

**REPLACEMENT  
COMPONENTS**

## **2025 R-454B COMPATIBLE HVAC TOOLS**

*Replacement Components has the products and expertise to support you and your customers as the industry transitions to a new class of refrigerants per 2025 EPA regulations.*

## BACKGROUND

In 2025, EPA regulations will mandate a change to refrigerants that have a lower global warming potential (GWP). For Carrier and its associated brands, that means a transition from R-410A to R-454B, which has one fourth the GWP of R-410A\*.

R-454B is in a specific class of refrigerants known as A2L, whereas R-410A is a class A1 refrigerant. Without going into all the technical details, R-454B offers similar operating temperatures, pressures, and oil compatibility as R-410A - reducing the learning curve associated with the new refrigerant. However, there are two key precautions that must be taken into account:

- R-454B and R-410A (or any refrigerant for that matter) cannot be mixed or cross-contaminated
- R-454B, as with all A2L refrigerants (including R-32), has a mildly flammable characteristic - meaning:
  - (1) a direct flame source and a high concentration of refrigerant is required to create a flame
  - (2) that if it were to ignite, the flame would likely be unsustainable and
  - (3) the spread rate would be less than half a mile per hour - slower than a typical walking speed.

These differences do require that additional measures be taken from a servicing perspective to avoid cross contamination and/or make certain no sparks are inadvertently generated.

Service technicians use a variety of equipment on the job - vacuum pumps & recovery machines, recovery cylinders, gauges/manifolds, leak detectors, scales, hoses, etc. This document will guide you through the changes needed to support these new refrigerants being introduced.


*\*Puron® and Puron Advance™ are trade names for R-410A and R-454B and are used exclusively with Carrier and Bryant branded products.*

## RECOVERY MACHINES

**Used for:** removal of refrigerant from the system, during repair or end of life.

**R-454B/R-32 Implications:** because R-454B and R-32 refrigerants have a mildly flammable characteristic, a non-sparking recovery machine is required. The model below is non-sparking and has a purge feature (purged into recovery tank) that allows it to be used with both A2L refrigerants (R-454B & R-32) and A1 refrigerants (R-410A) without cross-contamination.



P/N	F6-BOOST
Compressor	1.25 HP, Brushless & Oilless Motor
Compatible Refrigerants	R-410A, R-454B, R-32
Purge Feature	Yes
High Visibility Gauges	Yes, 2 ¼" (6 cm) diameter
Auto-shutoff w/ recovery complete	Yes
Dimensions (WxLxH)	14.5" x 9.5" x 12" (37 x 24 x 30 cm)
Weight	24 lbs. (10.9 kg)
Resources (click or scan)	

## RECOVERY CYLINDERS

**Used for:** recovery of refrigerant from the HVAC system for recycling or reclamation.

**R-454B/R-32 Implications:** because R-454B and R-32 have a mildly flammable characteristic, there are several key changes to the recovery cylinder. The tops will be red for identification purposes, there will be two warning labels (compressed gas and flammability), cylinders will utilize a pressure relief valve for safety instead of a rupture disc, and the threads will be reversed (left-handed instead of right-handed for R-410A refrigerants). A R-454B / R-32 refrigerant recovery cylinder can only be used for R-454B/R-32 refrigerant; R-410A refrigerant recovery cylinders will still be required for R-410A refrigerants. Note that because the threads are reversed, a reverse thread adapter is required to connect the hoses (see “gauges, manifolds, hoses, and adapters” section).



R-410A RECOVERY CYLINDERS		R-454B, R-32 RECOVERY CYLINDERS		
P/N	P706-9002	P706-9004	P706-9006	P706-9008
Description	30 lbs.	50 lbs.	30 lbs.	50 lbs.
Float Switch	No	No	No	No
Pressure release	Rupture Disc		Pressure Release valve	
Nom. Tare Weight	16.9 lbs. (7.7 kg)	29.3 lbs. (13.3 kg)	16.9 lbs. (7.7 kg)	29.3 lbs. (13.3 kg)
Cylinder Diameter	9.2" (23 cm)	12.2" (31 cm)	9.2" (23 cm)	12.2" (31 cm)
Collar Diameter	7.2" (18 cm)			
Collar Height	5.1" (13 cm)			
Footring Diameter	8" (20 cm)			

**COMING Q3 2024**

## VACUUM PUMPS

**Used for:** removing air, moisture, and any residual refrigerant from the system.

**R-454B/R-32 Implications:** because R-454B and R-32 have a mildly flammable characteristic, a non-sparking vacuum pump is required. All the models below are non-sparking, and because purging occurs through normal operation, they can be used with R-410A, R-454B, and R-32 refrigerants without risk of cross-contamination.



	ELIMINATOR	PLATINUM PRO	PLATINUM BEAST	RAPID EVAC. KIT
P/N	DV-6EDC	DV-240DC	DV-340N	VL-200
CFM	6	8.4	12	Removes restrictive valve cores & enables evacuation up to 20x faster. Includes: • ½" & 3/8" Y connectors • Two core removal tools • Evacuation hoses • Storage bag
Max Equipment Tonnage	36	71	144	
Compatible Refrigerants	R-410A, R-454B, R-32			
Blank-off Valve*	No	Yes	Yes	
Vacuum level**	25 microns	15 microns	15 microns	
Weight	24 lbs. (10.9 kg)	24 lbs. (10.9 kg)	34 lbs. (15.4 kg)	
Dimensions (WxLxH)	14"x18"x13" (36 x 46 x 33 cm)	14"x18"x13" (36 x 46 x 33 cm)	14" x 17" x 11" (36 x 43 x 28 cm)	
Vacuum Pump Oil	P903-0632			
Resources (click or scan)				

\*Blank-off valve enables oil change without breaking vacuum

\*\*<500 micron level needed for tight, dry system

## GAUGES & MANIFOLDS

**Used for:** measuring the refrigerant pressure in the HVAC system. Additional tools include temperature clamps, psychrometers (measures humidity and temperature), pressure probes, and vacuum gauges.

**R-454B/R-32 Implications:** while R-454B and R-32 refrigerants have similar operating pressures as R-410A, the saturation temperatures are different. While the digital manifolds can be updated with new refrigerant details (including saturation tables), new analog tools will be needed if using the gauge saturation temperature guidance. To minimize the risk of accidental cross-contamination, separate gauges, manifolds, and hoses are recommended for each refrigerant.



	COMPOUND GAUGE	PRESSURE GAUGE	PATRIOT MANIFOLD*
P/N	M2-861	M2-862	22633
Compatible refrigerant	R-410A, R-454B, R-32		
Display size	3 1/8" (7.9 cm) diameter, glow-in-dark		
Manifold			2-valve brass
Included Accessories			M2-861 Compound & M2-862 Pressure Gauge 60" (152cm) hoses p/n CCLE-60
Resources (click or scan)			



included app



	WIRELESS TEMPERATURE CLAMPS	WIRELESS PSYCHROMETERS	WIRELESS PRESSURE PROBES	WIRELESS VACUUM GAUGE	WIRELESS DIG. MANIFOLD (ZEPPELIN)	WIRELESS DIG. MANIFOLD (REVOLVER)
P/N	WC-1 (single) WC-2 (pair)	WH-1 (single) WH-2 (pair)	WP-1 (single) WP-2 (pair)	DV-22W	DM4-ZW	DM4-RW
Usage	Digital display for standalone use or can connect wirelessly to app or manifold					
Apps	Includes access to JB GOV2 app, compatible with measureQuick® app					
Comp. Refrig	Any	Any	Any	Any	60+, updatable	
Display size	0.6" x 0.5" (1.6 x 1.1 cm)			2.3" x 0.6" (5.7 x 1.5 cm)	2.9" x 2.3" (7.5 x 5.9 cm)	
Manifold					4-valve alum.	4-valve brass
Included accessories					60" (152cm) hoses (CCLE4-60) (2) K-type thermocouples Carrying case	
Resources (click or scan)						
Avail. Packages	CC-2-CHP: includes qty (2) WC-1, qty (2) WH-1, qty (2) WP-1 CC-2-CP: includes qty (2) WC-1, qty (2) WP-1					

\*measureQuick is a registered trademark of Manifold Cloud Services LTD.

## FIRE EXTINGUISHER

**Used for:** extinguishing fires.

**R-454B/R-32 Implications:** because R-454B and R-32 have a mild flammability characteristic, a fire extinguisher is highly recommended for all service personnel. The Kidde fire extinguisher model below is a large-capacity single use / low maintenance (no hydrostatic test required) while still being low-weight and portable.



MULTIPURPOSE FIRE EXTINGUISHER		
P/N	466142MTL	21006204P
UL-Rating	1-A:10-B:C	3-A:40-B:C
Unit Weight	3.9 lbs (1.8 kg)	8.25 lbs. (3.7 kg)
Diameter x Height	3.3" x 13.8" (8.3 x 34.9 cm)	4.5" x 16.8" (11 x 43 cm)
Discharge Range	6'-8' (1.8 - 2.4 m)	12'-18' (3.7 - 5.5 m)

## LEAK DETECTORS

**Used for:** detecting refrigerant leaks. Typically, two types of detectors are used – a “sniffer” (electronic unit) to detect the presence of a leak, and a spray-on “bubble” leak detector to find the exact location.

**R-454B/R-32 Implications:** because R-454B and R-32 have a mildly flammable characteristic, “sniffer” (electronic) style leak detectors should be fully sealed to prevent electrical spark exposure, such as with the units below. “Bubble” leak detectors have no spark risk and thus are safe to use around any refrigerant.



	QUEST	PROWLER	SPRAY-ON LEAK DETECTOR
Part Number	LD-3000	LD-5000	P902-1432 (Quart) P902-1401 (Gallon)
Detector Type	Electronic	Electronic	Bubble
Probe type	18" (46 cm) flexible	17" (43 cm) flexible	
Indication	3 levels visual, audible with mute	10 level tilting visual display, audible with mute/vibration	
Case Included	Yes	Yes	
Replacement Filter	LD-RF5		
Replacement Sensor	LD-S101		
Replacement Leak Test Vial	LD-TV		
Resources (click or scan)			

## DIGITAL SCALES

**Used for:** measuring the weight of a recovery cylinder to determine when full.

**R-454B/R-32 Implications:** there are no R-454B/R-32 implications for digital scales. The following model is available through Replacement Components.



ATLAS	
P/N	DS-20000
Capacity	220 lbs. (100 kg)
Accuracy	0.25 oz (10 gm)
Dimensions (L x W x H)	18" x 15.3" x 3" (46 x 39 x 8 cm)
Weight	8 lbs. (3.6 kg)
Resources (click or scan)	

## PRESS FIT FILTER-DRIERS

**Used for:** filter driers connect to the refrigerant line and “filters” out physical contaminants while “drying” liquid contaminants.

**R-454B/R-32 Implications:** all existing filter-driers will work with the R-454B/R-32 refrigerants, and as the refrigerant lines are evacuated prior to replacing there is no flammability risk. However, Replacement Components now offers “press fit” filter-driers that can be attached with a coupling - no brazing required.



	AC APPLICATIONS			HP APPLICATIONS	
Part Number	P502-C083P	P502-C163P	P502-C164P	P504-H083P	P504-H163P
Connection OD	3/8"	3/8"	1/2"	3/8"	3/8"
Desiccant Volume	8 in <sup>3</sup>	16 in <sup>3</sup>	16 in <sup>3</sup>	8 in <sup>3</sup>	16 in <sup>3</sup>
Type	Uni-Flow / Liquid Line / Solid Core			Bi-Flow / Solid Core	

## ADAPTERS & SWAGE KITS

New regulatory requirements include provisions to avoid confusion between R-410A and new refrigerants, including use of left-handed threads for new refrigerants instead of right-handed threads with older refrigerants. As a result, left hand thread adapters are required when connecting hoses to R-454B or R-32 refrigerants. Swage kits are general tools used to improve the fitting of copper tubes prior to brazing.



	REVERSE THREAD ADAPTER, 1/4"	REVERSE THREAD ADAPTER, 1"	MULTI-SWAGE TOOL SET
P/N	QC-A2L-LH	CGA-670	T21000
Detail	Used for connected to reverse-thread R-454B and R-32 refrigerant and recovery tanks		Three piece pack works with common OD sizes to form solder cups OD: 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 5/8", 3/4", 7/8" Nominal: 1/8", 1/4", 3/8", 1/2", 5/8", 3/4"

## REFRIGERANTS

In addition to R-454B and R-410A, Replacement Components offers a full line of refrigerants to support all your HVAC needs.

R-410A	R-454B	R-32
25 lbs.	20 lbs.	20 lbs.
100 lbs. *	90 lbs. *	90 lbs. *

R-22	R-123	R-134A	R-404A	R-407A +	R-407C +
30 lbs.	100 lbs.	30 lbs.	24 lbs.	25 lbs.	25 lbs.
		125 lbs. *	100 lbs. *	115 lbs. *	115 lbs. *

R-422B +	R-422D +	R-427A +	R-438A ++	R-507A	R-513A
25 lbs.	25 lbs.	25 lbs.	25 lbs.	25 lbs.	25 lbs.
110 lbs. *	110 lbs. *	110 lbs. *	110 lbs. *	100 lbs. *	115 lbs. *

\* - Cylinder deposit part number is required upon ordering.

+ - "Carrier Engineering has not approved the use of alternative refrigerant in place of R22 and as a result the warranty may be voided on the unit. If alternative refrigerants are used on out of warranty units, please follow the refrigerant manufactures guidelines for proper retrofitting procedures".

++ - The only R22 replacement Carrier has qualified for our 30 series chillers is R438A.

Note: All information contained herein is believed to be accurate. Carrier accepts no liability from any claims made because of the use or reliance on such information.

For other refrigerants and or additional sizes including 1/2 ton and ton cylinders please contact Replacement Components.

## ADDITIONAL COMPONENTS

Replacement Components offers the full line of JB Industries service tools and other products. Please contact Replacement Components for additional information.

Full line JB Industries catalog, available through RC (click or scan)







**REQUIRED TOOLS FOR WORKING WITH R-454B OR R-32 REFRIGERANTS.  
ALL TOOLS ARE BACKWARD COMPATIBLE WITH R-410A.**

Product	Used at			Recommended Models	Key Features
	Install	Service	Checkup		
Recovery Machine	✓	✓		F6-Boost*	1.25HP motor, auto shutoff
Recovery Cylinder	✓	✓		P706-9006* P706-9008	30lb, available Q3 2024 50lb, available Q3 2024
Vacuum Pump	✓	✓		DV-6EDC (Eliminator) DV-240DC (Platinum Pro)* DV-340N (Platinum Beast)	6 CFM, 25 micron 8.4 CFM, 15 micron, blank-off valve 12 CFM, 15 micron, blank-off valve
Compound/Pressure Gauge	✓	✓	✓	M2-861 (compound gauge) M2-862 (pressure gauge) 22633 (manifold + gauges)*	Supports R-454B, R-32, & R-410A Supports R-454B, R-32, & R-410A Includes M2-861 & M2-862 gauges
Fire Extinguisher	✓	✓	✓	466142MTL* 21006204P	Multipurpose (1-A:10-B:C), 3.9 lbs. Multipurpose (3-A:40-B:C), 8.25 lbs.
Leak Detectors	✓	✓	✓	LD-3000 (Quest) LD-5000 (Prowler)* P902-1432 (spray-on, quart)* P902-1401 (spray-on, gallon)	Digital, 3-level indication Digital, 10-level indic., silent option Spray-on leak detector, quart Spray-on leak detector, gallon
Thread Adapters	✓	✓	✓	QC-A2L-LH (1/4" reverse thread)* CGA-670 (1" reverse thread)	Required to connect to R-454B or R-32 refrigerant cylinders
Refrigerant	✓	✓	✓	R454B-0020* R32-0020W	20 lb. cylinder R-454B refrigerant 20 lb. cylinder R-32 refrigerant

\*most popular offerings

**ADDITIONAL TOOLS (COMPATIBLE ACROSS ALL REFRIGERANTS, NO CHANGES REQUIRED FOR R-454B OR R-32).**

Product	Used at			Recommended Models	Key Features
	Install	Service	Checkup		
Rapid Evacuation Kit	✓	✓		VL-200	Removes valve cores for faster vacuum pump evacuation
Wireless Digital Tools	✓	✓	✓	WC-1 / WC-2 (wireless temp. clamp) WH-1 / WH-2 (wireless psychrometer) WP-1 / WP-2 (wireless pressure probe) DV-22W (wireless vacuum gauge) DM4-ZW (digital manifold, Zeppelin) DM4-RW (digital manifold, Revolver)	Tools with digital displays for standalone use or can connect wirelessly to app or manifold. "-1" is single unit, "-2" is dual units.
Digital Scales	✓	✓		DS-20000 (Atlas)	220 lbs. capacity accurate to 0.25 oz
Press-fit Filter Driers (allows connection via coupler - no brazing required)	✓	✓		P502-C083P P502-C163P P502-C164P P504-H083P P504-H163P	AC, 3/8" OD, 8in <sup>3</sup> desiccant AC, 3/8" OD, 16in <sup>3</sup> desiccant AC, 1/2" OD, 16in <sup>3</sup> desiccant HP, 3/8" OD, 8in <sup>3</sup> desiccant HP, 3/8" OD, 16in <sup>3</sup> desiccant