

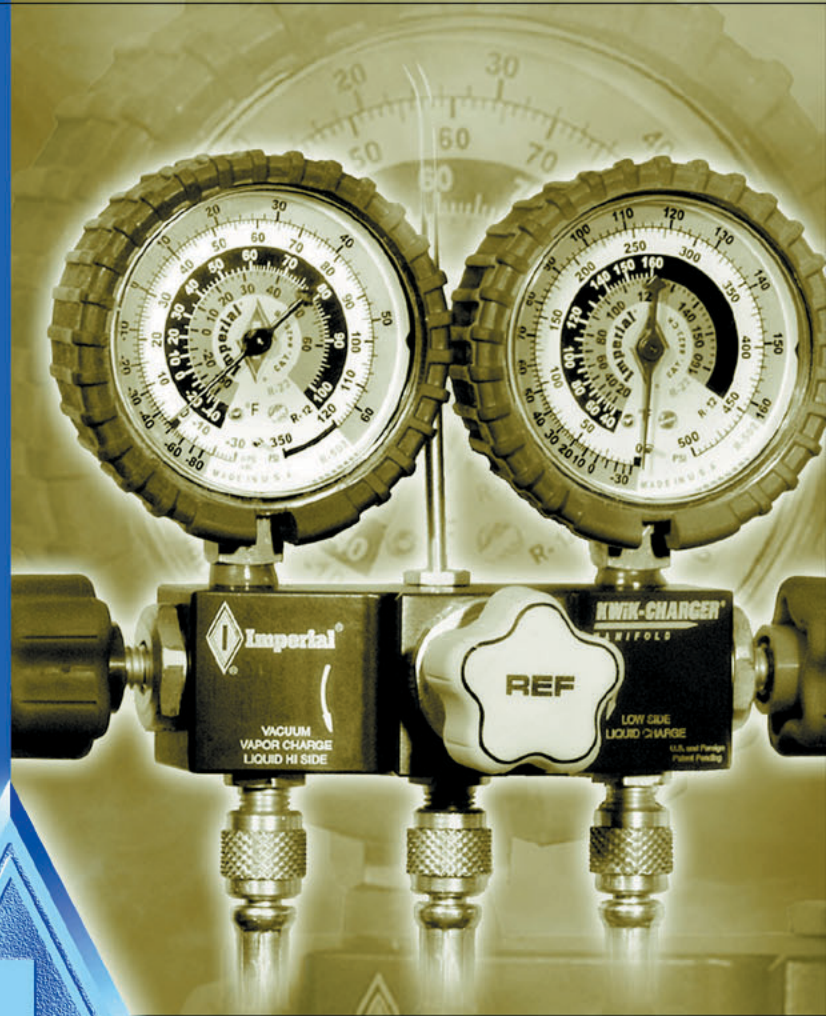


Table of Contents

Bookmarks [Show/Hide]

Alpha Index

Help / Tips



PROFESSIONAL REFRIGERATION/  
AIR-CONDITIONING PRODUCTS  
AND TUBE WORKING TOOLS



*The international standard of excellence.™*



*The international standard of excellence.™*

## PROFESSIONAL REFRIGERATION/AIR-CONDITIONING PRODUCTS AND TUBE WORKING TOOLS



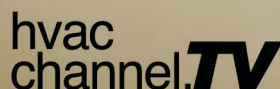
In 1905, the Imperial Brass Manufacturing Company began on the south side of Chicago as a manufacturer of brass valves and fittings. Though the quality of our products has not changed from what our professional customers expect, we have developed into the worldwide leader of innovative products serving the Refrigeration & Air-Conditioning Service and Tube Working Tool industries.

In 1996, Imperial-Eastman became part of Stride Tool Inc. and is now known as Imperial. Since its acquisition Imperial has focused on developing new, patented products that serve the professionals of our industry. As you page through our catalog, you will find a number of new products geared towards making your job easier, and saving you time in the process. All of Imperial's products are backed with our exclusive lifetime warranty.

We are very proud to have the Imperial brand name as part of Stride Tool. Today, nearly a century after it was first formed, Imperial continues its legacy of innovation and excellence with each of its Refrigeration & Air-Conditioning Service and Tube Working Tool products.

### LIFETIME WARRANTY

Any product manufactured by Imperial that fails to render service due to defect in workmanship or materials will be replaced or repaired at no charge. Product failures due to misuse, abuse, normal wear and tear or alterations are not covered by the Lifetime Warranty. Wear items will need to be replaced over time, and are not included (such as cutter wheels, seals, gaskets, o-rings and gauges). Imperial makes no other warranty, expressed or implied. Tools should be returned to the Buyer's place of purchase.



## **REFRIGERATION AND AIR-CONDITIONING PRODUCTS**

---

**MANIFOLDS**

.....1-9

**GAUGES**

.....10

**HOSES**

.....11

**COUPLERS**

.....12-13

**ACCESSORIES & TOOLS**

.....14-15

## **TUBE WORKING TOOLS**

---

**TUBE CUTTERS**

.....16-20

**TUBE BENDERS**

.....21-26

**FLARING & SWAGING**

.....27-35

**TUBING TOOL KITS**

.....36-39

**ACCESSORIES & WRENCHES**

.....40-42

## **ELECTRICAL TOOLS**

---

**STRIPPERS & CRIMPERS**

.....43-44

## **RETAINING RING PLIERS**

---

**UNIVERSAL CONVERTIBLE PLIERS**

.....45

## **MERCHANDISING**

---

**SELLING AIDS & ACCESSORIES**

.....46

**ALPHA-INDEX**

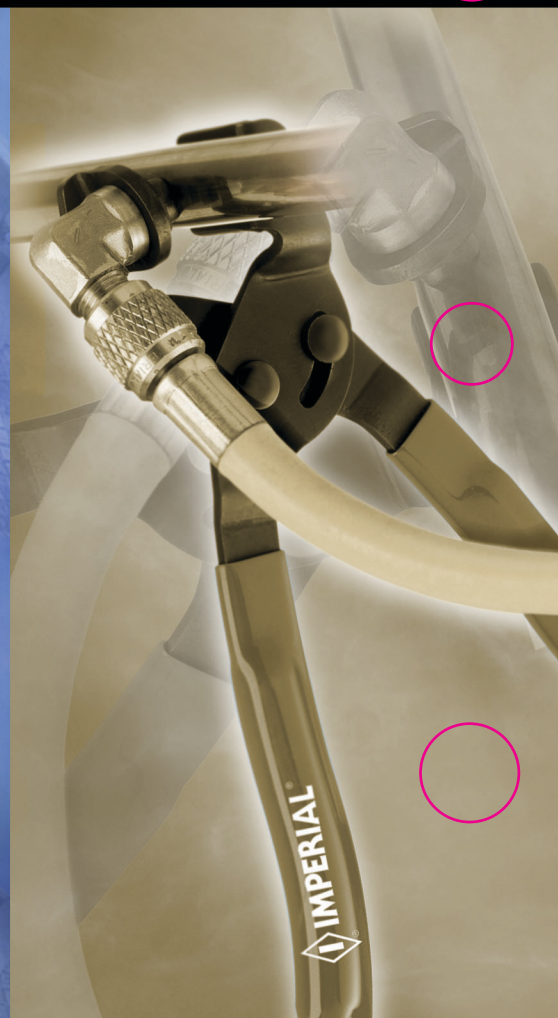
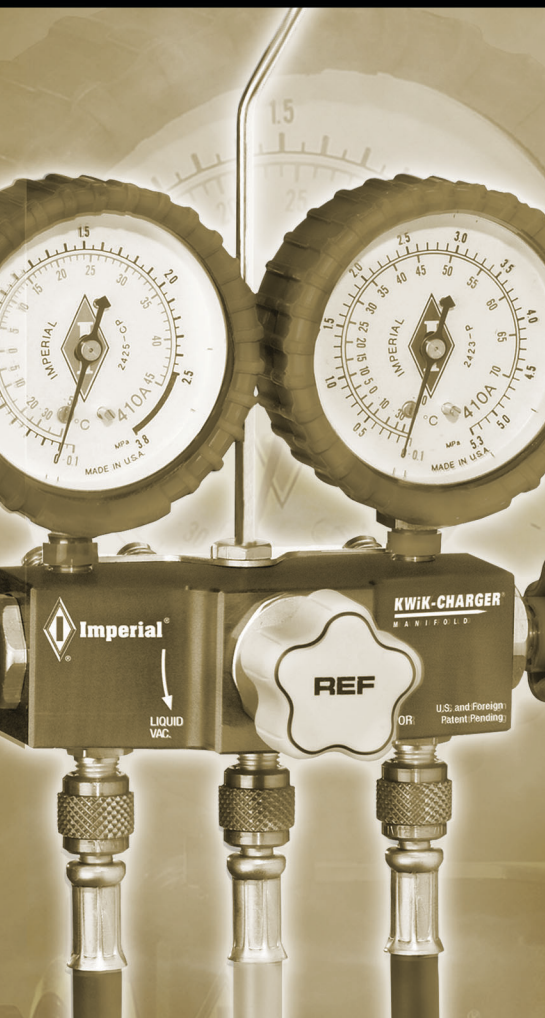
.....47-48

# REFRIGERATION AND AIR-CONDITIONING PRODUCTS

SERVICE MANIFOLDS • GAUGES • HOSES



*The international standard of excellence.™*



# GUIDE TO NEW REFRIGERATION AND A/C PRODUCTS

	ITEM	PAGE
<b>MANIFOLDS</b>	700 SERIES KWIK-CHARGER®	2
<b>GAUGES</b>	EASY TO READ HI-VISIBILITY GAUGES	10
<b>HOSES</b>	900 & 950 SERIES POLARSHIELD®	11
<b>SELLING AIDS &amp; ACCESSORIES</b>	TB-52 PROFESSIONAL TOOL BAG	46



NEW



NEW



NEW




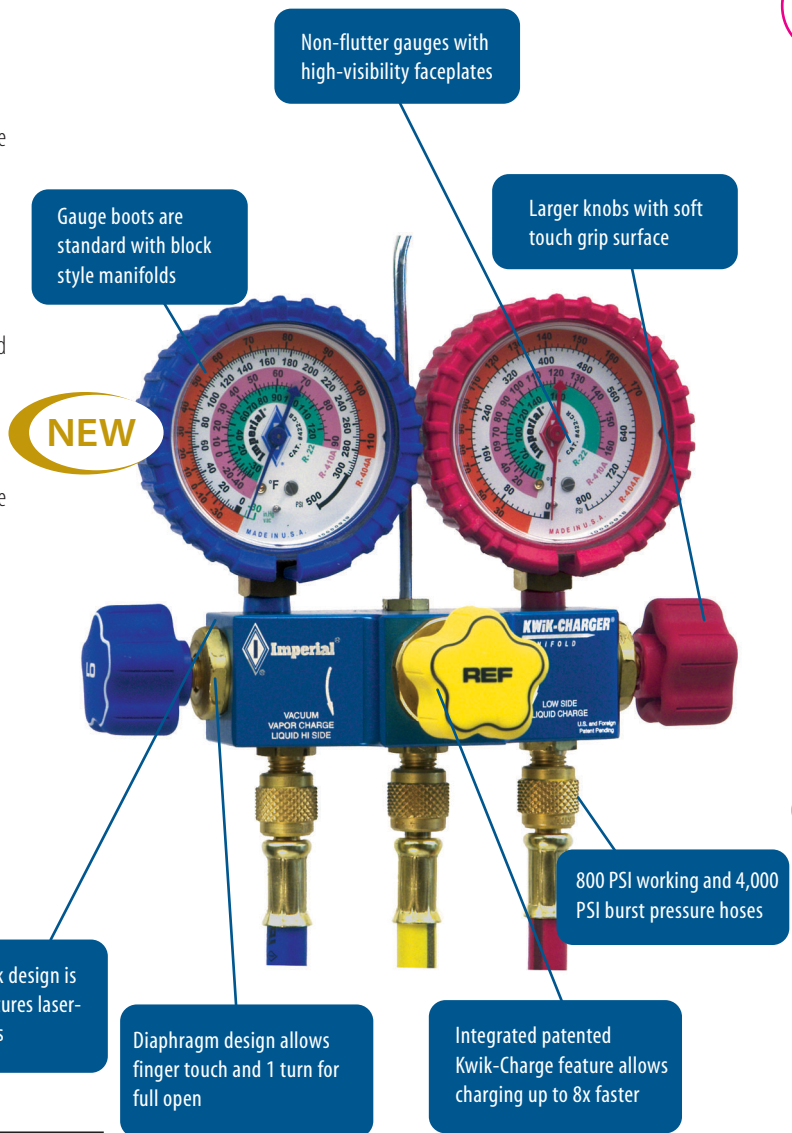
NEW

# SERVICE MANIFOLDS

## 700 SERIES KWIK-CHARGER® MANIFOLD

Charging the system is faster and easier than ever. Imperial® has designed manifolds with built-in Kwik-Charge®.

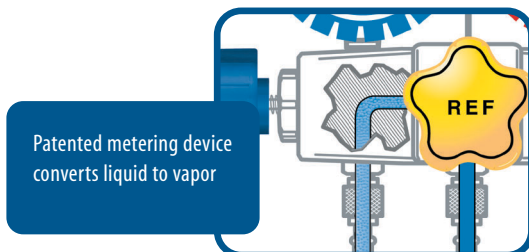
- **Dual Action Valve** - Operates as a conventional manifold, or engage the Kwik-Charge valve and the manifold accepts liquid refrigerant from cylinder and discharges into the low side of the system. Charging rate is up to eight times faster than vapor charging.
- **Safe** - Internal metering element reduces liquid flow to a level below capacity of the compressor. Assures a safe, fast charge without endangering the compressor.
- **All-In-One** - No connecting or disconnecting special adapters for charging new blended refrigerants.
- **No Pressure Drop-In Cylinder** - No need to heat refrigerant cylinder.
- **Works With All Refrigerants** - CFC, HFC, HCFC, Zeotropic and Azeotropic.
- **Filters In All Manifold Port Fittings** - To keep out particulate material that may be present during recovery or reclaim or in recovered refrigerant. Filters are easily serviceable.
- **Deep Vacuum Valve Design** - Proven diaphragm type, soft seat valves require only fingertip pressure to close completely. One turn to full open/close. Superior for deep vacuum service.
- **Precision Gauges & Protective Boots** - Unique gauges provide superior resistance to shock, vibration & pulsation for accurate performance and extended gauge life.
- **PolarShield® Hi-Performance Hoses**  - 800 PSI working pressure, 4,000 PSI burst pressure - not all models include hose.
- **Ergonomic Handles** - Durable, soft touch non-slip surface, even with oily fingers.
- **Swivel Hanger**



### 700 SERIES KWIK-CHARGER® MANIFOLD - See page 8 for details


CATALOG NUMBER	REFRIGERANT	CHARGING LINES	MANIFOLD PORT CONNECTIONS
715-C*	R-410A, R-22, R-404A		1/4" SAE
717-C*	R-410A, R-22, R-404A	3-60"	1/4" SAE
718-C*	R-410A, R-22, R-404A	3-60" w/Low Loss Ball Valve Shut-Off	1/4" SAE
720-C*	R-12, R-22, R-502		1/4" SAE
721-C*	R-12, R-22, R-502	3-60"	1/4" SAE
725-C*	R-12, R-22, R-502	3-60" w/Low Loss Shut-Off Couplers	1/4" SAE
750-C*	R-404A, R-507, R-134a		1/4" SAE
751-C*	R-404A, R-507, R-134a	3-60"	1/4" SAE
755-C*	R-404A, R-507, R-134a	3-60" w/Low Loss Shut-Off Couplers	1/4" SAE

\* Add "C" suffix for clamshell packaging



# SERVICE MANIFOLDS

## 600 SERIES 4-VALVE MANIFOLD

- **4-Valve Efficiency** - Vacuum, low side, high side, and refrigerant lines are individually connected and controlled. No need to switch charging lines.
- **4 Times Faster Evacuation** - 3/8" vacuum port and oversize internal passages evacuate systems four times faster than ordinary manifolds. 3/8" port has greater area than combined inlets of high and low side lines.
- **Deep Vacuum Valve Design** - Proven diaphragm type, soft seat valves require only fingertip pressure to close completely. One turn to full open/close. Superior for deep vacuum service.
- **Precision Gauges & Protective Boots** - Unique design with easy to read color-coded scales provides superior resistance to shock, vibration and pulsation for superior performance and extended gauge life.
- **UL® Recognized** - The 600 Series manifold is recognized by UL.
- **PolarShield® Hi-Performance Hoses ** - 800 PSI working pressure, 4,000 PSI burst pressure - not all models include hose.
- **Ergonomic Handles** - Durable, soft touch non-slip surface, even with oily fingers.
- **Swivel Hanger**

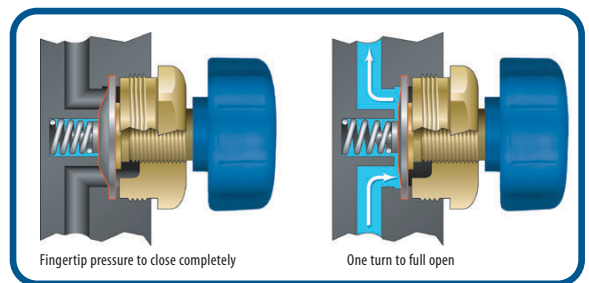


### 600 SERIES 4-VALVE MANIFOLD - See page 8 for details

CATALOG NUMBER	REFRIGERANT	CHARGING LINES	MANIFOLD PORT CONNECTIONS
620-C*	R-12, R-22, R-502		1/4" & 3/8" SAE
620-CS* (w/Sight Glass)	R-12, R-22, R-502		1/4" & 3/8" SAE
621-C*	R-12, R-22, R-502	4-60" (3/8" VAC)	1/4" & 3/8" SAE
621-CS* (w/Sight Glass)	R-12, R-22, R-502	4-60" (3/8" VAC)	1/4" & 3/8" SAE
622-C (w/Carrying Case)	R-12, R-22, R-502	4-60" (3/8" VAC)	1/4" & 3/8" SAE
629-C*	R-12, R-22, R-502	3-60" w/Low Loss Shut-Off Couplers, 1-60" 3/8" VAC Line	1/4" & 3/8" SAE
630-CKP*	R-134a		1/4" & 3/8" SAE
630-CKPS* (w/Sight Glass)	R-134a		1/4" & 3/8" SAE
631-CKP*	R-134a	4-60" (3/8" VAC)	1/4" & 3/8" SAE
631-CKPS* (w/Sight Glass)	R-134a	4-60" (3/8" VAC)	1/4" & 3/8" SAE
640-C*	R-410A		
641-C*	R-410A	4-60" (3/8" VAC)	1/4" & 3/8" SAE
642-C*	R-410A	3-60" w/Low Loss Ball Valve Shut-Off, 1-60" 3/8" VAC Line	1/4" & 3/8" SAE
644-C*	R-410A, R-22, R-404A	4-60" (3/8" VAC)	1/4" & 3/8" SAE
645-C*	R-410A, R-22, R-404A		1/4" & 3/8" SAE
646-C*	R-410A, R-22, R-404A	3-60" w/Low Loss Ball Valve Shut-Off, 1-60" 3/8" VAC Line	1/4" & 3/8" SAE
650-C*	R-404A, R-507, R-134a		1/4" & 3/8" SAE
651-C*	R-404A, R-507, R-134a	4-60" (3/8" VAC)	1/4" & 3/8" SAE
652-C*	R-404A, R-507, R-134a	3-60" w/Low Loss Shut-Off Couplers, 1-60" 3/8" VAC Line	1/4" & 3/8" SAE
653-C (w/Carrying Case)	R-404A, R-507, R-134a	4-60" (3/8" VAC)	1/4" & 3/8" SAE


\* Add "C" suffix for clamshell packaging

### DIAPHRAGM TYPE SOFT SEAT VALVES



# SERVICE MANIFOLDS

## 510 SERIES 2-VALVE / 4-PORT R-410A MANIFOLDS

- **Auxiliary Valve Port** - Allows multiple hookups for vacuum gauge, vacuum pump, recovery unit and add-ons.
- **Dual O-Ring Seal** - For high-pressure valve use. Electroless nickel plate stem to reduce wear and gauling.
- **Precision Gauges & Protective Boots** - Unique design with easy to read color-coded scales provides superior resistance to shock, vibration & pulsation for superior performance and extended gauge life.
- **PolarShield® Hi-Performance Hoses**  - 800 PSI working pressure, 4,000 PSI burst pressure - not all models include hose.
- **Ergonomic Handles** - Durable, soft touch non-slip surface, even with oily fingers.
- **Swivel Hanger**




### 510 SERIES 2-VALVE/4-PORT R-410A MANIFOLDS - See page 8 for details

CATALOG NUMBER	REFRIGERANT	CHARGING LINES	MANIFOLD PORT CONNECTIONS
510-C*	R-410A		1/4" SAE
510-CM*	R-410A		1/4" SAE
511-C*	R-410A	3-60"	1/4" SAE
511-CM*	R-410A	3-60"	1/4" SAE
512-C*	R-410A	3-60" w/Low Loss Ball Valve Shut-Off	1/4" SAE
513-C*	R-410A		5/16" SAE

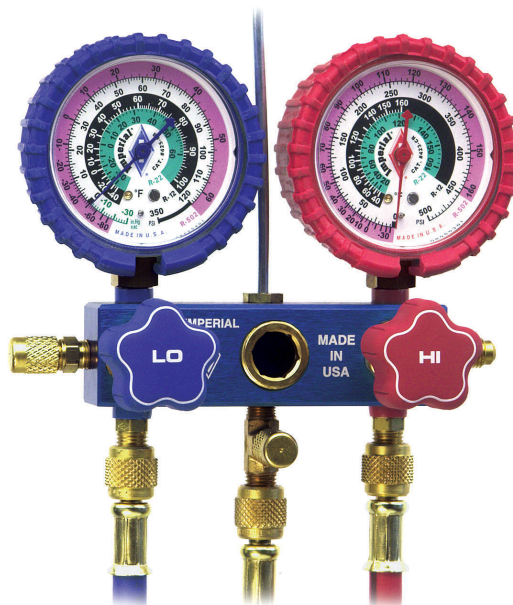
\* Add "C" suffix for clamshell packaging

## 520 SERIES 2-VALVE / 4- OR 5-PORT MANIFOLDS

- **Two Integrated Auxiliary Ports** - Provide additional hookups for use with a micron (vacuum) gauge, vacuum pump, adding tracer dye, adding oil, purging non-condensables.
- **Deep Vacuum Valve Design** - Proven diaphragm type, soft seat valves require only fingertip pressure to close completely. One turn to full open/close. Superior for deep vacuum service.
- **Precision Gauges & Protective Boots** - Unique design with easy to read color-coded scales provides superior resistance to shock, vibration and pulsation for superior performance and extended gauge life.
- **Ergonomic Handles** - Durable, soft touch non-slip surface, even with oily fingers.
- **PolarShield® Hi-Performance Hoses**  - 800 PSI working pressure, 4,000 PSI burst pressure - not all models include hose.
- **Swivel Hanger**

520-CA Combination R-134a & R-12 Auto Manifold. Hose and couplers optional.

520-C Series 2-Valve / 4-Port Manifolds for commercial and residential service.



### 520 SERIES 2-VALVE/ 4- OR 5-PORT MANIFOLDS - See page 8 for details


CATALOG NUMBER	# OF PORTS	REFRIGERANT	CHARGING LINES	MANIFOLD PORT CONNECTIONS
520-C* (w/Sight Glass)	5	R-12, R-22, R-502		1/4" SAE
520-CA* (w/Sight Glass)	4	R-134a, R-12		1/4" SAE
520-CAM* (w/Sight Glass)	4	R-134a, R-12		1/4" SAE
521-C* (w/Sight Glass)	5	R-12, R-22, R-502	3-60"	1/4" SAE
521-CA* (w/Sight Glass)	4	R-134a, R-12	3-60" w/Auto Service Couplers	1/4" SAE
521-CAM* (w/Sight Glass)	4	R-134a, R-12	3-60" w/Auto Service Couplers	1/4" SAE

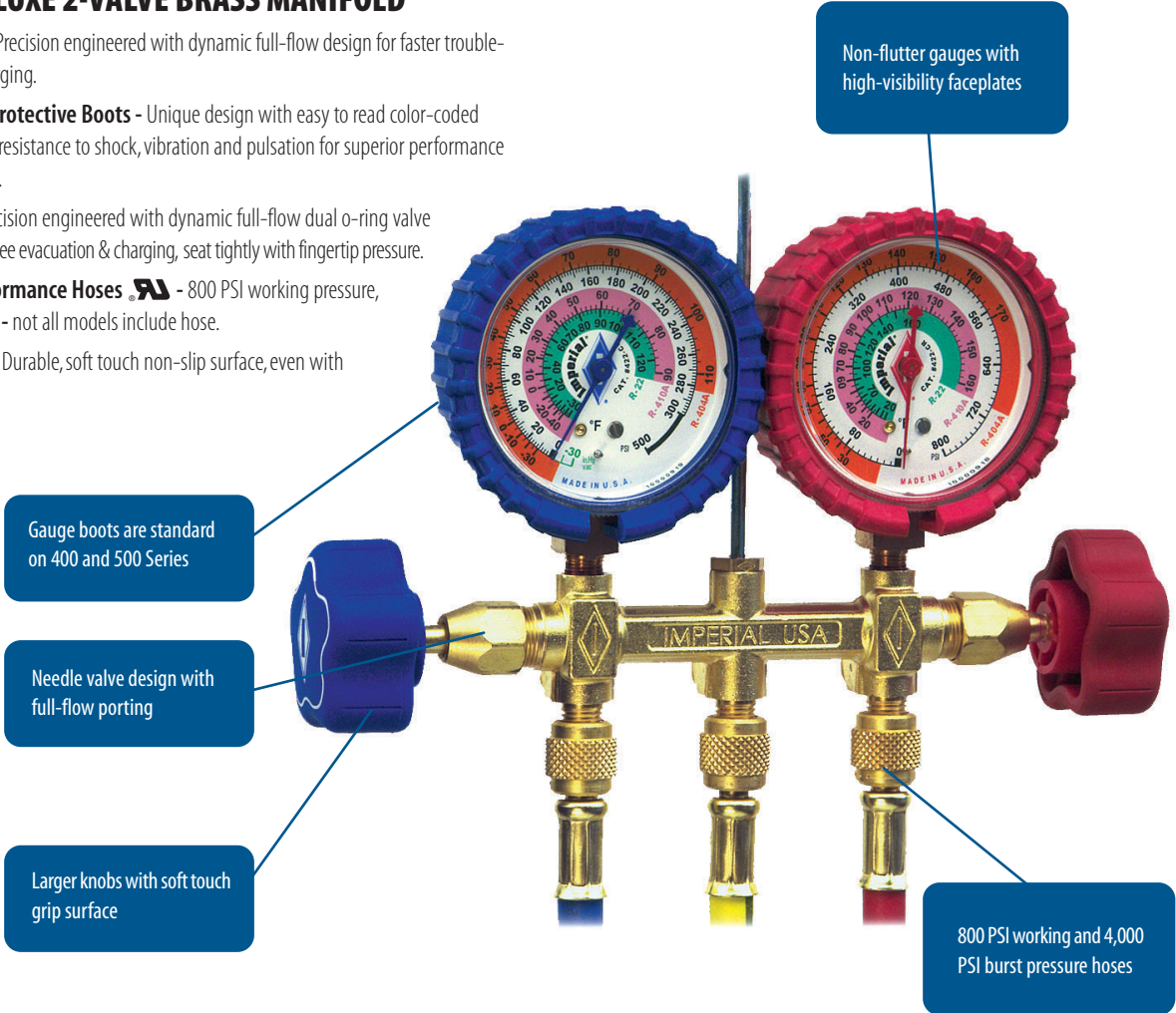
\* Add "C" suffix for clamshell packaging



# SERVICE MANIFOLDS

## 400 SERIES DELUXE 2-VALVE BRASS MANIFOLD

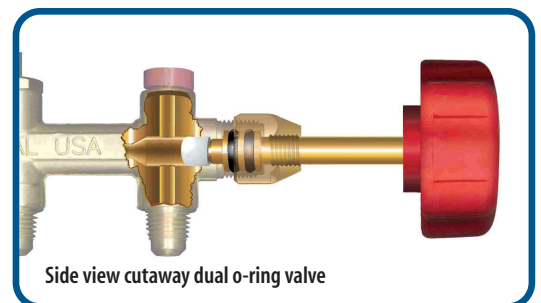
- **Dual O-Ring Valves** - Precision engineered with dynamic full-flow design for faster trouble-free evacuation and charging.
- **Precision Gauges & Protective Boots** - Unique design with easy to read color-coded scales provides superior resistance to shock, vibration and pulsation for superior performance and extended gauge life.
- **Soft Seat Valves** - Precision engineered with dynamic full-flow dual o-ring valve design for faster trouble-free evacuation & charging, seat tightly with fingertip pressure.
- **PolarShield® Hi-Performance Hoses**  - 800 PSI working pressure, 4,000 PSI burst pressure - not all models include hose.
- **Ergonomic Handles** - Durable, soft touch non-slip surface, even with oily fingers.
- **Swivel Hanger**



## 400 SERIES DELUXE 2-VALVE BRASS MANIFOLD - See page 9 for details

CATALOG NUMBER	REFRIGERANT	CHARGING LINES	MANIFOLD PORT CONNECTIONS
415-C*	R-410A		1/4" SAE
416-C*	R-410A	3-36"	1/4" SAE
417-C*	R-410A	3-60"	1/4" SAE
418-C*	R-410A	3-60" w/Low Loss Ball Valve Shut-Off	1/4" SAE
420-C*	R-410A, R-22, R-404A		1/4" SAE
421-C*	R-410A, R-22, R-404A	3-60"	1/4" SAE
422-C*	R-410A, R-22, R-404A	3-60" w/Low Loss Ball Valve Shut-Off	1/4" SAE
435-CKP*	R-134a		1/4" SAE
436-CKP*	R-134a	3-36"	1/4" SAE
450-C*	R-404A, R-507, R-134a		1/4" SAE
451-C*	R-404A, R-507, R-134a	3-36"	1/4" SAE
452-C*	R-404A, R-507, R-134a	3-60"	1/4" SAE
494-C* (body only)			1/4" SAE
495-C*	R-12, R-22, R-502		1/4" SAE
496-C*	R-12, R-22, R-502	3-36"	1/4" SAE
498-C*	R-12, R-22, R-502	2-36", 1-60"	1/4" SAE
500-C*	R-12, R-22, R-502	3-60"	1/4" SAE
505-C*	R-12, R-22, R-502	3-60" w/Low Loss Shut-Off Couplers	1/4" SAE

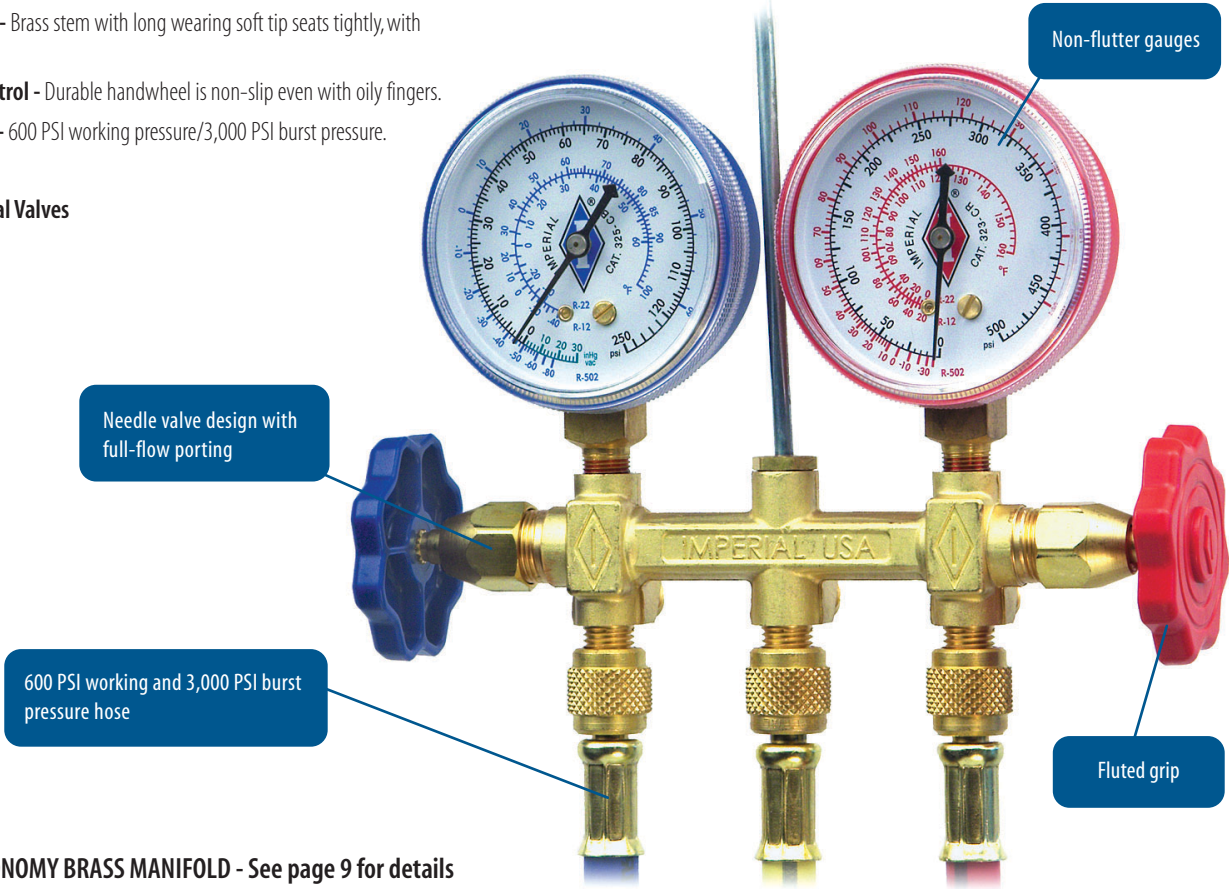
\* Add "C" suffix for clamshell packaging



# SERVICE MANIFOLDS

## 300 SERIES ECONOMY BRASS MANIFOLDS

- **Soft Seat Valve** - Brass stem with long wearing soft tip seats tightly, with fingertip pressure.
- **Fluted Grip Control** - Durable handwheel is non-slip even with oily fingers.
- **Premium Hose** - 600 PSI working pressure/3,000 PSI burst pressure.
- **Fluted Grips**
- **Dual O-Ring Seal Valves**
- **Swivel Hanger**



### 300 SERIES ECONOMY BRASS MANIFOLD - See page 9 for details

CATALOG NUMBER	REFRIGERANT	CHARGING LINES	MANIFOLD PORT CONNECTIONS
335-CKP*	R-134a		1/4" SAE
336-CKP*	R-134a	3-36"	1/4" SAE
395-C*	R-12, R-22, R-502		1/4" SAE
395-CD*	R-12, R-22, R-502		1/4" SAE
395-CKP*	R-12, R-22, R-502		1/4" SAE
396-C*	R-12, R-22, R-502	3-36"	1/4" SAE
396-CD*	R-12, R-22, R-502	3-36"	1/4" SAE
396-CKP*	R-12, R-22, R-502	3-36"	1/4" SAE
397-CD	R-12, R-22, R-502	3-72"	1/4" SAE
398-C	R-12, R-22, R-502	3-60"	1/4" SAE
398-CD	R-12, R-22, R-502	3-60"	1/4" SAE

\* Add "C" suffix for clamshell packaging



## SINGLE GAUGE CHARGING AND TESTING UNIT

A compact, single gauge unit which will perform a variety of charging and testing operations. Body is forged brass, with 1/4" SAE port flare connections.

- **Soft Seat Valve** – Brass stem with long wearing soft tip seats tightly, with fingertip pressure.
- **Fluted Grip Control** – Durable handwheel is non-slip even with oily fingers.
- **Swivel Hanger**


**466-C** Charging and Testing Unit with 425-CB, 2-1/2" compound gauge.  
0 -30" vacuum, 0-120 lbs. pressure.

**401-C** Charging and Testing Unit without gauge.



# AUTOMOTIVE SERVICE MANIFOLDS & ACCESSORIES

## 520 SERIES 2-VALVE 4-PORT SERVICE MANIFOLDS

- **Deep Vacuum Valve Design** - Proven diaphragm type, soft seat valves require only fingertip pressure to close completely. One turn to full open/close. Superior for deep vacuum service.
- **Precision Gauges & Protective Boots** - Unique design with easy to read color-coded scales provides superior resistance to shock, vibration and pulsation for superior performance and extended gauge life.
- **PolarShield® Hi-Performance Hoses**  - 800 PSI working pressure, 4,000 PSI burst pressure - not all models include hose.
- **Ergonomic Handles** - Durable, soft touch non-slip surface, even with oily fingers.
- **Swivel Hanger**



521-CA

## 520 SERIES 2-VALVE 4-PORT MANIFOLD - See page 8 for details

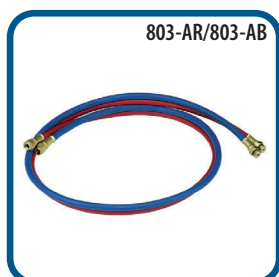
CATALOG NUMBER	REFRIGERANT	CHARGING LINES	MANIFOLD PORT CONNECTIONS
520-CA* (w/Sight Glass)	R-134a, R-12		1/4" SAE
520-CAM* (w/Sight Glass)	R-134a, R-12		1/4" SAE
521-CA* (w/Sight Glass)	R-134a, R-12	3-60" w/R-134a Auto Service Couplers	1/4" SAE
521-CAM* (w/Sight Glass)	R-134a, R-12	3-60" w/Auto Service Couplers	1/4" SAE

\* Add "C" suffix for clamshell packaging

## AUTOMOTIVE R-134a HOSE FOR USE WITH CONVENTIONAL MANIFOLDS EQUIPPED WITH 1/4" SAE PORTS

Red and blue hose supplied with 1/4" SAE FFL x 14 mm male connections. Yellow hose supplied with 1/4" SAE FFL x 1/2" ACME female with ball valve (bv) shut-off.

LENGTH	BLUE	YELLOW W/BV	RED	SET OF THREE (B,Y,R)
3' (36")	803-MAB	803-MAY	803-MAR	803-MAS
5' (60")	805-MAB	805-MAY	805-MAR	805-MAS
6' (72")	806-MAB	806-MAY	806-MAR	806-MAS



803-AR/803-AB



805-MAY



19-C

PATENTED



21-L

21-H



## AUTOMOTIVE R-134a HOSE FOR USE WITH MANIFOLDS EQUIPPED WITH 1/2" ACME PORTS

Red and blue hose supplied with 1/2" ACME female x 14 mm male connections. Yellow hose supplied with 1/2" ACME x 1/2" ACME female with ball valve (bv) shut-off.

LENGTH	BLUE	YELLOW W/BV	RED	SET OF THREE (B,Y,R)
3' (36")	803-AB	803-AY	803-AR	803-AS
6' (72")	806-AB	806-AY	806-AR	806-AS

## PREMIUM R-134a HI-FLOW AUTO SERVICE COUPLERS

14 mm thread connection. Quick connect/disconnect valve actuation eliminates venting. Color-coded knobs for high/low connections.

- Integral safety sleeve prevents accidental refrigerant venting under all operating conditions.
- Provides maximum flow without damaging service port.
- Meets current SAE-J639 specifications.

21-L Low side service coupler.

21-H High side service coupler.



## AUTOMOTIVE KWIK-COUPLER® FOR R-12

19-C (Set) Includes special female coupler for use on 3/16" automotive high side access valves, 1/4" low side coupler, straight and 90° male couplers.

20-A High side adapter. Converts 3/16" system access valve to 1/4" access valve for use with standard 1/4" charging hose.

# AC MANIFOLDS & ACCESSORIES

CATALOG NUMBER	REFRIGERANT	GAUGE CALIBRATION**				TEMP		CHARGING LINES	MANIFOLD PORT CONNECTIONS
		PSI	Kg/cm <sup>2</sup>	kPa	MPa	°F	°C		
<b>700 SERIES KWIK-CHARGER MANIFOLD</b>									
<b>R-410A, 22, 404A</b>									
715-C	R-410A, R-22, R-404A	●				●			1/4" SAE
717-C	R-410A, R-22, R-404A	●				●		3-60"	1/4" SAE
718-C	R-410A, R-22, R-404A	●				●		3-60" w/Low Loss Ball Valve Shut-Off	1/4" SAE
<b>R-404A, 507, 134a</b>									
750-C*	R-404A, R-507, R-134a	●				●			1/4" SAE
751-C*	R-404A, R-507, R-134a	●				●		3-60"	1/4" SAE
755-C*	R-404A, R-507, R-134a	●				●		3-60" w/Low Loss Fittings	1/4" SAE
<b>R-12, 502, 22</b>									
720-C*	R-12, R-22, R-502	●				●			1/4" SAE
721-C*	R-12, R-22, R-502	●				●		3-60"	1/4" SAE
725-C	R-12, R-22, R-502	●				●		3-60" w/Low Loss Fittings	1/4" SAE
<b>600 SERIES 4-VALVE MANIFOLD</b>									
<b>R-12, 502, 22</b>									
620-C*	R-12, R-22, R-502	●				●			1/4" & 3/8" SAE
620-CK*	R-12, R-22, R-502			●		●			1/4" & 3/8" SAE
620-CKP*	R-12, R-22, R-502	●		●		●			1/4" & 3/8" SAE
620-CM*	R-12, R-22, R-502		●			●			1/4" & 3/8" SAE
620-CS* (w/Sight Glass)	R-12, R-22, R-502	●				●			1/4" & 3/8" SAE
621-C*	R-12, R-22, R-502	●				●		4-60" (3/8" VAC)	1/4" & 3/8" SAE
621-CD*	R-12, R-22, R-502	●				●		4-60" (3/8" VAC)	1/4" & 3/8" SAE
621-CK*	R-12, R-22, R-502			●		●		4-60" (3/8" VAC)	1/4" & 3/8" SAE
621-CKP*	R-12, R-22, R-502	●		●		●		4-60" (3/8" VAC)	1/4" & 3/8" SAE
621-CM*	R-12, R-22, R-502		●			●		4-60" (3/8" VAC)	1/4" & 3/8" SAE
621-CS* (w/Sight Glass)	R-12, R-22, R-502	●				●		4-60" (3/8" VAC)	1/4" & 3/8" SAE
622-C (w/Carrying Case)	R-12, R-22, R-502	●				●		4-60" (3/8" VAC)	1/4" & 3/8" SAE
622-CKP (w/Carrying Case)	R-12, R-22, R-502	●		●		●		4-60" (3/8" VAC)	1/4" & 3/8" SAE
629-C*	R-12, R-22, R-502	●				●		3-60" w/Low Loss Fittings, 1-60" 3/8" VAC Line	1/4" & 3/8" SAE
<b>R-134a</b>									
630-CKP*	R-134a	●		●		●			1/4" & 3/8" SAE
630-CKPS* (w/Sight Glass)	R-134a	●		●		●			1/4" & 3/8" SAE
631-CKP*	R-134a	●		●		●		4-60" (3/8" VAC)	1/4" & 3/8" SAE
631-CKPS* (w/Sight Glass)	R-134a	●		●		●		4-60" (3/8" VAC)	1/4" & 3/8" SAE
<b>R-410A</b>									
640-C*	R-410A	●		●		●			1/4" & 3/8" SAE
641-C*	R-410A	●		●		●		4-60" (3/8" VAC)	1/4" & 3/8" SAE
642-C*	R-410A	●		●		●		3-60" w/Low Loss Ball Valve Shut-Off, 1-60" 3/8" VAC Line	1/4" & 3/8" SAE
<b>R-410A, 22, 404A</b>									
644-C	R-410A, R-22, R-404A	●				●		4-60" (3/8" VAC)	1/4" & 3/8" SAE
645-C	R-410A, R-22, R-404A	●				●			1/4" & 3/8" SAE
646-C	R-410A, R-22, R-404A	●				●		3-60" w/Low Loss Ball Valve Shut-Off, 1-60" 3/8" VAC Line	1/4" & 3/8" SAE
<b>R-404A, 507, 134a</b>									
650-C*	R-404A, R-507, R-134a	●				●			1/4" & 3/8" SAE
651-C*	R-404A, R-507, R-134a	●				●		4-60" (3/8" VAC)	1/4" & 3/8" SAE
652-C*	R-404A, R-507, R-134a	●				●		3-60" w/Low Loss Fittings, 1-60" 3/8" VAC Line	1/4" & 3/8" SAE
653-c (w/Carrying Case)	R-404A, R-507, R-134a	●				●		4-60" (3/8" VAC)	1/4" & 3/8" SAE
<b>520 SERIES 2-VALVE MANIFOLD</b>									
<b>R-134a, 12</b>									
520-CA* (w/Sight Glass)	R-12, R-22, R-502	●				●			1/4" SAE
520-CA* (w/Sight Glass)	R-134a, R-12	●				●			1/4" SAE
520-CAM* (w/Sight Glass)	R-134a, R-12		●	●		●			1/4" SAE
521-C* (w/Sight Glass)	R-12, R-22, R-502	●				●		3-60"	1/4" SAE
521-CA* (w/Sight Glass)	R-134a, R-12	●				●		3-60" w/Service Couplers	1/4" SAE
521-CAM* (w/Sight Glass)	R-134a, R-12		●	●		●		3-60" w/Service Couplers	1/4" SAE
<b>510 SERIES 2-VALVE 4-PORT MANIFOLD</b>									
<b>R-410A</b>									
510-C	R-410A	●		●		●			1/4" SAE
510-CM*	R-410A			●		●			1/4" SAE
511-C*	R-410A	●		●		●		3-60"	1/4" SAE
511-CM*	R-410A	●		●		●		3-60"	1/4" SAE
512-C*	R-410A	●		●		●		3-60" w/Low Loss Ball Valve Shut-Off	1/4" SAE
513-C*	R-410A	●		●		●			5/16" SAE

\* Add "C" suffix for clamshell packaging  
 \*\* All gauges available with MPa, kPa, Bar, etc.

# AC MANIFOLDS & ACCESSORIES

CATALOG NUMBER	REFRIGERANT	GAUGE CALIBRATION**				TEMP		CHARGING LINES	MANIFOLD PORT CONNECTIONS
		PSI	Kg/cm <sup>2</sup>	kPa	MPa	°F	°C		
<b>400 &amp; 500 SERIES DELUXE 2-VALVE BRASS MANIFOLD</b>									
<b>R-410A</b>									
415-C*	R-410A	●		●		●	●		1/4" SAE
416-C*	R-410A	●		●		●	●	3-36"	1/4" SAE
417-C*	R-410A	●		●		●	●	3-60"	1/4" SAE
418-C*	R-410A	●		●		●	●	3-60" w/Low Loss Ball Valve Shut-Off	1/4" SAE
<b>R-410A, 22, 404A</b>									
420-C	R-410A, R-22, R-404A	●				●			1/4" SAE
421-C	R-410A, R-22, R-404A	●				●		3-60"	1/4" SAE
422-C	R-410A, R-22, R-404A	●				●		3-60" w/Low Loss Ball Valve Shut-Off	1/4" SAE
<b>R-134a</b>									
435-CKP*	R-134a	●		●		●	●		1/4" SAE
436-CKP	R-134a	●		●		●	●	3-36"	1/4" SAE
<b>R-404A, 507, 134a</b>									
450-C*	R-404A, R-507, R-134a	●				●			1/4" SAE
450-CM*	R-404A, R-507, R-134a		●	●					1/4" SAE
451-C*	R-404A, R-507, R-134a	●				●		3-36"	1/4" SAE
451-CM*	R-404A, R-507, R-134a		●	●			●	3-36"	1/4" SAE
452-C*	R-404A, R-507, R-134a	●				●		3-60"	1/4" SAE
<b>R-12, 22, 502</b>									
494-C*	Manifold body only								1/4" SAE
495-C*	R-12, R-22, R-502	●				●			1/4" SAE
496-CD*	R-12, R-22, R-502	●	●			●			1/4" SAE
495-CKP*	R-12, R-22, R-502	●		●			●		1/4" SAE
496-C*	R-12, R-22, R-502	●				●		3-36"	1/4" SAE
496-CD*	R-12, R-22, R-502	●	●			●		3-36"	1/4" SAE
496-CKP*	R-12, R-22, R-502	●		●			●	3-36"	1/4" SAE
498-C*	R-12, R-22, R-502	●				●		2-36", 1-60"	1/4" SAE
500-C*	R-12, R-22, R-502	●				●		3-60"	1/4" SAE
500-CD	R-12, R-22, R-502	●	●			●		3-60"	1/4" SAE
505-C*	R-12, R-22, R-502	●				●		3-60" w/Low Loss Fittings	1/4" SAE
<b>300 SERIES ECONOMY 2-VALVE BRASS MANIFOLD</b>									
<b>R-12, 22, 502</b>									
395-C*	R-12, R-22, R-502	●				●			1/4" SAE
395-CD*	R-12, R-22, R-502	●	●			●			1/4" SAE
395-CKP*	R-12, R-22, R-502	●		●			●		1/4" SAE
396-C*	R-12, R-22, R-502	●				●		3-36"	1/4" SAE
396-CD*	R-12, R-22, R-502	●	●			●		3-36"	1/4" SAE
396-CKP*	R-12, R-22, R-502	●		●			●	3-36"	1/4" SAE
397-CD	R-12, R-22, R-502	●	●			●		3-72"	1/4" SAE
398-C	R-12, R-22, R-502	●				●		3-60"	1/4" SAE
398-CD	R-12, R-22, R-502	●	●			●		3-60"	1/4" SAE
<b>R-134a</b>									
335-CKP*	R-134a	●		●		●	●		1/4" SAE
336-CKP*	R-134a	●		●		●	●	3-36"	1/4" SAE
<b>MANIFOLD ACCESSORIES &amp; SERVICE PARTS</b>									
105G Sight Glass Repair Kit									
300-RH High Side Repair Kit w/plastic knob for 300 Series "Imperial USA" brass manifold									
300-RL Low Side Repair Kit w/plastic knob for 300 Series "Imperial USA" brass manifold									
600-R Diaphragm Replacement Seal Kit for all 600 Series manifolds									
601-R Replacement VAC & REF Knobs w/stems for all 600 Series manifolds									
602-R Replacement HI & LO Knobs w/stems for all 600 Series manifolds									
400-RB Set: Red & Blue Protective Gauge Boots									
405-RH High Side Repair Kit w/soft touch knob for 400 Series "Imperial USA" brass manifold									
405-RL Low Side Repair Kit w/soft touch knob for 400 Series "Imperial USA" brass manifold									
500-RH High Side Repair Kit for 510 & 511 Series R-410A manifold									
500-RL Low Side Repair Kit for 510 & 511 Series R-410A manifold									
700-CV Control Valve Repair Kit for 700 Series manifold									

\* Add "C" suffix for clamshell packaging

\*\* All gauges available with MPa, kPa, Bar, etc.

# PRECISION REFRIGERANT GAUGES

NOW WITH HI-VISIBILITY REFRIGERANT COLOR-CODED SCALES

- **Superior Shock Resistance** - Our unique patented design isolates the movement from the socket, reducing the effects of shock.
- **Superior Vibration Resistance** - Our enhanced vibration dampening design cushions the movement for flutter-free performance and extended gauge service life.
- **Superior Pulsation Resistance** - After 10 million cycles, these gauges show three times less wear than conventional gauges. The result is a longer lasting, more reliable gauge.
- **Replacement Screw-on Lens** - S8230301
- **Protective Red & Blue Rubber Boot Set** - 400-RB

NEW

NEW



Protective rubber boots for gauges sold separately.

ITEM	PRESSURE GAUGE TYPE	Cmpnd	GAUGE CALIBRATION					TEMP		REFRIGERANTS								
			PSI	Bar	kg/cm2	kPa	MPa	°F	°C	R-12	R-22	R-134a	R-404A	R-407A	R-407C	R-410A	R-502	R-507
2423P	HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2425CP	LOW	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3423IP	HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3425CIP	LOW	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
422CB	LOW	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
422CR	HIGH	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
423CAM	HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
423CAP-D	HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
423CK	HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
423CKB	HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
423CKP	HIGH	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
423CR	HIGH	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
423HPS	HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
425CAM	LOW	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
425CAP-D	LOW	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
425CB	LOW	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
425CK	LOW	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
425CKB	LOW	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
425CKP	LOW	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
425HPS	LOW	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
426CKP	LOW	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
427CKP	HIGH	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
428CKP	LOW	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
429CKP	HIGH	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
431CM	HIGH	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
432CM	LOW	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
434BKP	LOW	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
434RKP	HIGH	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
441CB	LOW	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
441CBM	LOW	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
441CR	HIGH	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
441CRM	HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
451CB	LOW	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
451CBM	LOW	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
451CR	HIGH	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
451CRM	HIGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
452CB	LOW	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
452CR	HIGH	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

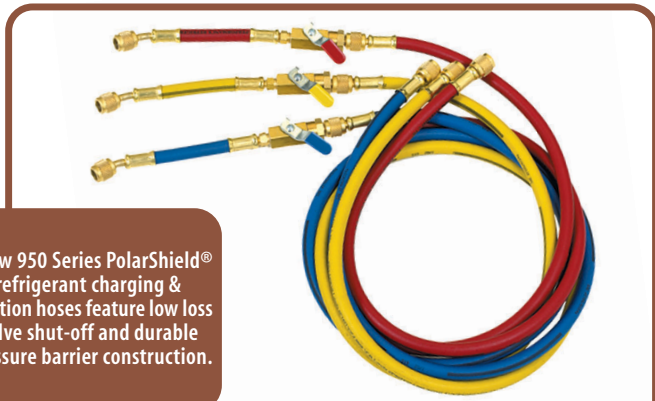
# HI-PERFORMANCE

## PolarShield® PREMIUM HI-PERFORMANCE CHARGING HOSE



### 950, 900 & 800 SERIES

- All Imperial PolarShield charging hoses are UL recognized and meet UL-1963, SAE-J2196 & EPA requirements for strength, pressure and refrigerant permeation.
- **Rugged, Multi-Refrigerant Nylon Barrier Construction** - PolarShield hoses are compatible with all CFC, HCFC & HFC refrigerants (R-410A, R-404A, R-407C, R-134a).
- **High-Pressure** - PolarShield hoses feature 800 PSI working pressure and 4,000 PSI burst pressure with a 5-to-1 safety factor.
- **Selection** - PolarShield hoses are available with a variety of end connections, in yellow, red or blue, individually or in sets of three. Consult factory for lengths and end connections not listed below. (For Automotive R-134a hoses see page 7)



The new 950 Series PolarShield® multi-refrigerant charging & evacuation hoses feature low loss ball valve shut-off and durable hi-pressure barrier construction.

- UL recognized
- 800 PSI working pressure, 4,000 PSI burst pressure
- Works with all refrigerant gasses including R-410A

### 950 SERIES HOSES WITH LOW LOSS BALL VALVE SHUT-OFF AND 1/4" FFL\* CONNECTIONS

LENGTH	BLUE	YELLOW	RED	SET OF THREE (B, Y, R)
3' (36")	953-MRB	953-MRY	953-MRR	953-MRS
5' (60")	955-MRB	955-MRY	955-MRR	955-MRS
6' (72")	956-MRB	956-MRY	956-MRR	956-MRS

\*5/16" fittings available

### 900 SERIES PolarShield® HOSES WITH AUTOMATIC SHUT-OFF VALVE

Precision engineered automatic low loss 1/4" FFL\* shut-off valve traps refrigerant within the hose to eliminate venting and finger burn.

### 900 SERIES HOSES - (1/4" FFL\* CONNECTIONS WITH AUTOMATIC SHUT-OFF ON ONE END)

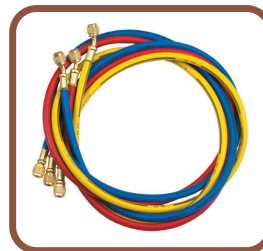
LENGTH	BLUE	YELLOW	RED	SET OF THREE (B, Y, R)
3' (36")	903-MRB	903-MRY	903-MRR	903-MRS
5' (60")	905-MRB	905-MRY	905-MRR	905-MRS
6' (72")	906-MRB	906-MRY	906-MRR	906-MRS

\*5/16" fittings available

### 800 SERIES HOSES - WITH STANDARD 1/4" FITTING\*

LENGTH	BLUE	YELLOW	RED	SET OF THREE (B, Y, R)
3' (36")	803-MRB	803-MRY	803-MRR	803-MRS
4' (48")	804-MRB	804-MRY	804-MRR	804-MRS
5' (60")	805-MRB	805-MRY	805-MRR	805-MRS
6' (72")	806-MRB	806-MRY	806-MRR	806-MRS
8' (96")	808-MRB	808-MRY	808-MRR	808-MRS
12' (144")	812-MRB	812-MRY	812-MRR	812-MRS

\*5/16" fittings available



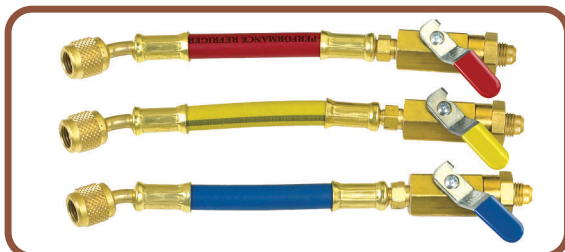
### 6" LOW LOSS BALL VALVE ADAPTER HOSES

1/4" SAE 45° female x 1/4" SAE male straight fittings

Connects to any 1/4" SAE charging line. Non-restrictive for maximum flow. UL recognized - environmentally safe.



LENGTH	BLUE	YELLOW	RED	SET OF THREE (B, Y, R)
6"	800-MBB	800-MBY	800-MBR	800-MBS



### 3/8" EVACUATION HOSE WITH 3/8" SAE SWIVEL CONNECTION

Large size hoses for faster evacuation and charging

3/8" hose in three lengths for larger jobs or applications where reduced service time is desired. 3/8" swivel ends. Eight-crimp ferrules. Available in yellow. Working pressure: 500 PSI. Burst pressure: 2,500 PSI.

LENGTH	YELLOW
3' (36")	536-FTY
4' (48")	548-FTY
5' (60")	560-FTY

### HOSE REPLACEMENT PARTS

- S7958301 1/4" Hose Seal Gasket.
- S7958302 3/8" Hose Seal Gasket.
- S8921626 Brass Core Depressor.
- S10000265 1/2" ACME & 5/16" Hose Seal Gasket.

# KWIK-COUPERS®

## KWIK-COUPLER® - SERVICES HOSE SHUT-OFF

The Kwik-Coupler® set is intended for use with refrigeration and air-conditioning service hoses when connecting to core valve type access fittings. Conventional threaded connecting is converted to push-pull operation which is faster, easier and positive sealing at all times. Valve cores are depressed automatically without adjustments or loss of refrigerant. Disconnecting is also accomplished without loss of refrigerant.

An automatic shut-off valve retains refrigerant pressure in a disconnected hose. This feature permits transferring high side hose refrigerant through the service manifold into the low side, thereby eliminating waste and hazardous high pressure discharge and atmospheric damage.

### FEATURES

- Automatic full depression of core valves without adjustment, regardless of core position.
- Coupler halves separately connect to access fitting and hose end, then easy push/pull operation automatically opens or closes system without loss of refrigerant.
- Automatic shut-off of hose ends permits discharging high side hose through manifold into low side.
- Eliminates hazardous discharge of refrigerant and oil from system when disconnecting hose.
- Simplifies operation of charging critical amount of refrigerant into small systems.
- Prevents finger burn when disconnecting - especially servicing heat pumps in cold weather.
- Core depressors in hose ends no longer necessary - speeds servicing of systems with hand valves.

**16-C** Straight Coupler (45° Flare) 1/4" female x 1/4" male.

**17-C** 90° Elbow Coupler (45° Flare) 1/4" female x 1/4" male.

**18-C** (Set) includes 16-C and 17-C.

**26-C** Straight Coupler (45° Flare) 5/16" female x 5/16" male.

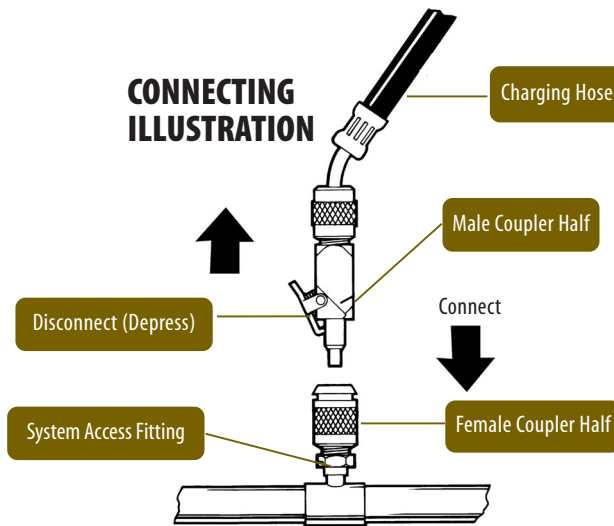
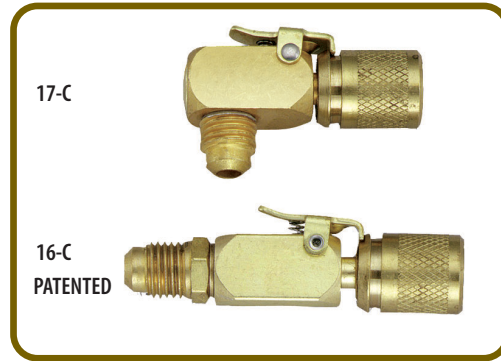
**27-C** 90° Elbow Coupler (45° Flare) 5/16" female x 5/16" male.

(26-C and 27-C Not UL Approved)

## AUTOMOTIVE KWIK-COUPLER® FOR R-12

**19-C** (Set) Same as 18-C except with special female coupler for use on 3/16" high side automotive access valves.

**20-A** High side adapter. Converts 3/16" system access valve to 1/4" access valve for use with standard 1/4" charging hose.



**WARNING:** Do not allow any refrigerant cylinder, connected for charging, to be exposed to system high side pressure cylinder - explosion could result!



## 23-C & 24-C SHUT-OFF COUPLERS

- Coupler captures refrigerant within hose, eliminating refrigerant loss, atmospheric damage, and finger burns.
- Connects quickly & easily to any standard 1/4" SAE refrigerant hose.
- Solid brass construction for years of dependable service.
- Innovative modular design permits easy field repairs.

### SHUT-OFF COUPLERS

CATALOG NUMBER	DESCRIPTION
23-C	Straight 1/4" SAE Shut-Off Coupler
24-C	90 Degree 1/4" SAE Shut-Off Coupler
25-K	Coupler Service Kit

COUPLERS



# KWIK-COUPERS®

## KWIK-COUPLER® REPAIR KITS

The Kwik-Coupler repair kit is intended for use with Imperial's 16-C, 17-C, 18-C and 19-C Kwik-Couplers and PolarShield® KC-Series hose. The male repair kit includes a threaded hex sleeve for replacement on straight coupler assemblies.

### KCK-M Male Kwik-Coupler Repair Kit

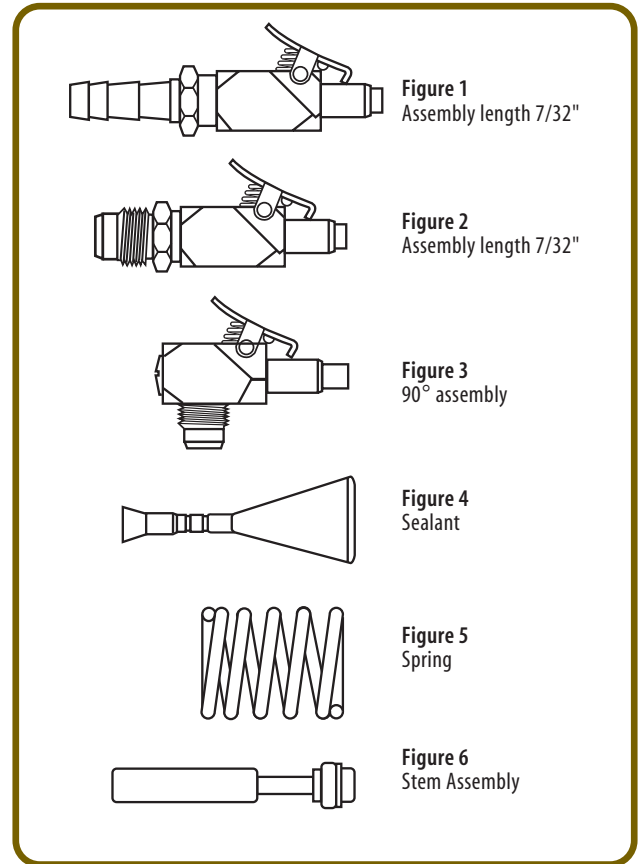
#### REPAIR INSTRUCTIONS

1. Remove threaded sleeve on end of Kwik-Coupler. A vise may be necessary to remove old straight sleeve - the 90° has a screw driver slot on back for removal.
2. Discard old stem and spring.
3. Use a wire brush to clean sealant residue from disassembled parts.
4. Insert new stem and spring.
5. Apply one bead of thread sealant completely around the thread. Do not apply an excessive amount of sealant - this may damage o-ring seal and cause leakage. Assemble to length at right (Fig. 1 & 2). For 90° style, engage threads until the bottom of the slot is even with the back of the coupler (Fig. 3).
6. Allow sealant to cure for at least 30 minutes. The Kwik-Coupler is now ready to use.

### KCK-F Female Kwik-Coupler Repair Kit

#### REPAIR INSTRUCTIONS

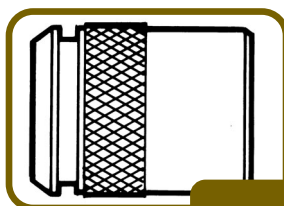
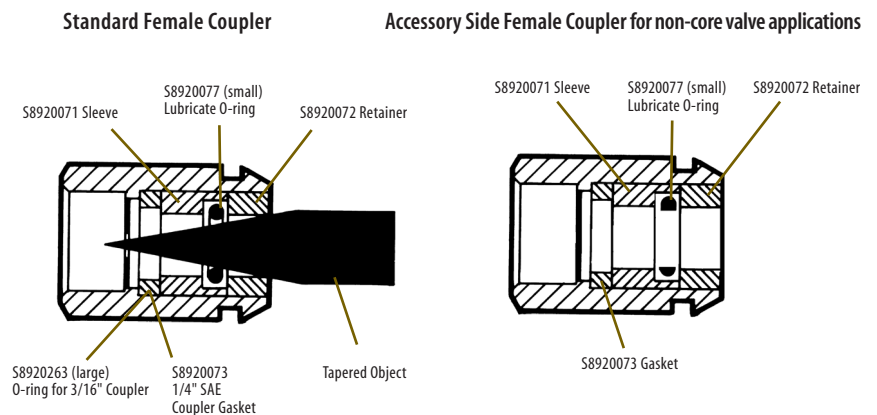
1. Insert tapered object (pen or pencil) and press against threaded retainer. Unscrew and remove retainer sleeve and rubber seals.
2. Lubricate new seals and reassemble. Tighten retainer to zero clearance plus 1/8" turn. Kwik-Coupler is now ready for use.



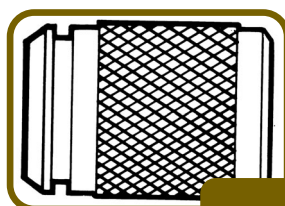
## KWIK-COUPLER REPLACEMENT PARTS

CATALOG NUMBER	DESCRIPTION
S8920069	Male Coupler-Straight
S8920071	Female Coupler-Sleeve
S8920072	Female Coupler-Retainer
S8920073	Female Coupler-Gasket
S8920074	Female Coupler-1/4"
S8920077	Female Coupler-O-Ring
S8920082	Male Coupler-90°
S8920261	Female Coupler-3/16"
S8920263 (19-C only)	Female Coupler-3/16" O-Ring
S5951125	Female Coupler for Non-Core Valve Application
KCK-F	Repair Kit For All Female Couplers
KCK-M	Repair Kit For All Male Couplers

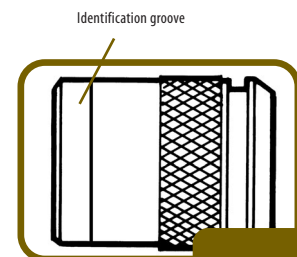
## FEMALE KWIK-COUPLER REPAIR KIT – KCK-F (not for 26-C and 27-C)



**S8920261** Female Coupler (1/16" high side automotive)



**S8920074** 1/4" Female Coupler



**S5951125** Female Coupler (accessory side)

# REFRIGERANT CHARGING & RECOVERY

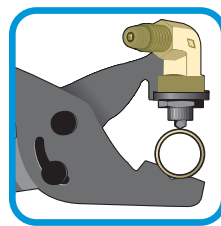
## KWIK-VISE®

### Refrigerant Recovery Tool

**PT-109** Line piercing/refrigerant recovery tool pierces, seals and locks on to copper lines in one swift motion.

Self adjusting! No need to adjust the tool for different sizes of tubing. The patented tension system automatically locks pliers on copper tubing 1/4" to 1/2" (6 mm-12 mm) O.D.tubing.

To use simply position the PT-109 on the tubing to be pierced. Close the pliers quickly and firmly. The pliers will automatically adjust and lock into a tightly sealed, secure position.



PATENTED PT-109



### Features

- Replaceable hardened, stainless steel pierce and brass valve assembly.
- Capacity: 1/4" thru 1/2" O.D. refrigerant copper tubing.
- Durable: made with high carbon, heat treated, steel jaws.
- Works with all refrigerants CFC, HFC, HCFC and Zeotropic, Azeotropic.
- 90° elbow valve eliminates tangling and interference problems.

## KWIK-CHARGE®

### Liquid low side charger provides fast, safe charge essential when using tracing dye.

Kwik-Charge accepts liquid refrigerant from the cylinder and discharges into low side of the system. Charging rate is up to eight times faster than vapor charging. In addition, liquid charging is required when using R-410A and other blended refrigerants. Kwik-Charge is attached to the low side of the charging manifold. Charging hose is connected from Kwik-Charge outlet to low side of refrigeration system. Internal Kwik-Charge metering element reduces liquid flow to a level below capacity of compressor. This assures a safe, fast charge without endangering the compressor. A built-in ball check valve automatically opens when drawing a vacuum to assure rapid, unrestricted evacuation. Can be used with all fluorinated hydrocarbon refrigerant systems.

### Features

- Up to 8 times faster than vapor charging.
- No need to heat refrigerant cylinder.
- Built-in check valve opens for drawing unrestricted vacuum.
- No pressure drop in cylinder.
- One charger services all units 1/2 ton or larger.



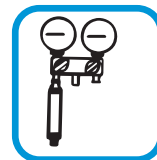
535-C

**535-C** Kwik-Charge 1/4" female SAE flare inlet, 1/4" male SAE flare outlet.

**545-C** Kwik-Charge 5/16" female SAE flare inlet, 5/16" male SAE flare outlet.

### CONNECTION TO MANIFOLDS (connect all hoses as usual)

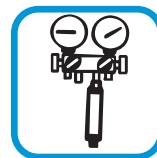
**2-Valve** Connect Kwik-Charge® to low side fitting. Arrow downward.



Kwik-Charge® can be connected to refrigerant cylinder rather than manifold.



**4-Valve** Unscrew Kwik-Charge® end fitting & reverse, then connect to refrigerant fitting as shown (flow arrow on body points upward).



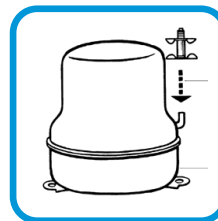
## PROCESS TUBE ADAPTER FOR CHARGING & TESTING

Offers a convenient method of making a service connection to a hermetic unit. Also ideal for providing a connection in testing coils and tubing installations. Handles pressure to 100 PSI.

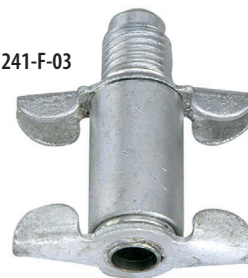
To connect to a hermetic system, pinch-off tube is cut off and adapter is slipped over cut end of tube and tightened. Synthetic rubber seal of adapter grips and seals outside of tube. This gives a 1/4" SAE male flare connection to the system for evacuating, charging or testing.

After system is recharged, tube is pinched off next to adapter.

Adapter is then removed and tube is cut off and sealed with solder. Adapter can be reused repeatedly.



241-F-03



CATALOG NUMBER	TUBE O.D. (in.)	SAE FLARE END (in.)
241-F-03	3/16	1/4
241-F-04	1/4	1/4
241-F-05	5/16	1/4
241-F-06	3/8	1/4

Pinch-off tube on hermetic compressor is cut off and 241-F is placed on tube. Charging line is connected to flare end of 241-F.

ACCESSORIES & TOOLS

# PIERCING VALVES & ADAPTERS

## 3-IN-1 PIERCING VALVE

Fast, easy, secure installation. Provides access to line at any point for charging, testing or evacuation. Two valves cover 3/16" to 5/8" O.D. tubing. Has depressor valve and needle valve shut-off.

Valve clamps on tubing line with two captive slotted head screws: positive built-in mechanical stop for each tube size eliminates tightening guesswork. To pierce tube, thread down the combination 1/4" flare port, stem and needle using knob furnished or a suitable wrench, back off stem and connect depressor type hose for testing or charging. After service is completed valve is closed and left on line for future service. Dust cap provided.

Three-point sealing [in Fig. 1: (1) needle-type valve, (2) gasket and (3) check valve] prevents leakage. Neoprene seal withstands temperatures near 300° F.

**541-C** Fits 3/16", 1/4" and 5/16" O.D. tubing.

**542-C** Fits 3/8", 1/2" and 5/8" O.D. tubing.

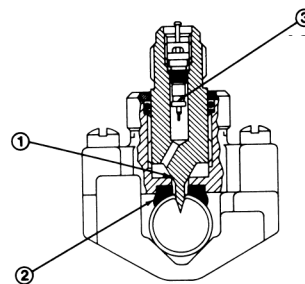
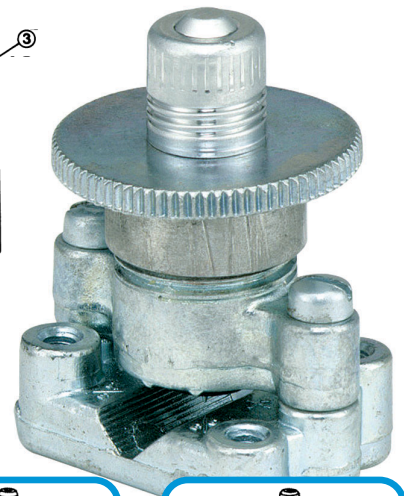
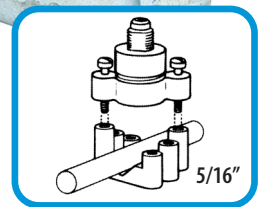
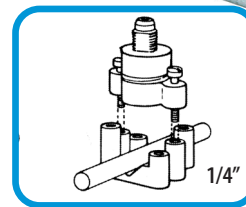
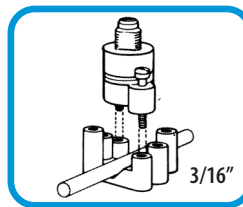


Fig. 1

541-C



### FITS THREE SIZES



## TAP-A-LINE®

### Universal Line Piercing Valves

A quick and economical way to tap into a line at any point for charging, testing or evacuating hermetically sealed units. Valve fits 3/16" to 3/8" O.D. tubing and has 1/4" flare connections for charging lines. Valve clamps on tubing line, one end of charging line is attached to 1/4" flare connection on valve and other end to testing unit or refrigerant tank. Valve stem is turned forward until sharp needle pierces tubing. Stem is then backed off for testing or charging. After service is completed, valve is closed and left on line for future service. Valve has T-Grip handle and forged brass body. Sealing gasket is confined to prevent falling out. V-block centers valve on tube, and is attached to nut so that it can't be lost.

**341-C** Line piercing valve.

**S67842** Replacement seal gasket.



341-C



12-C



9-C



10-C

## SERVICES/SHUT-OFF VALVE

**12-C** 1/4" SAE female swivel connection by 1/4" SAE male flare, adjustable core depressor, positive shut-off. Can be used as a hose shut-off valve.

## ACCESS FITTINGS/SWIVEL ADAPTERS

**10-C** 90° swivel adapter, 1/4" SAE male flare by 1/4" SAE female flare swivel connection with core depressor.

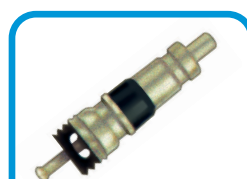
**9-C** Straight adapter, 1/8" female pipe by 1/4" SAE female swivel connection.

## ACCESS VALVES

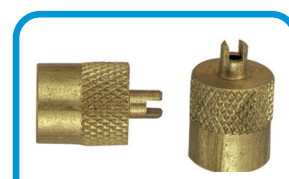
These valves are designed to facilitate charging and testing of refrigeration systems. Furnished with flare cap on valve end.



Half Union		
Catalog Number	Tube O.D. (in.)	Pipe Thread (in.)
GU1-4A	1/4	1/8
GU1-4B	1/4	1/4



**Replacement Valve Cores**  
Catalog Number G6400



**Wrench Caps**  
Catalog Number G6600



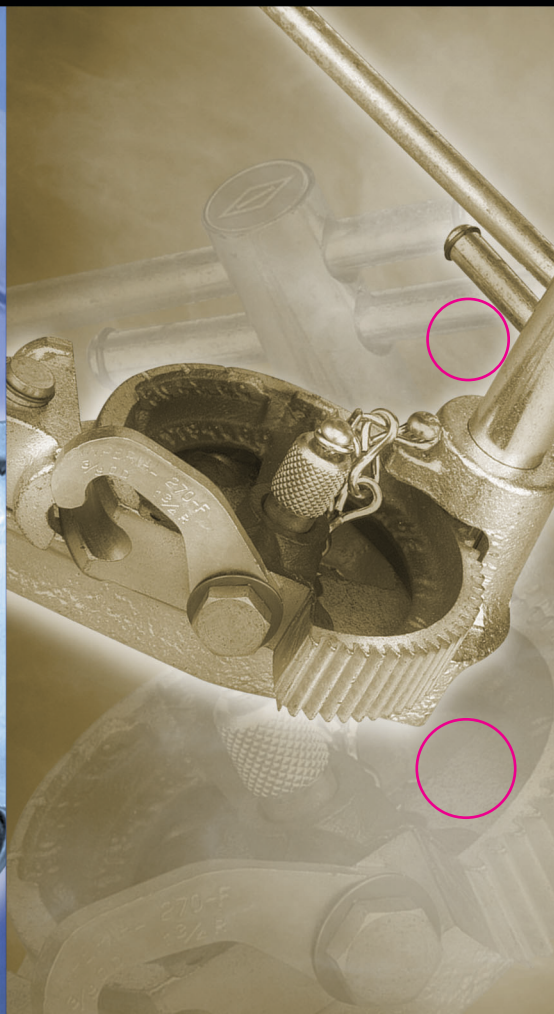
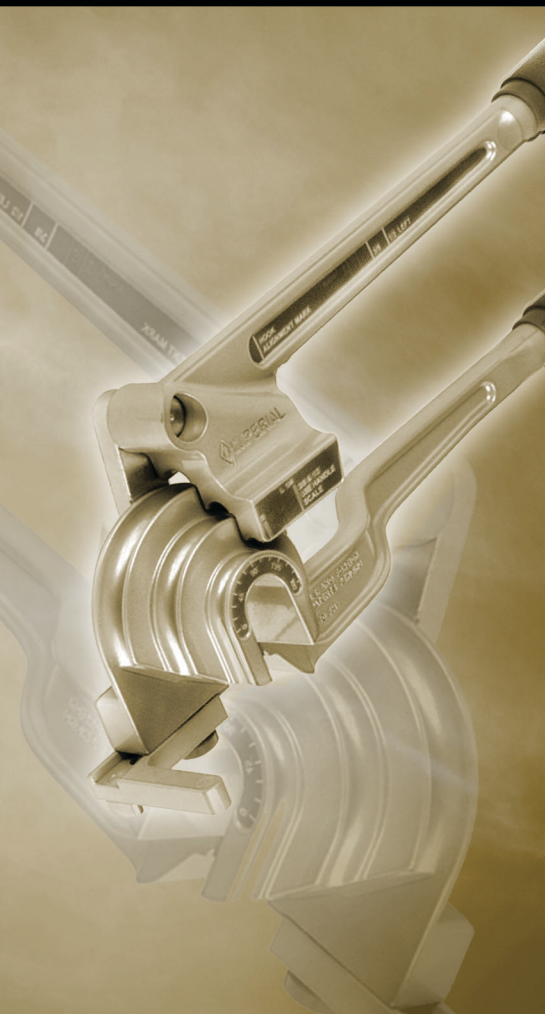
Flare Caps	
Catalog Number	For Flare Size
640-FC-04	1/4"
640-FC-06	3/8"

# PROFESSIONAL TUBE WORKING TOOLS

TUBE CUTTERS • TUBE BENDERS • FLARING & SWAGING



*The international standard of excellence.™*



# GUIDE TO NEW TUBE WORKING TOOLS

	ITEM	PAGE
<b>TUBE CUTTERS</b>	TC-1010 HI-DUTY® TUBE CUTTER	17
<b>TUBE BENDERS</b>	370-FH TRIPLE HEAD BENDER 371-FH TRIPLE HEAD BENDER	21 21
<b>FLARING &amp; SWAGING</b>	95-S 6 IN 1 SWAGE PUNCH	33



For hard or soft copper, aluminum, brass, thin wall steel, stainless steel, monel, titanium and other tubing.

## METAL TUBING

### HI-DUTY® TUBE CUTTERS

For 1/8" to 1-1/8" and 1/4" to 1-5/8" O.D. tubing.

- Enclosed hardened steel, thrust bearing feed mechanism for smoothest cutting action and trouble free operation.
- Imperial's unique design eliminates spiraling for clean right angle cuts. Our high precision machining and construction method permits one-piece screw type axle for easy access to cutting wheel – no clip to lose or replace.
- Rugged aluminum alloy body designed for handling ease. Body is hand buffed and nickel chrome plated to a high luster finish.
- Foldaway hardened steel reamer with turned cutting edge removes inside burrs cleanly. Filing surface removes outside burrs.
- Rollers feature flare cut-off groove to reduce tube loss when damaged flare is removed.
- Imperial cutter wheels are made of the highest quality wear & abrasion resistant chromium steel and precision machined to exacting specifications for accurate cutting and long life. Each tool is supplied with a spare cutter wheel.
- All Imperial tube cutters are 100% factory tested to ensure accurate spiral free cutting.



TC-1000

**TC-1000** For 1/8" to 1-1/8" (4 mm to 28 mm) O.D. tubing. Includes (2) S75015 general-purpose cutter wheels. Length 5". Wt. 6.5 oz.

**TC-1010** For 1/8" to 1-1/8" (4 mm to 28 mm) O.D. tubing. Includes (2) S75046 cutter wheels for continuous cutting of stainless steel, monel and other hard temper tubing. Length 5". Wt. 6.5 oz.

**TC-1020** Combination tube constrictor & tube cutter. For 1/8" to 1-1/8" (4 mm to 28 mm) O.D. tubing. Includes S76637 constrictor wheel and S75015 general-purpose cutter wheel. Length 5-1/2". Wt. 7.0 oz.

**312-FC** For 1/4" to 1-5/8" (7 mm to 41 mm) O.D. tubing. Includes (2) S75015 general-purpose cutter wheels. Length 5-1/2". Wt. 7.0 oz.

Conforms to Federal Specification GGG-C-771d, Type II, Class I.

**S75015** General-purpose cutter wheel.

**S75046** Wheel for continuous cutting of stainless steel, monel and other hard temper tubing.

**S16003162** Replacement cutting wheel for soft copper & aluminum tubing is extra sharp to minimize burr buildup.

**S76637** Constrictor wheel for producing sweat joints.



TC-1010



312-FC

<p><b>ENCLOSED THRUST BEARING FEED</b> Hardened steel thrust bearing feed.</p>	<p><b>FLARE CUT-OFF GROOVE</b> Groove in rollers reduces tube loss when cracked flare is removed.</p>	<p><b>RETRACTABLE REAMER</b> Foldaway hardened steel reamer with turned cutting edge removes inside burrs cleanly. Filing surface removes outside burrs.</p>	<p><b>SPARE CUTTING WHEEL</b> Spare cutting wheel carried under retractable locking reamer.</p>	<p><b>TC-1020 TUBE CONSTRICTOR</b></p> <p><b>FILL WITH SOLDER</b> Joint is ready for sweating when constricted tube contacts smaller tube. Can be used for crimping applications.</p>
------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

### JUNIOR TUBE CUTTER

For 1/8" to 3/4" (4 mm to 19 mm) O.D. tubing.

**227-FA** Includes S32633 general-purpose cutter wheel. Swing radius 2". Length 3-1/2". Wt. 5.0 oz.



227-FA

For hard or soft copper, aluminum, brass, thin wall steel, stainless steel, monel, titanium and other tubing.

## METAL TUBING

### IMP® MINI TUBE CUTTERS

For 1/8" to 5/8" and 3/16" to 7/8" O.D. tubing.

- Big capacity, small size tube cutters designed for use in tight quarters where other cutters won't fit.
- Enclosed feed screw minimizes contamination assuring continued smooth operation.
- Corrosion resistant stainless steel rollers positioned at bottom of cutter allows for easier cutter engagement on tubing and smoother cutting action.
- All Imperial tube cutters are 100% factory tested to ensure accurate spiral free cutting.

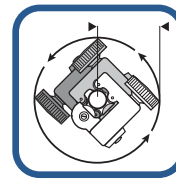
**TC-1050** For 1/8" to 5/8" and 4 mm to 15 mm O.D. tubing. Includes (1) S32633 general-purpose cutter wheel. Swing radius 1-1/4". Length 1-3/4". Wt. 2.5 oz.

**TC-2050** For 3/16" to 7/8" and 5 mm to 22 mm O.D. tubing. Includes (1) S75015 general-purpose cutter wheel. Swing radius 1-11/16". Length 2-1/4". Wt. 4.0 oz.

### "BIG IMP"® TUBE CUTTER - "Big capacity in small size"

For 3/8" to 1-1/8" (10 mm to 28 mm) O.D. tubing.

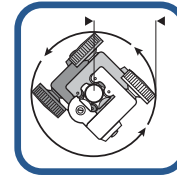
**174-F** Includes (2) S75015 general-purpose cutter wheels. Swing radius 1-15/16" (2-1/4" swing radius with 1-1/8" tube). Length 2-11/16". Wt. 5.0 oz.



Swing Radius  
1-1/4"

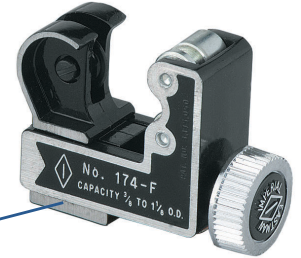


TC-1050



Swing Radius  
1-15/16"

174-F



S75015 - Spare cutting wheel

### ADJUST-O-MATIC® TUBE CUTTERS

For 3/8" to 2-5/8" and 2" to 4-1/8" O.D. tubing.

- Ratchet feed mechanism speeds up cutting operation.
- Extra wide rollers with flare cut-off groove stabilize tubing.
- Spare cutting wheel included under handle cap.
- Enclosed screw-type feed mechanism; light weight aluminum alloy body.

**206-FB** For 3/8" to 2-5/8" and 10 mm to 66 mm O.D. tubing. Includes (2) S74761 general-purpose cutter wheels. Length closed 7-3/4". Wt. 2.0 lbs.

**206-FBP** Cuts schedule 40 PVC pipe up to 2". Includes one cutter wheel for PVC S10000770 and one general-purpose cutter wheel S74761.

**406-FA** For 2" to 4-1/8" and 51 mm to 104 mm O.D. tubing. Includes (2) S74833 general-purpose cutter wheels. Length closed 11-1/4". Wt. 3.5 lbs.



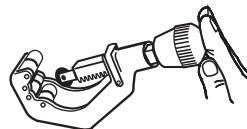
406-FA

206-FB

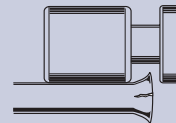
Conforms to Federal Specification GGG-C-771d, Type II, Class I.



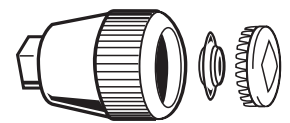
**RATCHET FEED**  
Ratchet release opens cutter instantly to maximum size.



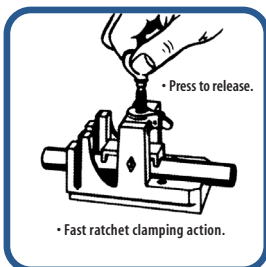
**RATCHET FEED**  
Push on handle to slide cutting wheel to tubing. Rotate handle for fine adjustment.



**FLARE CUT-OFF GROOVE**  
Wide flare cut-off groove in rollers to accommodate flares on large size tubing.



**SPARE CUTTING WHEEL**  
Spare cutting wheel included in handle under snap-off cap.



• Fast ratchet clamping action.



384-FA

### SAWING VISE

**384-FA** For 1/8" to 1-1/2" and 4 mm to 28 mm O.D. tubing. Cuts metal and non-metal tubing. Designed for stainless steel tubing that requires flaring. Grips tube or hose securely for perfect right angle cuts. Excellent for holding stainless steel tubing and wire braided hose when cutting with a hacksaw. Quick clamp adjustment with instant tube release. Replaceable hardened steel hacksaw guides. Fastens on bench or clamp in vise. Size: 5" x 3-1/8" x 5-1/8". Wt. 2.5 lbs.

Conforms to Federal Specification GGG-V-436d.

# NON-METAL REINFORCED TUBING

## PLASTIC TUBE AND HOSE SHEARS

For 1/16" to 13/16" (1 mm to 20 mm) O.D. hose\* or tubing.

**307-FP Snimp®** For 1/16" to 1/2" and 1 mm to 13 mm O.D. plastic tubing and non-metal reinforced hose. Compact shear is spring loaded for safety. Includes S8115601 replaceable hardened steel blade. Length 2-7/8". Wt. 1.0 oz. each. Comes in 12-pc pop-up counter display. 9"d x 12"w x 12"h.

**327-FP** For 1/8" to 13/16" and 4 mm to 20 mm O.D. plastic tubing and non-metal reinforced hose. Can be wall or bench mounted for production, or carried in a toolbox. Includes S77615 replaceable hardened steel blade. Length 9-3/4". Wt. 1.0 lb.

\* Not for use with metal reinforced hose.



307-FP



327-FP



307-FP POP UP DISPLAY





# METAL TUBING

## NEW TUBE CUTTER SERVICE CENTER

For 1/8" to 4-1/8" O.D. tubing.

Selling Imperial® replacement cutter wheels, reamer blades and fasteners just got easier. Our new Service Center organizes a popular selection of replacement parts for Imperial cutters. Display on the counter or bring it with you when making sales calls. You can even sell the whole unit to customers!

### 144-F IMPERIAL TUBE CUTTER SERVICE CENTER

- 15 most common replacement parts stocked in one handy container.
- Includes a visual replacement chart for quick and easy identification.



#### 144-F SERVICE CENTER INCLUDES:

PART #	QUANTITY	DESCRIPTION	CUTTER
S75015	10	General Purpose Cutter Wheel	TC-1000, TC-1010, 312-FC, 174-F, TC-2050
S75046	5	Cutter Wheel for Stainless Steel	TC-1000, TC-1010, 312-FC, 174-F, TC-2050
S32633	10	Cutter Wheel	TC-1050, 227-FA
S74761	5	Cutter Wheel	206-FB, 206-FBP
S74762	5	Cutter Wheel Retaining Screw	TC-1000, TC-1010, 312-FC, 174-F, TC-2050
S74833	3	Cutter Wheel	406-FA
S26883	3	Cutter Wheel Retaining Screw	TC-1050
S77511	3	Cutter Wheel Retaining Screw	206-FB, 206-FBP
S74834	3	Cutter Wheel Retaining Screw	406-FA
S76637	3	Constrictor Roller Wheel	TC-1000, TC-1010, TC-1020, 312-FC
S16003162	5	Cutter Wheel for Soft Copper Only	TC-1000, TC-1010, 312-FC, 174-F, TC-2050
S10000770	3	Cutter Wheel for PVC	206-FB, 206-FBP
S7931801	3	Reamer Blade	TC-1000, TC-1010, 312-FC
S8201501	3	Retaining Screw for Reamer Blade	TC-1000, TC-1010, 312-FC
S74197	3	Spring Washer for Reamer Blade	TC-1000, TC-1010, 312-FC
144FB	1	Container only	

#### PARTS CONTENTS CHART:

<b>CUTTER WHEEL</b> Part# S74833 for Cutter # 406-FA 	<b>CUTTER WHEEL FOR PVC</b> Part# S10000770 for Cutters # 206-FB, 206-FBP 	<b>CUTTER WHEEL</b> Part# S74761 for Cutters # 206-FB, 206-FBP 	<b>GENERAL PURPOSE CUTTER WHEEL</b> Part# S75015 for Cutters # TC-1000, TC-1010, 312-FC, 174-F, TC-2050 	<b>CUTTER WHEEL FOR SOFT COPPER ONLY</b> Part# S16003162 for Cutters # TC-1000, TC-1010, 312-FC, 174-F, TC-2050 	<b>CONSTRICTOR ROLLER WHEEL</b> Part# S76637 for Cutters # TC-1000, TC-1010, TC-1020, 312-FC 
<b>CUTTER WHEEL FOR STAINLESS STEEL</b> Part# S75046 for Cutters # TC-1000, TC-1010, 312-FC, 174-F, TC-2050 	<b>CUTTER WHEEL</b> Part# S32633 for Cutters # TC-1050, 227-FA 	<b>SPRING WASHER FOR REAMER BLADE</b> Part# S74197 for Cutters # TC-1000, TC-1010, 312-FC 	<b>REAMER BLADE</b> Part# S7931801 for Cutters # TC-1000, TC-1010, 312-FC 	<b>CUTTER WHEEL RETAINING SCREW</b> Part# S26883 for Cutter# TC-1050 	<b>CUTTER WHEEL RETAINING SCREW</b> Part# S74834 for Cutter # 406-FA 
<b>CUTTER WHEEL RETAINING SCREW</b> Part# S77511 for Cutters # 206-FB, 206-FBP 	<b>CUTTER WHEEL RETAINING SCREW</b> Part# S74762 for Cutters # TC-1000, TC-1010, 312-FC, 174-F, TC-2050 	<b>RETAINING SCREW FOR REAMER BLADE</b> Part# S8201501 for Cutters # TC-1000, TC-1010, 312-FC 			

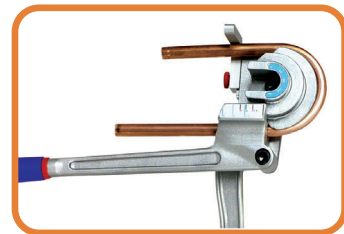
## TRIPLE HEAD LEVER TYPE

### 370-FH TRIPLE HEAD 180° TUBE BENDER

- Bends 1/4", 3/16", 3/8" and 1/2" Tubing.
- Makes Smooth, Tight Radius 180° Bends.
- Calibrated Markings - for making accurate left-hand, right-hand and offset bends.
- Adjustable hook.
- Optimum Bending Radius - for each tubing size.
- Cushion Grips - for extreme comfort.
- Made of Lightweight Die-Cast Aluminum.
- **371-FH** Metric Bender - for 6 mm, 10 mm and 12 mm.
- Clamshell packaging available.

Bend 3 of the most popular sizes of soft copper, aluminum and thin wall steel tubing with one rugged, precise tool!

**NEW**



Easy 180° bends in one swift motion

#### 370-FH

TUBE O.D. (in.)	RADIUS TO CENTER OF TUBE (in.)
1/4	11/16
3/8	1-1/8
1/2	1-1/2

#### 371-FH

TUBE O.D. (mm)	RADIUS TO CENTER OF TUBE (mm)
8	17.5
10	28.6
12	38.12



### IMP® TRIPLE HEAD BENDERS

For soft copper, aluminum and thin wall steel tubing.  
For 1/8", 3/16", 1/4", 5/16", 3/8" O.D. tubing.  
Makes up to 90° bends.

Calibrated markings for making accurate left-hand, right and offset bends. Ninety degree start requires less effort – making bending fast and easy. For soft copper, aluminum and steel.

**367-FH** For 1/8", 3/16" and 1/4" (3 mm, 4 mm and 6 mm) O.D. tubing.  
9/16" (14.2 mm) radius to center of tube. Wt. 0.5 lbs.

**368-FH** For 3/16", 1/4", 5/16" and 3/8" (6 mm and 8 mm) O.D. tubing.  
15/16" (17.5 mm) radius to center of tube. Wt. 1.0 lbs.



367-FH



368-FH

#### 102-F-08



### SPRING TYPE TUBE BENDERS

For soft copper and aluminum tubing.  
For 1/4" to 7/8" O.D. tubing.

Tools allow hand bending of soft tubing to any shape without collapsing walls. Special spring steel, zinc finish. End beveled for quick tube removal.

**201-F** Set of 8 benders for 1/4", 5/16", 3/8", 7/16", 1/2", 5/8", 3/4" and 7/8" O.D. tubing.

**101-F** Set of 6 benders for 1/4", 5/16", 3/8", 7/16", 1/2" and 5/8" O.D. tubing.

**163-F** Set of 4 benders for 1/4", 3/8", 1/2" and 5/8" O.D. tubing.

**112-F** Set of 3 benders for 1/4", 5/16" and 3/8" O.D. tubing.

CATALOG NUMBER	TUBE O.D. (in.)	LENGTH (in.)	WEIGHT EACH (oz.)
102-F-04	1/4	10	3
102-F-05	5/16	10	3
102-F-06	3/8	10	4
102-F-07	7/16	12	6.25
102-F-08	1/2	12	6.5
102-F-10	5/8	12	8
102-F-12	3/4	12	10
102-F-14	7/8	12	10

## LEVER TYPE

### 364-FHA LEVER TYPE TUBE BENDERS

For 1/8" to 1" (6 mm to 12 mm) O.D. tubing.

Each tool bends one size. Open side type which slips over tube at any point. Makes smooth, tight radius bends up to 180° with minimum effort. No scoring or flattening of tubing. Calibrated to show angle of bend. Wide hook grips tubing securely.

CATALOG NUMBER	TUBE O.D. (in.)	RADIUS TO CENTER OF TUBE (in.)	WEIGHT EACH (lbs.)
364-FH-02	1/8	3/8	0.5
364-FH-03	3/16	7/16	0.5
364-FHA-04	1/4	9/16	1.0
364-FHA-05	5/16	11/16	1.0
364-FHA-06	3/8	15/16	1.75
364-FHA-07	7/16	1-1/2	3.5
364-FHA-08	1/2	1-1/2	3.5
364-FHA-10*	5/8	2-1/4	5.5
364-FHA-12*	3/4	3	7.0
364-FHA-14*	7/8	3	10.5
364-FHA-16*	1	3-1/2	10.5

Each tool bends only one size.

Conforms to Federal Specifications GGG-B-191a Type III, Class 2.

\*For bending annealed copper and aluminum tubing only.

#### 364-FHA-14

Features telescopic handles for increased leverage. Expandable style furnished for 7/8" and 1" O.D. tubing.

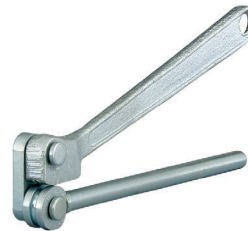


#### 364-FHA-06

Style furnished for 1/4" through 1/2" O.D. tubing.

### METRIC SIZE BENDING TOOLS

CATALOG NUMBER	TUBE O.D. (mm)	RADIUS TO CENTER OF TUBE		WEIGHT EACH	
		(mm)	(inches)	(kg.)	(lbs.)
364-FHAM-6 mm	6	14.2	9/16	0.45	1.0
364-FHAM-8 mm	8	17.5	11/16	0.45	1.0
364-FHAM-10 mm	10	24.0	15/16	0.79	1.75
364-FHAM-12 mm	12	38.1	1-1/2	1.6	3.5



#### 364-FH-02

Style furnished for 1/8" and 3/16" O.D. tubing.



#### 364-FHA-10

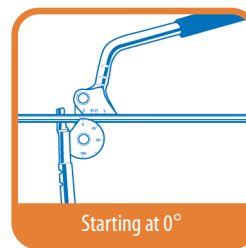
Style furnished for 5/8" and 3/4" O.D. tubing.

### 364-FHB SWIVEL HANDLE TUBE BENDERS

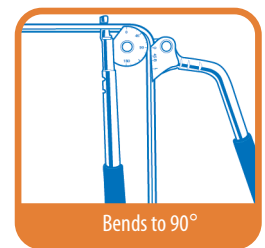
For 1/4" to 1/2" (6 mm to 12 mm) O.D. tubing.

The patented 364-FHB series has a swivel handle that can be repositioned midway through a bend when both handles begin to meet. This simple feature allows easy fabrication of bends up to 180° with reduced effort, better control and without the crossing of handles, typical of most other lever type benders.

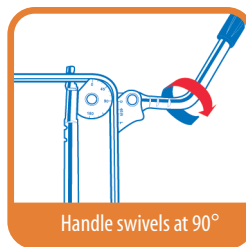
CATALOG NUMBER	TUBE O.D. (in.)	RADIUS TO CENTER OF TUBE (in.)	WEIGHT EACH (lbs.)
364-FHB-04	1/4	9/16	1.0
364-FHB-05	5/16	11/16	1.0
364-FHB-06	3/8	15/16	1.75
364-FHB-07	7/16	1-1/2	3.5
364-FHB-08	1/2	1-1/2	3.5



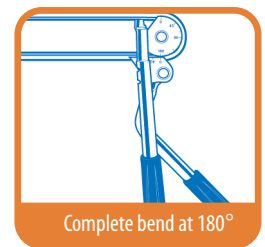
Starting at 0°



Bends to 90°



Handle swivels at 90°



Complete bend at 180°

### METRIC SIZE BENDING TOOLS

CATALOG NUMBER	TUBE O.D. (mm)	RADIUS TO CENTER OF TUBE		WEIGHT EACH	
		(mm)	(inches)	(kg.)	(lbs.)
364-FHBM-6 mm	6	14.2	9/16	0.45	1.0
364-FHBM-8 mm	8	17.5	11/16	0.45	1.0
364-FHBM-10 mm	10	24.0	15/16	0.79	1.75
364-FHBM-12 mm	12	38.1	1-1/2	1.6	3.5

Each tool bends only one size.



Style furnished for 1/4" through 1/2" O.D. tubing and 6 mm through 12 mm O.D. tubing.

#### 364-FHB-06 PATENTED

# LEVER TYPE

## 564-FH AND 564-FHT LEVER TYPE HEAVY-DUTY TUBE BENDERS

For 3/8" and 1/2" O.D. tubing.

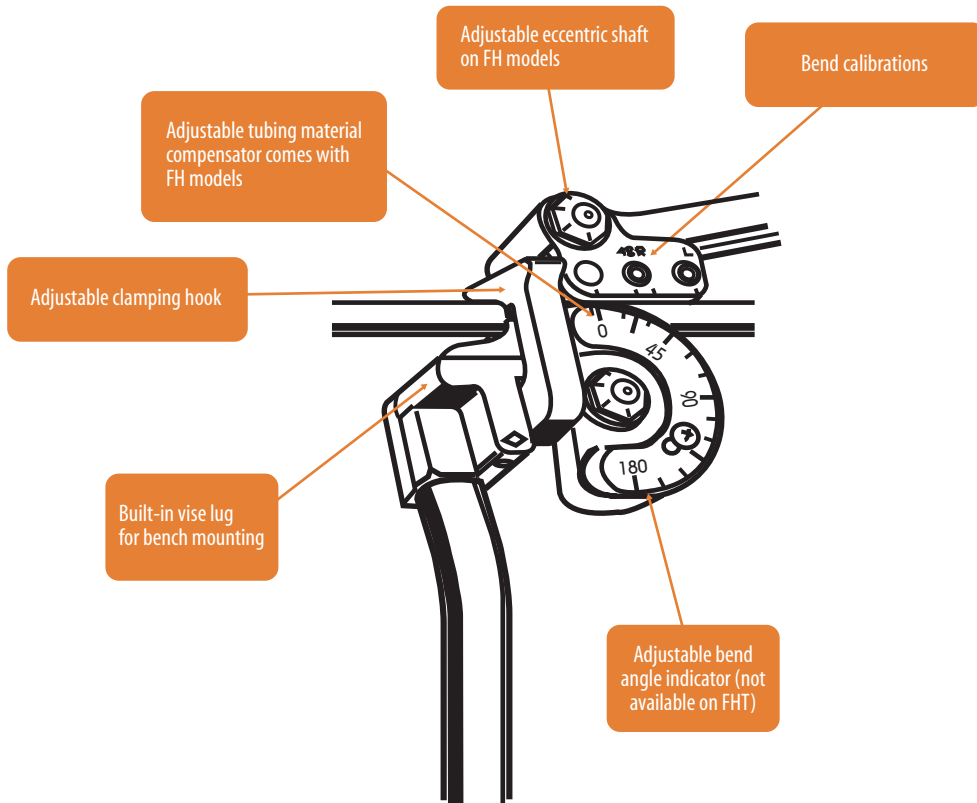
These heavy-duty tube benders feature high-strength tool steel construction on all components subjected to stress during the bending process – including forming rollers, form wheel, stop pins, hook and cam adjustment shaft. Unique offset handle design assures maximum power transfer between worker and bender. Bender will not “gyrate” as handles are brought to closed position.

- Meets ANSI/ASME Boiler/Power requirements (FH Models only).
- Vise mountable.
- Prevents slippage and flattening.
- Fully adjustable to compensate for variances in tube tolerance.
- Starts with handles at 90° angle.
- Built for rugged day-in and day-out use.
- Precise bends!
- Self-aligning rollers eliminate scoring and reduce bending effort.



564-FH-06  
PATENTED

CATALOG NUMBER	TUBE O.D. (in.)	RADIUS TO CENTER OF TUBE (in.)	WEIGHT EACH (lbs.)
564-FHT-06	3/8	15/16	5.0
564-FH-06	3/8	1-1/8	5.5
564-FH-08	1/2	1-1/2	7.0



TUBE BENDERS

## LEVER TYPE KITS

### WIDE RANGE TUBE BENDER KITS

For 1/4" to 7/8" O.D. tubing.

Each tool quickly adapts to all sizes in its range by changing forming wheel and block. Telescopic handles reposition during bend for best leverage. Calibrations show precise bend angle. One piece benders furnished for 1/4" and 5/16" O.D. sizes. Furnished in tool case with space for other tools needed on the job.

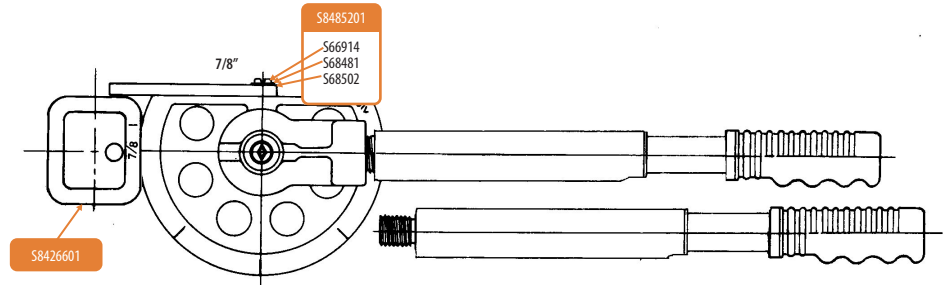
Conforms to Federal Specifications GGG-B-191a Type III, Class 1.



260-FHA

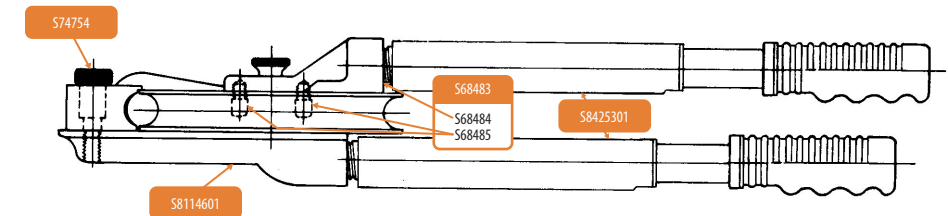
260-FHA for 7 sizes. Wt. 23 lbs.

TUBE O.D. (in.)	RADIUS TO CENTER OF TUBE (in.)
1/4	9/16
5/16	11/16
3/8*	1-5/8
1/2*	1-5/8
5/8*	2-1/4
3/4*	3
7/8*	3



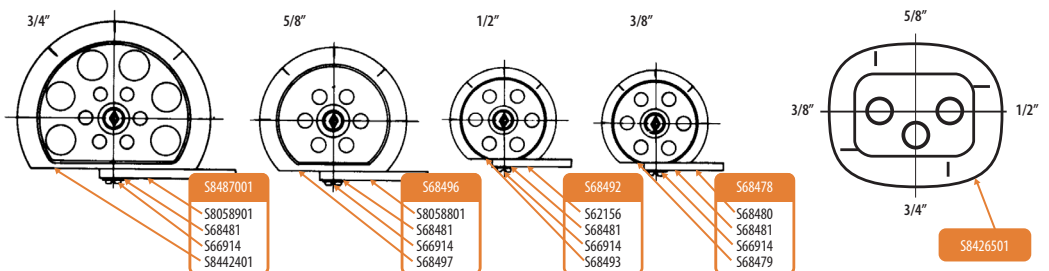
350-FHA for 6 sizes. Wt. 20 lbs.

TUBE O.D. (in.)	RADIUS TO CENTER OF TUBE (in.)
1/4	9/16
5/16	11/16
3/8*	1-5/8
1/2*	1-5/8
5/8*	2-1/4
3/4*	3



360-FHA for 4 sizes. Wt. 20 lbs.

TUBE O.D. (in.)	RADIUS TO CENTER OF TUBE (in.)
3/8*	1-5/8
1/2*	1-5/8
5/8*	2-1/4
3/4*	3



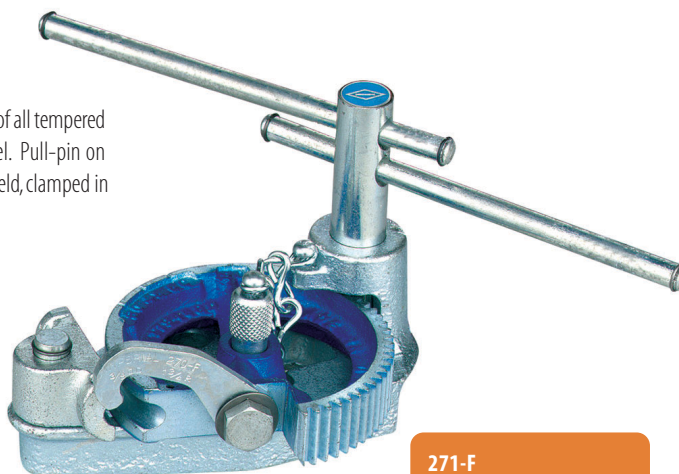
\*Recommended for bending annealed copper and aluminum tubing only.

## GEAR TYPE

### 270-F GEAR TYPE TUBE BENDER

For 3/8" to 1-1/8" O.D. tubing.

For all bending work. Spur-gear type with 10-to-1 ratio for easy bending of all tempered tubing. Floating shoe aligns tube perfectly on calibrated forming wheel. Pull-pin on wheel speeds repositioning for bends over 90°. Portable. Can be hand held, clamped in vise or bolted to bench. Adapts to pipe vise with handle 271-F.



270-F

#### 271-F

Pipe vise extension (fits all 270-F Benders). For use when clamping bender in pipe vise. Wt. 1.75 lbs.

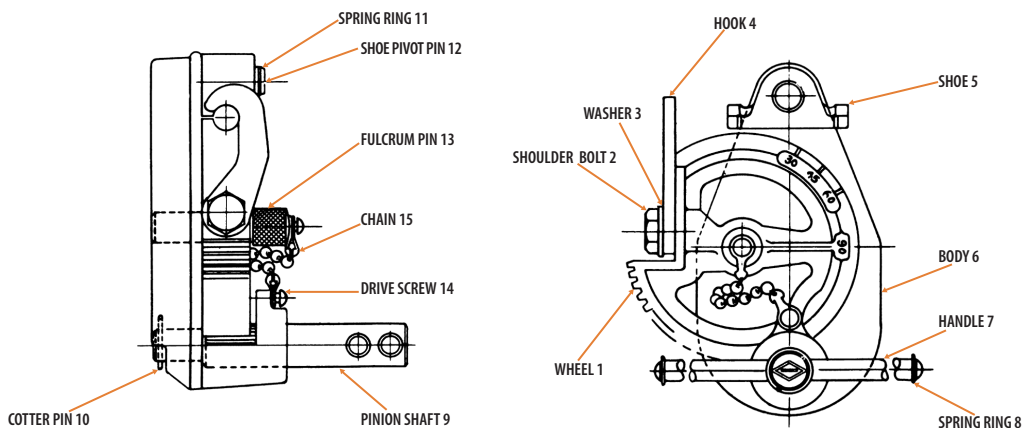


Each tool bends only one size.

CATALOG NUMBER	TUBE O.D. (in.)	RADIUS FROM CTR. TO CENTER OF TUBE (in.)	MIN. RETURN FROM CENTER TO CENTER OF TUBE (in.)	WEIGHT EACH (lbs.)	WALL THICKNESS (in.)
270-F-06	3/8	1-3/4	4-1/2	3	.030 to .060
270-F-08	1/2	2-1/2	6	4.75	.035 to .065
270-F-10	5/8	3	7-1/2	8.5	.040 to .072
270-F-12	3/4	4	9-1/2	15	.042 to .083
270-F-14	7/8	4	9-1/2	14.75	.045 to .083
270-F-16	1	4	9-1/2	14.75	.065 to .095
270-F-18	1-1/8	4	9-1/2	14.25	.065 to .095

## REPLACEMENT PARTS

For Imperial 270-F Gear Type Tube Benders



Order by catalog number and O.D. size. Each bender handles only one size.

CATALOG NUMBER	size (in.)	1 part no.	2 part no.	3 part no.	4 part no.	5 part no.	6 part no.	7 part no.	8 part no.	9 part no.	10 part no.	11 part no.	12 part no.	13 part no.	14 part no.	15 part no.
270-F-06	3/8	S62244	S62245	S62246	S62247	S62250	S62251	S62252	S62253	S62254	S62255	S62257	S62258	S62838	S62836	S62839
270-F-08	1/2	S62261	S62264	S62246	S62263	S62262	S62260	S62269	S62253	S62268	S62255	S62266	S62265	S62840	S62836	S62839
270-F-10	5/8	S62275	S62280	S62279	S62278	S62277	S62276	S62284	S62285	S62283	S62255	S62281	S62282	S62841	S62836	S62842
270-F-12	3/4	S62305	S62294	S62298	S62307	S62306	S62288	S62292	S62297	S62291	S62255	S62296	S62295	S62835	S62836	S62837
270-F-14	7/8	S62302	S62294	S62298	S62304	S62303	S62288	S62292	S62297	S62291	S62255	S62296	S62295	S62835	S62836	S62837
270-F-16	1	S62299	S62294	S62298	S62301	S62300	S62288	S62292	S62297	S62291	S62255	S62296	S62295	S62835	S62836	S62837
270-F-18	1-1/8	S62287	S62294	S62298	S62290	S62289	S62288	S62292	S62297	S62291	S62255	S62296	S62295	S62835	S62869	S62837

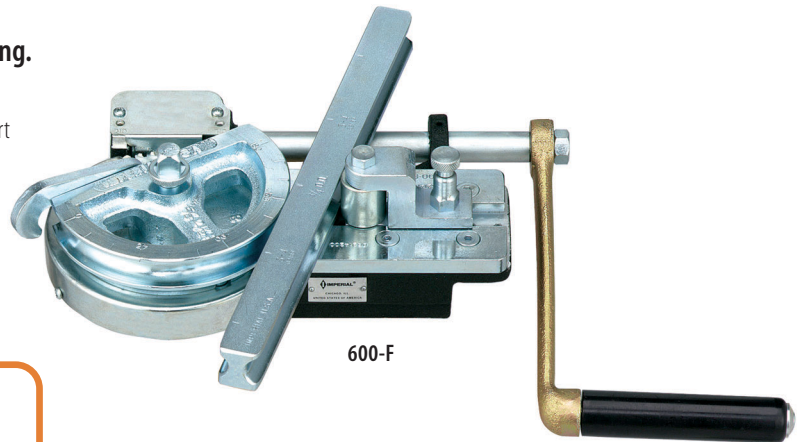
For hard or soft copper, aluminum, brass, thin wall steel, stainless steel, monel, titanium and other metal tubing.

# GEAR TYPE

## WORM GEAR TUBE BENDER

For 1/4", 5/16", 3/8", 1/2", 5/8" and 3/4" O.D. tubing.

**600-F** Precision tool for highest quality work. Worm gear type with 50-to-1 ratio and crank with revolving hand grip. Keeps effort at a minimum. Follow bar eliminates drawing action and keeps tube in virtually perfect round. Adjustable pressure roller positions quickly in index holes. Enclosed gears. Furnished in carrying case. Size of kit: 14" x 9" x 6". Wt. 35.0 lbs.



600-F



**Tube Wall Thickness and Bend Radius**

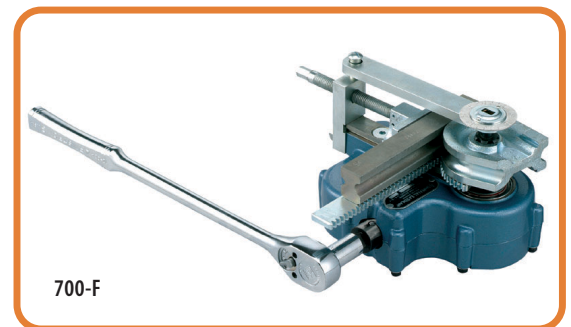
TUBE O.D. (in.)	WALL THICKNESS (in.)	RADIUS TO CENTER OF TUBE (in.)
1/4	.016 to .049	3/4
5/16	.020 to .065	1
3/8	.028 to .083	1-1/4
1/2	.035 to .083	2
5/8	.042 to .083	2-1/2
3/4	.049 to .083	3

Conforms to Federal Specification GGG-B-191b, Type I, Class 2. Meets ANSI specification (B31.1) and ASME Section III Nuclear Code.

## GEAR TYPE TUBE BENDER

For 1/4", 5/16", 3/8", 1/2", 5/8" and 3/4" O.D. tubing.

**700-F** Makes bends up to 180° in stainless steel tubing conforming to Specification MIL-T-6845. Precision construction maintains original diameter of tube within 5% at cross section of bend. Also bends copper, aluminum and other types of tubing. Size of kit 16" x 7" x 6-1/2". Wt. 32.0 lbs.



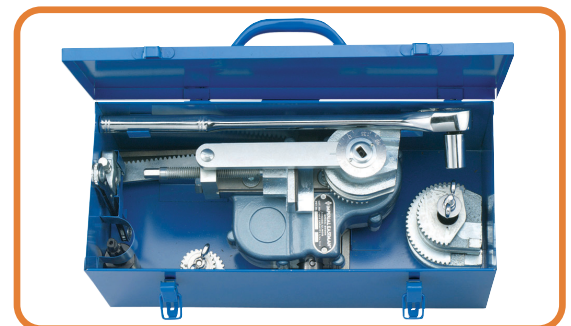
700-F

**Tube Wall Thickness and Bend Radius**

TUBE O.D. (in.)	WALL THICKNESS (in.)	RADIUS TO CENTER OF TUBE (in.)
1/4	.016 to .049	9/16
5/16	.020 to .065	11/16
3/8	.028 to .083	15/16
1/2	.035 to .083	1-1/4
5/8	.042 to .083	1-1/2
3/4	.049 to .083	1-3/4

Conforms to Federal Specification GGG-B-191a, and Interim Amendment No. 2, Type I, Class 1.

Calibration dial indicates angle on bend.  
(In some cases these wall thicknesses can be exceeded for copper and aluminum tubing. Consult factory.)



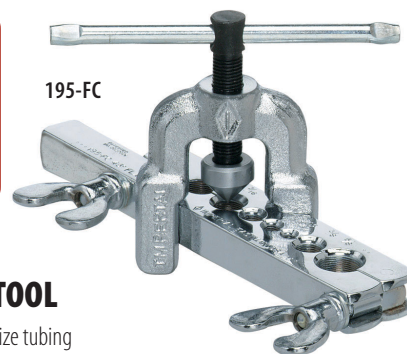
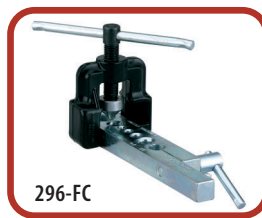
# 45° FLARING TOOLS

## 45° FLARING TOOLS

For 3/16", 1/4", 5/16", 3/8", 7/16", 1/2" and 5/8" O.D. tubing.

**195-FC** Flares 7 sizes of tubing. Rugged forged steel slip-on yoke and hardened flaring bar. Positive clamping action of bars prevents tube slippage. Self centering yoke with swivel-type, hardened steel, chrome-finished flaring cone forms better flares with less effort. Design of yoke permits flaring where there is little space between nut and tube end. Satin finish nickel-chrome plated. Wt. 2.0 lbs.

**296-FC** Flares 7 sizes of tubing. Economical, fast operating tool. Quick slip-on yoke. Easy operating swivel-type, hardened steel, chrome-finished cone assures smooth flares. Chrome and black finish. Wt. 1.75 lbs.



## 45° METRIC SIZE FLARING TOOL

**395-FAM** Same as 195-FC except for metric size tubing 4 mm, 6 mm, 8 mm, 10 mm, 12 mm, 15 mm, 16 mm O.D. tubing.

### 195-FC, 296-FC

Outside Tube Diameter	(in.)	3/16	1/4	5/16	3/8	7/16	1/2	5/8
Wall Thickness	(in.)	.028	.035	.035	.035	.035	.035	.035

### 395-FAM

Outside Tube Diameter	(mm)	4	6	8	10	12	15	16
Wall Thickness	(mm)	1.0	1.0	1.0	1.0	1.0	1.0	1.0

## 45° LARGE SIZE FLARING TOOLS

Flares larger tube sizes. Quick slip-on yoke with hard chrome-finished, swivel flaring cone reduces effort. Positive clamping action of flaring bar eliminates tube movement. Nickel chrome finish.

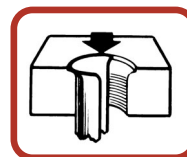
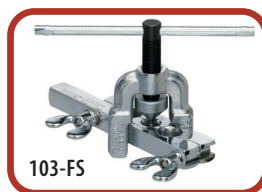
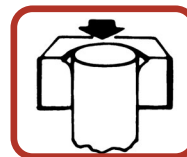
Conforms to Federal Specification GGG-F-451a Type 1, Class 2, Style A.

**103-FS** For sizes 3/4", 7/8" and 1" O.D. tubing. Wt. 3.75 lbs.

**203-FA** For sizes 5/8", 3/4", 7/8" and 1-1/8" O.D. tubing. Wt. 3.75 lbs.

**375-FS** For sizes 1/8", 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 5/8" and 3/4" O.D. tubing. Wt. 3.75 lbs.

**376-FS** For sizes 1/2", 5/8", 3/4" O.D. tubing. Wt. 2.0 lbs.



Outside Tube Diameter	(in.)	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	1-1/8
Wall Thickness	(in.)	.025	.028	.035	.035	.035	.035	.035	.049	.049	.049	.058	.058

## HI-DUTY® FLARING TOOL

For 3/16", 1/4", 5/16", 3/8", 1/2" and 5/8" O.D. tubing.

**300-FB** Hardened steel, chrome finished cone makes exceptionally smooth, high strength flares with a radius at base of flare – instead of the sharp angle formed by ordinary tools. New slip-on yoke permits use in tight quarters, allows flaring where there is little space between nut and tube end. New feed screw design provides smoother, easier operation. Positive gripping and self-gauging of tube for exact flare size. Sliding die blocks lock in place by lever clamp action to ensure even dispersal of force around full diameter of tube for superior grip. Wt. 1.6 lbs.

**FORMS STRONGER FLARES-** Stronger flares assured by smooth, even radius formed at base of every flare by engineered chamfer.

**SELF GAUGING-** Just insert tube flush with top of die for accurate flare size.



Outside Tube Diameter	(in.)	3/16	1/4	5/16	3/8	1/2	5/8
Wall Thickness	(in.)	.028	.035	.035	.035	.035	.035

FLARING & SWAGING



# 45° ROL-AIR® FLARING TOOLS

## 45° ROL-AIR FLARING TOOL

Flares and burnishes 3/16", 1/4", 5/16", 3/8", 1/2" and 5/8" O.D. tubing.

**500-FC** Faceted, hardened steel, chrome-finished cone rolls out perfect 45° flares above die block, and automatically burnishes flare face reducing the need for deburring. Original wall thickness is maintained at base of flare. New slip-on yoke permits use in tight quarters, where there is little space between nut and tube end. Larger handle, with better leverage, and precision threads on feed screw make flaring effortless. Heat treated dies grip tubing without scoring. Satin chrome and black finish. Wt. 1.5 lbs.

Outside Tube Diameter	(in.)	3/16	1/4	5/16	3/8	1/2	5/8
Wall Thickness	(in.)	.028	.035	.035	.035	.035	.035

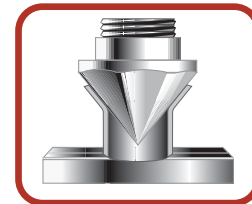


500-FC

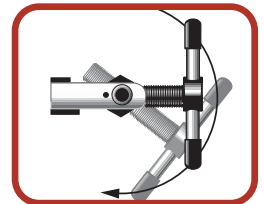
## METRIC SIZE 45° ROL-AIR FLARING TOOL

**500-FCM** Same as 500-FC except for metric size tubing 6 mm, 8 mm, 10 mm, 12 mm, 15 mm and 16 mm O.D.

Outside Tube Diameter	(mm)	6	8	10	12	15	16
Wall Thickness	(mm)	1.0	1.0	1.0	1.0	1.0	1.0



Flares rolled out above die bar by super-smooth faceted cone. Makes stronger flares.



**PATENTED** Unique detention mechanism for rapid engagement and release of die blocks.



Flares rolled out above die bar by super-smooth faceted cone. Makes stronger flares.



525-F

## "GRABBER"® ROL-AIR 45° FLARING TOOL

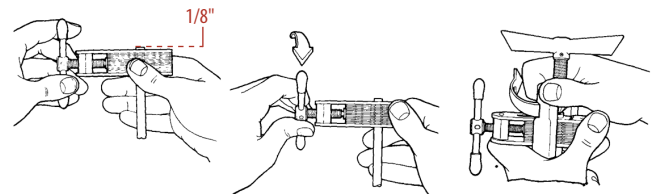
Universal application. Adjustable opening holds all sizes. Flares and burnishes 3/16" to 5/8" (4.75 to 16 mm) O.D. tubing.

**525-F** Unique, self-adjusting, tube holding mechanism permits flaring any size tubing within the range of 3/16" to 5/8" (4.75 to 16 mm) O.D. tubing. Innovative, single opening design is more compact and easier to use than conventional multi-opening flaring bars. Faceted, hardened steel, chrome-finished cone rolls out and burnishes perfect 45° flare above the tube holding mechanism reducing need for deburring. Original wall thickness is maintained at base of flare. Slip-on self-centering yoke permits use in tight quarters. Large handle, with better leverage, and precision threads on feed screw make flaring effortless. High quality construction with satin chrome and black finish. Wt. 1.75 lbs.

Outside Tube Diameter	(in.)	3/16	1/4	5/16	3/8	1/2	5/8
Wall Thickness	(in.)	.028	.035	.035	.035	.035	.035

Outside Tube Diameter	(mm)	4.75	6	8	10	12	15	16
Wall Thickness	(mm)	1.0	1.0	1.0	1.0	1.0	1.0	1.0

- (1) Insert tubing into adjustable opening of tube holding assembly. Position end of tubing approximately 1/8" above the surface of holder.
- (2) Tighten clamp screw approximately 1/2 to 3/4 of a turn beyond free travel position to secure tubing.
- (3) Be certain flaring cone surface is oiled. Slip yoke over tube holding assembly centering on tubing. Twist yoke clockwise to lock in position. Turn yoke handle clockwise to flare.



# 45° DOUBLE FLARING TOOLS

## 45° DOUBLE FLARING TOOL

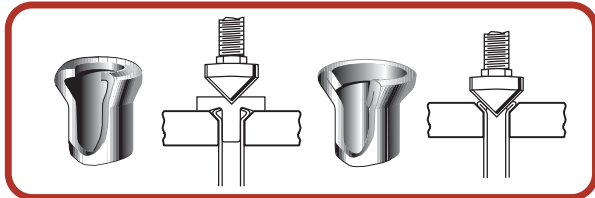
For 3/16", 1/4", 5/16", 3/8" and 1/2" O.D. tubing.

**93-FB** Recommended for Bundy and other annealed soft steel tubing (wall thickness to .035"). Also makes single or double flares in soft copper or aluminum tubing. Small, lightweight, easy to handle. Forged steel yoke; swivel-type hardened steel, chrome-finished flaring cone. Bar provides positive grip of tubing. Includes plastic tool case. Wt. 3.0 lbs.

Conforms to Federal Specification GGG-F-451a, Type 1, Class 2, Style A.



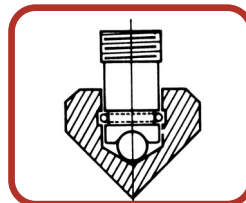
93-FB



Screw down flaring cone with proper size adapter in tube. Retract cone, remove adapter, complete flare.

### SWIVEL-TYPE BALL BEARING CONE

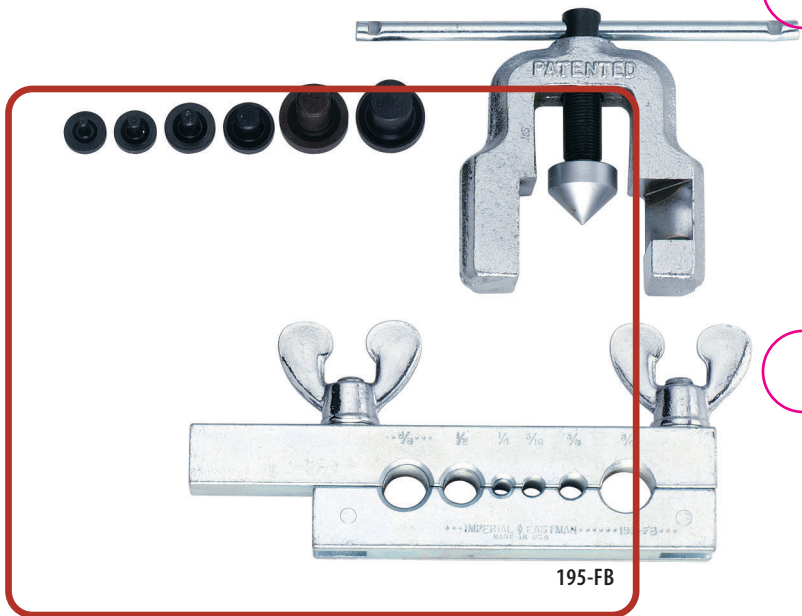
Ball thrust bearing in flaring cone minimizes friction, makes operation easier.



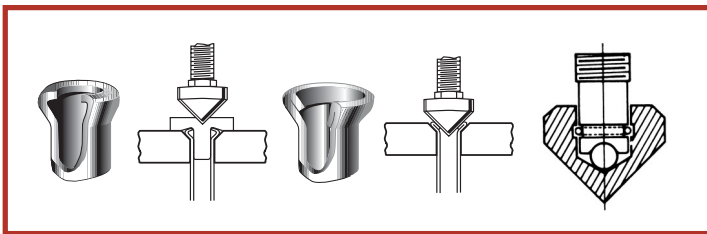
## 45° DOUBLE FLARING TOOL

For 1/4", 5/16", 3/8", 1/2", 5/8" and 3/4" O.D. tubing.

**195-FB** Designed for automotive air-conditioning service. Makes double flares in soft copper or aluminum tubing (wall thickness to .035"). Easy operating, ball bearing swivel-type hard chrome-finished flaring cone. Quick slip-on yoke. Flaring bar offers positive grip of tubing. Also makes single flares. Comes in a metal case. Wt. 5.5 lbs.



195-FB



- (1) Screw down flaring cone with proper size adapter in tube. Retract cone, remove adapter, complete flare.
- (2) **SWIVEL-TYPE BALL BEARING CONE**- Ball thrust bearing in flaring cone minimizes friction, makes operation easier.

FLARING & SWAGING

# 37° FLARING TOOLS

## 37° FLARING TOOL

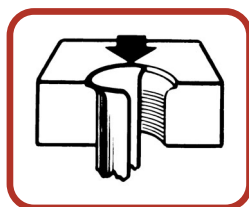
For 3/16", 1/4", 5/16", 3/8", 1/2" and 5/8" O.D. tubing.

**437-FB** For use with soft copper, aluminum and brass tubing. Hardened steel, chrome-finished cone makes exceptionally smooth, high strength flares with a radius at base of flare – instead of the sharp angle formed by ordinary tools. New slip-on yoke permits use in tight quarters, allows flaring where there is little space between nut and tube end. New feed screw design provides smooth, easier operation. Positive gripping and self-gauging of tube for exact flare size. Sliding die blocks lock in place by clamp action. Satin chrome and black finish. Wt. 1.75 lbs.

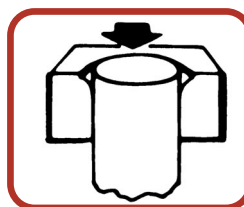
Outside Tube Diameter (in.)	3/16	1/4	5/16	3/8	1/2	5/8
Wall Thickness (in.)	.032	.032	.032	.032	.035	.035



437-FB



**FORMS STRONGER FLARES-**  
Stronger flares assured by smooth, even radius formed at base of every flare by engineered chamfer.



**SELF GAUGING** - Just insert tube flush with top of die for accurate flare size.

## 37° ROL-AIR® FLARING TOOL

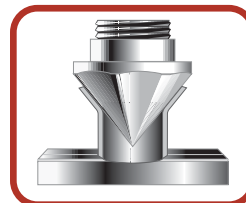
For 3/16", 1/4", 5/16", 3/8", 1/2" and 5/8" O.D. tubing.

**507-FB** For use with soft copper, aluminum and brass tubing. Faceted, hard chrome-finished cone rolls out perfect 37° flares above die block - then automatically burnishes flare face. Original wall thickness is maintained at base of flare. New slip-on yoke permits use in tight quarters where there is little space between nut and tube end. Larger handle, with better leverage, and precision threads on feed screw make flaring effortless. Heat treated dies firmly grip tubing. Satin chrome and black finish. Wt. 1.75 lbs.

Outside Tube Diameter (in.)	3/16	1/4	5/16	3/8	1/2	5/8
Wall Thickness (in.)	.032	.032	.032	.032	.035	.035



507-FB



Flares rolled out above die bar by super-smooth faceted cone. Makes stronger flares.

## METRIC SIZE 37° ROL-AIR FLARING TOOL

**507-FBM** Metric 37° Rol-Air flaring tool. Same as 507-FB except for metric size tubing 6 mm, 8 mm, 10 mm, 12 mm, 15 mm, 16 mm O.D. tubing.

Outside Tube Diameter (mm)	6	8	10	12	15	16
Wall Thickness (mm)	1.0	1.0	1.0	1.0	1.0	1.0

# 37° FLARING TOOLS

## 37° ROL-AIR® FLARING TOOLS

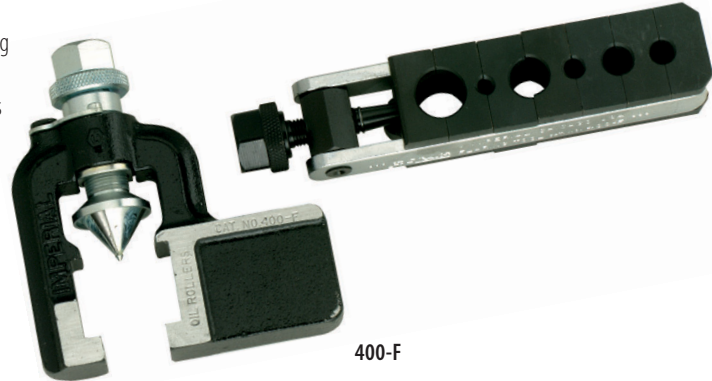
For 3/16", 1/4", 5/16", 3/8", 1/2" and 5/8" O.D. tubing.

**400-F** Forms 37° flares to government specifications in steel, stainless steel (including MIL-T-6845), titanium and other metal tubing. Positive stop gauge assures correct size of flare. Special burnishing action polishes flare face. Three rollers in flaring cone roll out 37° flare above die block. Roller action cuts effort required; maintains original wall thickness - eliminates stress concentration. Extension on yoke for clamping in vise. Satin chrome and black finish. Furnished in sturdy tool case. Wt. 2.5 lbs.

**401-FA** Reaming yoke for 1/4" to 5/8" O.D. tubing. Recommended for use with steel and stainless steel tubing for proper flaring. Wt. 0.7 lbs.

**402-FA** Flaring and reaming kit. Contains No. 400-F Flaring Tool and No. 401-FA Reaming Yoke for 1/4" to 5/8" O.D. tubing. In tool case. Wt. 3.2 lbs.

Conforms to Federal Specification GGG-F-451a, Type 1, Class 1, Style A.



400-F

Outside Tube Diameter	(in.)	3/16	1/4	5/16	3/8	1/2	5/8
Wall Thickness	(in.)	.035	.049	.049	.065	.065	.065



Feed release and burnishing mechanism. Flare control gauge.



3 rollers in flaring cone. Flare formed above die block.



Feed screw controls depth of reaming.

401-FA



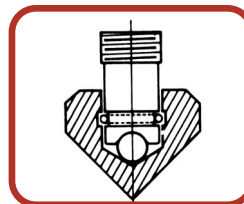
402-FA

## 37° HEAVY-DUTY FLARING TOOL

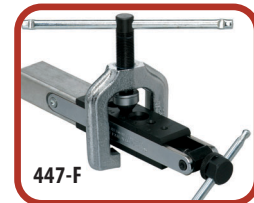
For 1/8", 3/16", 1/4", 5/16", 3/8" and 1/2" O.D. tubing.

**447-F** Forms 37° flares in annealed stainless steel (MIL-T-6345 or AMS5566), cold drawn stainless steel and annealed copper or aluminum tubing. Built to withstand continuous rugged service. Ball thrust bearing mechanism reduces effort required. Hardened tool steel die features non-slip grip of tubing, even after repetitive flaring. Bar has vise extension. Wt. 3.25 lbs.

Outside Tube Diameter	(in.)	1/8	3/16	1/4	5/16	3/8	1/2
Wall Thickness	(in.)	.032	.032	.035	.049	.049	.049



Ball thrust bearing in flaring cone minimizes friction, makes operation easier.



447-F

FLARING & SWAGING

# 37° FLARING TOOLS

## LARGE SIZE 37° ROL-AIR® FLARING TOOLS

For 3/4", 7/8", 1", 1-1/4", 1-1/2" and 2" O.D. tubing.

Three cylinders in flaring cone roll out 37° flare above die block. Flares soft steel, copper, aluminum and fully annealed stainless steel tubing. Roller action cuts effort required; maintains original wall thickness; eliminates stress concentration. Feed release and burnishing action. Vise clamp extension on yoke. Heat treated dies clamp tubing without marking it. Satin chrome and black finish. Furnished in tool case.

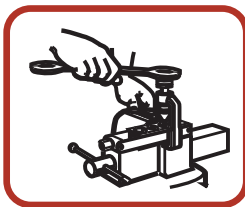
**537-F** Flares and burnishes 3/4", 7/8", 1" and 1-1/4" O.D. tubing.  
Wt. 13.0 lbs.

**637-F** Flares and burnishes 1-1/4", 1-1/2" and 2" O.D. tubing.  
Wt. 13.0 lbs.

\*Conforms to Federal Specification GGG-F-451a, Type 1, Class 1, Style B.



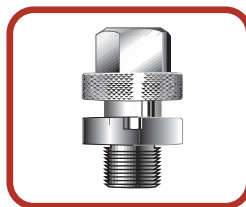
537-F



Vise clamp extension.



Flares rolled out above die bar.



Feed release and burnishing mechanism.

Outside Tube Diameter (in.)	3/4	7/8	1	1-1/4
Wall Thickness (in.)	.065	.065	.065	.083

Outside Tube Diameter (in.)	1-1/4	1-1/2	2
Wall Thickness (in.)	.083	.083	.083

## 37° PRECISION FLARING TOOL

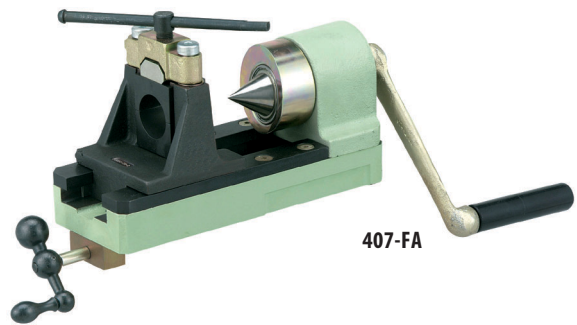
For 1/8", 3/16", 1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 1", 1-1/4" and 1-1/2" O.D. tubing.

**407-FA** Precision tool flares (37°) 1/8" hard stainless steel and other tubing to extremely close tolerances. Swivel-head clamp locks tubing in smooth bore die blocks. Lathe type tube feed. Flares rolled out by ball-bearing mounted concentric flaring cone. Tool must be clamped in vise. Will flare 1/8" hard stainless steel tubing in the sizes and wall thicknesses listed below. In some cases these wall thicknesses can be exceeded when flaring aluminum, copper or soft steel tubing. In tool case. Wt. 50.0 lbs.

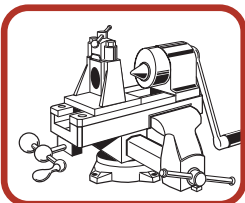
Facing and deburring attachments not included with 407-FA.

**407-F** Same as 407-FA, except includes the facing and deburring attachments.

- S74460 Internal deburring tool for 1/8" to 1/2" O.D. tubing.
- S74455 Internal deburring tool for 5/8" to 1-1/2" O.D. tubing.
- S74447 External deburring tool.
- S74462 Facing tool.



407-FA



TUBE O.D. (in.)	WALL THICKNESS (in.)	
1/8	.020	.028
3/16	.010	.028
1/4	.016	.028, .035
5/16	.035	
3/8	.028	.035
1/2	.035	.049
5/8	.035	.049
3/4	.028	.035, .049
1	.028	.035
1-1/4	.035	.049
1-1/2	.035	.049, .065

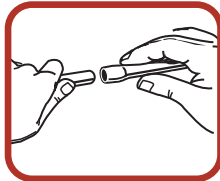
# FLARING & SWAGING TOOLS

## PRODUCTION FLARING (45° & 37°) AND SWAGING TOOL

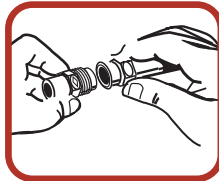
For 3/16", 1/4", 5/16", 3/8", 1/2" and 5/8" O.D. tubing.

**555-FS** Flares and swages 6 sizes of soft copper, aluminum or brass tubing. Makes both 45° and 37° single flares. Fast cam lever operation. Portable and vise or bench mountable. Change sizes quickly. Built in gauge for accurate flare size or swage depth. Unique jaws provide a positive non-slip grip on tubing. Wt. 6.5 lbs.

Outside Tube Diameter	(in.)	3/16	1/4	5/16	3/8	1/2	5/8
Wall Thickness	(in.)	.028	.035	.035	.035	.035	.035



Swages 6 sizes.



Makes 45° & 37° flares.



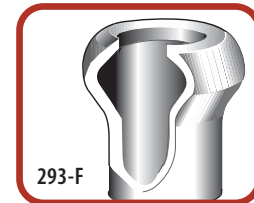
555-FS

## METRIC BUBBLE FLARING TOOL

For soft steel or Bundy tubing 4.75 mm (3/16"), 6 mm, 8 mm or 10 mm O.D. tubing.

**293-F** Forms international standard bubble flare in one fast operation. Flares metric hydraulic brake lines used on European, Japanese and American automobiles and light trucks. This unique design makes flares on 4 sizes of tubing: 4.75 mm (3/16"), 6 mm, 8 mm and 10 mm O.D. Will flare soft double wall steel tubing with a wall thickness up to .028". Can also be used with soft copper and aluminum tubing.

**Replacement parts:** **S8771801** 4.75 mm (3/16") adapter.  
**S8771701** 6 mm adapter.  
**S8771601** 8 mm adapter.  
**S8771301** 10 mm adapter.  
**S8694401** Wing nut.



293-F

## PUNCH TYPE SWAGING TOOLS

Use these tools for making tubing connections without fittings. Enlarge end of tube, insert another tube of original O.D. size and solder together like a sweat fitting.

**94-S** Three-in-one swaging tool for 1/2", 5/8" and 7/8" tubing. Wt. 1.0 lbs.

**95-S**

- One tool swages 3/16", 1/4", 5/16", 3/8", 1/2", 5/8" O.D. tubing.
- Hi-alloy steel, heat-treated for rugged use.
- Hex design for ease of extraction.
- Precision machined surface for ease of forming.

**193-S** Vinyl case contains 4 swaging punches 1/4", 3/8", 1/2" and 5/8" O.D. tubing. Wt. 1.0 lbs.

**195-SA** Vise mountable flaring bar and 4 swaging punches 1/4", 3/8", 1/2" and 5/8" O.D. tubing. In tool case. Wt. 2.0 lbs.

**S75531** Flaring bar only. Wt. 1.0 lb.

### 95-S 6 IN 1 SWAGING TOOL

Outside Tube Diameter	(in.)	3/16	1/4	5/16	3/8	1/2	5/8
Wall Thickness	(in.)	.028	.035	.035	.035	.035	.035



95-S



193-S

94-S

195-SA

### INDIVIDUAL SWAGING TOOLS

CATALOG NUMBER	TUBE O.D. (in.)	WALL THICKNESS (in.)	WEIGHT (lbs.)
93-S-03	3/16	.028	.20
93-S-04	1/4	.035	.20
93-S-05	5/16	.035	.25
93-S-06	3/8	.035	.25
93-S-08	1/2	.035	.50
93-S-10	5/8	.035	.50
93-S-12	3/4	.035	.75
93-S-14	7/8	.045	1.0

FLARING & SWAGING

# FLARING & SWAGING TOOLS

## FLARING (45°) & SWAGING TOOL

For 1/8" to 3/4" and 4 mm to 22 mm O.D. tubing.

**275-FS** Flares and swages. Converts quickly. Screw-type feed. Ideal for use in close quarters. Two bars included cover 9 sizes. Swivel-type swaging adapters and flaring cone are hardened steel chrome-finished for easy operation. Self-centering, slip-on forged steel yoke. In tool case. Wt. 3.5 lbs.  
Flares 1/8", 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 5/8" and 3/4" O.D.  
Includes 5 swage adapters that swage 7 tube sizes 3/16", 1/4", 5/16", 3/8", 1/2", 5/8", 3/4" O.D.

**Replacement parts:** **278-FS-03X04X06** Adapter 3/16", 1/4", 3/8".      **278-FS-10** Adapter 5/8".  
                                  **278-FS-05** Adapter 5/16".      **278-FS-12** Adapter 3/4".  
                                  **278-FS-08** Adapter 1/2".      **S38600** Flaring Cone.

**275-FSM** Metric flaring and swaging tool. Same as 275-FS except for metric size tubing 4 mm, 6 mm, 8 mm, 10 mm, 12 mm, 14 mm, 15 mm, 16 mm, 18 mm, 22 mm O.D. tubing. In tool case. Wt. 3.5 lbs.

**Replacement parts:** **278-FSM4-6-10** Adapter 4 mm, 6 mm, 10 mm.      **278-FSM-15** Adapter 15 mm.  
                                  **278-FSM-8** Adapter 8 mm.      **278-FSM-16** Adapter 16 mm.  
                                  **278-FSM-12** Adapter 12 mm.      **278-FSM-18** Adapter 18 mm.  
                                  **278-FSM-14** Adapter 14 mm.      **278-FSM-22** Adapter 22 mm.  
                                  **S38600** Flaring Cone.



275-FS

Outside Tube Diameter	(in.)	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4
Wall Thickness	(in.)	.020	.028	.035	.035	.035	.035	.035	.035	.035

Outside Tube Diameter	(mm)	4	6	8	10	12	14	15	16	18	22
Wall Thickness	(mm)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

## 45° SWAGING TOOL

For 1/2", 5/8" and 7/8" O.D. tubing.

**194-S** Screw-type flaring and swaging tool. Far easier to work with in close quarters than punch type tools. Perfect swaging alignment of tube every time. Hardened steel chrome-finished adapters change quickly. In tool case. Wt. 2.0 lbs.

**Replacement parts:** **278-FS-08** Adapter 1/2".  
                                  **278-FS-10** Adapter 5/8".  
                                  **278-FS-14** Adapter 7/8".



194-S

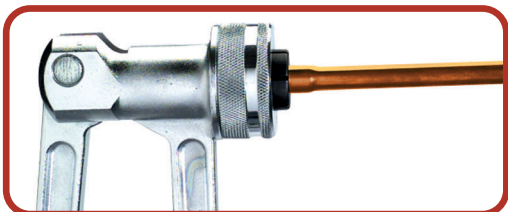
# FLARING & SWAGING TOOLS

## 175EX XPANDR™ SWAGING/EXPANDING KIT

- Easily expands tube for braze & soldered joints in seconds.
- Floating jaw head design is self-centering for fast, accurate alignment.
- Re-rounds deformed tube ends.
- Accurate joints in seconds without using fittings.
- For soft copper and soft thin wall steel and stainless steel tubing.
- Save 60-70% of time over conventional swaging tools.
- Reduces soldering by 50% over standard fittings.
- Meets ARI tube insertion recommendations.
- Long life with high alloy hardened steel jaw segments.
- XpandR™ Tool comes with non-slip, ergonomically designed grips.
- Supplied in a compact carrying case.
- Includes 5 heads: 3/8", 1/2", 5/8", 3/4" and 7/8"

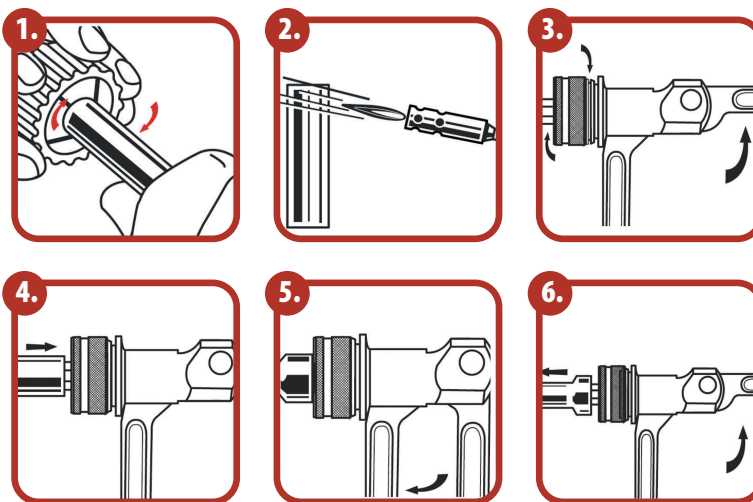


175EX



### SIX EASY STEPS:

1. Deburr inside of tube.
2. To create perfectly centered capillary sockets for soldering or brazing, you must use soft copper or fully anneal end of tube to be expanded.
3. Pull XpandR™ handle up to 90-degree position. Maintain this position as you screw the appropriate size head over the center-punch and tighten.
4. Insert the end of the tube over the XpandR™ head completely.
5. Pull the lever completely down.
6. Return the lever to the 90-degree position. Remove expanded tube.



#### 175EX KIT INCLUDES

175EXP	XpandR Pliers
175EXC	XpandR Case
175EX06	3/8" head
175EX08	1/2" head
175EX10	5/8" head
175EX12	3/4" head
175EX14	7/8" head

You may order kit items separately. Kit wt. 20 lbs.

#### ADDITIONAL HEAD SIZES AVAILABLE:

175EX16	1" head
175EX18	1-1/8" head
175EX22	1-3/8" head
175EX26	1-5/8" head

### TO RE-ROUND SLIGHTLY DEFORMED TUBE ENDS:

1. Insert deformed tube end to the first groove of head.
2. Pull the lever completely down.
3. Return the lever to the 90-degree position. Remove expanded tube.



# TUBE WORKING KITS

## WIDE RANGE TOOL KIT

121-F All purpose tubing tool kit contains:

- TC-1000** Tube cutter for 1/8" to 1-1/8" O.D. tubing.
- 375-FS** Flaring tool for 1/8", 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 5/8" and 3/4" O.D. tubing.
- 102-F-04** Spring bender for 1/4" O.D. tubing.
- 102-F-06** Spring bender for 3/8" O.D. tubing.
- 102-F-08** Spring bender for 1/2" O.D. tubing.
- 123-C** Ratchet wrench with 1/2" ratchet, 3/16" and 1/4" square opening, and 1/2" hex in handle.

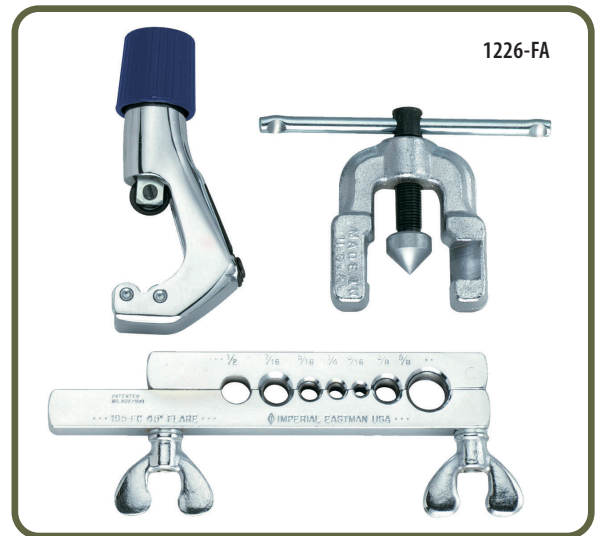


121-F

## CUTTING AND FLARING KITS

Each kit contains No. TC-1000 tube cutter for 1/8" to 1-1/8" O.D. tubing and a 45° or 37° flaring tool. In tool case.

CATALOG NUMBER	TUBE CUTTER	FLARING TOOL	RANGE OF FLARING TOOL (in.)	WEIGHT (lbs.)
120-F	TC-1000	375-FS (45°)	1/8, 3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4 O.D.	2.75
122-FA	TC-1000	437-FB (37°)	3/16, 1/4, 5/16, 3/8, 1/2, 5/8 O.D.	2.75
123-FA	TC-1000	300-FB (45°)	3/16, 1/4, 5/16, 3/8, 1/2, 5/8 O.D.	2.75
124-FA	TC-1000	500-FC (45° Rol-Air®)	3/16, 1/4, 5/16, 3/8, 1/2, 5/8 O.D.	2.75
1226-FA	TC-1000	195-FC (45°)	3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8 O.D.	3.0



1226-FA



124-FA

# TUBE WORKING KITS

## 45° FLARING, CUTTING AND SWAGING KIT

For soft copper, aluminum, steel, stainless steel and brass tubing.

**275-FSC** Kit contains a TC-1000 tube cutter for 1/8" to 1-1/8" O.D. tubing and 275-FS 45° flaring and swaging tool. In tool case. Wt. 3.0 lbs.

**Flares:** 1/8", 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 5/8" and 3/4" O.D. tubing.

**Swages:** 3/16", 1/4", 5/16", 3/8", 1/2", 5/8" and 3/4" O.D. tubing.

## 45° DOUBLE FLARING, SWAGING AND CUTTING KIT

**275-FSCD** Kit contains 275-FS, TC-1000, and double flaring adapters for 3/16", 1/4", 5/16", 3/8" and 1/2" O.D. tubing.



275-FSC

## FLAREPRO® FOUR-IN-ONE FLARING & SWAGING TOOL

For copper, aluminum, steel, stainless steel and other metal tubing.

**2000-FS** Individual size jaw sets are used for positive clamping compactness and operating convenience.

Socket head screws are provided for clamping the jaws to the yoke and feeding the tube forming components. The screws are hand turned for all free travel movement when advancing or retracting.

A hex socket and 3/8" square drive ratchet are furnished for easy operation of the threaded members under load. Tube forming components (flaring cones, double flaring adapters and swaging adapters) are retained on the feed screw by a ball detent mechanism and can be snapped on and off for quick change as required.

The tool is designed to permit hand held or vise mounted operation. Wt. 7.0 lbs.

**Flaring - 37° and 45°:** Flares soft copper, brass, aluminum, steel and stainless steel in nine tube sizes: 1/8", 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 5/8" and 3/4" O.D. tubing.

**Double Flaring - 45° Only:** Double flares soft copper, aluminum and steel (Bundy or G.M. to .035 wall) in seven tube sizes: 3/16", 1/4", 5/16", 3/8", 1/2", 5/8" and 3/4" O.D. tubing.

**Swaging:** Swages soft copper, aluminum and brass in seven tube sizes: 3/16", 1/4", 5/16", 3/8", 1/2", 5/8" and 3/4" O.D. tubing.



2000-FS

### Flaring

Outside Tube Diameter (in.)	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4
Wall Thickness (in.)	.020	.028	.035	.035	.035	.035	.035	.049	.049

### Swaging

Outside Tube Diameter (in.)	3/16	1/4	5/16	3/8	1/2	5/8	3/4
Wall Thickness (in.)	.028	.035	.035	.035	.035	.035	.035

# TUBING TOOL SELECTOR

TUBING TOOL SELECTOR				TUBE MATERIAL							
TOOL	PART NO.	PAGE NO.	SIZE RANGE TUBE O.D. (in.)	ANNEALED GENERAL PURPOSE	COPPER						TYPE M
					TYPE K BENDING TEMPER-HARD			TYPE L BENDING TEMPER-HARD			
					SOFT	TEMPER-HARD	HARD	SOFT	TEMPER-HARD	HARD	
Tube Cutters	TC-1000	17	1/8 - 1-1/8	●	●	●	●	●	●	●	●
Metal Tubing	TC-1050	18	1/8 - 5/8	●	●	●	●	●	●	●	●
	TC-2050	18	3/16 - 7/8	●	●	●	●	●	●	●	●
	174-F	17	3/8 - 1-1/8	●	●	●	●	●	●	●	●
	206-FB	18	3/8 - 2-5/8	●	●	●	●	●	●	●	●
	227-FA	17	1/8 - 3/4	●	●	●	●	●	●	●	●
	312-FC	17	1/8 - 1-5/8	●	●	●	●	●	●	●	●
	406-FA	18	2 - 4-1/8	●	●	●	●	●	●	●	●
Tube Cutters	206-FBP	18	3/8 - 2-5/8	●(5)	●(5)	●(5)	●(5)	●(5)	●(5)	●(5)	●(5)
Thermoplastic	307-FP	19	1/16 - 1/2 (4)								
Rubber Hose	327-FP	19	1/8 - 13/16 (4)								
Saw Vise	384-FA	18	1/8 - 1-1/2	●	●	●	●	●	●	●	●
Bending Tools	101-F	21	1/4 - 5/8	●	●	●		●	●		
	102-F	21	1/4 - 3/4	●	●	●		●	●		
	112-F	21	1/4 - 3/8	●	●	●		●	●		
	163-F	21	1/4 - 5/8	●	●	●		●	●		
	260-FHA	24	1/4 - 7/8	●	●	●		●	●		
	270-F	25	3/8 - 1-1/8	●	●	●	●	●	●	●	
	350-FHA	24	1/4 - 3/4	●	●	●		●	●		
	364-FH	22	1/8 - 3/16	●	●	●		●	●		
	364-FHA	22	1/4 - 1	●	●	●		●	●		
	364-FHAM	22	6-12 mm	●	●	●		●	●		
	364-FHB	22	1/4 - 1/2	●	●	●		●	●		
	364-FHBM	22	6-12 mm	●	●	●		●	●		
	367-FH	21	1/8, 3/16, 1/4	●	●	●		●	●		
	368-FH	21	1/4, 5/16, 3/8	●	●	●		●	●		
	370-FH	21	1/4, 3/8, 1/2	●	●	●		●	●		
	371-FH	21	8,10,12 mm	●	●	●		●	●		
	564-FH	23	3/8, 1/2	●	●	●		●	●	●	
	600-F	26	1/4 - 3/4	●	●	●		●	●		
	700-F	26	1/4 - 3/4	●	●	●		●	●		
37° Flaring Tool	400-F	31	3/16 - 5/8	●	●	●		●	●		(2)
	407-FA	32	1/8 - 1-1/2	●	●	●		●	●		(2)
	437-FB	30	3/16 - 5/8	●	●	●		●	●		(2)
	447-F	31	1/8 - 1/2	●	●	●		●	●		(2)
	507-FB	30	3/16 - 5/8	●	●	●		●	●		(2)
	555-FS	33	3/16 - 5/8	●	●	●		●	●		(2)
	537-F	32	3/4 - 1-1/4	●	●	●		●	●		(2)
	637-F	32	1-1/4 - 2	●	●	●		●	●		(2)
	2000-FS	37	1/8 - 3/4	●	●	●		●	●		(2)
45° Flaring Tool	103-FS	27	3/4 - 1	●	●	●		●	●		(2)
	195-FC	27	3/16 - 5/8	●	●	●		●	●		(2)
	203-FA	27	5/8 - 1-1/8	●	●	●		●	●		(2)
	275-FS	34	1/8 - 3/4	●	●	●		●	●		(2)
	296-FC	27	3/16 - 5/8	●	●	●		●	●		(2)
	300-FB	27	3/16 - 5/8	●	●	●		●	●		(2)
	375-FS	27	1/8 - 3/4	●	●	●		●	●		(2)
	376-FS	27	1/2 - 3/4	●	●	●		●	●		(2)
	395-FAM	27	4 - 16 mm	●	●	●		●	●		(2)
	500-FC	28	3/16 - 5/8	●	●	●		●	●		(2)
	500-FCM	28	6 - 16 mm	●	●	●		●	●		(2)
	525-F	28	3/16 - 5/8	●	●	●		●	●		(2)
			4.75 - 16 mm	●	●	●		●	●		(2)
	555-FS	33	3/16 - 5/8	●	●	●		●	●		(2)
	2000-FS	37	1/8 - 3/4	●	●	●		●	●		(2)
45° Double	93-FB	29	3/16 - 1/2	●	●	●		●	●		
Flaring Tools	195-FB	29	1/4 - 3/4	●	●	●		●	●		
	2000-FS	37	3/16 - 3/4	●	●	●		●	●		
Reaming and	208-F	40	3/16 - 1-1/2	●	●	●		●	●		●
Deburring Tools	208-FSS	40	3/16 - 1-1/2	●	●	●		●	●		●
Tube Constrictor	TC-1020	17	1/8 - 1-1/8	●	●	●		●	●		●
Swaging Tools	93-S	33	3/16 - 7/8	●	●	●		●	●		
	94-S	33	1/2, 5/8, 7/8	●	●	●		●	●		
	95-S	33	3/16 - 5/8	●	●	●		●	●		
	193-S	33	1/4 - 5/8	●	●	●		●	●		
	194-S	34	1/2 - 7/8	●	●	●		●	●		
	195-SA	33	1/4 - 5/8	●	●	●		●	●		
	275-FS	34	3/16 - 3/4	●	●	●		●	●		
	555-FS	33	3/16 - 5/8	●	●	●		●	●		
	2000-FS	37	3/16 - 3/4	●	●	●		●	●		
Metric Bubble Flaring Tool	293-F	33	4.75 - 10 mm	●	●	●		●	●		

\*See page 20 for specialized cutters.  
 (1) Heavy duty cutting wheel No.S75046 is recommended for continuous service with steel, stainless steel, monel, titanium and hard temper copper tubing.  
 (2) Type M tubing should be torch annealed before flaring.  
 (3) No.364-FHA, 1" size should be used only with annealed (softened) non-ferrous tubing.  
 (4) Not to be used with metal reinforced hose.  
 (5) When cutting metallic tubing you must switch to standard wheel furnished.

# TUBING TOOL SELECTOR

TUBING TOOL SELECTOR			TUBE MATERIAL							
TOOL	PART NO.	PAGE NO.	SIZE RANGE TUBE O.D. (in.)	ANNEALED ALUMINUM (SOFT)	ANNEALED BRASS (SOFT)	SAE 1020 (SOFT)	BRAZED- BUNDY WELD GM	STAINLESS STEEL ANNEALED (SOFT)	STAINLESS STEEL (1/8 HARD)	TITANIUM
Tube Cutters	TC-1000	17	1/8 - 1-1/8	●	●	●	●	(1)	(1)	(1)
Metal Tubing	TC-1050	18	1/8 - 5/8	●	●	●	●			
	TC-2050	18	3/16 - 7/8	●	●	●	●	(1)	(1)	(1)
	174-F	17	3/8 - 1-1/8	●	●	●	●	(1)	(1)	(1)
	206-FB	18	3/8 - 2-5/8	●	●	●	●	●	●	●
	227-FA	17	1/8 - 3/4	●	●	●	●			
	312-FC	17	1/8 - 1-5/8	●	●	●	●	(1)	(1)	(1)
	406-FA	18	2 - 4-1/8	●	●	●	●			
Tube Cutters	206-FBP	18	3/8 - 2-5/8	●(5)	●(5)	●(5)	●(5)	●(5)	●(5)	●(5)
Thermoplastic	307-FP	19	1/16 - 1/2 (4)							
Rubber Hose	327-FP	19	1/8 - 13/16 (4)							
Saw Vise	384-FA	18	1/8 - 1-1/2	●	●	●	●	●	●	●
Bending Tools	101-F	21	1/4 - 5/8	●	●					
	102-F	21	1/4 - 3/4	●	●					
	112-F	21	1/4 - 3/8	●	●					
	163-F	21	1/4 - 5/8	●	●					
	260-FHA	24	1/4 - 7/8	●	●	●	●			
	270-F	25	3/8 - 1-1/8	●	●	●	●	●	●	●
	350-FHA	24	1/4 - 3/4	●	●	●	●	●	●	●
	364-FH	22	1/8 - 3/16	●	●	●	●	●	●	●
	364-FHA	22	1/4 - 1	●	●	●	●	●	●	●
	364-FHAM	22	6 - 12 mm	●	●	●	●	●	●	●
	364-FHB	22	1/4 - 1/2	●	●	●	●	●	●	●
	364-FHBM	22	6 - 12 mm	●	●	●	●	●	●	●
	367-FH	21	1/8, 3/16, 1/4	●	●	●	●	●	●	●
	368-FH	21	1/4, 5/16, 3/8	●	●	●	●	●	●	●
	370-FH	21	1/4, 3/8, 1/2	●	●	●	●	●	●	●
	371-FH	21	8, 10, 12 mm	●	●	●	●	●	●	●
	564-FH	23	3/8, 1/2	●	●	●	●	●	●	●
	600-F	26	1/4 - 3/4	●	●	●	●	●	●	●
	700-F	26	1/4 - 3/4	●	●	●	●	●	●	●
	37° Flaring Tool	400-F	31	3/16 - 5/8	●	●	●	●	●	●
407-FA		32	1/8 - 1-1/2	●	●	●	●	●	●	●
437-FB		30	3/16 - 5/8	●	●	●	●	●	●	●
447-F		31	1/8 - 1/2	●	●	●	●	●	●	●
507-FB		30	3/16 - 5/8	●	●	●	●	●	●	●
555-FS		33	3/16 - 5/8	●	●	●	●	●	●	●
537-F		32	3/4 - 1-1/4	●	●	●	●	●	●	●
637-F		32	1-1/4 - 2	●	●	●	●	●	●	●
2000-FS		37	1/8 - 3/4	●	●	●	●	●	●	●
37° Flaring Tool		103-FS	27	3/4 - 1	●	●				
	195-FC	27	3/16 - 5/8	●	●					
	203-FA	27	5/8 - 1-1/8	●	●					
	275-FS	34	1/8 - 3/4	●	●					
	296-FC	27	3/16 - 5/8	●	●					
	300-FB	27	3/16 - 5/8	●	●					
	375-FS	27	1/8 - 3/4	●	●					
	376-FS	27	1/2 - 3/4	●	●					
	395-FAM	27	4 - 16 mm	●	●					
	500-FC	28	3/16 - 5/8	●	●					
	500-FCM	28	6 - 16 mm	●	●					
	525-F	28	3/16 - 5/8	●	●					
				4.75 - 16 mm	●	●				
	555-FS	33	3/16 - 5/8	●	●					
	2000-FS	37	1/8 - 3/4	●	●	●	●	●	●	●
45° Double	93-FB	29	3/16 - 1/2	●	●	●	●			
Flaring Tool	195-FB	29	1/4 - 3/4	●	●					
	2000-FS	37	3/16 - 3/4	●	●	●	●			
Reaming	208-F	40	3/16 - 1-1/2	●	●					
& Deburring Tools	208-FSS	40	3/16 - 1-1/2	●	●	●	●	●	●	
Tube Constrictor	TC-1020	17	1/8 - 1-1/8	●	●					
Swaging Tools	93-S	33	3/16 - 7/8	●	●					
	94-S	33	1/2, 5/8, 7/8	●	●					
	95-S	33	3/16 - 5/8	●	●					
	193-S	33	1/4 - 5/8	●	●					
	194-S	34	1/2 - 7/8	●	●					
	195-SA	33	1/4 - 5/8	●	●					
	275-FS	34	3/16 - 3/4	●	●					
	555-FS	33	3/16 - 5/8	●	●					
	2000-FS	37	3/16 - 3/4	●	●					
Metric Bubble Flaring Tool	293-F	33	4.75 - 10 mm	●	●	●	●			

\*See page 20 for specialized cutters.

(1) Heavy duty cutting wheel No. S75046 is recommended for continuous service with steel, stainless steel, monel, titanium and hard temper copper tubing.

(2) Type M tubing should be torch annealed before flaring.

(3) No. 364-FHA, 1" size should be used only with annealed (softened) non-ferrous tubing.

(4) Not to be used with metal reinforced hose.

(5) When cutting metallic tubing you must switch to standard wheel furnished.

# TESTING AND SERVICE TOOLS

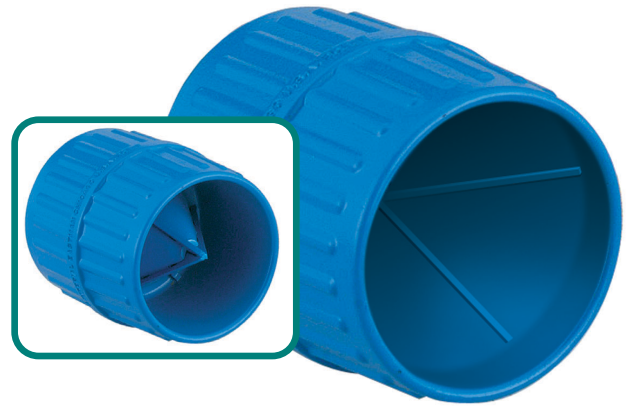
## INNER-OUTER REAMING AND DEBURRING TOOLS

For 3/16" to 1-1/2" O.D. tubing.

Reams both inside and outside edges of tube with 3 hollow ground cutters. Tough die cast body. Deburrs both clockwise and counterclockwise. Fluted body is shaped to fit comfortably in palm.

**208-F** Reamer for copper, aluminum and brass tubing. Hardened steel cutter blades. Blue finish. Wt. .63 lbs.

**208-FSS** Reamer for aircraft grade stainless steel tubing, hard or soft copper, aluminum, brass and steel tubing. Tungsten hardened tool steel cutter blades. Black finish. Wt. .63 lbs.



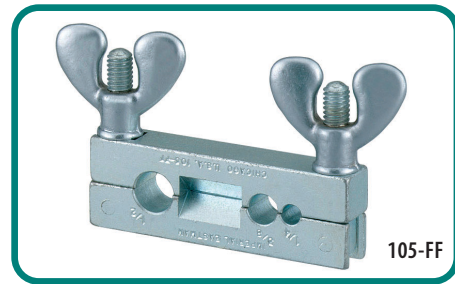
208-F

## PINCH-OFF TOOL

For 1/4" to 1/2" O.D. tubing.

Temporarily closes soft copper, aluminum or steel tubing so no liquid or gas passes sealed part. Lets you disconnect line while making repairs without loss of liquid or gas. Also opens tubing to allow flow.

**105-FF** Pinch-Off Tool for 1/4", 5/16", 3/8" and 1/2" O.D. tubing. Wt. .75 lbs.



105-FF

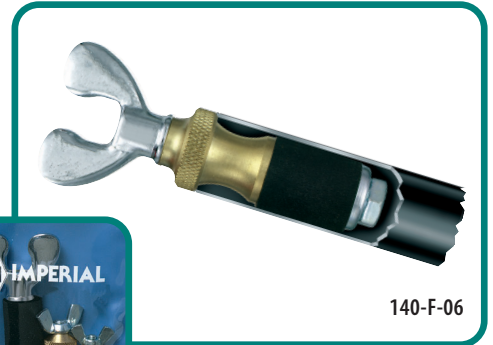
## TUBING TEST PLUGS

For 1/4" to 1-5/8" O.D. tubing.

For temporary shut-off of tubing without pinching it off or installing a valve. Especially handy for plumbing, heating, refrigeration and instrumentation when troubleshooting for leaks. Light weight, fast acting, dependable. Insert plug in tube end and tighten wing nut. Expander seals tube and holds pressures to 100 PSI.

**142-F** Test plug kit for 1/2", 5/8" and 7/8" O.D. tubing. Wt. .5 lbs.

CATALOG NUMBER	TUBE O.D. (in.)	WEIGHT EACH (oz.)	REPLACEMENT SLEEVE
140-F-04	1/4	.5	S62641
140-F-06	3/8	.75	S62648
140-F-08	1/2	1.0	S62655
140-F-10	5/8	1.5	S62661
140-F-12	3/4	2.0	S62666
140-F-14	7/8	3.0	S66434
140-F-18	1-1/8	4.0	S66435
140-F-22	1-3/8	4.0	S71174
140-F-26	1-5/8	5.0	S71177



140-F-06



142-F

## 45° REFLACING TOOL

For 1/4", 5/16", 3/8" and 1/2" SAE 45° flare fittings.

Reams both inside and outside edges of tube with 3 hollow ground cutters. Tough die cast body. Deburrs both clockwise and counterclockwise. Fluted body is shaped to fit comfortably in palm.

**345-FA** With cutter and adapters for 1/4", 5/16", 3/8", 1/2" and 5/8" fittings. Makes nicked or marred seats on brass and other nonferrous fittings and valves as good as new. Precision feed. Replaceable cutter. In tool case. Wt. 2.0 lbs.

**Adapters:** 346-F-04 1/4" O.D., 346-F-05 5/16" O.D., 346-F-06 3/8" O.D., 346-F-08 1/2" O.D., 346-F-10 5/8" O.D., S63412 Replacement Cutter



345-FA

# RATCHET WRENCHES

## 199-F KWIK-TITE® RATCHET WRENCHES

For 5/16" to 2-1/4" O.D. tubing and 7 mm to 32 mm hex sizes.

The Kwik-Tite® ratchet wrench speeds installation of tube fittings and valves, hex nuts, bolts and fasteners. This unique wrench, with its open jaw design, makes it easy to slip onto fittings and fasteners, even in tight quarters. Flips quickly into tightening position with a sure grip on all hex surfaces.

12 point contact distributes torque pressures evenly on the flats of the hex, not at the corners. Eliminates warping and distorting of fittings and fasteners. Because of the Kwik-Tite® ratchet action, tightening jobs are easier and faster.

Kwik-Tite® wrenches are constructed for rugged use. Jaws are hardened steel. Handles are made of heavy gauge alloy steel, hardened and chrome plated.



Ratcheting of wrench requires only 30° of movement.



### Kwik-Tite® Ratchet Wrench Kit

299-F contains: 3/8", 1/2", 5/8", 3/4", 7/8" and 1" wrenches

399-F contains: 1/2", 9/16", 5/8" and 3/4" wrenches

### SAE

CATALOG NUMBER	HEX SIZE (in.)	OVERALL LENGTH (in.)
199-F-05	5/16	5-3/8
199-F-06	3/8	5-3/8
199-F-07	7/16	5-3/16
199-F-08	1/2	5-3/8
199-F-09	9/16	5-3/8
199-F-10	5/8	7-1/32
199-F-11	11/16	7-1/8
199-F-12	3/4	7-3/16
199-F-13	13/16	9-1/8
199-F-14	7/8	9-3/32
199-F-15	15/16	9-1/4
199-F-16	1	9-9/32
199-F-17	1-1/16	13.59
199-F-18	1-1/8	13.59
199-F-19	1-3/16	13.59
199-F-20	1-1/4	13.59
199-F-22	1-3/8	13.84
199-F-24	1-1/2	13.84
199-F-26	1-5/8	13.84
199-F-28	1-3/4	14.21
199-F-30	1-7/8	14.21
199-F-32	2	14.21
199-F-34	2-1/8	14.53
199-F-36	2-1/4	14.53

### METRIC

CATALOG NUMBER	HEX SIZE (mm)	OVERALL LENGTH (mm)	OVERALL LENGTH (in.)
199-F-07 mm	7	137.41	5.41
199-F-08 mm	8	137.41	5.41
199-F-09 mm	9	137.41	5.41
199-F-10 mm	10	137.41	5.41
199-F-11 mm	11	137.41	5.41
199-F-12 mm	12	137.41	5.41
199-F-13 mm	13	137.41	5.41
199-F-14 mm	14	184.15	7.25
199-F-15 mm	15	184.15	7.25
199-F-16 mm	16	184.15	7.25
199-F-17 mm	17	184.15	7.25
199-F-18 mm	18	184.15	7.25
199-F-19 mm	19	184.15	7.25
199-F-20 mm	20	184.15	7.25
199-F-21 mm	21	237.50	9.35
199-F-22 mm	22	237.50	9.35
199-F-23 mm	23	237.50	9.35
199-F-24 mm	24	237.50	9.35
199-F-27 mm	27	345.19	13.59
199-F-30 mm	30	345.19	13.59
199-F-32 mm	32	345.19	13.59

# WRENCHES

## WRENCHES

### For Refrigeration and Air-Conditioning Service.

- 127-C** Compressor access valve wrench. Chrome plated. Has 1/4", 3/8", 3/16" and 5/16" square drive ratchets and is specially designed for use on compressors with access valves in hard to reach places. Reversible ratchets.
- 127-C0** Same as 127-C except with unique 25° offset that provides additional convenience in hard to reach places.
- 123-C** Rugged steel forged wrench. For use on small refrigerant cylinders, shut-off valves, packing gland nuts, etc. Ratchet has 1/4" square drive and raised face. Handle has 3/16" and 1/4" square drives and 1/2" hex.
- 124-C** Combination wrench with the four sizes most needed for servicing air-conditioning and refrigerator equipment:
  - 9/16" hex for dust cap on access valves and plug oil check on compressor.
  - 1/2" hex for compressor mounting bolts.
  - 1/4" square for valve stem and service valves and old style compressor valves.
  - 3/16" square for valve refrigerant charging tanks.
- 125-C** Rugged, steel forged wrench with four sizes covering almost any application. Ratchet has 1/4" drive on one end; other end has 3/16" and 5/16" square openings, plus 9/16" hex opening.
- 126-C** Economy compressor access valve wrench. Chrome plated. Has 1/4", 3/8", 3/16" and 5/16" square drive ratchets and is specially designed for use on compressors with access valves in hard to reach places. Reversible ratchets.



127-C



127-C0



123-C



124-C



125-C

## RotoWrench® 8 BOX WRENCH SIZES IN 1 HANDY TOOL

Great for professional, industrial, auto, home or farm use.

- Each box end has 12 gripping teeth — won't round corners of fasteners.
- 30° swing-arc for tight clearances.
- Slim profile — easy to carry and store.
- Hardened chrome-moly steel for lifetime service.
- Patented; Member tested and recommended by HANDYMAN CLUB OF AMERICA.
- Lifetime Warranty.



- 10-S** Fits SAE 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16" and 3/4" nuts and bolts. In clamshell.
- 10-SM** Fits Metric 8, 10, 12, 13, 14, 15, 17 and 19 mm nuts and bolts. Black oxide handle for easy differentiation from silver SAE model. In clamshell.
- 10-S18** 12-pc SAE POP counter/shelf display.
- 10-SM18** 12-pc Metric POP counter/shelf display.



10-S

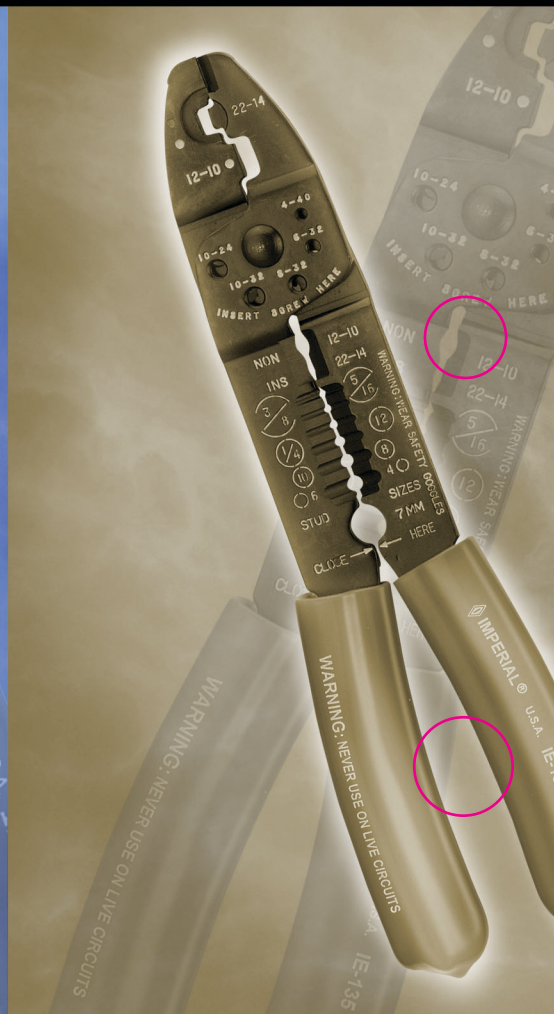
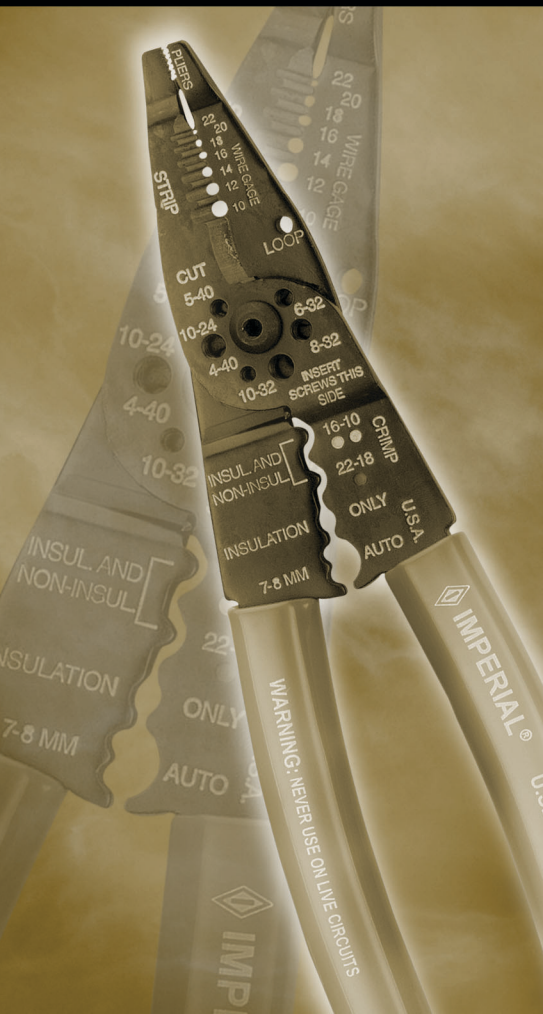
10-SM

# ELECTRICAL TOOLS

ROMEX® TOOLS • UPFRONT STRIPPERS • UPFRONT CRIMPERS



*The international standard of excellence.™*





# ROMEX® PRODUCTS

## ROMEX® STRIPPERS AND CUTTERS

**IE-123** For 12-2 and 14-2 type NM-B cable. Patent pending “staggered” cutting blade produces a clean, sure cut with 30-50% less effort. Also features precision-ground stripping stations, serrated pliers nose, wire looping holes, spring return, lock and 6-32 / 8-32 bolt cutters. Tool markings have been redesigned to be easier to read and highly visible. Includes air-pocket cushion grips for comfort. 7-3/4" NOM length.

**IE-124** For 10-2 type NM-B cable. Heavy duty stripper/cutter for removing outer jacket and stripping 10 AWG wires. Also features: pliers nose, large staggered cutter, wire looping holes, spring return, lock and 6-32 / 8-32 bolt sizing/cutting stations. 7-3/4" NOM length.

\*Romex is a registered trademark of General Cable Industries, Inc., or an affiliate.

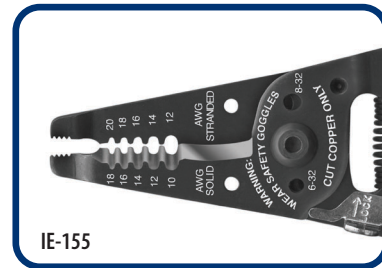


# UPFRONT STRIPPERS

Cutters, strippers and crimpers are designed to the demanding specifications of the professional. Made from high carbon, heat-treated steel, each tool is manufactured to produce clean, exacting results. Also, each tool is MADE IN U.S.A.

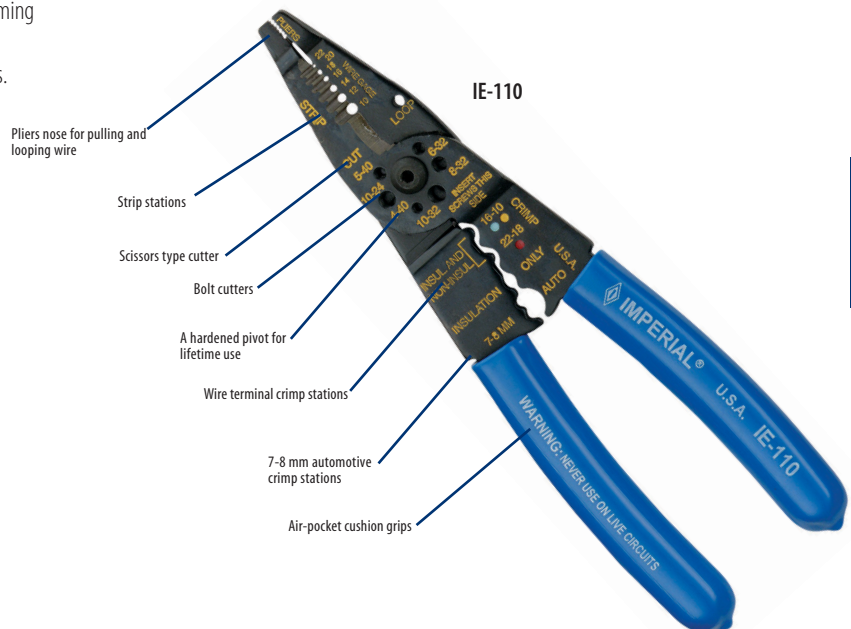
## SUPER STRIPPER

- IE-155** • Pliers nose for working small nuts and pulling wire.
- Precision-ground stripping stations for both solid and stranded wire; 20-10 AWG.
  - Long, curved cutter requires less force to cut, holes in jaw for looping wire.
  - Lock to protect cutting and stripping edges when stored.
  - Return spring and opening stop to prevent spring from becoming disengaged.
  - Longer handles for greater leverage, cuts 6-32 and 8-32 bolts.
  - NOM length: 7-1/4"



## 5 IN 1 COMBINATION TOOL

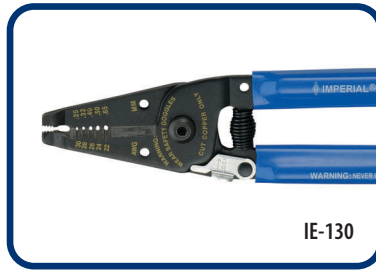
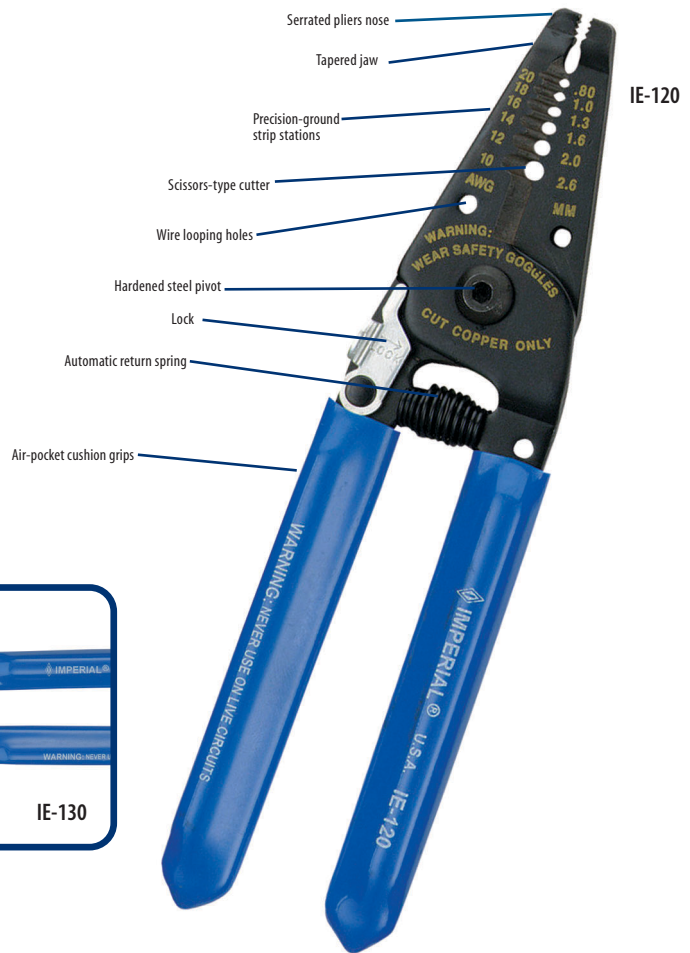
- IE-110** • Strips: 22/20/18/16/14/12/10 AWG.
- Crimps: insulated and non-insulated: 22-18, 16-10 AWG; non-insulated: Auto 7 & 8 mm.
  - Bolt cutter: 4-40/5-40/6-32/8-32/10-32/10-24.
  - Wire sizes, etc. are embossed in metal and paint filled.
  - Air-pocket cushion grips.
  - OAL 8.25 in. (210 mm).



# UPFRONT STRIPPERS

## HEAVY-DUTY UPFRONT STRIPPERS & CUTTERS

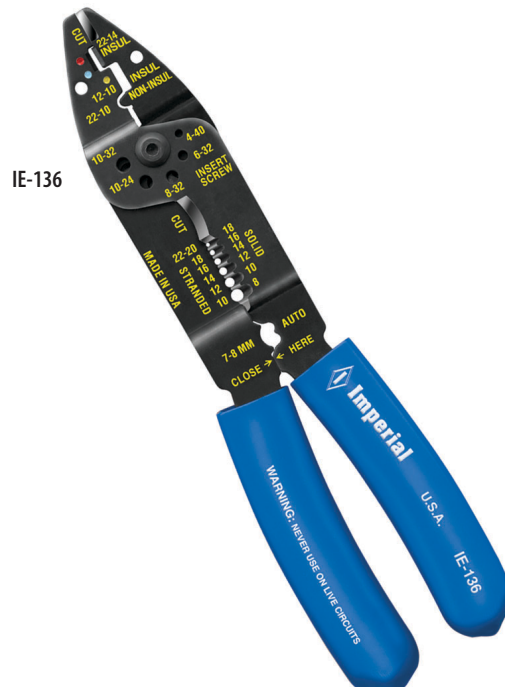
- IE-120** • Strips solid wire AWG gauges: 20/18/16/14/12/10 AWG; .8/1.0/1.3/1.6/2.0/2.6 mm. Wire sizes are embossed in metal and pad printed on face.
- IE-125** • Strips standard wire AWG gauges : 26/24/22/20/18/16 AWG; .40/.50/.65/.80/1.0/1.3 mm.
- IE-130** • Strips solid wire AWG gauges: 30/28/26/24/22 AWG; 25/.32/.40/.50/.65 mm.
  - Serrated pliers nose for pulling and working wire, small nuts, etc.
  - AWG and metric wire sizes are embossed in steel and pad printed for high visibility.
  - 2-piece hardened steel pivot for lifetime service.
  - Spring return to help speed work.
  - Large air-pocket cushion grips for greater comfort.
  - NOM length: 6-1/4".



# UPFRONT CRIMPERS

## UPFRONT CUTTER/CRIMPER/STRIPPER

- IE-136** • Curved cutter reduces force required to cut; longer length capable of cutting Romex® in a single stroke.
  - Wire looping holes in jaw.
  - Screw cutter/sizing holes are moved closer to the pivot for more leverage, making it easier to shear screws.
  - Strips: 10-22 AWG.
  - Crimps: insulated 10-22 AWG.
  - Crimps: non-insulated 10-22 AWG, 7-8mm Auto.
  - Bolt cutter: 4-40 / 6-32 / 8-32 / 10-32 / 10-24.
  - Anvil-type long, curved cutter.
  - NOM length: 8-1/2"



**Note: Plastisol or slip-on grips are for comfort only and not intended for protection against electrical shock. Never use tools on live electrical outlets.**

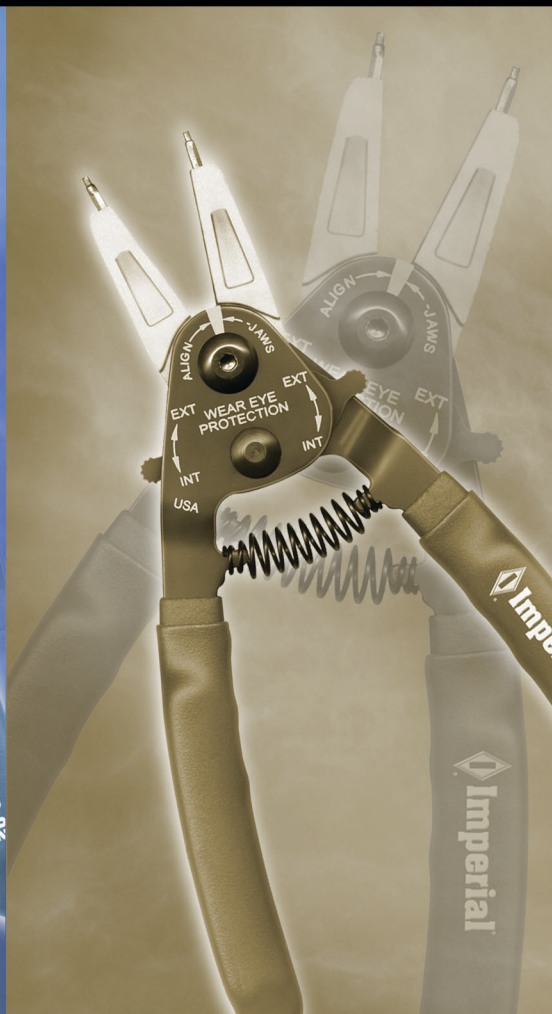
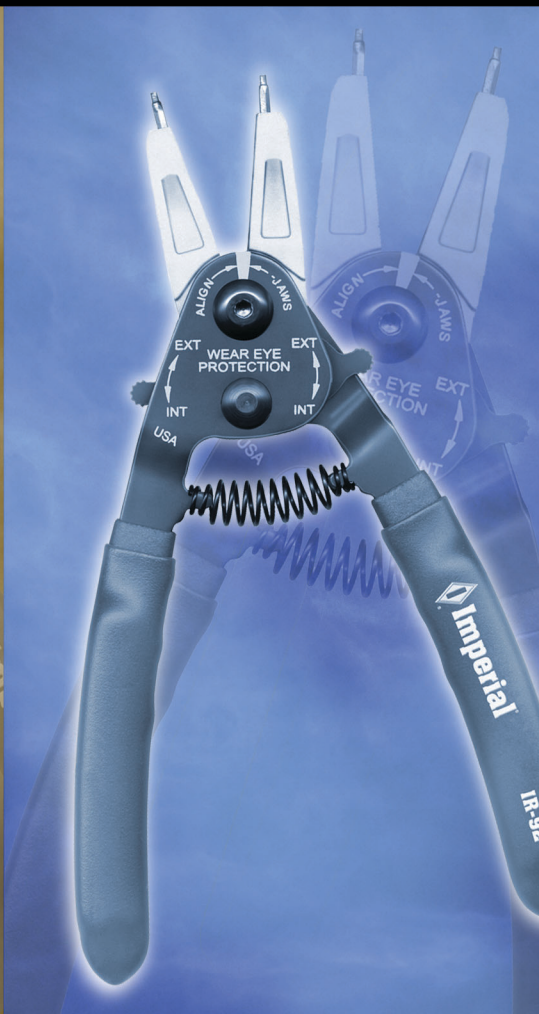
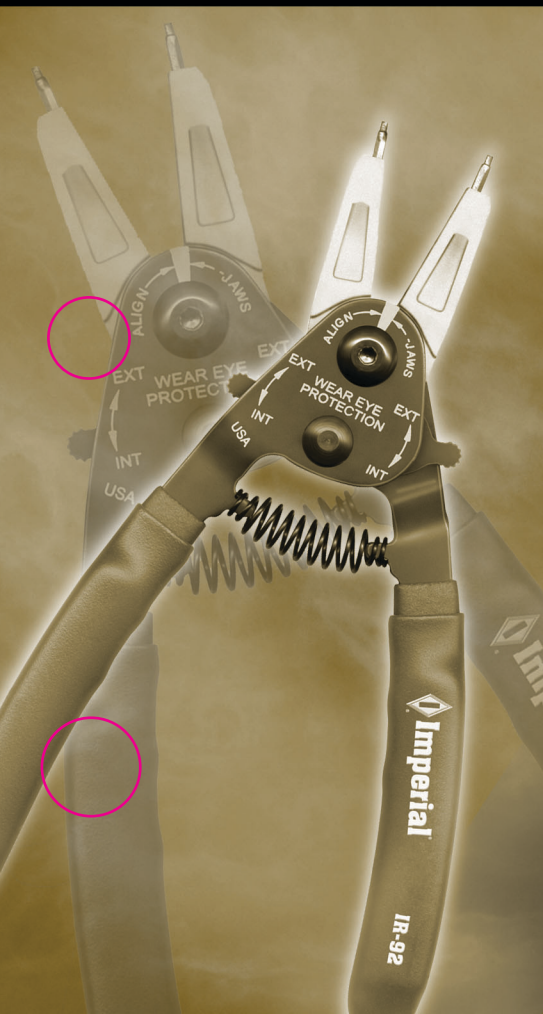


# RETAINING RING PLIERS

## UNIVERSAL CONVERTIBLE REPLACEABLE TIP



*The international standard of excellence.™*



# UNIVERSAL CONVERTIBLE RETAINING RING PLIERS

## EASY TO CONVERT FROM INTERNAL TO EXTERNAL RINGS - SIMPLY MOVE LEVERS TO SWITCH. NO PINS TO PUSH!

- Hex-shaped locking guides firmly hold tips.
- Tough steel construction for durability and strength.
- Ergonomic anti-slip sealed air pocket grips for comfort.
- Spring loaded to speed the work.
- Black oxide finish resists rust & corrosion.

### IR-92 FOR UP TO 2.0" DIA. RINGS

Includes five pairs of color-coded precision-ground tips and Allen wrench in convenient storage pouch:

- (2) 0.038 in. Yellow Tips
- (2) 0.038 in. Yellow 90° Tips
- (2) 0.047 in. Green Tips
- (2) 0.047 in. Green 90° Tips
- (2) 0.070 in. Copper Tips

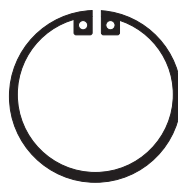
#### IR-92TP REPLACEMENT TIP KIT

### IR-94 FOR UP TO 1.0" DIA. RINGS

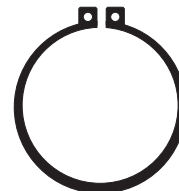
Includes five pairs of color-coded precision-ground tips and Allen wrench in convenient storage pouch:

- (2) 0.024 in. Red Tips
- (2) 0.038 in. Yellow Tips
- (2) 0.038 in. Yellow 90° Tips
- (2) 0.047 in. Green Tips
- (2) 0.047 in. Green 90° Tips

#### IR-94TP REPLACEMENT TIP KIT



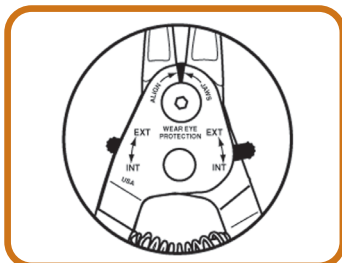
**Internal**  
3/8 in. - 2 in. 10 mm - 48 mm



**External**  
1/4 in. - 2 in. 7 mm - 48 mm

### Simple to Use

1. Determine the largest size of tip that will fit the retaining ring holes. Insert tips into pliers and tighten set screws with included 3/16 in. Allen wrench.
2. Convert pliers to internal or external position by gently squeezing grips and aligning edge of jaws with mark on pliers. Push both levers to desired setting. See diagram.
3. Use a punch or similar tool to break any bond created from rust or dirt that has accumulated in the retaining ring groove.
4. Push the tip of the pliers as far as possible into the retaining ring holes before squeezing the handles.
5. Use only as much pressure as needed to remove or install the retaining ring.



# SELLING AIDS & ACCESSORIES

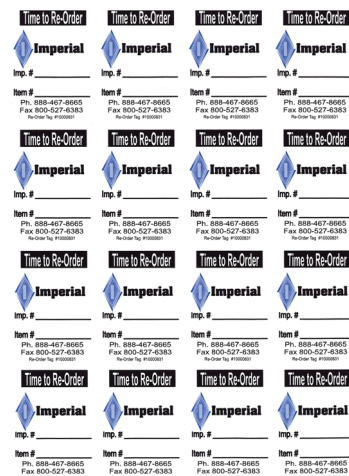
## TOOL CENTER SIGN

- TH-100 • 10" H x 45" W Sturdy hardboard.  
• With two grommets for hanging.



## "TIME TO RE-ORDER" PEGBOARD INVENTORY TAGS

- P10000831 • 2-1/2" W x 2-3/4" H Pre-punched.  
• 12 Tags per 8-1/2" x 11" sheet.



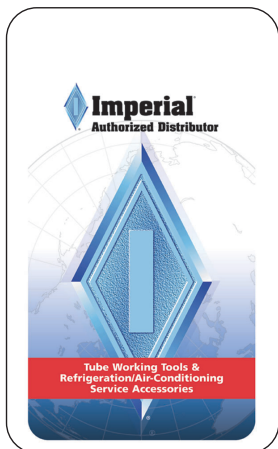
## MANIFOLD & TUBE WORKING POSTERS

- LT Posterset • 23" W x 35-1/2" H.  
• Great for stores and tech schools.



## AUTHORIZED DISTRIBUTOR VINYL STATIC LABEL

- LTWD1 • 6" W x 9-1/2" H.  
• Adheres to glass and smooth surfaces.



## 15-POCKET PROFESSIONAL

### TB-52 Tool Bag

- 8" W x 16" L x 11" D.
- Double layered ballistic nylon.
- Wide opening mouth.
- Padded handles & 48" shoulder strap.
- Designed to hold tools.
- Tools not included! Great for friends!



# ALPHA-NUMERICAL INDEX

ITEM#	PAGE #	ITEM#	PAGE #	ITEM#	PAGE #	ITEM#	PAGE #	ITEM#	PAGE #	ITEM#	PAGE #
101-F	21	175EX12	35	199-F 24mm	41	278-FS 12	34	364-FHB 06	22	423-HPS	10
102-F 04	21	175EX14	35	199-F 26	41	278-FS 14	34	364-FHB 07	22	425-CAM	10
102-F 05	21	175EX16	35	199-F 27mm	41	278-FSM 12	34	364-FHB 08	22	425-CAP-D	10
102-F 06	21	175EX18	35	199-F 28	41	278-FSM 14	34	364FHBM10MM	22	425-CB	10
102-F 07	21	175EX22	35	199-F 30	41	278-FSM 15	34	364FHBM12MM	22	425-CK	10
102-F 08	21	175EX26	35	199-F 30mm	41	278-FSM 16	34	364FHBM6MM	22	425-CKB	10
102-F 10	21	175EXC	35	199-F 32	41	278-FSM 18	34	364FHBM8MM	22	425-CKP	10
102-F 12	21	175EXP	35	199-F 32mm	41	278-FSM 22	34	367-FH	21	425-HPS	10
102-F 14	21	17-C	12	199-F 34	41	278-FSM 8	34	368-FH	21	426-CKP	10
103-FS	27	18-C	12	199-F 36	41	278-FSM4-6-10	34	370-FH	21	427-CKP	10
105-FF	40	193-S	33	19-C	7, 12	27-C	12	371-FH	21	428-CKP	10
10-C	15	194-S	34	2000-FS	37	293-F	33	375-FS	27	429-CKP	10
10-S	42	195-FB	29	201-F	21	296-FC	27	376-FS	27	431-CM	10
10-S18	42	195-FC	27	203-FA	27	299-F	41	384-FA	18	432-CM	10
10SG	9	195-SA	33	206-FB	18	300-FB	27	395-C	6, 9	434-BKP	10
10-SM	42	199-F 05	41	206-FBP	18	300-RH	9	395-CD	6, 9	434-RKP	10
10-SM18	42	199-F 06	41	208-F	40	300-RL	9	395-CKP	6, 9	435-CKP	5, 9
112-F	21	199-F 07	41	208-FSS	40	307-FP	19	395-FAM	27	436-CKP	5, 9
120-F	36	199-F 07mm	41	20-A	7, 12	312-FC	17	396-C	6, 9	437-FB	30
121-F	36	199-F 08	41	21-H	7	327-FP	19	396-CD	6, 9	441-CB	10
1226-FA	36	199-F 08mm	41	21-L	7	335-CKP	6	396-CKP	6, 9	441-CBM	10
122-FA	36	199-F 09	41	227-FA	17	336-CKP	6	397-CD	6, 9	441-CR	10
123-C	42	199-F 09mm	41	23-C	12	341-C	15	398-C	6, 9	441-CRM	10
123-FA	36	199-F 10	41	241-F 03	14	3423IP	10	398-CD	6, 9	447-F	31
124-C	42	199-F 10mm	41	241-F 04	14	3425CIP	10	399-F	41	450-C	5, 9
124-FA	36	199-F 11	41	241-F 05	14	345-FA	40	400-F	31	451-C	5, 9
125-C	42	199-F 11mm	41	241-F 06	14	346-F 04	40	400-RB	9, 10	451-CB	10
126-C	42	199-F 12	41	2423P	10	346-F 05	40	401-C	6	451-CBM	10
127-C	42	199-F 12mm	41	2425CP	10	346-F 06	40	401-FA	31	451-CR	10
127-CO	42	199-F 13	41	24-C	12	346-F 08	40	402-FA	31	451-CRM	10
12-C	15	199-F 13mm	41	25-K	12	346-F 10	40	405-RH	9	452-C	5, 9
140-F 04	40	199-F 14	41	260-FHA	24	350-FHA	24	405-RL	9	452-CB	10
140-F 06	40	199-F 14mm	41	26-C	12	360-FHA	24	406-FA	18	452-CR	10
140-F 08	40	199-F 15	41	270-F	25	364-FH 02	22	407-F	32	466-C	6
140-F 10	40	199-F 15mm	41	270-F 06	25	364-FH 03	22	407-FA	32	494-C	5, 9
140-F 12	40	199-F 16	41	270-F 08	25	364-FHA 04	22	415-C	5, 9	495-C	5, 9
140-F 14	40	199-F 16mm	41	270-F 10	25	364-FHA 05	22	416-C	5, 9	496-C	5, 9
140-F 18	40	199-F 17	41	270-F 12	25	364-FHA 06	22	417-C	5, 9	498-C	5, 9
140-F 22	40	199-F 17mm	41	270-F 14	25	364-FHA 07	22	418-C	5, 9	500-C	5, 9
140-F 26	40	199-F 18	41	270-F 16	25	364-FHA 08	22	420-C	5, 9	500-FC	28
142-F	40	199-F 18mm	41	270-F 18	25	364-FHA 10	22	421-C	5, 9	500-FCM	28
144-F	20	199-F 19	41	271-F	25	364-FHA 12	22	422-C	5, 9	500-RH	9
144-FB	20	199-F 19mm	41	275-FS	34	364-FHA 14	22	422-CB	10	500-RL	9
163-F	21	199-F 20	41	275-FSC	37	364-FHA 16	22	422-CR	10	505-C	5, 9
16-C	12	199-F 20mm	41	275-FSDC	37	364FHAM10MM	22	423-CAM	10	507-FB	30
174-F	18	199-F 21mm	41	275-FSM	34	364FHAM12MM	22	423-CAP-D	10	507-FBM	30
175-EX	35	199-F 22	41	278-FS 03X04X06	34	364FHAM6MM	22	423-CK	10	510-C	4, 8
175EX06	35	199-F 22mm	41	278-FS 05	34	364FHAM8MM	22	423-CKB	10	510-CM	4, 8
175EX08	35	199-F 23mm	41	278-FS 08	34	364-FHB 04	22	423-CKP	10	511-C	4, 8
175EX10	35	199-F 24	41	278-FS 10	34	364-FHB 05	22	423-CR	10	511-CM	4, 8



# ALPHA-NUMERICAL INDEX

ITEM#	PAGE #	ITEM#	PAGE #	ITEM#	PAGE #	ITEM#	PAGE #	ITEM#	PAGE #	ITEM#	PAGE #
512-C	4,8	715-C	2,8	808-MRR	11	IR-94TP	45	S62292	25	S76637	17,20
513-C	4,8	717-C	2,8	808-MRY	11	KCK-F	13	S62294	25	S77511	20
520-C	4,8	718-C	2,8	812-MRB	11	KCK-M	13	S62295	25	S77615	19
520-CA	4,7,8	720-C	2,8	812-MRR	11	LT Posterset	46	S62296	25	S7931801	20
520-CAM	4,7,8	721-C	2,8	812-MRY	11	LTWD 1	46	S62297	25	S7958301	11
521-C	4,8	725-C	2,8	903-MRB	11	P10000831	46	S62298	25	S7958302	11
521-CA	4,7,8	750-C	2,8	903-MRS	11	PT-109	14	S62299	25	S8058801	24
521-CAM	4,7,8	751-C	2,8	903-MRY	11	S10000265	11	S62300	25	S8058901	24
525-F	28	755-C	2,8	905-MRB	11	S10000770	18,20	S62301	25	S8114601	24
535-C	14	800-MBB	11	905-MRS	11	S16003162	17,20	S62302	25	S8115601	19
536-FTY	11	800-MBR	11	905-MRY	11	S38600	34	S62303	25	S8201501	20
537-F	32	800-MBS	11	906-MRB	11	S5951125	13	S62304	25	S8230301	10
541-C	15	800-MBY	11	906-MRS	11	S62156	24	S62305	25	S8425301	24
542-C	15	803-AB	7	906-MRY	11	S62244	25	S62306	25	S8426501	24
545-C	14	803-AR	7	93-FB	29	S62245	25	S62307	25	S8426601	24
548-FTY	11	803-AS	7	93-S 03	33	S62246	25	S62835	25	S8442401	24
555-FS	33	803-AY	7	93-S 04	33	S62247	25	S62836	25	S8485201	24
560-FTY	11	803-MAB	7	93-S 05	33	S62250	25	S62837	25	S8487001	24
564-FH 06	23	803-MAR	7	93-S 06	33	S62251	25	S62838	25	S8694401	33
564-FH 08	23	803-MAS	7	93-S 08	33	S62252	25	S62839	25	S8771301	33
564-FHT 06	23	803-MAY	7	93-S 10	33	S62253	25	S62840	25	S8771601	33
600-F	26	803-MRB	11	93-S 12	33	S62254	25	S62841	25	S8771701	33
600-R	9	803-MRR	11	93-S 14	33	S62255	25	S62869	25	S8771801	33
601-R	9	803-MRS	11	94-S	33	S62257	25	S63412	40	S8920069	13
602-R	9	803-MRY	11	953-MRB	11	S62258	25	S66914	24	S8920071	13
620-C	3,8	804-MRB	11	953-MRS	11	S62260	25	S67842	15	S8920072	13
620-CS	3,8	804-MRR	11	953-MRY	11	S62261	25	S68478	24	S8920073	13
621-C	3,8	804-MRS	11	955-MRB	11	S62262	25	S68480	24	S8920074	13
621-CS	3,8	804-MRY	11	955-MRS	11	S62263	25	S68481	24	S8920077	13
622-C	3,8	805-MAB	7	955-MRY	11	S62264	25	S68483	24	S8920082	13
629-C	3,8	805-MAR	7	956-MRB	11	S62265	25	S68484	24	S8920261	13
630-CKP	3,8	805-MAS	7	956-MRS	11	S62266	25	S68485	24	S8920263	13
630-CKPS	3,8	805-MAY	7	956-MRY	11	S62268	25	S68492	24	S8921626	11
631-CKP	3,8	805-MRB	11	95-S	33	S62269	25	S68493	24	TB-52	46
631-CKPS	3,8	805-MRR	11	9-C	15	S62275	25	S68496	24	TC-1000	17
637-F	32	805-MRS	11	G6400	15	S62276	25	S68497	24	TC-1010	17
640-C	3,8	805-MRY	11	G6600	15	S62277	25	S68502	24	TC-1020	17
640-FC 04	15	806-AB	7	GU1-4A	15	S62278	25	S74197	20	TC-1050	18
640-FC 06	15	806-AR	7	GU1-4B	15	S62279	25	S74447	32	TC-2050	18
641-C	3,8	806-AS	7	IE-110	43	S62280	25	S74455	32	TH-100	46
642-C	3,8	806-AY	7	IE-120	44	S62281	25	S74460	32		
644-C	3,8	806-MAB	7	IE-123	43	S62282	25	S74462	32		
645-C	3,8	806-MAR	7	IE-124	43	S62283	25	S74754	24		
646-C	3,8	806-MAS	7	IE-125	44	S62284	25	S74761	18,20		
650-C	3,8	806-MAY	7	IE-130	44	S62285	25	S74762	18,20		
651-C	3,8	806-MRB	11	IE-136	44	S62287	25	S74833	18,20		
652-C	3,8	806-MRR	11	IE-155	43	S62288	25	S74834	20		
653-C	3,8	806-MRS	11	IR-92	45	S62289	25	S75015	17,20		
700-CV	9	806-MRY	11	IR-92TP	45	S62290	25	S75046	17,20		
700-F	26	808-MRB	11	IR-94	45	S62291	25	S75531	33		



*Celebrating 100 Years of Leadership & Innovation™*



30333 Emerald Valley Parkway • Glenwillow, OH 44139 • USA  
Phone (440) 247.4600 • (888) 467.8665 Fax (440) 715.4718 • (800) 527.6383

[www.stridetool.com](http://www.stridetool.com) • [info@stridetool.com](mailto:info@stridetool.com)

**PIP—PRODUCT IDEA PROGRAM.** We are always looking for new and innovative product ideas. Under Imperial's PIP, your new tool idea may earn you a significant PIP royalty. Send your idea or a letter to the address above, ATTN: Marketing Director, or visit our Inventors Wanted page on our website at [www.stridetool.com](http://www.stridetool.com) for an Idea Submission application.





## Catalog Help / Tips

We know your time is important, so we've designed our electronic catalog to be simple and easy to use. Please take a moment to review these 5 simple navigation features we've incorporated in our electronic catalog. We think you'll agree it's one of the easiest to use catalogs in the industry.

- 1 Click the "Bookmarks" tab or press F5 to show/hide the bookmarks. Use the bookmarks for navigation, or hide them to increase the page magnification.
- 2 Click tabs on the sides of pages to jump to the first page of that section.
- 3 Click tabs on top of pages to jump to the Table of Contents.

Scroll down or click here for more.

**1** Bookmarks panel

**2** Side tab

**3** Top tab

**4** Page reference link

**5** Page number link

### MANIFOLDS

## 700 SERIES KWIK-CHARGER® MANIFOLD

Charging systems is faster and easier than ever. Imperial® has designed manifolds with built-in Kwik-Charge®.

- Dual Action Valve** - Operates as a conventional manifold to engage the Kwik-Charge valve and the manifold accepts liquid refrigerant from cylinders and it charges into the low side of the system. Charging rate is up to eight times faster than vapor charging.
- Safe** - Internal venting prevents refrigerant from being forced below capacity of the compressor. Accurate sub-cool charge without recharging the compressor.
- All-In-One** - Accurate charging and recovery gauges for charging and bleed-off refrigerant.
- No Pressure Drop In Cylinder** - No need to vent refrigerant cylinders.
- Works With All Refrigerants** - (R1, R12, R134a, DuraGas, and Amalgam).
- Fits In All Manifold Port Fittings** - Always use particular manifold that may be present during recovery conditions or in recovery equipment. Fittings already available.
- Deep Vacuum Valve Design** - Forms deep traps to prevent oil return and only allows the pressure to rise slightly after the total operation. Superior deep vacuum results.
- Precision Gauge & Protective Beads** - Gauge protects gauge face resistance to shock, vibration & pulsation to assure performance and extended gauge life.
- PolarShield® Hi-Performance Brass** - 300 PSI working pressure, 6000 PSI burst pressure - not all manifolds are built like this.
- Expensive Handles** - Double wall, knock-free handles, easy to hold design.
- Serial Gauge**

CATALOG NUMBER	DESCRIPTION	CATALOG NUMBER	DESCRIPTION
700-2P	Serial 2-Valve 2-Port	700-10B	10" x 10"
700-2P	Serial 2-Valve 4-Port	700-10B	10" x 10"
700-2P	Serial 2-Valve 4-Port	700-10B	10" x 10"
700-2P	Serial 2-Valve 4-Port	700-10B	10" x 10"
700-2P	Serial 2-Valve 4-Port	700-10B	10" x 10"
700-2P	Serial 2-Valve 4-Port	700-10B	10" x 10"
700-2P	Serial 2-Valve 4-Port	700-10B	10" x 10"
700-2P	Serial 2-Valve 4-Port	700-10B	10" x 10"
700-2P	Serial 2-Valve 4-Port	700-10B	10" x 10"
700-2P	Serial 2-Valve 4-Port	700-10B	10" x 10"

- 4 Click page references to jump to the referenced page.
- 5 Click on the page numbers to jump to a specific page in the catalog. ("Go to page" Dialog appears).

