Power cord:** 6 feet
- Dimensions:** 4.25" x 5.5" x 1.5" (108 x 140 x 38 mm)
- Carrying case:** Heavy duty plastic 12.25" x 8" x 3.5" (310 x 203 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" brass Female flare connector
15006	Optional vibration isolation hose

YELLOW JACKET® DIGITAL VACUUM GAUGE with seven different units of vacuum



clean and performing properly. If the sensor gets dirty, simply pull a new sensor out of your tool kit, plug it into the gauge, run

through a quick calibration process, and be back on the job within minutes.

- Unique patented thermal conductivity sensor automatically compensates for temperature
- Replaceable, cleanable, plug-in sensor (Part #69087) handles 450 psi positive pressure
- Displays 7 different units of vacuum (microns, milliTorr, Torr, millimeters of mercury, millibar, kiloPascal and Pascal)
- Calibration standards traceable to (NIST)

- 12" coiled sensor cord stretches to 24" for easy reach, connectivity, and readability of display
- Low battery indicator
- Automatic shut-off after 20 minutes
- Operating Temperature Range: 32° to 122°F (0° to 50°C)
- Weight: 12 oz. (340 g) with battery
- Battery Life: Approximately 25 hours continuous use

This easy-to-use gauge helps you to be certain that air and moisture have been removed from the system. Simple push of a button changes the display readout between 7 units of vacuum. **Each displays down to the equivalent of 10 microns of vacuum to let you know that your vacuum pump is**

UPC #	Description
69086	Hand-held vacuum gauge with fabric carry pouch
69087	Replacement sensor
69088	Replacement cable
69089	Battery cover (blue)
69090	Accessory case
69091	Replacement fabric pouch for 69086

YELLOW JACKET® DIGITAL LCD ECONOMY VACUUM GAUGE



Versatile — 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 at right (and see page 21).

For peace of mind, this gauge shows you that air and moisture has been removed from the system. The lower the number of microns, the more complete the vacuum and less chance for no-charge call-backs. Track down 14 increments from atmosphere to 25 microns to know that the system is clean and your vacuum pump is performing properly.



- 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 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 the National Institute of Standards and Technology (NIST)
- Patented technology

Packaged complete with 9V alkaline battery and hanging hook

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

What is an “adequate” vacuum, and how do I measure it?

ASHRAE recommends evacuation to below 1000 microns, and after isolation a system must not rise above 2500 microns within several hours. Some equipment manufacturers specify deeper vacuum such as 400 microns to ensure that harmful water vapor is removed from the system.

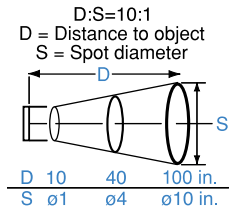
1000 microns equal only .039 inches of mercury, a measurement that cannot be made with a mechanical gauge, or determined by evacuation time or the sound of the pump. **The only tool that can measure vacuum at these levels is an electronic vacuum gauge.**

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

YELLOW JACKET® PISTOL-GRIP INFRARED THERMOMETER – -40°F to 932°F



With wide measurement of -40° to 932°F, this easy-to-use tool is the effective choice for high or low temp 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 ms

UPC #	Description
69228	Pistol-grip infrared thermometer

Applications

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

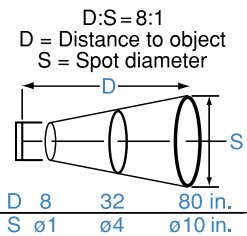
YELLOW JACKET® INFRARED THERMOMETERS



Pocket-size – compact and lightweight.

With laser sighting, you simply target a surface and press the power key to take a fast and safe non-contact temperature reading. 95% response in 500 msec at -4° to 788°F (-20° to 420°C). To take readings in low light, the large LCD features a switchable backlight.

FEATURE	MODEL		
	69235	69237	69240
Accuracy	±5.4°F, ±3%	±3°C, ±3%	±3.6°F, ±2%
Emissivity	Fixed	Fixed	adj. 0.3-1.0
Distance/Spot ratio	8:1	8:1	8:1
Switchable	°F only	°C only	Yes
Max/Min Delta T/Avg	No	No	Yes
9 pt. memory	No	No	Yes
Audio alarm	No	No	Yes
Keys	3 Keys	3 Keys	5 Keys
Dimension	6-1/8" x 1-5/16" x 2-1/8" (156 x 33 x 53 mm)		
Weight	6.3 oz. (180 g)		



Measurement capabilities 69240:

- Real time temp of surface measured
- Highest and lowest temperature taken
- Average temperature from the time the power key was first pressed
- Determines net temp difference between two surfaces or readings of the same surface to calculate net heating or cooling

UPC #	Description
69235	Infrared thermometer – °F
69237	Infrared thermometer – °C
69240	Full feature infrared thermometer

YELLOW JACKET® MICRO INFRARED THERMOMETER



At 2.7" x 1.5" x .7" and 0.9 ozs. (1.1 oz. w/battery), 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.

- ±2% of reading or 4°F (2°C), whichever is greater

- Operating temp. range: 14° to 122°F (-10° to 50°C)
- Emissivity: 0.05-1 adjustable
- Wave length: 5-14 microns
- Maximum and Minimum hold
- °F/°C switchable
- Resolution: .1°F or C
- Fast response time of 0.5 second
- 3V button cell battery included (CR2032)

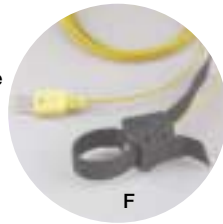
UPC #	Description
69225	Micro infrared thermometer

YELLOW JACKET® DIGITAL THERMOMETERS

Differential and single probe types



Easy strap-on probe for 1/4" OD and larger piping. Efficient for super heat. Part 69224.



Specifications

- Range:** -58° to 1999°F (-50° to 1300°C)
- Resolution:** 1 or 0.1 degree
- Display:** LCD 5/8" (16 mm)
- Operating temp:** 32° to 120°F (0 to 49°C)
- Storage temp:** -20° to 130°F (-29 to 54°C)
- Power:** 9 volt alkaline battery

- Battery life:** Approximately 200 hours continuous
- Dimensions:** 7.2" x 2.75" x 1.6" (180 x 70 x 40 mm)

- Accuracy:** -58° to 1800°F ± (0.3% of reading + 2°F)
-50° to 982°C ± (0.3% of reading + 1°C)

Thermometer applications:
HVAC/R technicians, research, industrial process laboratory.

Single Probe "K" type features:

- Single "K" type input
- Switchable °F and °C. -58° to 1999°F (-50° to 1300°C)
- Resolution is switchable 0.1° and 1°
- Max/Min and hold temperature readings
- Low battery indicator
- Power off after 30 minutes

Differential "K" type added features:

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

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 digital thermometer — 2 strap-on, 2 general purpose probes and case			
69210	Differential thermometer — two general purpose probes and case			
UPC #	Description	Max. Temp.	Length	Response time (sec.)
69215	Type "K" air probe (E)	1100°F (593°C)	4 ft. (1.21 m)	5
69216	Type "K" 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. (.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

YELLOW JACKET® WATER-PROOF DIGITAL THERMOMETER – Single probe "K" type



Easy-to-use single "K" probe unit meets IP66 standard. First 6 means that the unit is dust tight. Second 6 means that the unit is "protected against powerful water jets" from any direction with "no harmful effects."

- Auto-ranging resolution .1 and 1°
- Max/min/relative reading memory
- Backlight for dark area use
- Sleep mode on/off
- °F/°C switchable

Specifications

- Range:** -328° to 1999°F (-200° to 1300°C)
- Operating temp:** 32° to 122°F (0° to 50°C) (0-85% RH, non-cond)
- Sampling rates:** 2.5 per second
- Battery:** 9 volt, battery life 200 hours
- Display:** 1.5" x 1.7" (37 x 42 mm) LCD, maximum reading 1999
- Dimensions:** 7.1" x 2.8" x 1.2" (181 x 71 x 30 mm)

Accuracy:

- 200° to 1300°C ± (0.3% rdg + 1°C)
- 1000° to 1300°C ± (0.5% rdg + 1°C)
- 328° to 2372°F ± (0.3% rdg + 2°F)
- (18° to 28°C ambient temperature)

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

YELLOW JACKET® DIGI-ALARM THERMOMETER



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

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

Specifications

Accuracy:

±1°C between -50° to 150°C
otherwise ±4°C
±2°F between -58° to 302°F
otherwise ±8°F

Display resolution:

0.1° over the full range

Sampling rate: 1 second

Battery:

1.5 volt size AAA/UM4 or equivalent (1 piece included)

Ambient temperature:

14° to 122°F
(-10° to 50°C)

UPC #	Description
69239	Digi-alarm thermometer

POCKET DIGITAL THERMOMETER

Digital head rotates 180° for easy reading.

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



UPC #	Description	Case/Qty.
69107	Thermometer -58° to 302°F digital (-50° to 150°C)	1
69250	60107 display pkg.	12
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.

Packaging:
12 units with display



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

Applications

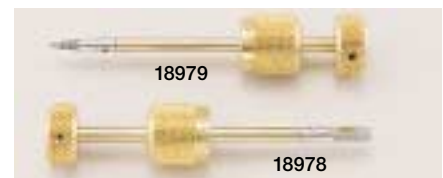
- Food processing
- Heating and ventilating
- Agriculture
- Laboratories
- Industrials
- Refrigeration
- Pharmaceutical
- Brewing

YELLOW JACKET SUPERHEAT CALCULATION KIT



With the access valve, improved °F and °C digital thermometer and core extractor tool you can easily take an internal temperature reading for calculating system superheat.

- Read from -58° to 302°F (-50° to 150°C), and pressure
- Extract Schrader core without opening system
- Remove broken Schrader cores
- Chase damaged threads
- Replace cores
- Use as vacuum valve to increase flow and reduce vacuum time. Also can decrease charging time
- Use to reduce recovery time



Accessory Set 18980

UPC #	Description
69104	Complete Superheat Kit and Accessories (as shown)
69103	Superheat Kit w/o accessory kit
18975	Improved Vacuum/Charge Valve
18980	Accessory Set - 2 piece
18978	Schrader Rethreading Accessory
18979	Broken Schrader Remove Accessory
69106	Digital Thermometer and Nut - 40° to 230°F
69107	Pocket Thermometer
18997	Grappler rod and nut assembly

YELLOW JACKET® HYGRO-THERMOMETER



CE

As indoor air quality and environmental issues gain in importance, instruments to accurately measure temperature and relative humidity are essential. The YELLOW JACKET hygro-thermometer is a highly accurate industrial grade meter that measures both humidity and temperature for the AC&R industry as well as heating and ventilation. Features include:

- Microprocessor controlled for reliability and repeatability
- Wide temperature and humidity range
- Using temperature only probe – 139° to 392°F (-95° to 200°C)
- Industrial grade components.
- Calculates and displays dew point in °F or °C
- Maximum and minimum temperature and humidity readings
- Switchable from °F and °C
- Display “hold” function for operator ease
- Replaceable sensor probe
- Long battery life of approximately 300 hours

Applications: HVAC/R technicians, clean rooms, hospitals, computer rooms, laboratories, warehousing, pharmaceuticals.

Specifications

Range: %RH 5.0 to 95% RH
-4° to 176°F (-20° to 80°C)

Range: using separate 68855 temperature only probe -139° to 392°F (-95° to 200°C)

Accuracy: ± 2.0% RH. ±0.3% of temp reading ±1 digit

Resolution: ±0.1% RH. 0.1°F or °C

Response time: RH – up to 90% of change is measured value in 15 seconds.
Temperature – approximately 60 seconds

Temperature drift: ±0.5% RH per 18°F (10°C)

Display: LCD 0.5" x 4 digits (15 mm)

Operating temperature:
Instrument: 32° to 122°F (0° to 50°C)

Probe: -4° to 176°F (-20° to 80°C)

Power: 2 AA alkaline battery

Battery life: approx. 300 hours

Battery check: low battery on LCD display

Dimensions: 7.1" x 3" x .8"
(181 x 71 x 20 mm)

Probe 1" diameter (25 mm)

Weight: 8 oz. (.22 kg) with batteries

UPC #	Description
68850	Hygro-Thermometer complete with probe, batteries and case
68854	Replacement relative humidity/temperature probe
68855	Temperature only probe -139° to 392°F (-95° to 200°C)

SOUND LEVEL METER



This easy-to-use unit measures and displays 30-130 decibels digitally and as an analog graph to help you test for OSHA compliance, monitor equipment, and more.

- Meets IEC 651, ANSI S1.4, Type 2 standard
- Six measurement ranges in 10 db increments
- Max/Min and Max Hold functions

Specifications

Accuracy: ±1.5dB (under reference condition)

Digital display: 3-1/2 digit LCD, 0.1dB resolution updated 0.5 seconds

Analog output: AC: 0.707 vrms (at full scale) DC: 10mV/db

Measurement frequency range:
31.5Hz - 8KHz

Power: 9V battery (included)

Dimension: 3.1" W x 10" H x 1.5" D
(80 x 256 x 38 mm)

UPC#	Description
69346	Deluxe sound meter

YELLOW JACKET® TACHOMETER

Easy-to-use and read 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
- Readings to a resolution of 0.001 rpm



CE

Specifications

Time base: 4.0 MHz quartz crystal

Power: 9V battery (included)

Sampling time: 1 second (>60 rpm, 10 to 60 rpm)

Dimension: 4.8" L x 1.9" W x 1.3" H
(124 x 50 x 33 mm)

UPC#	Description
69348	Non-contact photo tachometer

YELLOW JACKET® DIGITAL ANEMOMETER



Flexible

Over 4 feet
of extension
rods

Extended reach

CE

Complete kit
68900 shown

Precision industrial grade instrument for air conditioning, refrigeration, heating and ventilation. Measures air velocity and calculates air flow volume. Features include:

- Reads air velocity from 40-7800 fpm
- Probes have metal vanes and high quality bearings for durability. Balanced to work reliability at -4° to 210°F (-20° to 99°C)
- Probes calibrated before leaving factory. Replaceable and recalibrateable
- Extension handles and 5 foot cable for hard-to-reach areas
- Microprocessor controlled for reliability and repeatability
- Calculates and reads in cfm (cubic feet/minutes) or cmh (cubic meters/hour)
- Switchable imperial to metric measurements
- Memory saves minimum and maximum readings
- Averages reading over 2 or 16-second periods
- Display “hold” button

Applications: Balancing air conditioning and heating ducts, refrigerated cases, check fan and blower operations, automotive, meeting safety regulations.

Specifications

Air flow:

Probe 68904	40-7800 fpm (0.2 to 40.00 mps)
Probe 68905	60-6800 fpm (0.3 to 35.00 mps)
Calc. Air Vol.	0.0 to 9999 cfm (0.0 to 9999 cmh) (cubic meter/hr.)

Accuracy: ±1% of reading
±1 digit

Resolution: 1 fpm (0.01 mps)

Display: .5" LCD 4 digits

Operating

Instrument: 32° to 122°F (0-50°C)

Probe: -4° to 212°F
(-20° to 100°C)

Power: 2 AA alkaline batteries

Battery life: Approx. 300 hours

Battery check: Low on LCD display

Dimensions :

Inst.	7.1" x 3.0" x 0.8" (180 x 76.2 x 20.3 mm)
68904	2-7/8" (70 mm) dia. probe
68905	1.0" (25 mm) dia. probe

UPC #	Description
68900	Complete Kit 2.75" dia. Probe
68901	Complete Kit 1.0" dia. Probe
68904	Probe 2.75" dia. Vane type
68905	Probe 1.0" dia. Vane type
68906	5' extension cable
68907	10" extension rod
68908	10" flexible extension

YELLOW JACKET ANEMOMETER



CE

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

Features:

- Low cost
- Microprocessor controller
- Calculates cfm air volume
- Records minimum and maximum readings
- Averages air velocity
- Display “hold” button freezes LCD reading
- Switchable imperial to metric
- Auto power 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/100 hr. average

Fan Diameter: 2-7/8" (70 mm)

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

YELLOW JACKET® COMBUSTIBLE GAS DETECTOR – with ultra-sensitive, long life sensor



Hand-held precision equipment detects all hydrocarbon and other combustible gases including propane, methane, butane, industrial solvents, and more.

Sensitivity, bar graph, and beeping to signal how much and how close

Unit is preset at normal sensitivity, but you can switch to high or low. After warm-up you'll hear a slow beeping. Frequency increases when a leak is detected until an alarm sounds when moving into high gas concentration. The illuminated bar graph indicates leak size.

If no leak is detected in an area you suspect, select high sensitivity. This will detect even low levels in the area to confirm your suspicions. Use low sensitivity as you 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 5 ppm methane and better than 2 ppm for propane. Performs equally well on a complete list of detectable gases including acetylene, butane, and isobutane.
- Automatic calibration and zeroing
- Long life sensor easily replaced after full service life
- 2-year limited warranty
- And many more features

Applications

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

Specifications

- Response time:** Instantaneous
- Warm up time:** 10 seconds
- Power:** 4 AA alkaline batteries
- Probe length:** 17 inches (43.17 cm)
- Sensor life:** 500 hours
- Body length:** 10 inches (25.4 cm)
- Weight:** 20 ozs. (0.57 kg)
- Battery life:** 20 hrs. continuous
- Operating temp. range:** 32° to 110°F (0° to 43.3°C)
- Approvals:** Intrinsic Safety, CE

UPC#	Description
69373	Combustible gas detector w/case
69301	Sensing tip
69371	Replacement sensor
69379	Battery cover red and screw
69387	Carrying case – blow molded
69388	Carrying holster

DIGITAL SLING PSYCHROMETERS THERMO HYGROMETERS



Pocket-sized to carry on every call. Set systems at specific superheat or subcooling temperatures. Use actual wet and dry bulb measurements and factory charts.

- Display °F or °C
- Data hold

- Auto power off
- Display relative humidity and temperature simultaneously

Specifications

Temperature

Range: -4° to 122°F (-20° to +50°C)

Size: 7" H x 1-7/8" W x 1" D
178 H x 48 W x 25 mm D

Sensors: Temperature: thermistor bead
Humidity: polymer film (capacitance)

Batteries: 2 standard AAA

Operating

range: +4° to +122°F
(-20° to +50°C) 0-100% RH

Resolution: 0.1°F/C, 0.1% RH

Accuracy:

Relative humidity functions
(± 3% RH at 25°C)
Temperature ± 1°F (0.6°C)

Auto-power-off: 5 min. (defeatable)

Response time: Approx. 60 sec.

Update Rate: 2-6 sec. depending on function

Weight: 2.65 oz. (75 g)

UPC #	Description
69008	Digital thermo psychrometer

Sling Psychrometer on next page.

YELLOW JACKET® SLING PSYCHROMETER



Streamlined, compact tool measures wet and dry bulb temperatures of surrounding air for immediate

conversion of readings to relative humidity percentage.

- One piece unit self-contained housing fits into your pocket
- Calibrated and easy-to-read
- "Slide rule" scale is part of the case

- Accurate to 1% of "Hygrometric Tables"

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

YELLOW JACKET® DIGITAL ELECTRONIC MANOMETER



The unit benefits all contractors who wish to eliminate the mess and fragility of U-tubes or diaphragm type gas pressure gauges. This easy to use electronic instrument provides a continuous display of the measured positive or negative pressure. The unit provides

measurements from -19.95" to +19.95" water column. Ideal for setting gas pressure at manifold, also check pressure, flue draft and air balancing. Once your work is complete it automatically turns itself off. Kit includes battery, tubing, and brass fitting.

- -19.95" to +19.95" water gauge
- 0.05" WG resolution
- Easy to use
- Large LCD display
- Automatic power-off
- Long battery life
- Includes 18" tubing and fitting

UPC#	Description
78050	Digital electronic manometer
78051	Battery door
78071	Tubing with fitting
59511	Brass fitting only

YELLOW JACKET WATER-TYPE MANOMETER



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

Strong magnet on manometer holds it in convenient upright position.

Includes tubing with fitting.

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

YELLOW JACKET® GAS PRESSURE TEST KIT



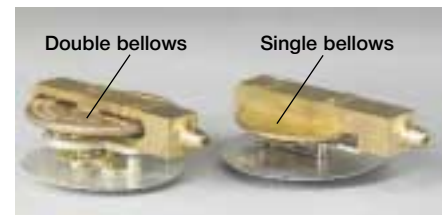
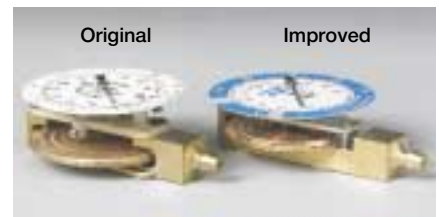
Easier to use than a manometer, this compact kit helps you accurately set manifold pressure for natural or L.P. gas.

- Sensitive diaphragm gauge calibrated in inches of water column
- 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

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



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

GLASS MIRRORS —telescoping

All mirrors have telescoping feature. Some have clips for pockets and magnifying glass. Replaceable mirrors.



UPC #	Description	Extension
78094	2-1/4" round	9-1/4" to 14-1/2"
78097	2-1/4" round magnified	9-1/4" to 14-1/2"
With pocket clip and insulated head		
78098	1-1/4" round	7" to 27"
78099	1-1/4" round magnified	7" to 27"
78103	2-1/8" x 3-3/8" rectangular	11" to 15-1/2"
78104	1" x 2" oval	7" to 19"
Replacement mirrors only		
78105	2-1/4" round glass	
78106	2-1/8" x 3-3/8" rectangular glass	
78107	1" x 2" oval glass	

INSPECTION MIRRORS — stainless telescoping



Check leaks in hard to see places. Stainless steel mirror on ball joint rotates 360°. Handle telescopes to 28".

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

FUEL OIL TEST KIT



Complete kit to determine pump efficiency, cut-off, suction etc. Also use to analyze or trouble shoot burner

efficiency. Kit includes 2" gauge, 30" 0-150 lbs. scale, and 12" YELLOW JACKET 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)
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) min. burst, 250 psi (17 bar) max. working pressure
- Operating temperature -20° to 180°F (-28.8° to 82.2°C)

UPC #	Description	Fittings
78012	Oil burner connector	3/8" Male flare x 1/4" NPT Male

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 on 2" gauge indicates leakage. 0-30 gauge is in 1/4 lb. increments and 0-15 is in 1/5 lb increments to meet some local inspection regulations.

UPC #	Description
78076	Test unit 0- 15 lb. gauge 1/2" end
78077	Test unit 0- 15 lb. gauge 3/4" end
78080	Test unit 0-30 lb. gauge 3/4" end
78087	Test unit 0-60 lb. gauge 3/4" end
78090	Test unit 0- 100 lb. gauge 3/4" end
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	Test unit 0- 15 lb. gauge 1" end
78085	Test unit 0-30 lb. gauge 1" end
78095	Test unit 0- 100 lb. gauge 1" end
78096	Schrader fitting 1/8" NPT Male x tire fitting

YELLOW JACKET® GAS TEST – 3/4" and 1" – with 3-1/2" gauge



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
49382	Gauge only 2-1/2" test unit 0-60 lb.
49421	Gauge only 3-1/2" test unit 0-30 lb.
49424	Gauge only 3-1/2" test unit 0-100 lb.



TEST LEAD SETS

Set of two leads three feet in length. Clips with red and black insulators each end. 120/240V – AC.

69532 & 69531 use 16-1 wire.
69530 & 69529 use 14-1 wire.

UPC #	Product Information		
	Max Amps	Clip Size	Replaces
69532	5 Amp	Small	Annie T-16-1 & HI TL1
69531	10 Amp	Medium	Annie T-16-2 & HI TL2
69530	10 Amp	Medium	Annie T-14-2 & HI TL3
69529	20 Amp	Large	Annie T-14-3 & HI TL4



TEST LEAD SETS

A six-foot lead using number 16-2 wire and male plug one end.

Clips with red and black insulators other end.

UPC #	Product Information		
	Max Amps	Clip Size	Replaces
69526	5 Amp	Small	Annie C-6-1M & HI TL7
69525	10 Amp	Medium	Annie C-6-2M & HI TL8
69524	15 Amp	Large	Annie C-6-3M & HI TL9



TEST LEAD SETS

A six-foot lead using number 16-2 wire and female plug one end.

Two clips other end with red and black insulators. 120/240V – AC.

UPC #	Product Information		
	Max Amps	Clip Size	Replaces
69528	10 Amp	Medium	Annie C-6-2F & HI TL5
69527	15 Amp	Large	Annie C-6-3F & HI TL6



ADAPTER CORD – TEST CONNECTOR

12-inch 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 #	Product Information		
	Max Amps	Clip Size	Replaces
69522	15 Amp	Large	Annie CA-220- & HI TL11



START SWITCH

A six lead using number 16-2 wire and male plug one end. Clips with red, black and white insulators.

Other end includes push button start switch. 120/240V – AC.

UPC #	Product Information		
	Max Amps	Clip Size	Replaces
69523	15 Amp	Large	Annie C-6-35T & HI TL10

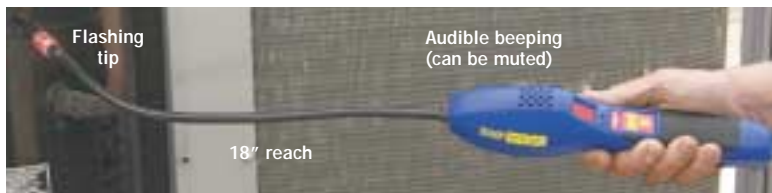


YELLOW JACKET®
Leak Monitors and
Portable Detectors —
locate problems fast and
save money

IMPROVED
AccuProbe Leak Detector
page 84
UPDATED
Leak Monitoring Information
page 92

YELLOW JACKET® ACCUPROBE™ LEAK DETECTOR – heated sensor and Smart Alarm™ to find every leak fast and sure, and know how big

Building on the field-proven original, this improved unit is the only tool you need for fast, easy, and certain leak detection. The heated sensor tip of the YELLOW JACKET® ACCUPROBE™ Leak Detector positively identifies the leak source for all refrigerants even those that other detectors miss. That includes HCFCs as small as 0.03 oz./yr.; HFC leaks of 0.06 oz./yr., even R-404A and R-410A; and CFCs (R-12 and R-502).



Frequency of flashes in the tip and audible beeping increases the closer you get to the leak source. You zero-in and the exclusive Smart Alarm™ LED shows how big or small the leak on a scale of 1 to 9. Maximum value helps you determine if the leak needs immediate repair.

Service life of the replaceable heated electrochemical sensor is more than 300 hours with minimal cleaning and no adjustments. Replaceable filters help keep out moisture and dust that can trigger false sensing and alarms.

Independent of the Smart Alarm LED, the unit combines three sensitivity levels with visual and audible signalling, including ultra-high to detect leaks that could be missed with other detection systems.

- Sensor not poisoned by large amounts of refrigerant
- Position probe for close-up or extended 18" detection
- Lightweight for handling comfort
- Replaceable filters help keep out dust and moisture
- Sensor failure mode
- Automatic calibration (no manual recalibration)
- Leak Standard bottle of non-ozone depleting chemical included to verify proper functioning of sensor and electronic circuitry
- 2-year limited warranty (1-year warranty on sensor)

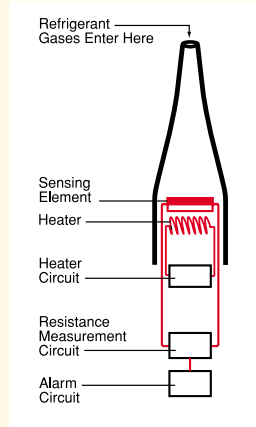
Unit is preset at normal sensitivity, but you can switch to high or low. If there is no response from the flashing tip or beeping signal at normal sensitivity in the general area of a suspected leak, select high sensitivity. This will detect even low levels in the general area and confirm your suspicions. Use low sensitivity as you move the tip over more defined areas of a system, and you will be alerted when the tip encounters the concentration at the leak source.

The frequency of flashing from the heated sensor tip increases as you get closer to a leak and refrigerant concentration increases. You can also turn on the audible alert. Beeping increases in frequency and duration as concentration increases.

Technology Comparison – Heated Sensor or Negative Corona?

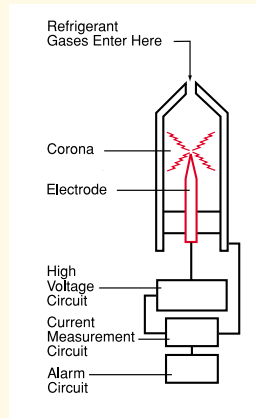
Heated Sensor Leak Detectors

When the heated 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, HCFCs, and CFCs and minimal chance of false alarms. When exposed to large amounts of refrigerant which could poison other systems, the heated sensor clears quickly and does not need recalibration before reuse.



Negative Corona Leak Detectors

In the sensor of an old-style 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. This technology has good sensitivity to R-12 and R-22, but only fair for R-134a, and poor for R-410A, R-404A, and R-407C. Sensitivity decreases with exposure to dirt, oils and water. And 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.



Tips for detecting system leaks

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 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.
9. Use heated sensor type detector for difficult-to-detect R-134a, R-410A, R-407C, and R-404A.

Specifications

Max sensitivity : 0.06 oz. (1.7 g)/yr.
HFC's R-134a

Max sensitivity : 0.03 oz. (0.9 g)/yr.
HCFC's R-22

Heated semiconductor sensor: Over 300 hours life

Maintenance required: No

Affected by humidity: No

Response time: Very fast

Body length: 10 inches (25.4 cm)

Probe length: 18 inches (46 cm)

Weight: 20 ounces (0.6 L)

Warm up time: 25 seconds or less

Battery type continuous life: 4 AA alkaline, 8 hours

Operating temp. range: 24° to 110°F (-4° to 43°C)

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

Approvals : SAE J1627, CE



UPC#	Description
69365	Heated AccuProbe
69366	Heated AccuProbe European
69367	Heated AccuProbe Japan
69368	Heated AccuProbe Australia/New Zealand
69378	(std w/69368) AC Adapter 230V/50-60 Hz
69380	(std w/69365) AC adapter – 115V/60 Hz
69381	(std w/69366) AC adapter – 230V/50 Hz
69382	(std w/69367) AC adapter – 100V/50-60 Hz
Accessories and Parts	
69383	Kit – sensor, filters and bottle
69384	Replacement sensor and filter
69385	Package 5 sensor filters
69386	Leak sensor bottle
69387	Carrying case with inserts
69388	Carrying holster with clip
69389	Battery cover and screw

YELLOW JACKET® COMBUSTIBLE GAS DETECTOR – with ultra-sensitive, long life sensor



Hand-held precision equipment detects all hydrocarbon and other combustible gases including propane, methane, butane, industrial solvents, and more. See page 91 for details.

Fluorescent Leak Detection – pinpoint leaks at the speed of light.

AC&R Leaks

Leaks usually start small and grow. When you find a leak early while still small, it's easier and faster to repair, and you save expensive refrigerant. Whether the system runs continuously or only part time, dye solution is ready in the system 24 hours a day to help you find even the smallest leaks with a lightweight UV lamp.

Automotive Leaks

Automotive manufacturers are installing dye in their A/C systems during assembly to make it easier for service technicians to pinpoint leak sources. Dye is always readily visible with a UV beam.

With **YELLOW JACKET® Fluorescent Leak Scanners**, you start by injecting solution into the system. No need to steam or clean area before scanning. Once the solution circulates, leak sources glow in the beam of the UV lightgun. It's that **fast and simple**.

- **Accurate** – The source of every leak glows, even leaks 1/4 oz. per year
- **Reliable** – See leaks indoors or outdoors. There are no problems with halide odors, noxious gases, or false alarms. Seeing and fixing every leak saves you the time of no-charge rework, reduces emissions and helps meet regulations
- **Versatile** – Easy-to-use with all AC&R systems and refrigerant oils
- **Long lasting** – Works for years
- **Energy saving** – A system with a full charge runs more efficiently



- With refrigerant loss, a system can use 25-50% more electricity
- **Harmless** to the system, recovery units, and the environment

Benefits of Fluorescent Scanning

- Find previously undetected leaks

- See exact leak location
- Find leaks more quickly and from a greater distance than electronic detection
- Lightweight, small and easy to carry

Fluorescent Scanning Applications

Put the technology to work wherever you find AC or refrigeration systems:

- A/C splits to window units
- **Commercial refrigeration** from supermarket to small cabinets
- **Property management** such as packaged terminal A/C units
- **Centrifugal systems** including

marine refrigeration and A/C

- **Industrial** hydraulic systems and closed loop water systems refrigeration
- **Chillers**
- **Transportation refrigeration**
- **Automotive** transmissions, cooling system, and A/C

YELLOW JACKET® MICRO LED UV LEAK DETECTION KITS

Use these high visibility lamps to spot leaks on all A/C systems. Individual reflectors surround each of five LEDs recessed for protection in the stainless steel head. 69790 features 3 UV and 2 blue bulbs A/C for detection at greater distances. For greatest contrast with all fluorescent dyes, use 69791 with 5 UV bulbs.

- 110,000+ hour LEDs
- Constant ON or momentary ON switch
- Sealing locks out moisture
- Long life lithium battery included
- Aircraft aluminum body
- Limited lifetime warranty

Continued on next page.



YELLOW JACKET® 3.2 and 2-Watt LED Flashlights



Compact 3.2-watt unit delivers 85 lumens for up to 250' effective range and up to 2-hour continuous non-dimming illumination (40 lumens for up to 175' and 5 hours with 2 watt unit).

Features for both include:

- One piece lens that focuses and projects up to 90% of light in a uniformly circular beam
- Aircraft aluminum body with military grade, Type III anodized finish and sure-grip texture
- Compression sealed for water resistance

Micro LED High Intensity Lamp



Illuminates 120' away with 5 high intensity clear bulbs. Visible at one mile.

- 110, 000+ hour LEDs

- Individual reflectors surround each of 5 LEDs recessed for protection in a stainless steel head
- Lithium battery for over 20 years of light and 10-year shelf life

UPC#	Description
69796	2 watt LED flashlight
69797	3.2 watt LED flashlight
69787	Micro 5 UV LED kit for ACR
69788	Micro UV LED and dye kit for auto
69789	Micro UV LED and dye kit for ACR
69790	Micro UV LED lamp 3 UV bulbs-2 blue bulbs
69791	Micro Pure UV LED lamp 5 UV bulbs
69792	Micro LED lamp clear bulbs for general use
69793	Replacement pouch for LED
69794	Lithium battery

UNIVERSAL PURE UV™ SYSTEM



Patented technology combines special high quality lens and reflector to emit only pure UV light (330-380 nanometers). Efficient in close quarters with power similar to AC lamps. Filter glasses not required.

Universal is your best choice for all dye bases including mineral, AB, PAG, POE, engine, and lubricant.

UPC#	Description
69770	Pure UV – flashlight, adapter and case
69771	Pure UV – 90° adapter and case
69772	Pure UV – 90° transformer and case
69773	Pure UV – 90° battery/charger and case
69775	Pure UV – 90° AC/R master kit w/transformer, A/C dye, coolant dye, oil dye, adapter hose and case
69777	Pure UV – 90° lamp – 230V with case
69410	Replacement bulb
69418	Filter lens
69413	Filter holding ring

MINI UV BLUE SYSTEM



Compact flashlight with patented Dichroic filter produces bright UV Blue light for maximum output in its class.

- Coolant, oil, and fluid dyes
- Durable carrying case
- Use with battery pack or AC transformer



Kit includes:

- Lamp with 65W bulb and UV glasses
- A/C dye syringes plus delivery hose for HVAC/R and auto systems

UPC#	Description
69740	Mini lamp, glasses, clip adapter
69741	Mini lamp above with case
69742	Mini lamp above with A/C, oil and coolant dyes, delivery hoses and case
69419	UV Blue lens – 2"
69423	Bulb for mini



Accessories

UPC#	Description
69401	Battery with case and charger
69403	Battery only
69405	Fast/trickle charger only
69406	AC power transformer

Common Parts

UPC#	Description
69409	Carrying/storage case
69415	Fluorescent viewing glasses for greatly enhanced visibility

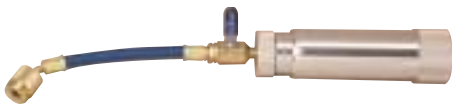


YELLOW JACKET® UNIVERSAL A/C DYE INJECTORS AND HOSE

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.

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

CALIBRATED A/C SCREW INJECTION

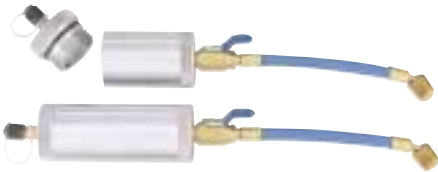


This 2-ounce injector is easy to refill and easy to operate. Calibrations are clearly marked on the injector. Connect

to A/C low side and rotate handle. AC/R and auto models.

UPC #	Description
69730	Calibrated A/C screw injector
69731	Auto R-134a calibrated A/C screw injector with service coupler
69732	Auto R-134a calibrated A/C screw injector without service coupler

DYE AND OIL INJECTORS



- Put oil in after changeout
- Add scanner fluorescent solution
- Add additives to system
- Refrigerant sampling

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

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 pk)
69564	"O"-ring 2 & 4 oz. injector (5 pk)

For auto injectors see page 112.

LARGE SYSTEM INJECTORS – systems with up to 32 gallons of lubricant



Self contained injection system for inducing up to 8 oz. of universal AC&R dye into the largest systems. Add to the low side. Easily works on all system pressures to 300 PSI, 1.5 oz. per stroke. Hose included with SealRight® end.

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

DYE APPLICATION AMOUNTS

Application	System size in lbs. of refrigerant	Universal dye amount
Small appliance	up to 4.9 lbs. (2.22 kg)	.25 Oz. (7.5 ml)
A/C or refrigerant systems	up to 25 lbs. (11.34 kg)	.5 oz (15 ml)
Larger systems	above 25 lbs. (11.34 kg)	.5 oz (15 ml) per gal. of oil

Compatible with mineral, alkyl, ester and PAG oil systems.

UNIVERSAL A/C DYE SOLUTIONS



Universal dye for A/C systems with mineral, alkyl, 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/cs.
69708	1/2 oz. (15 ml) universal A/C – 12/cs.
69709	1 oz. (30 ml) universal A/C – 6/cs.
69710	2 oz. (60 ml) universal A/C – 6/cs.
69712	8 oz. (240 ml) universal A/C – 1/cs.
69713	8 oz. (240 ml) universal A/C – 6/cs.
69803	1 gal. (3.78 L) universal A/C – 1/cs.
69805	5 gal. (18.92 L) universal A/C – 1/cs.
69806	55 gal. (208.19 L) universal A/C – 1/cs.

Oil/fluid and coolant dyes available on page 90.

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.



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

- Less costly and faster than many other methods
- One dye minimizes inventory
- No back-up refrigerant to move dye into system
- Patented

UPC#	Description
69700	1 oz. (30 ml) injector – 6/cs. (12 residential applications/cs.)
69721	1 oz. (30 ml) injector – 2/pkg. (4 residential applications/pkg.)
69727	1 oz. (30 ml) injector – 1/pkg.

YELLOW JACKET® AC POWERED UV LAMP



Lightweight pistol-grip lamp with 10 foot cord plugs into any outlet. Metal housing and lens retention ring with break resistant lens protects the high output 160 watt bulb. Lens filters out virtually all light except pure UV and concentrates the beam like a spot light

for high intensity, contrast, and ease of detection.

Handle stays cool and vinyl-coated heat guard cage around the ring helps keep fingers away from the lens. Cage also provides a handy stand.

Kit includes light gun with AC cord, UV spot bulb with ballast, heat guard cage/stand, high contrast filter, and UV protective glasses.

UPC #	Description
69435	A/C leak scanner lamp kit
69436	Replacement UV bulb with ballast
69468	Replacement UV filter lens
69438	Heat guard lamp stand

FLUORESCENT LEAK SCANNER SYSTEM II



With Scanner System II, you not only accurately pinpoint every leak at the speed of light, but also save prep time. High intensity UV lamp with filter produces almost pure UV to light up fluorescent particles in the solution for the best contrast and fastest, most visible results. Simply connect the disposable pre-filled solution injector tube directly to the AC&R system. There's no solution mess and you eliminate the cost and time of a separate infuser.

3 simple ways to inject system



1. Use refrigerant from tank to move solution into low side while throttling refrigerant flow.

2. Connect high and low sides. Let high pressure gas move solution into the system while throttling refrigerant flow.
3. Add solution to the oil container and then pump solution into the system.

Complete system includes:

- UL Listed UV lightgun with bulb, hand grip and heat guard. 110 volt
- Mineral-based pre-filled fluorescent solution tubes with two bleed valves
- SealRight™ Fitting immediately traps refrigerant in hose when disconnected
- UV-absorbing anti-fogging goggles
- Service manual and carrying case

UPC #	Description
69631	Leak Scanner System II 120V
69632	Leak Scanner System II 230V
69460	Mist infuser 1/2 oz.
69461	Mist infuser 2 oz.
69464	Complete lightgun with bulb, stand
69466	Replacement UV bulb with ballast
69467	Heat guard/stand for new body
69468	Replacement UV filter lens
69474	UV-absorbing goggles
69498	Carrying case
18993	System control valve
69470	Rubber filter holder for lamp
69670	Bleed valve (1/4" SAE threads)
69671	Bleed valve (1/2" Acme threads)

UV detection as preventative maintenance

Leaks generally start small. With ultra-violet leak scanners for system surveillance you can keep a small problem from becoming a bigger, more expensive one. After installing the correct dosage of Universal Dye solution, locate leaks quickly.

The *big payback* comes on each subsequent visit. A quick scan of the system reports to you system status on all leaks, so you can repair even the smallest.

Of course UV detection can also be used to confirm leaks and show the customer.

INSPECTION MIRRORS stainless telescoping

Check leaks in hard to see places. Stainless steel mirror on ball joint rotates 360°. Handle telescopes to 28". More mirrors page 111.



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

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	Quantity
69698	Natural Degreaser #01020 19 oz.	Indiv.
69699	Hand cleaner 16 oz.	Indiv.
69696	Spray-off solution 8 oz.	Indiv.
69697	Spray-off solution 8 oz.	12/case

YELLOW JACKET FLUORESCENT SCANNER SOLUTIONS – technology to match refrigerant and system volume



Patented disposable pre-filled solution tubes.



AC&R bottles

Different concentrations of Yellow Jacket fluorescent solutions are available to match the refrigerant volume in a system. You also have the choice of bottles for the original system or the disposable pre-filled solution injector tubes for *System II*.

Operating temperature:
-40°F for all solutions. Alkylbenzene in alkylbenzene systems to -100°F.

Injectors and bottles

01

Systems 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.

* When working on split systems, servicemen generally prefer to use solution 3 even if system has 10 lbs. of gas or less.

		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 (.03 oz.)	up to 2.9 lbs.	69610	69620	69600	69590			
1 (.5 oz.)	up to 4.9 lbs.	69611	69621	69601		69451		
2 (.5 oz.)	up to 9.9 lbs.	69612	69622	69602		69452		
3* (.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 ounce #4 solution per gallon of oil.

Injectors packaged 6/case. Bottles of solution 12/case. #4 solution individual bottles.

YELLOW JACKET FLUORESCENT SOLUTIONS for non-refrigerant applications

Using your scanner system to help locate leaks in non-refrigeration and non-A/C applications adds value and versatility to your leak scanner system.

The oil and fluid dye solution, and coolant H₂O dye solution, and H₂O auto solution all work similarly to the refrigerant scanner solution above. Pour in the appropriate amount of dye solution and use the UV lamp to find the bright glow.



The oil and fluid dye solution is for finding leaks in oil-based applications such as milling machines and hydraulics, transmissions, power steering, and more. Use one

ounce per 2 gallons of oil.

- Pin point leaks in 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

69584 H₂O solution glows blue at leak sources in large closed-loop water systems such as boilers and sprinklers. Use one pint per 1,000 gallons of water

- Easiest way to 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



Bright blue glow

Coolant dye to pinpoint leak sources in antifreeze-based automotive water systems such as hydronics and engine radiators. Use one ounce per each gallon of coolant.

UPC#	Description
69584	Fluorescent H ₂ O solution, 16 oz. bottle
69733	1 oz. (30 ml) oil and fluid dye – 6/cs.
69734	1 oz. (30 ml) oil and fluid dye – 24/cs.
69735	8 oz. (240 ml) oil and fluid dye – 1/cs.
69737	1 oz. (30 ml) coolant dye – 6/cs.
69738	1 oz. (30 ml) coolant dye – 24/cs.
69739	8 oz. (240 ml) coolant dye – 1/cs.

Frequently Asked Questions

1. Does the UV scanner light work better than an electronic leak detector?

No one detection system is better for all situations. But, with a UV lamp you can scan a system more quickly and moving air is never a problem. Solutions also leave a telltale mark at every leak site. Multiple leaks are found more quickly.

2. How is the solution different from visible colored dyes?

Unlike colored dyes, YELLOW JACKET® fluorescent solutions mix completely with oil and do not settle out. Lubrication, cooling capacity and unit life are not affected. And there is no threat to valves or plugging of filters. The solutions will also work in a system containing Dytel.

3. In a system with a mix of mineral and alkylbenzene oil, which scanner solution should be used?

Base your choice of solution on whatever oil is present in the larger quantity. If you don't know which oil is in greater quantity, assume alkylbenzene.

4. How do I test the system?

Put solution into a running system to be mixed with oil and carried throughout system. Nitrogen charging for test purposes will not work since nitrogen will not carry the oil.

To confirm solution in the system, shine the lamp into the system's sight glass. Another way is to connect a hose and a sight glass between the high and low sides, and monitor flow with the lamp. The most common reason for inadequate fluorescence is insufficient solution in the system.

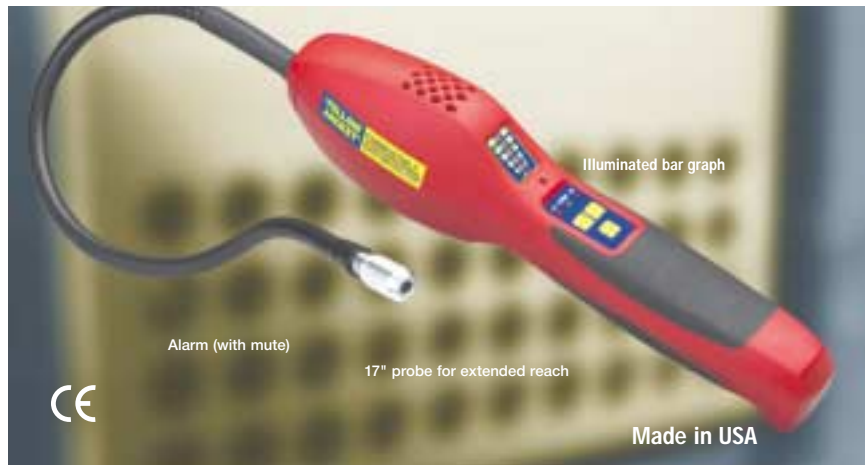
5. What's the most effective way to perform an acid test?

Scanner solution affects the color of the oil slightly. Use a 2-step acid test kit which factors out the solution in the oil, giving a reliable result.

YELLOW JACKET solutions meet or exceed applicable ASHRAE and ANSI tests.

Meets SAE standard J2297 for R-134a UV leak detection.

YELLOW JACKET® Combustible Gas Detector – with ultra-sensitive, long life sensor



Hand-held precision equipment detects all hydrocarbon and other combustible gases including propane, methane, butane, industrial solvents, and more.

Sensitivity, bar graph, and beeping to signal how much and how close

Unit is preset at normal sensitivity, but you can switch to high or low. After warm-up you'll hear a slow beeping. Frequency increases when a leak is detected until an alarm sounds when moving into high gas concentration. The illuminated bar graph indicates leak size.

If no leak is detected in an area you suspect, select high sensitivity. This will detect even low levels in the area to confirm your suspicions. Use low sensitivity as you 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 sobutane
- Automatic calibration and zeroing
- Long life sensor easily replaced after full service life
- 2-year limited warranty
- And many more features

Applications

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

Specifications

Response time: Instantaneous

Warm up time: 10 seconds

Power: 4 AA alkaline batteries

Probe length: 17 inches (43.17 cm)

Sensor life: 500 hours

Body length: 10 inches (25.4 cm)

Weight: 20 ounces (.057 kg)

Battery life: 20 hours continuous

Operating temp. range: 32° to 110°F (0° to 43°C)

Approvals: Intrinsic Safety, CE

UPC#	Description
69373	Combustible gas detector w/case
69301	Sensing Tip
69371	Replacement sensor
69387	Carrying case – blow molded
69388	Carrying holster
69379	Battery cover red and screw

Three reasons to monitor

1. Safety and Legal

ASHRAE 15-2001 safety code for mechanical refrigeration calls for refrigerant monitoring systems to be installed in machinery rooms, industrial occupancy buildings, and refrigerated rooms such as in factories, plants, processes, and high probability systems. Monitors that actuate an alarm and air ventilation are to be located in all areas where refrigerant from a leak could concentrate.



In addition, an increasing number of local regulations govern occupational health and safety, refrigerant use, and fixed monitoring as a way to protect people from hazardous situations:

- Refrigerants are not normally detected and can displace oxygen
- Most refrigerants do not have an odor and exposure to flame generates toxic fumes

2. Economical

With taxes and other factors driving up the costs of refrigerant, catching and repairing a leak early makes good economic sense.

Fast detection and repair also protects your HVAC&R system, helping control maintenance and operating costs.

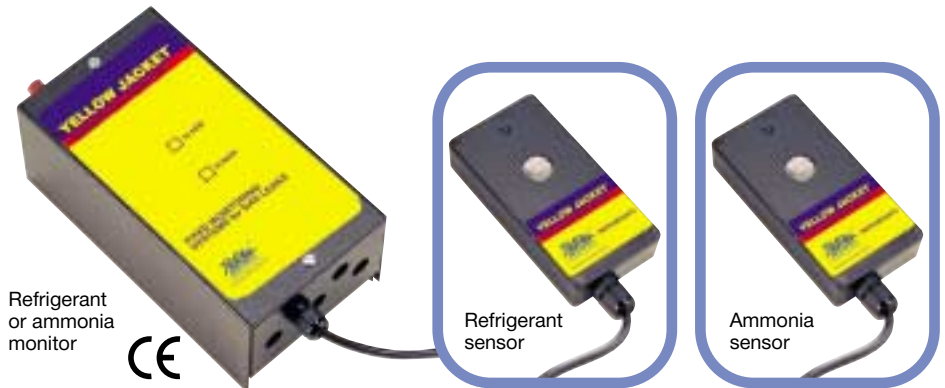
3. Environmental

Refrigerants represent possible threat to the environment. And many refrigerants are toxic at various concentrations. Early detection and fast repair is common sense protection.

Configure a YELLOW JACKET® Fixed Monitoring System that's right for you.

Single sensor system

Includes refrigerant monitor with refrigerant sensor or ammonia monitor with ammonia sensor.



With YELLOW JACKET™ Fixed Monitoring Systems for refrigeration leaks, you can configure controllers and remote sensors to meet your requirements for point or perimeter detection. You can **monitor most common refrigerants or ammonia**.

Controllers are available using one or two sensors (shown here) or four or six sensors (see page 94).

The system first emits an intermittent siren and constant orange illumination at the low level, about 100 ppm. At the high level, usually about 1,000 ppm*, the siren is continuous and LED is red to signal a condition that requires immediate action.

To help **minimize false alarms**, all systems wait until “certain” of gas in the air before signalling.

Voltage-free relay switch can activate ventilation or remote alarms, or report to control systems. The system features two relays.

To help resist harsh work environments,

Applications

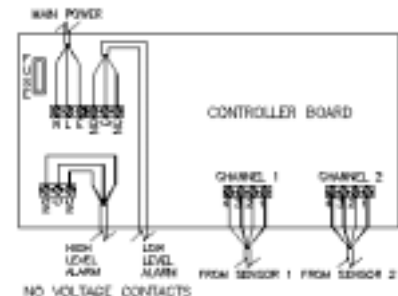
- Refrigerant storage areas
- Supermarkets
- Refrigeration machinery rooms
- Cold storage facilities
- Walk-in coolers
- Systems with large refrigerant volume
- Marine and fishing fleets
- Small deli stores, ice cream parlors, quick service stores.

controller circuitry is in a coated steel housing. The **maintenance-free** sensors are protected in a high impact ABS casing. All components are designed for **long-life** with mechanical strength and chemical resistance. Sensors will not be poisoned by prolonged exposure to refrigerant.

Easy installation

Systems are factory calibrated. Controllers and sensors mount to any flat vertical surface. For point detection, mount the sensor(s) near the most likely leak source. With perimeter detection, sensors surround the potential leak area. Sensors operate from -20° to 122°F (-29° to 50°C). From -20° to -40°F use with environmental enclosure, page 93.

Typical two sensor, two level installation



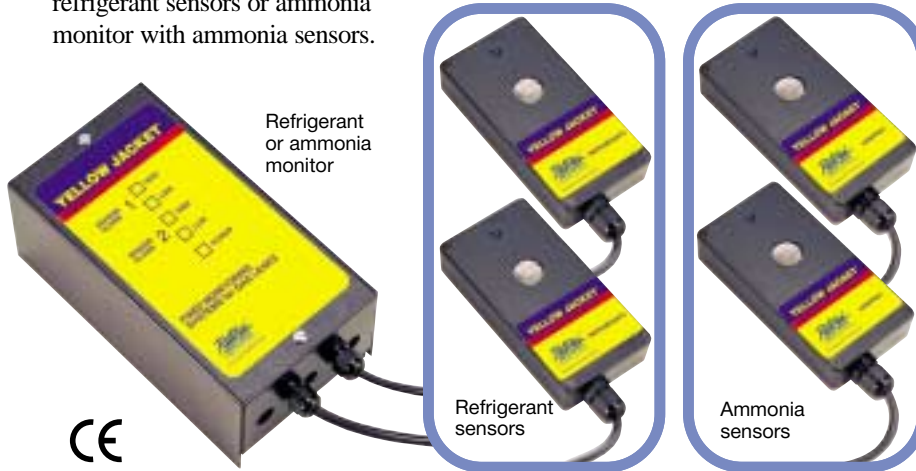
Semi-conductor technology

provides a cost/performance balance that makes YELLOW JACKET systems an attractive alternative to electro-chemical or infrared systems.

* High levels: R-123 is about 300 ppm; ammonia about 150 ppm.

Two sensor system

Includes refrigerant monitor with refrigerant sensors or ammonia monitor with ammonia sensors.



Refrigerant sensor is for **most common CFCs, HFCs, and HCFCs, plus R-134a, R-404A, R-410A, R-407C, and R-123.** Ammonia sensor is for ammonia only.

Specifications

Controller: 7.6" x 4" x 3"; 2.8 lbs.
(193 x 102 x 76 mm; 1.3 kg)

Relays: Dry contact switch;
10 Amp @ 120/250V max

Sensor: 4.3" x 2.2" x 0.9"
(109 x 56 x 23 mm)
Operates to -20°F (29°C)
Sensors can be hard wired up to 200' from controller

Power LED: Green

Alarm 90 dB @ 18" (456 mm)

Cable: 4-wire alarm with max
3.52 ohms/core/1000'

Power: 120VAC, 60 Hz or
230VAC, 50/60 Hz

Operation: Constant power-on
and fault monitoring

UPC # 120V	One and Two Sensor Refrigerant Monitors	UPC # 230V
68004	Single sensor monitor with two level detection	68104
68008	Two sensor monitor with two level detection	68108
68091	Refrigerant sensor for two level monitor	68191
UPC # 12V	One and Two Sensor Refrigerant Monitors	
68010	Single sensor monitor with two levels of detection	—
68011	Two sensor monitor with two levels of detection	—
One and Two Sensor Ammonia Monitors		
68032	Single sensor monitor with two level detection	68132
68036	Two sensor monitor with two level detection	68136
68093	Ammonia sensor for two level monitor	68193
UPC #	Accessories	
68096	500' alarm to sensor cable	—
68097	1,000' alarm to sensor cable	—
68099	Monitor key switch set	—

Reset: Automatic on one level unit. On two level unit, automatic on low level; manual on high level.

MONITOR with 12 volt backup

A single or two sensor, two level monitor that can be located up to 200 feet from the controller. UPC # 68010 and 68011.

ENVIRONMENTAL ENCLOSURE for sensors



A sensor element mounted in an area of high condensation, low temperature to -40°F, or direct airflow can experience a fast

temperature drop causing a false alarm. These vented enclosures maintain the proper operating temperature around the sensor for alarm reliability.



Two versions available: wall mount affixes to any surface and duct mount for sampling air inside plenum ducts.

UPC #	Description
68089	Environmental enclosure
68084	Duct mount enclosure

Integrated Area Monitor



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

The unit emits a continuous siren and constant red LED illumination at about 1000 ppm. This early warning gives technicians time to find the leak while refrigerant concentration is still low. With adjustable delay, the monitor waits 0-5, 10 or 15 minutes to avoid

false alarms before signalling. Siren can be switched off.

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

Size: 3.4" x 5.8" x 2.4" (86 x 147 x 61 mm)

Applications: 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

YELLOW JACKET® 4 AND 6 SENSOR MONITORING SYSTEMS



YELLOW JACKET 4 and 6 sensor monitors provide all of the benefits of the 1 and 2 sensor systems (pages 92-93), but increase coverage area and level of coverage with more sensors at greater distances from the controller. Cost per channel are lower. You can locate 4 or 6 sensors up to 500' from the controller.

UPC # 120V	Refrigerant Monitors	UPC # 230V
68016	Refrigerant four sensor monitor with two levels of detection	68116
68024	Refrigerant six sensor monitor with two levels of detection	68124
68091	Refrigerant replacement sensor for two level refrigerant monitor	68191
Ammonia Monitors		
68043	Ammonia four sensor monitor with two levels of detection	68143
68047	Ammonia six sensor monitor with two levels of detection	68147
68093	Ammonia replacement sensor for two level ammonia monitor	68193

See alarm cables on page 93.

Specifications

- Controller:** 10.3" x 10" x 3.2"
(262 x 254 x 81 mm)
6.3 lbs. (2.9 kg)
- Relays:** Dry contact switch;
10 Amp @ 120/250v max
- Power LED:** Green
- Alarm:** 10 dB @ 3 feet (92 cm)
- Sensor:** 4.3" x 2.2" x 0.9"
(109 x 56 x 23 mm)
0.2 lb. (0.1 kg)
- Cable:** 4-wire alarm with maximum 8.8 ohms/core/1000 ft. Sensors can be hard wired up to 500' from controller
- Power:** 120VAC, 60 Hz or 230 VAC, 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

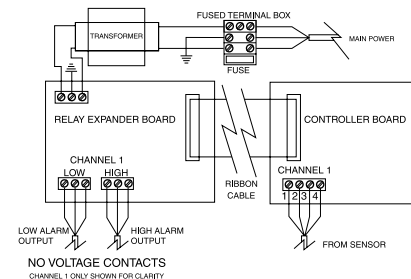
RELAY EXPANDER BOX



Enables the 4 or 6 sensor controller to individualize response to each sensor. For example, 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 YELLOW JACKET controller.

Typical Installation



UPC # 120V	Description	UPC # 230V
68028	4 sensor expander box	68128
68029	6 sensor expander box	68129

COMBUSTIBLE REFRIGERANT (HYDROCARBON) GAS MONITORS



The YELLOW JACKET hydrocarbon sensors will detect most hydrocarbons such as methane, butane, propane,

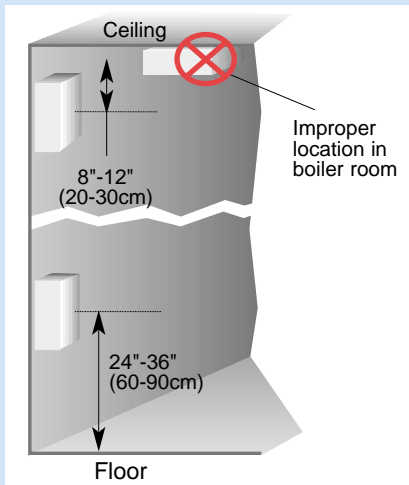
and all other products emerging in refrigerant applications, including:

- Propane (R-290)
- Propene (R-1270)
- Isobutane (R-600a)

Sensors are set at 100 ppm low level, and 1000 ppm for a high level alarm.

UPC # 120V	Hydrocarbon Monitors	UPC # 230V
68064	Hydrocarbon monitor - single sensor with two levels of detection	68164
68068	Hydrocarbon monitor - two sensors with two levels of detection	68168
68094	Hydrocarbon sensor for two level hydrocarbon monitors only	68194

Guidelines on Locating Sensors



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

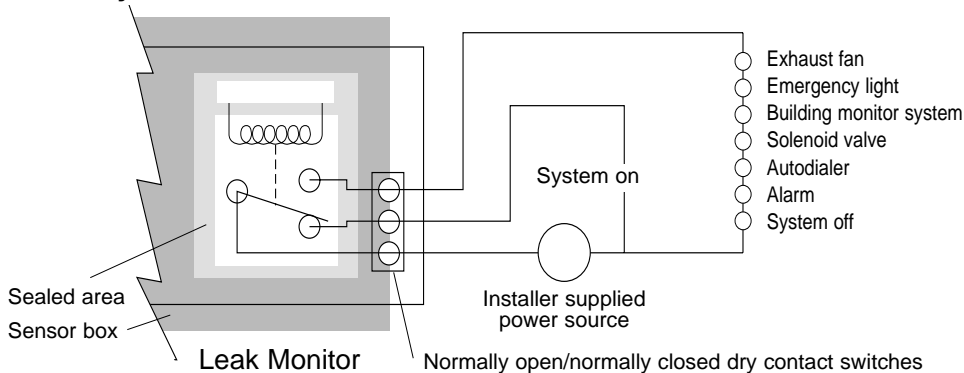
- Do not mount in areas of high heat, direct solar heat, wetness, dampness, or where condensation may form on the sensor
- Do not mount to piping or any structure subject to vibration
- For perimeter detection, place sensors around the area in question to monitor the entire space
- For point detection, place a 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 24" TO 26" 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 Ritchie Engineering for detailed suggestions.

Remote Systems Control



All of these related products can be triggered by the monitor alarm. All are available from your local fire alarm or building management suppliers.

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-123, R-134a, R-404A, 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 abroad range of refrigerants.	\$1000 and more per sensor for each refrigerant.
Installation	Controllers mount on any flat surface and then cable is run from the controller to the sensor(s).	Plumbing tube is used to reach sensing points. An additional tube for exhaust is also 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 is size of controls** – Controllers available for 1, 2, 4 or 6 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 (R-123 high level is about 300 ppm) indicating that immediate action is required
- **Designed to minimize false alarms** – Minimize false alarms by waiting until "certain" that gas is in the air before signaling
- **Individualized response by "zone"** – Relay expander panel allows a 4 or 6 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

Frequently Asked Questions

1. Are calibrated leak testers available to confirm monitor is calibrated correctly?

Ritchie Engineering does not sell calibrated leak testers, but gases for testing leak monitor installations are available through MSA Mine Safety Appliances, 121 Gamma Drive, Pittsburgh, PA 15238-2919. 1-800-672-2222

2. What refrigerants will the leak monitors detect?

Leak monitors will detect most CFC, HFC, and HCFC's. Such as R-11, R-12, R-13, R-22, R-113, R-123, R-134a, R-404A, R-407C, R-410A, R-500, R-502, and R-507. YELLOW JACKET also has leak monitors available for ammonia and hydrocarbon based refrigerants.

3. Can the leak monitor be calibrated for specific applications?

Yes, the YELLOW JACKET leak monitor can be calibrated for specific applications. Contact customer service for your specific need.

4. If the unit goes into alarm, can it switch on the fan? Can it turn off the system at the same time?

The leak monitor has a pair of dry, normally open/normally closed contacts that can handle 10 amps at 115 volts. When the sensor indicates a gas presence higher than the set point, it opens the closed contacts and closes the open contacts which will turn equipment on or off.

5. After a unit goes into alarm and the contacts close, what can it be connected to?

The open contacts can shut the system down, call a phone number, turn on a fan or emergency light, etc.

6. How does the sensor work?

When the sintered metal oxide surface within the sensor absorbs gas molecules, electrical resistance is reduced in the surface allowing electrons to flow more easily. The system controller reads this increase in conductivity and signals an

alarm. Metal oxide technology is proven for stability and performance

7. What is the detection sensitivity level of YELLOW JACKET fixed monitors?

The dual sensitivity system has a low alarm level of about 100 ppm and a high level of about 1000 ppm for most CFC, HFC, and HCFC products. The high level for R-123 is an exception at about 300 ppm. Ammonia detection levels are about 100 ppm low and about 150 ppm high. The alarm level of all YELLOW JACKET single level systems is about 100 ppm.

Detection levels are preset at the factory to cover most situations. If necessary, however, you can order a custom level, or adjust the set point on site.

8. What concentration must be detected?

Depends on the refrigerant. For a more thorough answer, terms established by U.S. agencies must first be understood:

- **IDLH** - Immediately Dangerous to Life and Health
- **TWA** – Time Weighted Average concentration value over an 8-hour work day or a 40-hour work week. (OSHA or NIOSH levels).
- **STEL** – Short Term Exposure Level measured over 15 min. (NIOSH).
- **Ceiling Concentration (c)** which should not be exceeded in a working day (OSHA).

Obviously, the first consideration is IDLH. For most refrigerants, the IDLH is relatively high (e.g. R-12 is 15,000 ppm), and such a concentration would be unusual in a typical refrigerant leak situation. Leak detection, however, is still an immediate condition, so the STEL should be the next consideration, followed then by the 8-hour TWA or Ceiling Concentration. R-22, for example, has a STEL of 1250 ppm and a TWA of 1000 ppm. (The TWA for most refrigerants is 1000 ppm).

The draft UL standard for leak monitors requires gas detection at 50% of the IDLH. In other words, R-12 with a IDLH value of 15,000 ppm must be

detected at 7500 ppm. As with most refrigerants, the TWA is 1000 ppm.

All of the foregoing suggests that for most CFC, HFC and HCFCs, detection at 1000 ppm provides a necessary safety margin for repair personnel. **Ammonia** with a significantly lower IDLH of 300 ppm and a TWA of 25 ppm requires detection at 150 ppm to comply with 50% IDLH requirements. **R-123** has a TWA of 50ppm and an IDLH of 1000 ppm, therefore detection at 100 ppm provides a good margin of safety.

A monitor with a detection threshold of about 100 ppm for any gas provides an early warning so that repairs can be made quickly. This can save refrigerant, money and the environment.

9. Will the system need recalibration?

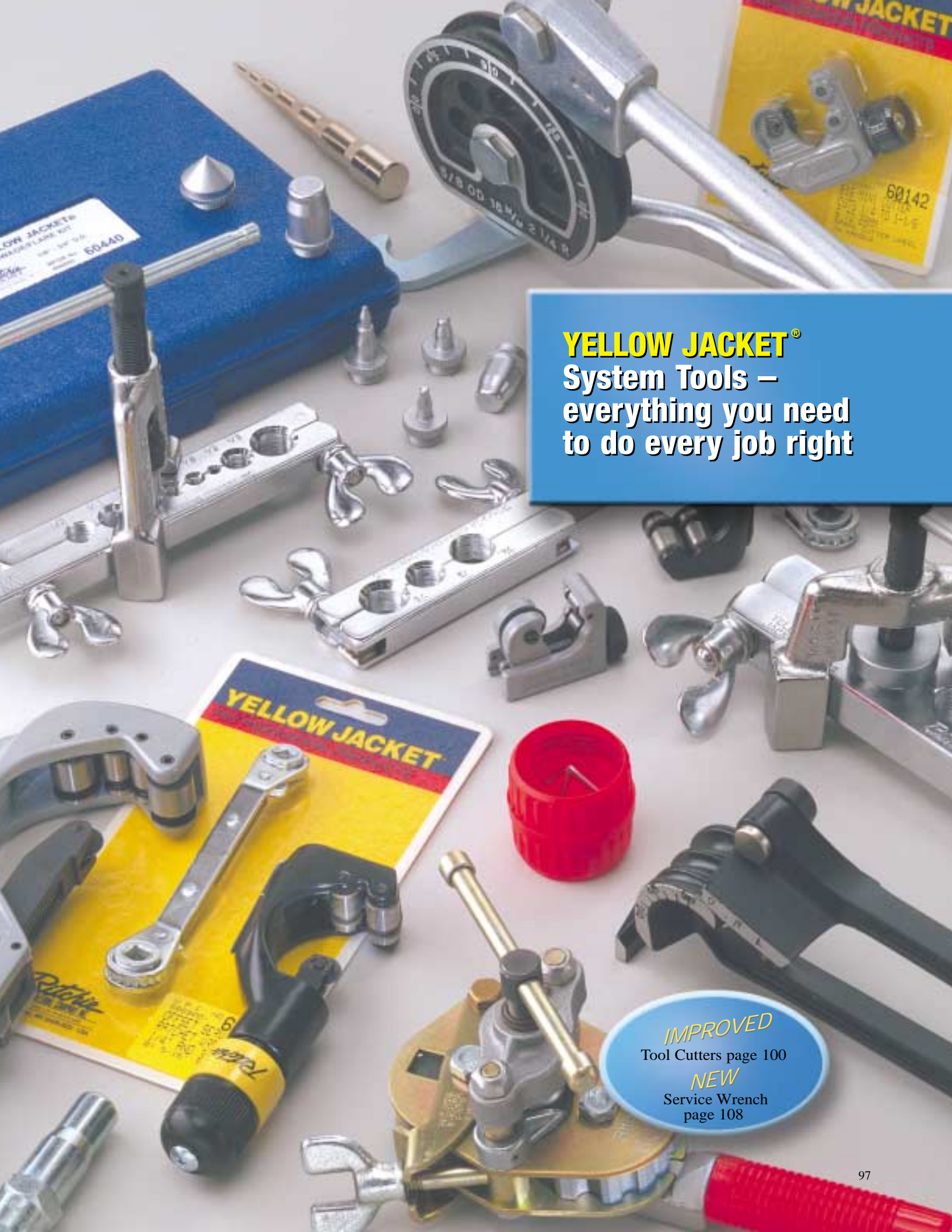
Factory calibration should be adequate for 5-8 years. Routine calibration is unnecessary when used with intended refrigerants. YELLOW JACKET sensors can not be poisoned, show negligible drift, and are stable long term. You should, however, routinely check performance.

10. Can there be a false alarm?

For monitoring mixtures, the semi-conductor must be able to respond to molecularly similar gases. With such sensitivity, false alarms can be possible. Engineered features in YELLOW JACKET monitors help minimize false alarms:

- The two level system waits about 30 seconds until "certain" that gas is present before signalling.
- At about 100-1000 ppm calibration level, false alarms are unlikely.

To prevent an unnecessary alarm, turn off the unit or disable the siren during maintenance involving refrigerants or solvents. Temperature, humidity, or transient gases may occasionally cause an alarm. If in doubt, check with us.



YELLOW JACKET®
System Tools –
everything you need
to do every job right

IMPROVED
Tool Cutters page 100
NEW
Service Wrench
page 108

Attention to detail – an ongoing process to assure you of getting full money's worth with every YELLOW JACKET® Tool.

On every service call and every installation, you can go with just the right YELLOW JACKET Tool. And go knowing that every tool passes a careful quality screening process that assures you of getting full value for your money.

This is an ongoing process that pays close attention to details. After all, with so many tools available in the industry, details often make the difference between the tools of one manufacturer and another.

On this page, you'll find an overview of YELLOW JACKET tools in which details contribute to a unique or innovative difference.



Premium Forged Service Wrenches – Enclosed ratcheting mechanism keeps out debris that could jam the high torquing action. 72 teeth per end for 5°/6° ratcheting (Page 108).



Deluxe 45° Flaring Tool – The only full range 1/8" to 3/4" O. D. flaring tool available for soft copper, brass, and aluminum tubing (Page 102).

Even with those more common tools on the following pages, attention to detail means you get reliable performance and the most features possible for your investment. For example, the heavy duty pipe wrench on page 109 includes a special design for instant grip and release. And the heavy duty service wrench on page 108 includes a ratcheting mechanism engineered for heavy use.

When evaluating whether or not a tool gets the Yellow Jacket name, we believe no detail is minor.

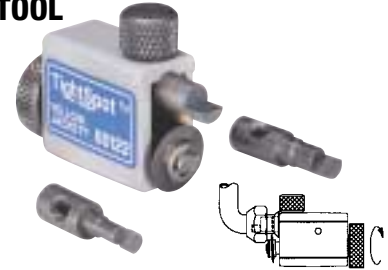


Swaging and 45° Flaring Tool – Swages 7 sizes: 3/16" through 3/4" O. D. (Page 104).



Ratchet Hand Bender – Versatile, easy-to-use bender for soft copper, aluminum and light wall hydraulic tubing (Page 107).

TIGHT SPOT™ FLARE CUT-OFF TOOL



Designed specifically for tight situations where only the flare must be removed, this cutter makes clean right angle cuts on 1/4", 5/16" and 3/8" O.D. copper tubing. Interchangeable arbors for the three sizes included.

Saves time —

1. Where flare nut cannot be moved back enough for regular cutter or saw.
2. Where it is critical not to shorten tubing.

UPC #	Description
60122	Flare cut-off tool with arbors
60196	1/4" support arbor
60197	5/16" support arbor
60198	3/8" support arbor

Tips for Cutting Tubing

Cutters are designed for different applications depending on the material to be cut. And for optimum performance the tools must be used properly.

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. If used on black iron pipe, however, the wheel will quickly be destroyed. Neither the cutter nor the wheel are designed for the hardness or wall thickness of black iron pipe.

To ensure that lasting tool performance, use the correct cutters for copper and the correct pipe cutter for black iron pipe (see page 100).

YELLOW JACKET® PREMIUM TUBE CUTTERS



60101



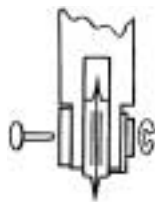
Retracted



Extended

Enclosed precision feed mechanism for easy, smooth cutting. Resists jams. Other features include:

- 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 easier to grip and hold with oily hands and gives it a more professional look.
- Made from high quality alloy steel, YELLOW JACKET wheels have a sharper cutting wheel edge for less burr on copper, aluminum and mild steel tubing. Does not "bottom out." Pinned rather than screwed in position, so it rotates in either direction without the screw backing out.



Spare blade stored in handle

- Corrosion-resistant finish on lightweight aluminum frame.
- Small and large sizes available.
- Fold away tool steel reamer with turned cutting edge.
- Flare cut-off groove for quickly removing damaged flare.

CONSTRUCTOR/CUTTER

Cutter modified with blunt wheel to roll down the tube O.D. so it can be mated to a smaller tube, ie. capillary tube.



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" - 1-1/8" O.D.
60014	6 pk. 60101 Counter display
60015	6 pk. 60102 Counter display

* Conforms to Federal Specification GGG-C-771-d, 1-31, 64. Type II, Class 1. Spare parts listed on page 101.

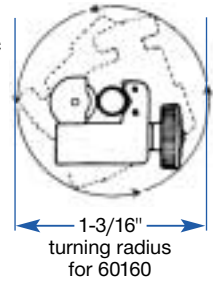


Counter display pack for increased attention and sales.

HEAVY DUTY MINI-CUTTERS



The pioneering **60121** Mini-cutter for heavy duty cutting from 1/8" to 7/8" O.D. – not a minor detail when you consider other minis with the same turning radius cut only up to 5/8".



Wide body for easy grip. Large rollers and flare cut-off groove.

Small-Mini 60160– Smallest version of the heavy duty model cuts 1/8" to 5/8" with a turning radius of only 1-3/16".



Big-Mini 60142– A larger version with a heavy duty cast body cuts from 1/4" to 1-1/8" O.D. and is still compact. Field proven.

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

Spare parts listed on page 101.



Counter display pack for increased attention and sales.

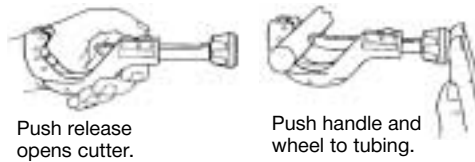
UPC #	Description
60016	12 pk. 60121 Counter display
60017	12 pk. 60142 Counter display
60018	12 pk. 60160 Counter display

YELLOW JACKET® LARGE TUBE CUTTERS — to 5-1/8" (130mm)



Improved spring loaded instant slide action feed is now simpler and stronger with heat treated components. The new stronger "I beam" design uses aluminum alloy for both strength and light weight. Wider body has longer rollers to hold tubing better and includes a flare cut off groove.

Contoured handle for better gripping also holds spare cutter wheel. Separate deburr tool slides into cutter body.



Push release opens cutter.

Push handle and wheel to tubing.

UPC #	Description	Capacity
60139	Tube cutter	3/8" to 2-5/8"
60146	Large tube cutter	2" to 5-1/8"
60165	Repl. Deburr tool for 60139	
60166	Repl. Deburr tool for 60146	

Spare parts listed on page 101.

PIPE CUTTER for black iron



Cuts black iron pipe more cleanly and quickly than other types of cutters. For durability, 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	Capacity
60131	Pipe cutter 6 lbs.	1/8" to 2" pipe
60133	Pipe cutter 14 lbs.	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. Other features: heat-treated steel alloy blade for long life, easily replaceable, and completely field repairable.

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"

Replacement blades

60193	Spare blade for 60190
60194	Spare blade for 60191
60155	Spare blade for 60152

Replacement blades for old models

60156	Spare blade for 60150 - individual
60153	Spare blades for 60150 - 5pk.
60154	Spare blade for 60151- individual

TUBE DEBURRING TOOL



For fast deburring, rotate blade.



UPC #	Description
60163	Deburring tool
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"

MINI-SAW for tight places



Specially designed for cutting small or large objects in tight areas. Not meant for hardened steel.

UPC #	Description	O.A. Length	Blade Length
60071	Mini saw	10"	6"
60076	Blades	10 pkg.	6"

CAPILLARY CUTTER



Cleanly cut capillary tubing without flattening or constricting tubing.

UPC #	Description
60195	Capillary cutter

YELLOW JACKET™ TUBE CUTTER PARTS – ORGANIZED BY CUTTER							
UPC#	Qty.	Pkg.*	UPC#	Qty.	Pkg.*	Description	For 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	-	-	-	Pkg. one each wheel, pin, clip	60101, 60102, 60103
60100	1	B	60107	10	B	Cutter wheels for copper	60101, 60102, 60103
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 (improved in '84)	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 & 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
PARTS FOR IMPERIAL™ AND YELLOW JACKET 60122, 60160 CUTTERS							
60110	1	B	60088	10	B	Cutter wheel 32633	127-FB, 227-FA, TC1050, 60122 and 60160
60081	1	B	60085	10	B	Screw 26883	"
60111	1	B	60089	10	B	Cutter wheel 75015	174-F, 274-F, 312-FB, 374-FC, TC1000, TC 1020, TC 2050
60112	1	B	60090	10	B	Wheel for stainless 75046	"
60082	1	B	60086	10	B	Screw 74762	"
60113	1	B	60091	10	B	Cutter wheel 74761	206-FA
60083	1	B	60087	10	B	Screw and nut 77511	"



* SP: Skin Pack. B: Bagged with header.

* For old model with Ritchie imprint.

SERVICE COUNTER KIT 60130

SERVICE COUNTER CUTTER PARTS KIT 60130			
UPC#	Qty	Description	For cutter
60130		Counter selection - Tube cutter maintenance kit as below	
60179	1	Kit box only with label - empty	
60100	4	Cutter wheels for copper	60101 60102 60103
60079	3	Pin & clip for wheel	
60077	3	Reamer screw and spacer	
60078	3	Reamer	
60106	3	Constrictor wheel	
60098	3	Cutter wheel for stainless	
60108	3	Screw for knob	
60120*	6	Cutter wheels	
60072	3	Cutter wheel for new style 60121 with YELLOW JACKET imprint	
60125*	6	Screws for cutter wheel style	
60074	3	Screw for cutter wheel for new style 60121 with YELLOW JACKET imprint	60121 (old), 60142 60121 (new)
60144	3	Cutter pin and clip for wheel	60142
60124	3	Cutter wheels	60123, 60139
60080	3	Cutter wheel screw & retainer	60121 (old), 60123
60136	3	Cutter wheel screw & retainer	60139
60110	3	Cutter wheel 32633	Imperial TC 1050 127-FB 227-FA
60081	3	Cutter wheel screw 26883	

Kit quantities only. Order individual parts from chart above

UPC #	Qty	Description	For cutter
60111	3	Cutter wheel for copper 75015	Imperial TC 1000 274-FC, 174-F TC 1020, 374-FC TC 2050, 312-FC
60112	3	Cutter wheel for stainless 75046	
60082	3	Cutter wheel screw 26883	
60113	3	Cutter wheel 74761	Imperial 206-FB 227-FB
60083	3	Cutter wheel screw and nut 77511	

For restocking kits, use quantity packs in chart at top of this page.



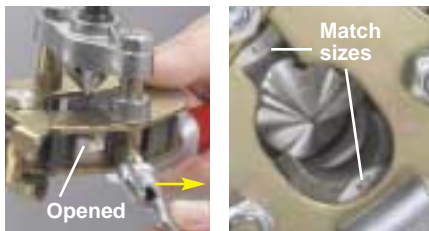
Imperial is a registered trade mark of Imperial Eastman Acquisition Corp.
* Old style 60121 with Ritchie imprint.

DELUXE 45° FLARING TOOL – full range 1/8" to 3/4" O.D.



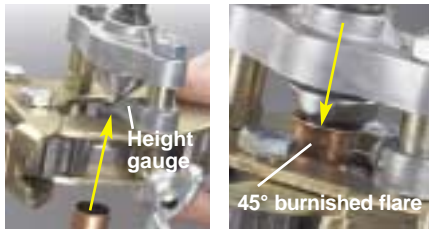
The only full range 1/8" to 3/4" O.D. flaring tool available for copper, brass and aluminum tubing.

- Self-centering yoke for precise 45° flares grips without marring or constricting tube.
- Automatic tube height gauge for correct tubing height .
- Multi-faceted burnishing cone to roll out smooth, polished flare seat for positive seal.
- Easy-to-use with 4 basic steps.



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	Capacity
60280	Deluxe flaring tool	1/8" - 3/4"
60281	45° flare cone only	
60282	Yoke assembly only	Up to 3/4"

Additional parts in price sheet.

HEAVY DUTY 45° FLARING TOOLS 3/16" to 3/4"

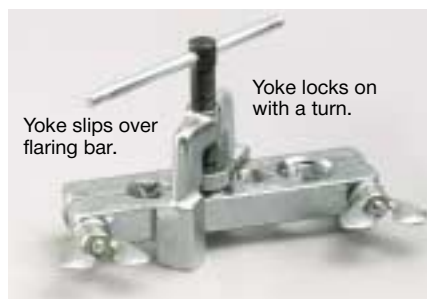


This heavy duty tool, designed for tight places, features:

- 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 to insure smooth and easy operation.

UPC #	Description	Capacity
60210	Flaring tool	3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8" O.D.
60212	Flaring bar only	3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8" O.D.
60230	Flaring tool	1/2, 5/8, 3/4" O.D.
60232	Flaring bar only	1/2, 5/8, 3/4" O.D.
60213	Yoke for 60210	Up to 5/8" flare
60214	Wing nut	
60233	Yoke for 60230	Up to 3/4" flare

LARGE SIZE 45° FLARING TOOLS 3/4" to 1-1/8"



Tool designed to flare on the larger size tubing – up to 1-1/8". Flaring bars are hardened and grip tubing securely. Yoke slips over flaring bar and locks in place. Long handle and precision threaded feed screw ensure easy flaring.

UPC #	Description	Capacity
60290	Large flaring tool	3/4, 7/8, 1, 1-1/8" O.D.
60293	Flaring yoke	for above
60292	Flaring bar	for above

UNIVERSAL 45° FLARE /BURNISH TOOL



Universal designed bar will hold all inch and metric size tubing up to 5/8" (16mm). Flare bar is more compact and easier to use in tight quarters. Multi-faceted cone rolls out precise 45° flare and polishes it at the same time. Flare is formed above flare bar.

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

FLARE /BURNISH TOOL



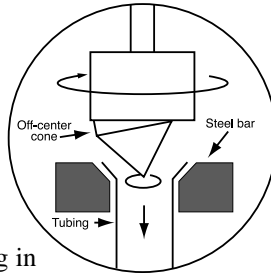
Multi-faceted cone rolls a precise flare and simultaneously polishes it on brass, copper and aluminum.

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

YELLOW JACKET® ECCENTRIC CONE FLARING TOOL



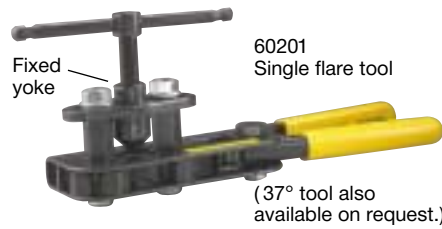
Off-center hardened steel cone produces a rolling action for uniform flare walls without galling in 3/16" to 3/4" O.D. tubing. Large feed screw handle turns with little effort for smooth operation.



- 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
- Recommended by some mini-split manufacturers for R-410A flare

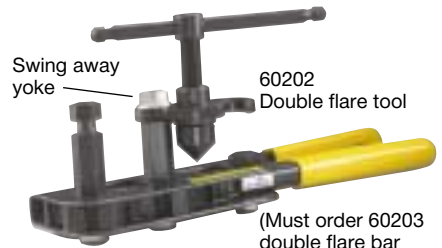
UPC #	Description
60295	Flaring tool with eccentric cone for 3/16" to 3/4" O. D.

YELLOW JACKET PREMIUM DOUBLE AND SINGLE FLARE 45° TOOL



60201
Single flare tool

(37° tool also available on request.)



60202
Double flare tool

(Must order 60203 double flare bar separately.)

One-piece tool single flares six sizes of copper, brass, aluminum and most mild steel tubing. Forms flare above clamping block without thinning flare. Deeper grooves in bar for improved gripping power.

- Hardened steel block; and steel handles and body for durability
- Automatic flare cone centering for consistent flare precision

60202 also features a swing away yoke so tool can also double flare 3/16" to 1/2" tubing when used with 60203

double flare bar (order separately)



Order 60203 bar separately

UPC #	Description	Capacity
60201	Single flare tool only - 45°	3/16, 1/4, 5/16, 3/8 1/2, 5/8" O.D.
60202	Double flare tool only - 45°	3/16, 1/4, 5/16, 3/8, 1/2, 5/8" O.D.
60203	Double flare bar for 60202 order separately	3/16 to 1/2" O.D.
60205	Flaring cone - 37°	—
60209	Flaring tool - 37°	—
60216	Flaring cone - 45°	—
60206	Roller and pin	—

YELLOW JACKET FLARING/CUTTING KITS



60260



60225

A wide variety of heavy duty tool kits for flaring 1/8" to 3/4" O. D.

UPC #	Description
60240	Full range 45° flaring kit for 1/8" to 3/4" O.D. with yoke, two bars, case, instructions
60230	45° flaring tool only for 1/2"-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 1/8" to 3/4" O.D. same as 60240 with 60101 cutter, case, instructions
60225	45° double flaring kit with with five adapters for 3/16" to 1/2" O.D., case, instructions
60211	45° double flare five-adapter set for 3/16"-1/2" O.D.

Tips for Flaring

An incorrect flare is one of the most common sources of leaks. To help prevent leaks and call backs, cut tubing with sharp wheel in a quality cutter (page 99) for a clean right-angle cut. To avoid tube constriction, use a light hand on the feed screw.

Since unremoved burrs can break off into the tubing or scratch the flared surface, remove burrs with a deburring tool (page 100).

A flare tool with burnishing cone puts a high polish on the flare and rolls out a perfect 45° flare for a good seal. Over or under flaring prevents a good seal. Use drop of oil on the flaring cone and feed screw for precise action.

YELLOW JACKET® SWAGING AND 45° FLARING TOOL 3/16" to 3/4"



This combination tool both flares and swages soft or annealed copper and similar materials. Six hardened and plated alloy steel adapters are interchangeable to easily convert sizes and functions. Slip-on self-centering steel yoke has a feed screw with extra long handle. For a sure grip when

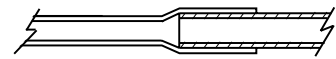
attaching adapters to the feed screw, adapters are deeply knurled. Flaring bars are hardened and chrome plated for durability.

Kit comes complete with six swage adapters, flaring cone, two flaring bars, yoke, and a deluxe case.

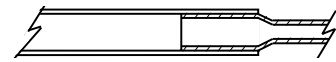


Swages 7 sizes: 3/16" through 3/4" O.D.

UPC #	Description
60440	Swage/flare kit complete 3/16" to 3/4" O.D.
60450	Swage/flare kit, case 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 3/8" to 3/4"
60442	"C" clip and nut
60441	Handle/feed screw/nut
60443	Complete yoke 60440/60453
60212	Flare bar 3/16" to 5/8" O.D.
60232	Flare bar 1/2" to 3/4" O.D.



Parallel Expansion Joint



Reduction Joint

SWAGE/45° FLARING TOOL 1/2" to 3/4"



Mid-size swaging and flaring tool for 1/2", 5/8" and 3/4" O.D. tubing.

UPC #	Description
60453	Swage/flare kit - complete 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"
60441	Handle screw assembly
60442	"C" clip and nut
60443	Complete yoke for 60453/60440
60232	Flare bar 1/2" to 3/4" O.D.

PUNCH-TYPE SWAGING TOOL



60475

Durable heat-treated and plated alloy steel tool expands one end of copper tubing for connecting same size tubes.



60460

UPC #	Swaging Sets
60475	Set - 4 pcs. in pouch - 1/4, 3/8, 1/2 and 5/8"
60476	Set - 5 pcs. in pouch - 1/4, 5/16, 3/8, 1/2 and 5/8"
60461	Set with clamping bar and 6 swaging punches 3/16 to 5/8"
60462	Clamping bar only

LARGE SIZE SWAGE/45° FLARING TOOL 3/4" to 1-1/8" O.D.



Swages 3/4", 7/8" and 1-1/8" O.D. tubing. Flares 3/4", 7/8", and 1-1/8" O.D. tubing.

UPC #	Description
60455	Large swage/flare kit complete 3/4" to 1-1/8" O.D.
60448	3/4" swage adapter
60457	7/8" swage adapter
60458	1-1/8" swage adapter
60459	Flare cone 3/4" to 1-1/8"
60441	Handle screw assembly
60442	"C" clip and nut
60456	Complete yoke 60455
60292	Flare bar 3/4" to 1-1/8" O.D.

UPC #	Single Tools
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

YELLOW JACKET® TUBING EXPANDER/SWAGER 5/16" to 1-5/8" O.D.



Kit 60407

With long handles for comfortable leverage, you can easily expand 5/16" to 1-5/8" O.D. soft copper and aluminum tubing in seconds. Handles, tapered expanding pin, and other moving surfaces are heat treated for long-term durability. Select from nine expander heads to attach to the front of the handles.

Wide range of capabilities:

- Precise swaging on the job
- Re-round deformed tube and fitting ends
- Help salvage shorts and scrap to make couplings
- Use on .063" wall soft copper and aluminum to 1-5/8" O.D. (anneal hard copper prior to use)

- Use on .047" wall soft steel to 1-1/8" O.D.
- Use on .039" wall stainless steel to 7/8" O.D.

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, steel carrying case, instructions
60412	Expander handles
60426	Steel carrying case

The savings of precise swages instead of couplings

- 100% of couplings
- 50% of solder points
- 50% of soldering material
- 50% of time
- possible leaks

Expander heads

UPC #	Description	Max. Wall Thickness	A	B
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"	.043"	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"	0.09"
60422	1-3/8" expander head	0.063"	0.77"	0.09"
60424	1-5/8" expander head	0.063"	0.77"	0.09"

3-IN-1 SWAGING AND FLARING TOOL for hard and soft copper



This revolutionary tool swages soft and hard copper, and flares soft copper. Swaging hard copper lowers the cost of joining, eliminating the time and expense of annealing.

- One-piece construction with hardened steel clamping dies.
- Quick-change swaging adapters heat-treated to take continual use.
- Automatic self-centering of swaging adapters and flaring cone for consistent results.
- Set includes heavy duty carrying case and 60161 tube reamer.

UPC #	Description
60480	Basic set – Swage 1/4", 3/8", 1/2" and 5/8" O.D. Flare 3/16" to 5/8" O.D.
60482	Complete set – 3/16" to 5/8" O.D.
60481	Tool only – less adapters
60483	Swage adapter – 3/16"
60484	Swage adapter – 1/4"
60485	Swage adapter – 5/16"
60486	Swage adapter – 3/8"
60487	Swage adapter – 1/2"
60488	Swage adapter – 5/8"
60489	Flaring cone
60490	Case only
60491	Detent pin
60492	Detent spring

FIN STRAIGHTENERS



61170

61150 Fin Tool straightens condenser and evaporator fins quickly and easily – even severely damaged ones.

Also cleans away lint, rust, dirt and other debris.

Adjustable tension and sturdy metal body.

61170 is similar to 61150 with a longer comfort-grip handle making straightener easier to use. Head is 20% wider to straighten more fins in one pass.



Clean: insert forward.



Straighten: insert backward

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

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

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. Available individually bagged, or as a set of 6 assorted. One set of 6 covers 12 different fin sizes. Also bulk bag of 25 of the same size. Newest comb, 61157, is for high efficiency units.

Improved shape conforms to the hand and thumb for more comfortable grip.

Individual			Bag of 25	
Individual U.P.C. No.	Description	Fins per inch	Color	Bag of 25 U.P.C. No.
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	—

6-in-1 Fin Straightener



Fin straightener sizes are marked on 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

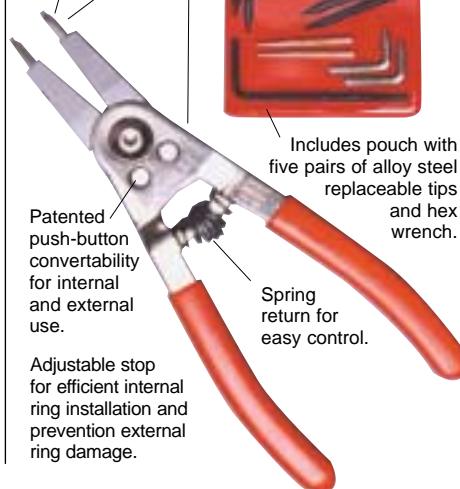
YELLOW JACKET® RETAINING RING PLIERS – COMBINATION INTERNAL/EXTERNAL

Six point broached jaw for accurate tip alignment. Adjustable for hex tips.

High handle-to-jaw ratio for increased mechanical advantage.



Includes pouch with five pairs of alloy steel replaceable tips and hex wrench.



Patented push-button convertibility for internal and external use.

Spring return for easy control.

Adjustable stop for efficient internal ring installation and prevention external ring damage.

Compact pliers for use on SealRight™ coupler with interchangeable tips. Works on internal and external retaining rings in a variety of areas:

- 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.
60594	Medium pliers for 3/8" - 2" (10 mm - 48 mm) internal rings; 1/4" - 2" (7 mm - 48 mm) external rings
60596	Replacement tip set for 60593: straight .023" (0.6 mm), .036" (0.9 mm), .047" (1.2 mm); 90° .036" (0.9 mm), .047" (1.2 mm)
60597	Replacement tip set for 60594: straight .036" (0.9 mm), .047" (1.2 mm), .070" (1.2 mm); 90° .036" (0.9 mm), .047" (1.2 mm)

YELLOW JACKET® RATCHET HAND BENDER

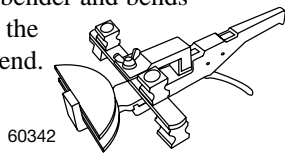


Bending
3/4" copper.

CAUTION: do not use with hard copper.

Optional reverse bend kit —

Attaches to bender and bends tubing from the outside of bend.



60342

The *original* one hand bending tool for soft copper, aluminum and light wall hydraulic tubing from 3/8" to 7/8".

- New stronger bending bar
- Bending shoes change quickly. Trouble free ratchet mechanism. Bend 3/4" tube to 90° in less than 10 seconds.
- Index marks ensure bending to length.

Complete swing bender kit includes all items shown to bend 3/8", 1/2", 5/8", 3/4" and 7/8" tubing per case.



UPC#	Description	Bending Radius
60331	Complete kit	—
60332	3/8" mandrel	1-3/16"
60333	1/2" mandrel	1-3/8"
60334	5/8" mandrel	1-15/16"
60335	3/4" mandrel	2-13/16"
60336	7/8" mandrel	3-3/8"
60337	Crossbar assembly	—
60338	Steel case with inserts	—
60342	Reverse bend adapter	—
60339	Ratchet body	—
Replacement parts for 60331		
60328	Fillister head screw	—
60343	Bending body housing (10)*	—
60344	Catch pin (13)*	—
60345	Catch lever (16)*	—
60346	Flat spring (17)*	—
60347	Feed lever (19)*	—
60348	Wing nut and E-clip (1-1/8)*	—
60349	Tension spring	—
60340	Ratchet bar (9)*	—

* Designates the call-out number from the parts diagram on the 60331 instruction sheet.

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



60390

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.

The balance of the line features special hardened wearing surfaces to help maintain accuracy. Conforms to Fed. Spec. GGG- B-191-a Type III, Class 2.

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

PRECISION TUBE BENDER for hard and soft copper



Mount in a vise

Make precision bends in hard and soft copper, and soft steel in commercial applications. Patented bending shoe gives two bending points for accuracy even on hard copper. Bends to 180° for vise mounting. Includes one handle.

UPC #	Tube O.D.	Bending Radius	Wall Thickness		(Ref. #)
			Min.	Max.	
60321	5/8"	2.50"	0.040"	0.080"	(2.5216)
60323	7/8"	3.25"	0.040"	0.080"	(2.5222)

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



Specially designed YELLOW JACKET 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 #	Single Bending Springs
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.

SERVICE WRENCHES STRAIGHT



60613

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

HEAVY DUTY



60618

Heavy duty version of original 60613 with 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.

OFFSET



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.

For large service valves



60615

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

7" LONG RATCHET WRENCH for service valves



60612

Heavy duty reversible ratchet wrench with hex openings 1/2" and 9/16" at one end; and 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	Heavy duty wrench – 7" long

CAUTION: Do not use cheater bars.

YELLOW JACKET® PREMIUM FORGED SERVICE WRENCHES



Patent pending

- Enclosed ratcheting mechanism to keep out debris that could jam the action.
- Higher torque ratings than 60613.
- 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" sq.
60601	Forged wrench 3/16" and 5/16" sq.
60629	Set of 60600 and 60601 above
60619	Display pak 60600 (25 pcs.)
60620	Display pak 60601 (25 pcs.)

SERVICE WRENCH AND ADAPTER



Combination service wrench with 60609 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/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 to fit some York/Coleman units

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

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 the ViseGrip® pinch-off tool.

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

YELLOW JACKET® RATCHETING BIT WRENCHES



60584

- Reverse direction with a flip of the reversing pawl.
- Knurled spinner wheel for finger tightening of fasteners.

These bit wrenches allow access where conventional screwdrivers and bit drivers fail to reach.

- 25° offset angle keeps your knuckles up and away from the work surface.

UPC #	Description
60584	Set includes bit #1 and #2 Phillips, 1/4", and 9/32" slotted.
60585	Ratcheting driver wrench only
60586	#1 Phillips bit (5pk)
60587	#2 Phillips bit (5pk)
60588	Small slotted bit (5pk)
60589	Medium slotted bit (5pk)

E-Z GRIP RATCHETS with comfort grip handles



Easy-to-hold handles and reversing mechanism provide comfortable

operation even when used frequently. Heat-treated gear hex for long life.

UPC #	Description	Hex Sizes
60664	Set 6 wrenches	1/4" to 9/16"
60655	Ratchet wrench	1/4"
60656	Ratchet wrench	5/16"
60657	Ratchet wrench	3/8"
60658	Ratchet wrench	7/16"
60659	Ratchet wrench	1/2"
60660	Ratchet wrench	9/16"

KNUCKLE-SAVER™ HEX WRENCH SETS - 3 pc. or 5 pc.



The unique offset design of these YELLOW JACKET® wrenches save your 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.

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"

UTILITY CHAIN WRENCH



Lightweight tool with double heat-treated forged steel handle and tempered steel chain. Reach tight places near walls and areas most wrenches cannot be used.

UPC #	Capacity	Weight
60654	4" dia.	1.9 lbs.

REFRIGERANT RECOVERY PLIERS



The fastest and easiest way to evacuate refrigerant before disposal of a unit. Snaps onto refrigerant line and punctures super 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 pkg)

HEAVY DUTY PIPE WRENCH



Designed for strength and durability with malleable iron construction, this heavy duty wrench features:

- Replaceable heat treated jaws.
- Instant grip and release jaws.

UPC#	Description	Capacity	weight
60641	8" Pipe wrench	1"	.9 lbs.
60642	10" Pipe wrench	1-1/2"	1.7 lbs.
60644	14" Pipe wrench	2"	3.3 lbs.
60645	18" Pipe wrench	2-1/2"	5.2 lbs.
60646	24" Pipe wrench	3"	8.2 lbs.

STRAP WRENCH



Easy-to-use strap attaches easily for quick gripping of chrome or nickel finished pipe without gouging the finish. Sturdy one-piece construction.

UPC #	Capacity	Weight
60651	17"	0.7 lbs.

YELLOW JACKET® FAN BLADE PULLER

This all purpose tool is designed tough to last.

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.

- All purpose tool.
- Remove squirrel cage type blower wheels.
- Pull off fan blades.
- Remove pulleys or sheaves.
- Fits 1-3/4" hub max.



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

12" HEX KEY WRENCHES

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



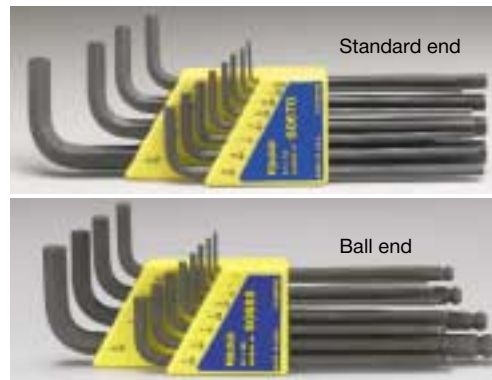
UPC # 25 per pkg.	Size	A	B	UPC # Individual
60750	Set 7 pcs. Hex Key wrenches, includes all sizes below			
60757	5/64	12"	1-3/4"	60857
60758	3/32	12"	1-3/4"	60858
60760	1/8	12"	1-3/4"	60860
60762	5/32	12"	1-3/4"	60862
60763	3/16	12"	1-3/4"	60863
60764	7/32	12"	1-3/4"	60864
60765	1/4	12"	1-3/4"	60865

YELLOW JACKET HEX KEYS

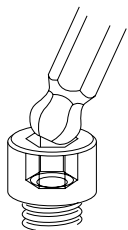
All YELLOW JACKET hex keys from .050" to 5/16" are premium 8650 heat-treated steel alloy for rugged use.

Other features:

- 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.



UPC # Std. End	Description		UPC # Ball End
	Size	Length	
60670	12 pc. set w/case		60685
60669	Metric - 12 pc. set w/case		-
All individual keys below are in 10 pkg.			
60671	.050	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



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.

FOLD-UP HEX KEY SETS

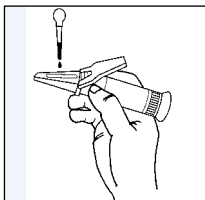


Locate the correct key size easily. For rugged use, each key is premium 8650 heat-treated steel alloy. Other features:

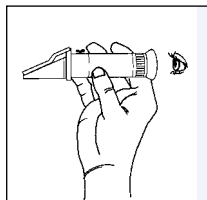
- Chamfered square cut ends for easy socket insertion.
- Corrosion-resistant finish.
- Smooth one-piece handle with sizes clearly marked.
- Keys snap to work position for leverage and fold into handle for compact storage.
- Replacement keys available.

UPC #	Description
60700	Hex key set - 8 sizes - .050, 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"

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 Solest® HFC, this field tool can accurately predict remaining mineral oil in the system down to 1%. 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 w/case

VALVE CORE TOOL

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

UPC #	Description
19306	Valve core tool

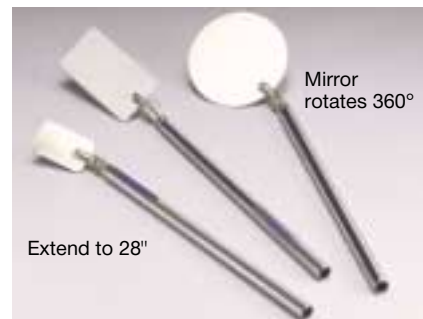
GLASS MIRRORS — telescoping

All mirrors have telescoping feature. Some have clips for pockets and magnifying glass. Replaceable mirrors.



UPC #	Description	Extension
78094	2-1/4" round	9-1/4" to 14-1/4"
78097	2-1/4" round magnified	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	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	

INSPECTION MIRRORS — stainless telescoping



Extend to 28"

Mirror rotates 360°

Check leaks in hard to see places. Stainless steel mirror on ball joint rotates 360°. Handle telescopes to 28".

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

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

AUTOMOTIVE R-134a and R-12 CAN TAPS



With side tap, handles slip around and close to pierce the can. Small inserts for use with lubricant cans.

Check valve on side taps help prevent back pressure into can.

Not for use with other refrigerants.

UPC #	Description
36192	R-134a side can tap
36193	R-12 side can tap
36194	Gaskets for side can tap (10 pak)

MAX-FLOW™ COMBINATION OIL PUMP

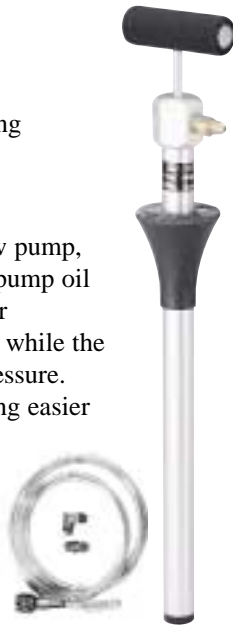
- Remove oil for recovery and conversion.
- Add oil to existing systems.

With the Max-Flow pump, you can smoothly pump oil into the compressor *on the down stroke* while the system is under pressure. This makes pumping easier with a positive stroke.

Pumps 2.6 ounces or 78 ml per stroke.

Other features:

- 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.

UPC#	Description
77940	Improved Max-Flow combination oil pump with tubing
77941	Automatic stopper for oil container openings for new 77940 pump
77942	"O"-ring kit for 77940
77919	Automatic stopper for oil container openings for original 77900 pump
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 ammonia laden oil.

MAX-FLOW™ DELUXE OIL PUMP

- Remove oil for recovery and conversion.
- Add oil to existing systems.
- Fits all size oil containers



Optional accessories

Improved for added reliability and a more powerful stroke, the Max-Flow deluxe oil pump is a high capacity unit for quick charging. Pumps 3.8 ounces (112.38 ml) per stroke.

Other features:

- 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.

UPC#	Description
77930	Max-Flow Deluxe oil pump
77924	3/8" NPT Male x 1/4" Fe. elbow
77925	Plastic seat
77931	"O" ring kit for 77930 (10 pak)
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" fl. – 90°
77937	Replacement fittings – 3/8" NPT Male x 3/8" fl. – 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








Body and cap are rugged aluminum with an "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.

Saves time on many applications:

- Add oil to system.
- Put oil in after changeout.
- Add scanner fluorescent solution.
- Add additives to system.
- Refrigerant sampling.
- 600 psi maximum working pressure.

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 pk)
69564	"O"-ring 2 & 4 oz. injector (5 pk)
69565	1/2 oz. R-134a auto injector w/hose and service coupler
69566	2 oz. R-134a auto injector w/hose and service coupler
69567	4 oz. R-134a auto injector w/hose and service coupler

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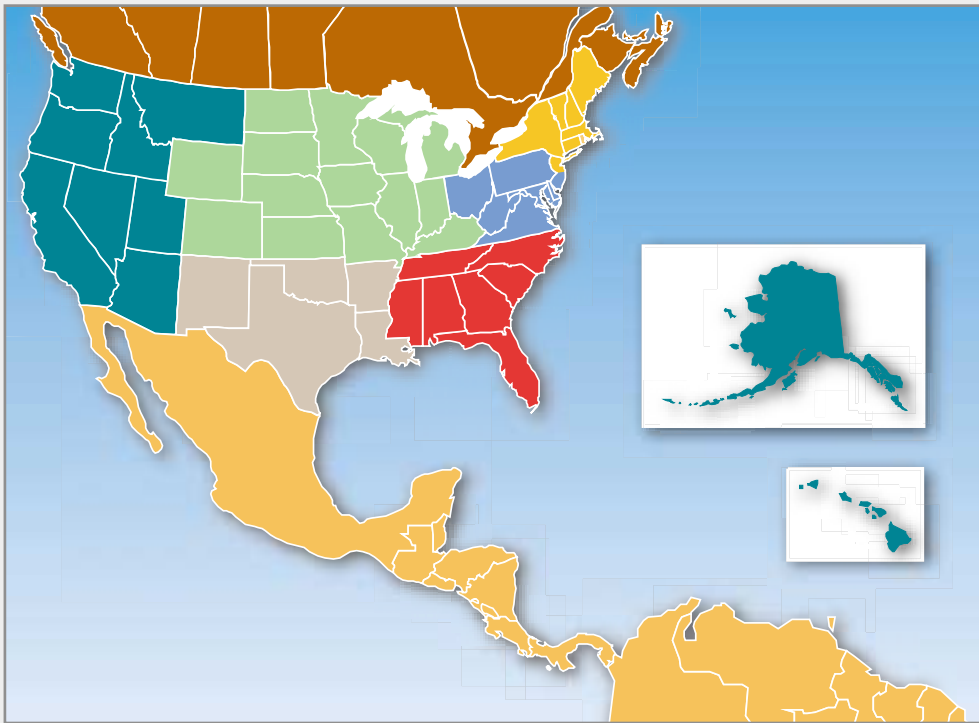
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