

ED 34

HVAC/R SERVICE PRODUCTS



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Highlights

**CHECK OUT OUR
new PRODUCTS**

Hi, I'm Sophie, the new brand ambassador for REFCO.

I will present new REFCO products in the future. Therefore you will see me now and then. Be curious and keep an eye on me.

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REFMATE™

New digital manifold, center of communication.
PAGE 24



REFMESH™

REFCO's global App.
PAGE 26 | 55



REFSCALE

New electronic charging scale. Communicates with REFMATE™ and REFMESH™.
PAGE 54



TRITECTOR™

The practical 3-in-1 leak detector for specialists.
PAGE 48



Vacuum Pumps

Features for all RL-Vacuum Pumps

- Built specifically for the AC/R Industry
- Latest technology allows extremely compact size
- High-end materials result in low weight but top quality
- Compact, practical, long lifetime
- Sturdy ergonomic handle stays cool to the touch
- Large, easily accessible oil fill port to prevent spillage when filling
- Sight glass for easy viewing of the oil level
- Two-stage rotary vane pump in state of the art design for greater efficiency
- Easy to start, compact motor operates efficiently
- Internal oil pump with unique device to prevent any oil back suction
- Built-in on/off switch to prevent breakage or accidental shut off
- Gas ballast valve feature to help keep the oil clean and to reduce water vapor in the oil compartment
- Easily field replaceable one piece cartridge allows for rebuild without special tooling
- Special designed oil exhaust filter to reduce oil mist
- Quiet operation
- Swiss Quality product manufactured under ISO 9001



RL-2 1.35 cfm

- Includes DV-44 vacuum pump oil (0.5 pt. / 250 ml)

RL-8 6.4 cfm

- Large oil drain valve located at the front bottom of oil pan to allow for fast and easy oil change
- Modern metal, rugged pump design with high-tech plastic housing to absorb shocks
- Ergonomical design for even easier handling
- Lower point of gravity for higher stability
- Both 1/4" and 3/8" SAE inlet connections allow for flexibility of connections
- Integrated blank off ball-valve to isolate pump from system
- Includes DV-45 vacuum pump oil (1 pt. / 500 ml)

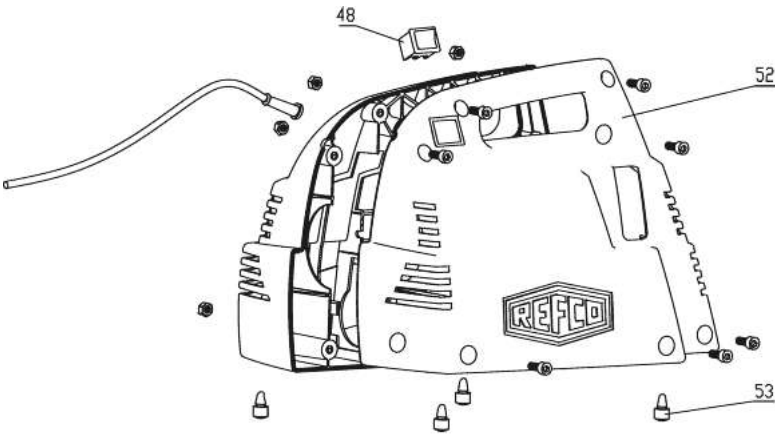


Technical Data

	RL-2	RL-8
Free air displacement:	1.35 cfm	6.4 cfm
Number of stages:	2	2
Microns:	15	15
Intake threads:	1/4" SAE Flare	1/4" and 3/8" SAE Flare with integrated ball valve
Motor:	1/5 horsepower, 2700 rpm	1/2 horsepower, 3300 rpm
Voltage:	115 Volt, 60 Hz	115 Volt, 60 Hz
Power Cord Length:	78"	78"
Oil Capacity:	0.25 pt.	1 pt.
Recommended oil change:	Every 20 working hours	Every 20 working hours
Dimensions:	10.5 x 6.5 x 7.5 inch	14 x 8.6 x 9.8 inch
Weight:	8.3 lbs	26 lbs
Part No.	4661601	4507356

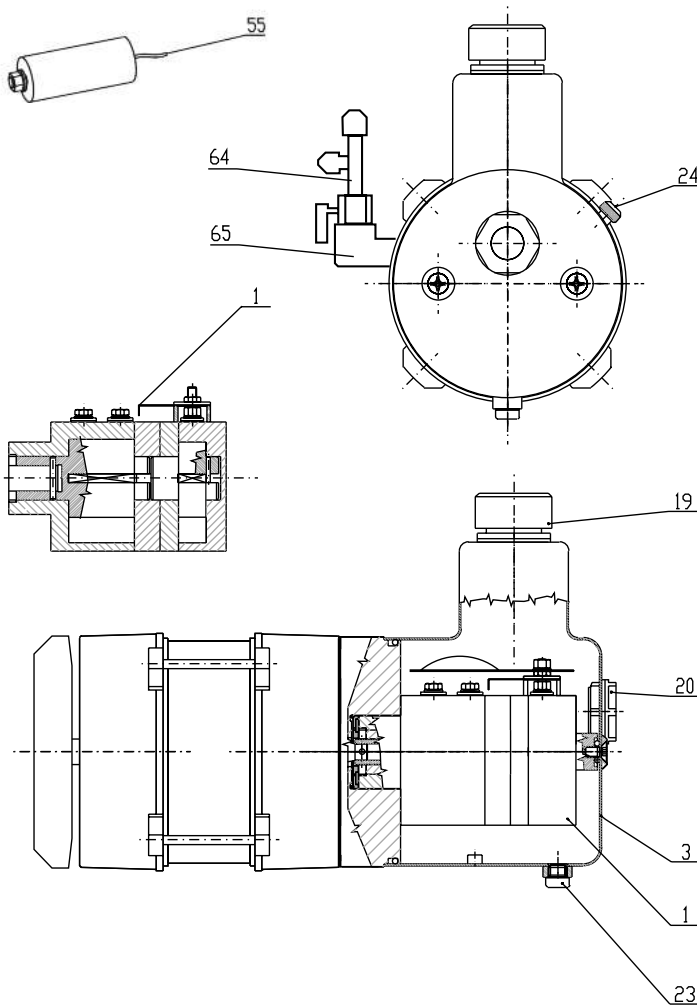
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Spare Parts for RL-2, RL-4 and RL-8



Spare Parts for RL-2

Pos.	Designation	Description	Part No.
20	RL-2-3011	Oil sight glass with gasket + counter nut	4661597
24	RL-2/4-3060	Gas ballast valve complete	4661423
55	RL-2-406	Capacitor	4661040
48	RL-2/4/8-415	Switch	4496770
52	RL-2-4000	Housing complete	4661538
64	RL-2-64	Intake port w/cap	4668028



Spare Parts for RL-4

Pos.	Designation	Description	Part No.
23	RL-4/8-310	Oil drain plug with gasket	4496761
24	RL-2/4-3060	Gas ballast valve complete	4661423
55	RL-4-406	Capacitor	4505051
48	RL-2/4/8-415	Switch	4496770

Spare Parts for RL-8

Pos.	Designation	Description	Part No.
3	RL-8-3000	Oil basin complete with gasket	4507607
20	RL-8-3011	Oil sight glass with gasket + counter nut	4507615
23	RL-4/8-310	Oil drain plug with gasket	4496761
24	RL-8-3060	Gas ballast valve complete	4507623
53	RL-8-4071	Rubber pad set (4 pieces)	4507631
55	RL-8-426	Capacitor	4508203
48	RL-2/4/8-415	Switch	4496770
1	RL-8-2A	Vacuum stage complete	4507658
64	RL-8-64	Intake port w/cap	4668045



Vacuum Pumps

ECO Series Vacuum Pumps

- Designed specifically for HVAC/R Service
- Two stage rotary vane pump design
- Compact design with aluminum housing and easy to grip carrying handle
- Very quiet operation
- High pumping capacity reduces evacuation time
- Carrying handle stays cool to the touch
- Easy to start
- Both ¼" and ⅜" SAE flare inlet connections allow for flexibility of connections
- Vacuum pump oil included
- Value priced but still manufactured to the highest quality and performance specifications



ECO-5

Technical Data	ECO-5	ECO-9
Free air displacement:	5.0 cfm	9.0 cfm
Number of stages:	2	2
Microns:	15	15
Intake threads:	¼" and ⅜" SAE Flare	¼" and ⅜" SAE Flare
Motor:	½ horsepower	1 horsepower
Voltage:	115 Volt, 60 Hz	115 Volt, 60 Hz
Power cord length:	78"	78"
Oil capacity:	9.5 oz / 0.6 pt.	20 oz / 1.25 pt.
Dimensions:	14 x 5 x 10 inch	16 x 6 x 11 inch
Weight:	24 lbs	37 lbs
Part No.	4667685	4669661

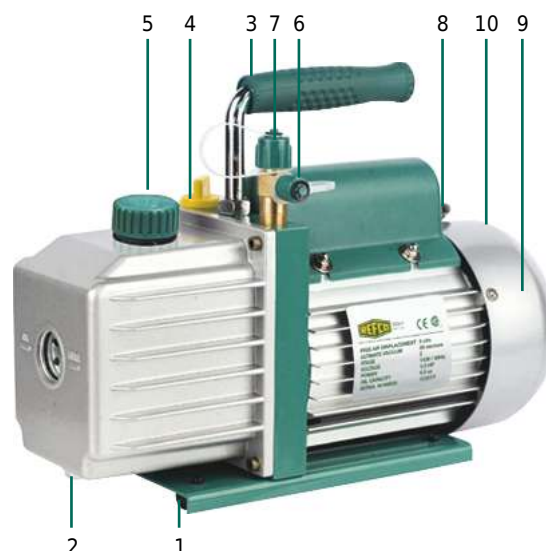
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DV-44/45/46

Spare Parts for ECO Series

Pos.	Designation	Description	Part No.
1	ECO-3/5/9-1	Rubber feet	4667757
2	ECO-3/5/9-3	Oil drain plug	4667774
3	ECO-3/5/9-4	Handle	4667782
4	ECO-3/5/9-5	Oil fill cap (yellow)	4667790
5	ECO-3/5/9-8	Protection cap	4667820
5	ECO-3/5-20N	Exhaust cap for ECO-3/5	4684580
5	ECO-9-20	Exhaust cap for ECO-9	4684604
6	NFT5-4-K-Green	Seal flare cap 3/4" for ECO-3/5/9	4676110
7	NFT5-6-K-Green	Seal flare cap 3/8" for ECO-5/9	4676128
8	ECO-3-9	On/Off switch	4678911
8	ECO-5-9	On/Off switch	4678929
8	ECO-9-9	On/Off switch	4678937
9	ECO-3-10	Fan cover for ECO-3	4678946
9	ECO-5-10	Fan cover for ECO-5	4678954
9	ECO-9-10	Fan cover for ECO-9	4678962
10	ECO-3-11	Fan blades for ECO-3	4678970
10	ECO-5-11	Fan blades for ECO-5	4678988
10	ECO-9-11	Fan blades for ECO-9	4678996



Vacuum Pump Oil for RL-2, RL-4, RL-8, ECO Series

- REFCO Vacuum pump oil is specifically manufactured to allow your vacuum pump to operate efficiently in different types of operating conditions

Designation	Description	Part No.
DV-44	0.5 pint (250 ml) Vacuum pump oil	4495340
DV-45	1 pint (500 ml) Vacuum pump oil	4495358
DV-46	1 quart (1000 ml) Vacuum pump oil	4495366



Recovery

ENVIRO

This state of the art, one-knob operation recovery machine allows for recovery of all popular CFC, HCFC and HFC refrigerants including R410A. The oil-less, aircooled compressor assures efficient and fast operation, making irritating oil changes unnecessary. In comparison to other compressors, this unit runs extremely quiet and without vibrations. The compact and ergonomic design as well as the rugged construction provide maximum protection during transport and usage. The ENVIRO is equipped with a self-purging mode as well as a built in filter which is easy to clean and replace.

Technical Data:

- Compressor: $\frac{3}{4}$ hp, oil-less, maintenance free
- Power supply: 115 V, 60 Hz
- Gauge: Oil-filled
- Weight: 32 lbs
- Dimensions: 16 x 10 x 14 in
- Certified to AHRI 740

Recovery Rate:

- Vapor rate: up to max. 0.80 lbs/min
- Liquid rate: up to 5 lbs/min
- Push-pull up to max. 14 lbs/min

Part No. 4684593



ENVIRO



Acknowledged globally

ENVIRO DUO

This high performance, state of the art, one-knob operation recovery machine allows for maximum recovery of all popular CFC, HCFC and HFC refrigerants including R410A. The oil-less, air-cooled, 2-piston compressor makes an impact due to its impressive performance. Even in close proximity, the noise level during operation is low in comparison to common compressors. The compact and ergonomic design as well as the rugged construction provide maximum protection from transport and usage. The ENVIRO-DUO is equipped with an 80% overfill-protection. Additionally the unit is equipped with a self-cleaning mode as well as a built in filter which is easy to clean and replace.

Technical Data:

- Compressor: 1 hp, oil-less, maintenance free
- Power supply: 115 V, 60 Hz
- Gauge: Oil-filled
- Weight: 35 lbs
- Dimensions: 16 x 10 x 14 in
- Certified to AHRI 740

Recovery Rate:

- Vapor rate: up to max. 1.2 lbs/min
- Liquid rate: up to max. 7.7 lbs/min
- Push-pull rate: up to max. 21 lbs/min

Part No. 4684605



ENVIRO DUO



Pressure Gauges

Principle of REFCO Gauges

Bellow Type Gauge Class 1.0



The metal-bellow-type gauges are very sensitive and therefore absolutely accurate (class 1).

The hardened steel spring **A** includes the brazed metal-bellow **S** and is slightly bent under a load (see drawing).

This combination set is tied up with the system-holder **R**, which is mounted on the gauge-housing **a - b**.

The working fork **F** is connected with the gauge-mechanism.

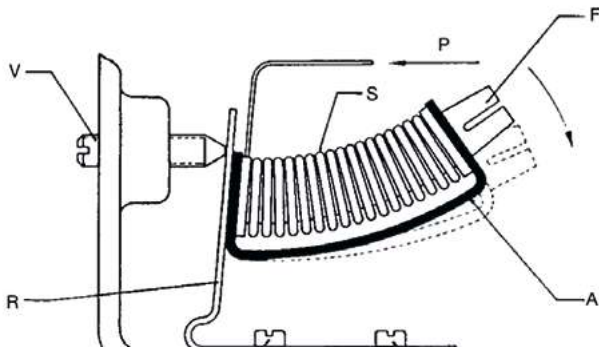
If pressure **P** is applied to the gauge the metal-bellow **S** will activate the working fork **F** and the pointer will show correct reading on the scale.

Metal-bellow-type gauges are extremely over-pressure resistant and made according to accuracy class 1.

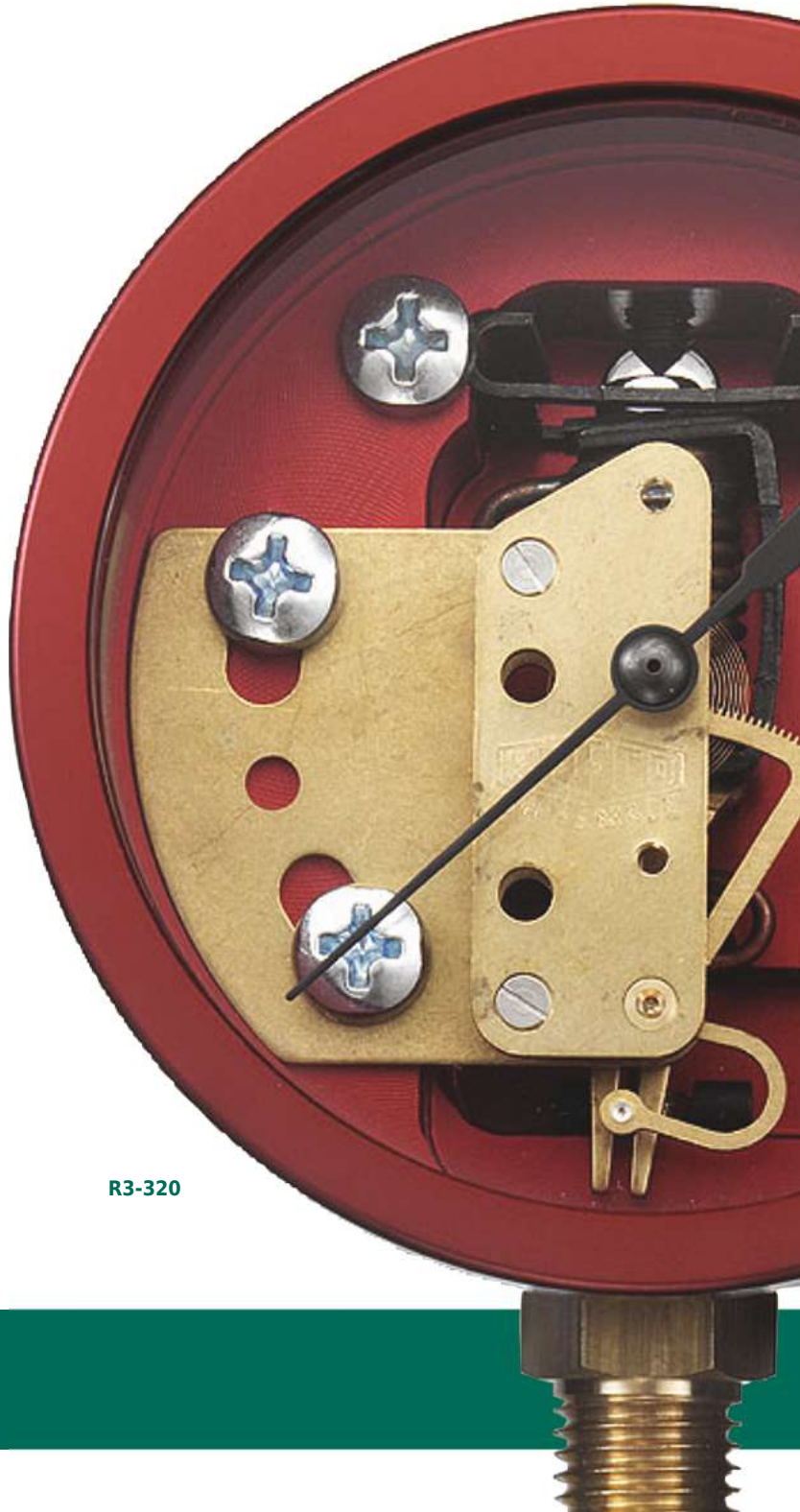
If for instance to a compound gauge with a range from $-30 + 140$ psi an overpressure 350 psi is applied, the pointer will turn around $2 \frac{1}{2}$ times.

After release of the pressure the gauge is still in perfect condition and the pointer should only be slightly re-calibrated with the zero-screw **V**.

A Bourdon-type gauge would never stand such an over-pressure and would be destroyed.



- | | |
|-------------------|--------------------|
| A - Steel spring | F - Working fork |
| S - Metal-Bellow | V - Zero-Screw |
| R - System holder | P - Pressure inlet |



R3-320

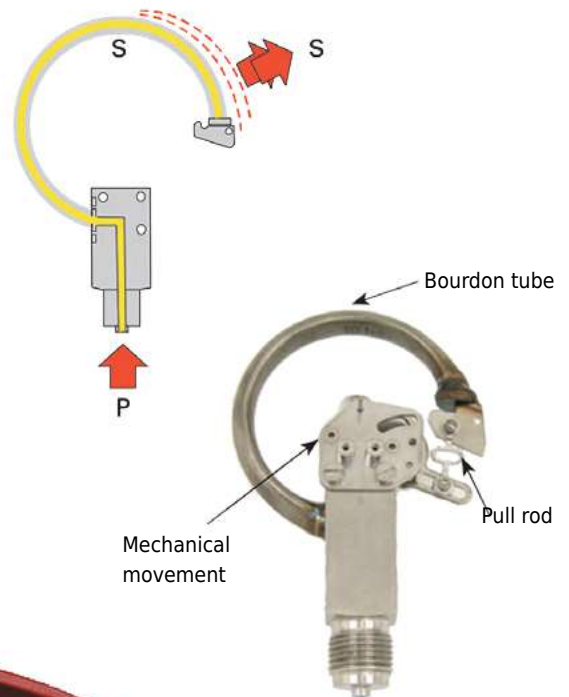
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Bourdon Type Gauge Class 1.0 and 1.6

SWISS
movement

Conversion of a pressure p into a way s

Under pressure the flattened, hollow tube is trying to reach it's circular perfect condition.
The movement of the tube end is carried forward over the pull rod to an internal mechanical movement and is converted into a rotation of the gauge needle.



M2-500



Pressure Gauges

REFCO Gauges General Information

Class 1 vs. Class 1.6 vs. Class 2 accuracy gauges

Class 1 gauges are accurate within ± 1 percent reading all the way around the gauge dial. These gauges are the most accurate offered by REFCO.

Class 1.6 gauges are accurate within ± 1.6 percent reading all the way around the gauge dial. These gauges are also very accurate and are the standard accuracy gauge offered by REFCO.

Class 2.0 gauges are accurate within ± 2 percent over the first $\frac{1}{3}$ of the gauge dial, ± 3 percent over the next $\frac{1}{3}$ of the gauge dial and then ± 2 percent over the last $\frac{1}{3}$ of the gauge dial. This is commonly called 2-3-2 accuracy. These gauges are least accurate where most of the readings are taken.

REFCO uses as standard on manifolds Class 1.6 accuracy gauges and on higher end manifolds Class 1.0 accuracy gauges. Most competitors use as standard the Class 2 or 2-3-2 accuracy gauges. This makes REFCO manifolds more accurate. REFCO DOES NOT USE ANY CLASS 2 or 2-3-2 accuracy GAUGES ON ITS MANIFOLDS. Unlike many service tool suppliers REFCO manufactures their own gauges.

Standard Refrigerant

Temperature Scales:

R12	= R12/R22/R502
R22	= R22/R134a/R404A
R32	= R32/R410A
R134a	= R134a/R404A/R507
R410A	= R410A
R410A-FG	= R410A/R404A/R22

Standard Pressure Scales:

R12, R22 and R134a gauges:

Low side 30" vacuum up to 120 psi, retard protection to 350 psi

High side 0 psi up to 500 psi

R410A gauges:

Low side 30" vacuum up to 500 psi

High side 0 psi up to 800 psi

Standard Features of REFCO KM2 and M2 Series Class 1.6

Bourdon Tube Gauges are:

- Class 1.6 accuracy
- 2 $\frac{3}{4}$ " or 68 mm outside diameter
- Zero point adjustable
- Pulse free
- Color-coded for pressure and compound
- Standard $\frac{1}{8}$ " NPT bottom connection
- All brass internal parts, no plastic

Standard Features of REFCO GR Series, Glycerine, Class 1.6

Bourdon Tube Gauges are:

- Class 1.6 accuracy
- 2 $\frac{3}{4}$ " or 68 mm outside diameter
- Glycerine-filled
- Standard $\frac{1}{8}$ " NPT bottom connection
- All brass internal parts, no plastic

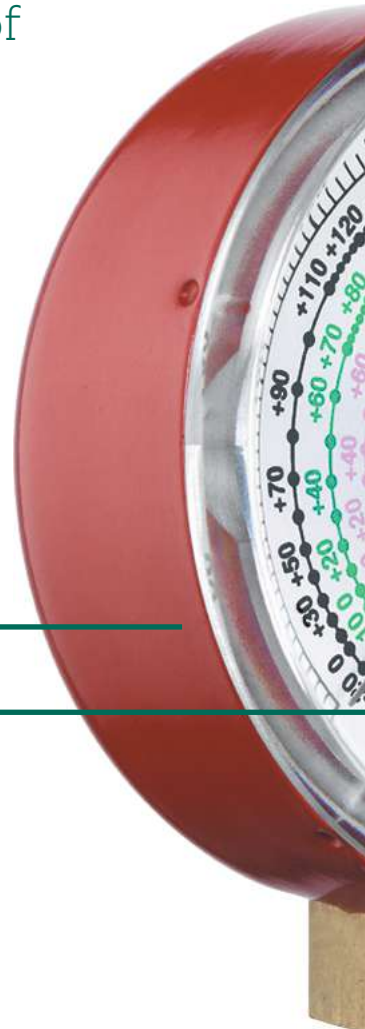
Same features for GR Series but with:

- Zero point adjustable
- Color-coded for pressure and compound

Color-coded for easy high and low side identification

Temperature units of the vapor pressure table

Standard $\frac{1}{8}$ " NPT connection

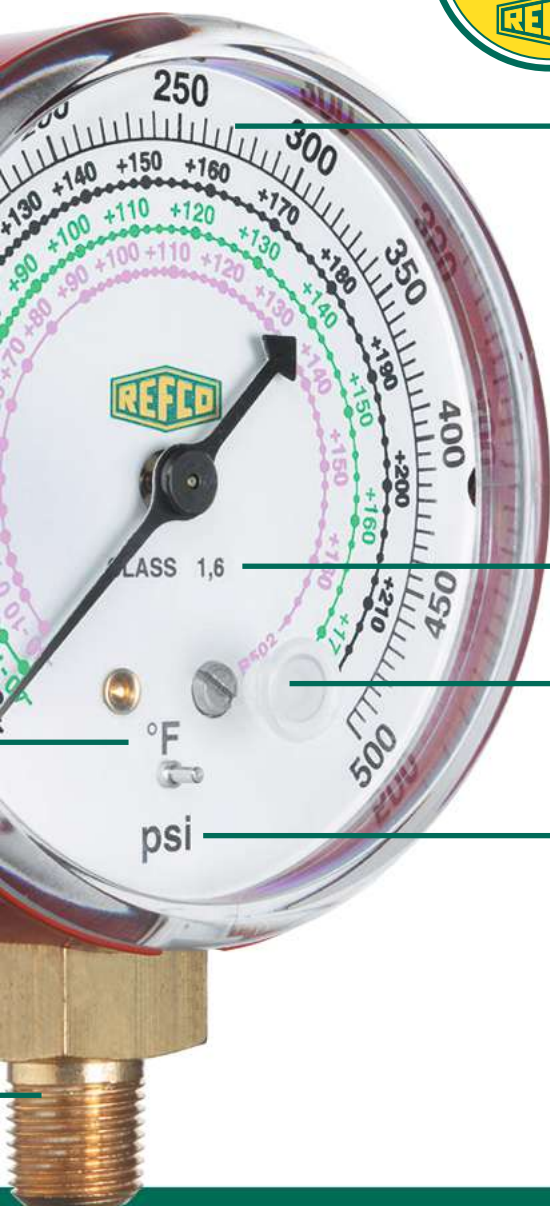


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Standard Features of REFCO M5 Series Class 1.0

Bourdon Tube Gauges are:

- Class 1 accuracy
- 3 ¼" or 80 mm outside diameter
- Easy to read
- Retard protection
- Zero point adjustable
- Pulse free
- All brass internal parts, no plastic



Vapor pressure
table Refrigerant

Accuracy class

Zero point adjustable

Pressure unit

Standard Features of REFCO R3 and R5 Class 1.0

Bellow Gauges are:

- Bellow type gauges are extremely over-pressure resistant.
- A bellow type gauge can withstand up to 2.5 times over-pressurization of the printed pressure scale without damage to the gauge. A bourdon tube gauge cannot withstand this type of over-pressurization
- Class 1.0 accuracy
- Available in 2 ¾" (68 mm) or 3 ¼" (80 mm), both large and easy to read. PM series only available in 3" (76 mm)
- Zero point adjustable
- Silicone oil-filled, except PM series
- Aluminum anodized body for R3 and R5 series
- PM series is made with a fiberglass body
- Hermetically sealed, no oil fill plug on the top of the gauge to allow seepage or leakage for R3 and R5 series
- Color-coded for pressure and compound
- Standard ½" NPT bottom connection
- All brass or steel internal parts, no plastic
- Relief device on back of gauge in case of extreme over-pressurization for R3 and R5 series

Pressure and Vacuum Gauges General Information:

Standard threaded connection – ½" NPT

F = pressure scale on gauge in psi and temperature scale in degrees F

Temperature scales:

R12	= R12/R22/R502
R22	= R22/R134a/R404A
R32	= R32/R410A
R134a	= R134a/R404A/R507
R410A	= R410A
R410A-FG	= R410A/R404A/R22

Pressure scales:

R12, R22, R134a gauges:

Low side 30" vacuum up to 120 psi, retard to 350 psi

High side 0 psi up to 500 psi

R410A:

Low side 30" vacuum up to 500 psi

High side 0 psi up to 800 psi



Pressure Gauges

Standard Bourdon Tube Pressure Gauges



KM2 standard series

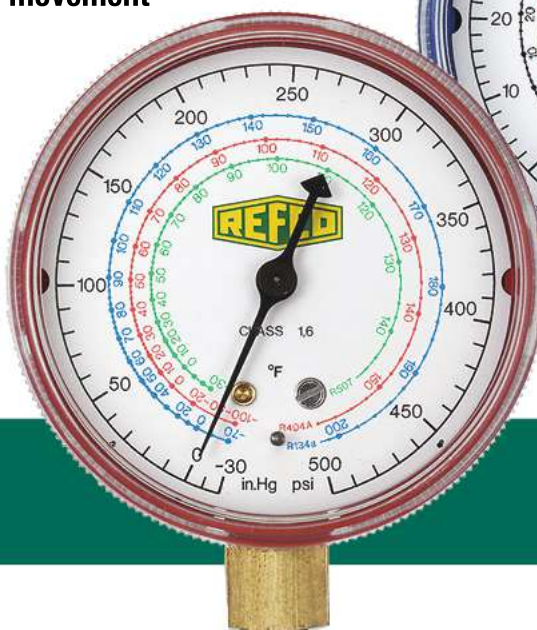
- Class 1.6 accuracy, bourdon tube design
- 2 3/4" (68 mm) outside diameter, easy to read
- Zero point adjustable
- Pulse free
- Color coded for easy high and low side identification
- Composite housing
- Standard 1/8" NPT connection
- Gauge internals are all brass, no plastic pieces

Designation	Description	Part No.
KM2-250-F-R12	R12/R22/R502 scales, compound	4530152
KM2-500-F-R12	R12/R22/R502 scales, pressure	4530161
KM2-250-F-R22	R22/R134a/R404A scales, compound	4505417
KM2-500-F-R22	R22/R134a/R404A scales, pressure	4505425
KM2-250-F-R134a	R134a/R404A/R507 scales, compound	4530179
KM2-500-F-R134a	R134a/R404A/R507 scales, pressure	4530187
KM2-001	Replacement lens cover	4503350

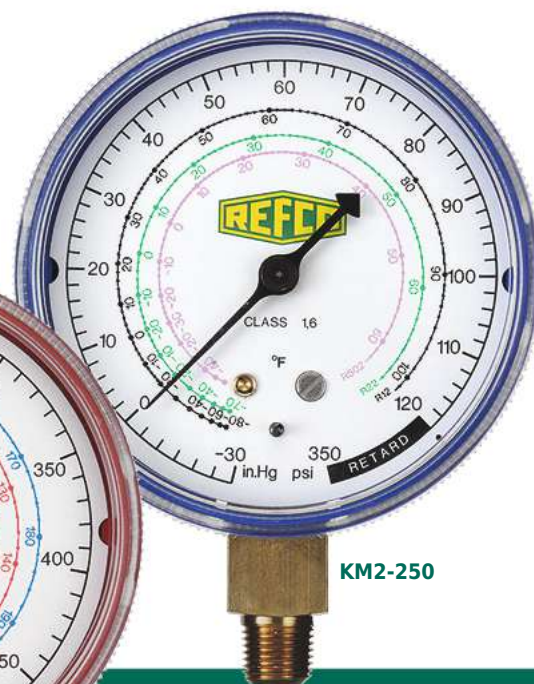


KM2-250

**SWISS
movement**



KM2-500



KM2-250

Acknowledged globally



M2-500



M2-250



M2-500

SWISS
movement

M2 Premium Series

- Standard all metal housing and easy to read through lens cover
- Class 1.6 accuracy, bourdon tube design
- 2 3/4" (68 mm) outside diameter, easy to read
- Zero point adjustable
- Pulse free
- Color-coded for easy high and low side identification
- Standard 1/8" NPT connections
- Gauge internals are all brass, no plastic pieces

Designation	Description	Part No.
M2-250-F-R12	R12/R22/R502 scales, compound	7829168
M2-500-F-R12	R12/R22/R502 scales, pressure	7829567
M2-250-F-R22	R22/R134a/R404A scales, compound	7635083
M2-500-F-R22	R22/R134a/R404A scales, pressure	7635147
M2-250-F-R410A	R410A scale, compound	7829982
M2-500-F-R410A	R410A scale, pressure	7830000
M2-250-F-R32	R410/R32 scales, compound	4687453
M2-500-F-R32	R410/R32 scales, pressure	4687454
M2-250-F-R410A-FG	R410A/R404A/R22 scales, compound	7218188
M2-500-F-R410A-FG	R410A/R404A/R22 scales, pressure	7218358
M2-001	Replacement lens cover	1212648
M2-GS	Gauge protector set	4677451



M2-GS



Zero point adjustment



Pressure Gauges

Bourdon Tube Gauges
Glycerin Filled and dry
Execution



GR-320



GR-220

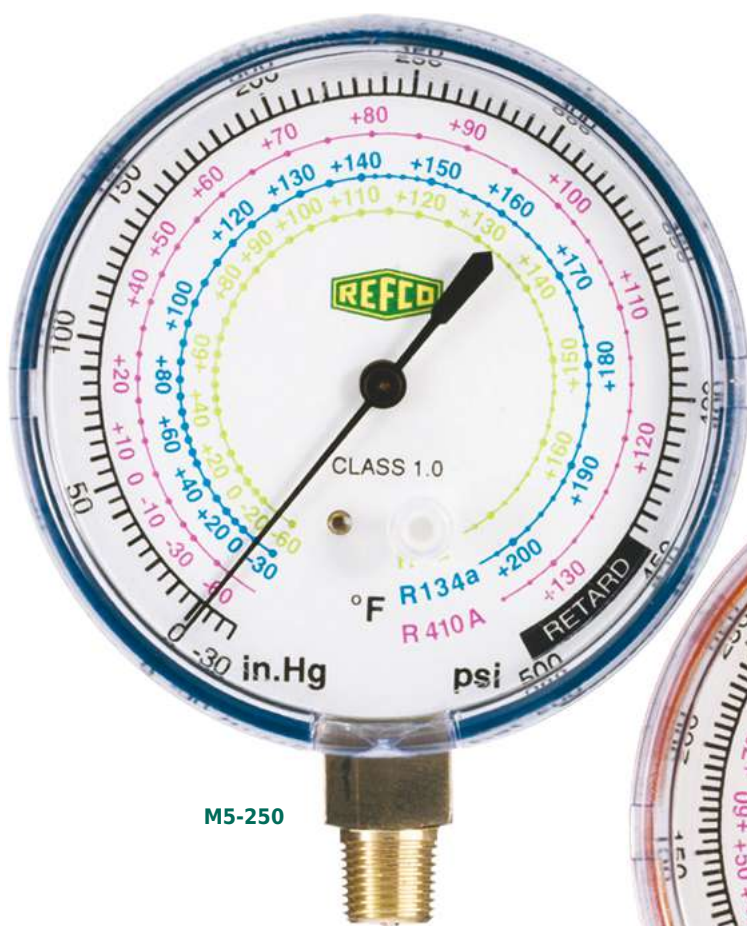
GR Series Glycerin Filled Gauges

- Class 1.6, glycerin filled, bourdon tube gauge
- Zero point adjustable
- Color-coded for easy high and low side identification
- 2 3/4" (68 mm) outside diameter, easy to read
- Pulse free
- Standard 1/8" NPT connection

SWISS
movement

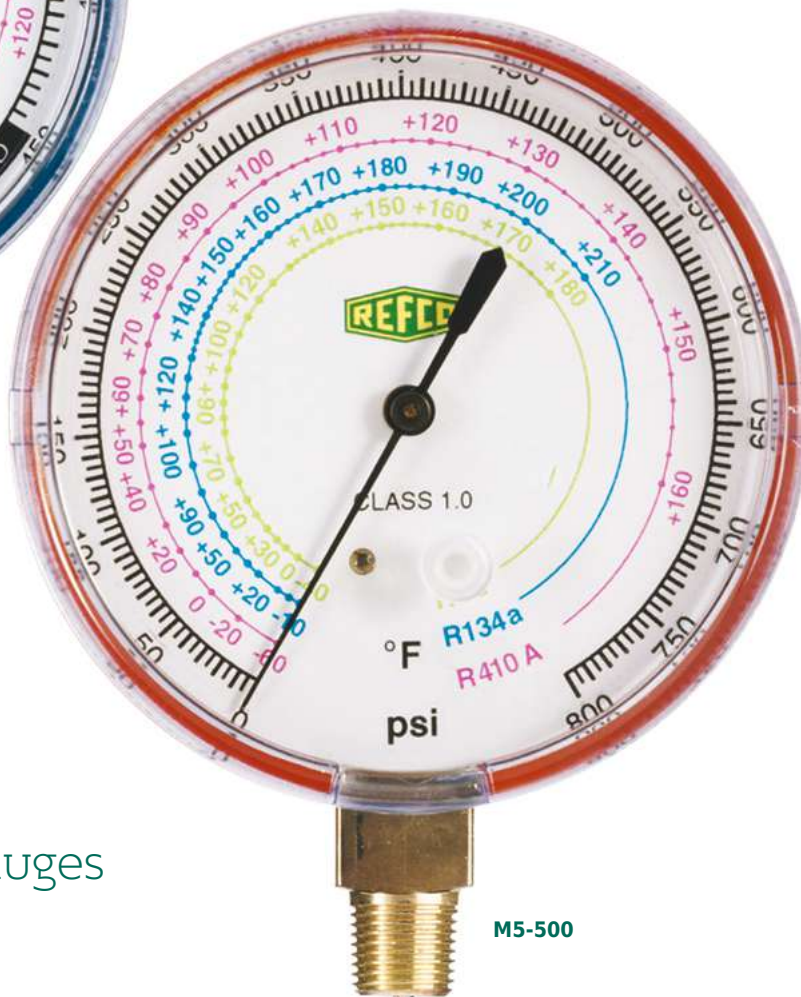
Designation	Description	Part No.
GR-220-F-R12	R12/R22/R502 scales, glycerin-filled, compound	7714013
GR-320-F-R12	R12/R22/R502 scales, glycerin-filled, pressure	7714098
GR-220-F-R134a	R134a/R404A/R507 scales, glycerin-filled, compound	7714064
GR-320-F-R134a	R134a/R404A/R507 scales, glycerin-filled, pressure	7714102

Acknowledged globally



M5-250

SWISS
movement



M5-500

M5 Series Large Bourdon Tube Gauges

- 3 1/4" (80 mm) outside diameter, easy to read
- Bourdon tube, Class 1.0 accuracy
- Retard protection
- Zero point adjustable
- Metal housing
- Pulse free

Designation	Description	Part No.
M5-250-F-R410A-FG	R410A/R134a/R22 scales, compound	4675288
M5-500-F-R410A-FG	R410A/R134a/R22 scales, pressure	4675296

Pressure Gauges

Bellow Type, Class 1.0 Gauges, Oil Filled and Dry Execution

Fundamentals of a Bellow Gauge - The best gauge you'll ever have.

A metal bellow type gauge is very sensitive and therefore much more accurate than a standard bourdon tube gauge. The main benefit of a bellow type gauge is that it is extremely accurate and highly over-pressure resistant. The bellow gauge is accurate within 1% around the gauge face and can withstand up to 2.5 times over-pressurization without damage to the gauge. A bourdon tube gauge would never withstand this type of over-pressurization.

R3 Series Oil Filled Bellow Type Gauges

- Bellow type, Class 1.0 accuracy, oil filled gauge
- Hermetically sealed, no oil fill plug on the top of gauge to allow leakage
- Highly over-pressure resistant, can withstand up to 2.5 times the printed scale
- Zero point adjustable
- All anodized aluminum body, no plastic
- Color-coded for easy identification of high and low side
- 2 3/4" (68 mm) outside diameter, easy to read
- Pulse free

Designation	Description	Part No.
R3-220-F-R12	R12/R22/R502 scales, oil-filled, compound	9884479
R3-320-F-R12	R12/R22/R502 scales, oil-filled, pressure	9884480
R3-220-F-R22	R22/R134a/R404A scales, oil-filled, compound	4667472
R3-320-F-R22	R22/R134a/R404A scales, oil-filled, pressure	4667480
R3-220-F-R134a	R134a/R404A/R507 scales, oil-filled, compound	9884481
R3-320-F-R134a	R134a/R404A/R507 scales, oil-filled, pressure	9884482
R3-220-F-R410A-FG	R410A/R404A/R22 scales, oil-filled, compound	4662399
R3-320-F-R410A-FG	R410A/R404A/R22 scales, oil-filled, pressure	4662403

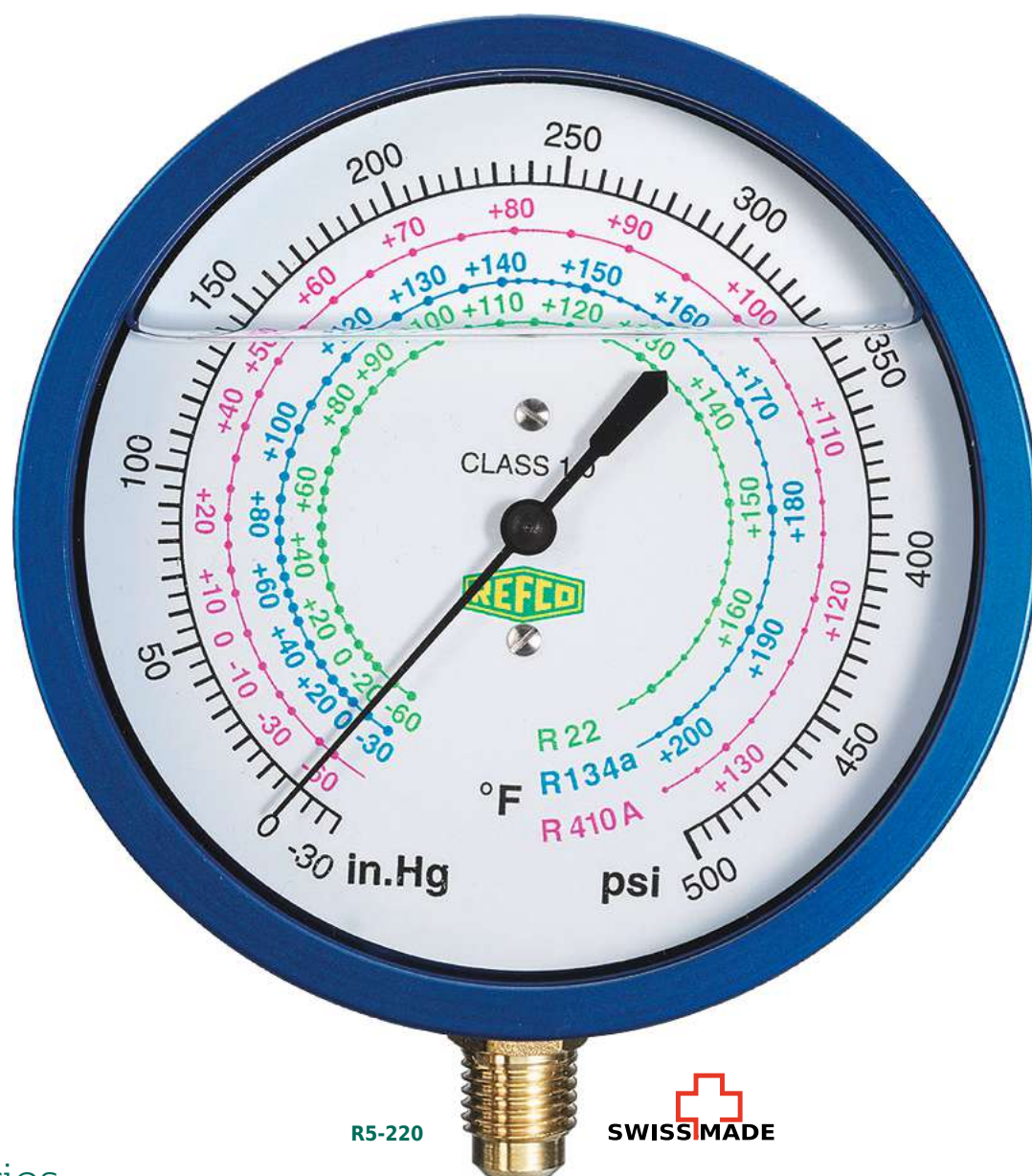


R3-320



Zero point
adjustment

Acknowledged globally



R5-220

 **SWISSMADE**

R5 Series Oil Filled Bellow Type Gauges

- All of the R3 features except it has a larger outside diameter
- 3 1/4" (80 mm) for an extra easy to read gauge face

Designation	Description	Part No.
R5-220-F-R12	R12/R22/R502 scales, oil-filled, compound	4493916
R5-320-F-R12	R12/R22/R502 scales, oil-filled, pressure	4493924
R5-220-F-R410A-FG	R410A/R404A/R22 scales, oil-filled, compound	4675300
R5-320-F-R410A-FG	R410A/R404A/R22 scales, oil-filled, pressure	4675318



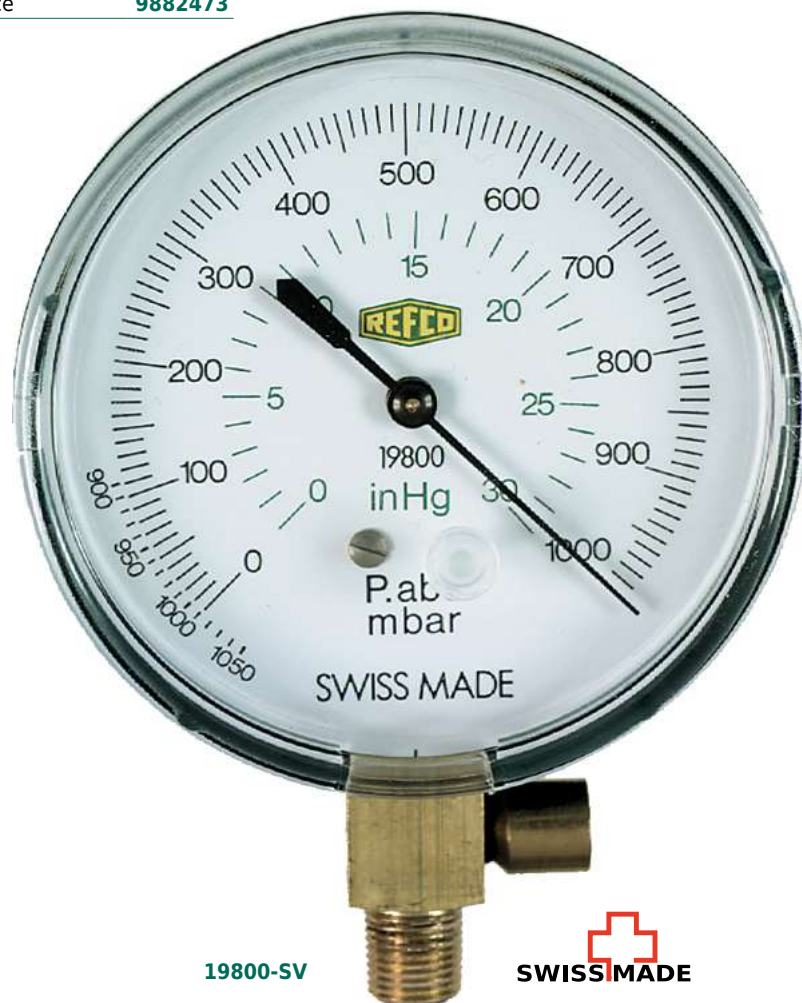
Vacuum Gauges

Mechanical Vacuum Gauges

19800-SV

- Full range Mechanical Vacuum gauge
- Complete with replaceable safety relief device if positive pressure is introduced into gauge
- 3 1/4" outside diameter for easy to read, more accurate reading than a compound gauge
- 1/8" NPT bottom connection
- Zero point adjustable
- Scales in 1000 - 0 mbar and 30" - 0 Hg

Designation	Description	Part No.
19800-SV	Mechanical Vacuum gauge with replaceable safety relief device	9882473



19800-SV

 **SWISSMADE**



Acknowledged globally

Electronic Vacuum Gauge

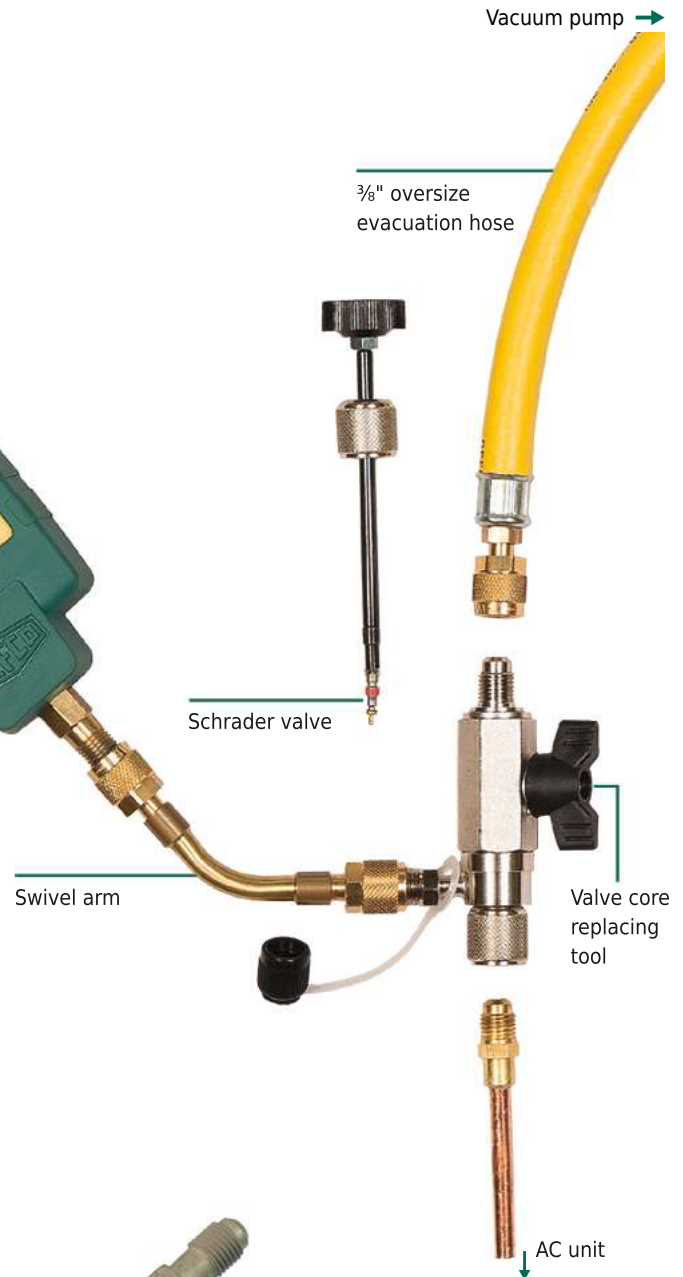
REF-VAC

Latest measuring instrument for continuous reading of measured values during the evacuation process out in the field as well as in the laboratory. Thanks to the large LCD display, the changing data can always be read easily. The vacuum gauge can be set to the main vacuum units such as microns, mbar, Pa, Torr, mTorr, psi, and inHG. It can accurately display the vacuum from 18'000 - 0 microns. The unit also has a practical hook for hanging and conforms to the IP classification IP 54.

Sensor Type:	Thermistor
Vacuum Range:	0 to 18000 microns
Display-Resolution:	0 to 20: 0.2 micron 21 to 200: 1 micron 201 to 500: 5 micron
Units:	microns, mbar, Pa, Torr, mTorr, psi, inHG
Accuracy:	+/-10% – 100 microns +/-6% – 101 to 750 microns
Connector Type:	Standard male ¼ inch SAE
Operating Temp.:	32 °F to 104 °F
Auto Shutoff:	After 10 min. if vacuum value greater than 18000 microns After 30 min. if vacuum value less than 18000 microns
Battery Life:	40 hours
Overpressure:	Max. 500 psi
Included:	Hanging hook, REF-VAC is supplied with a REF-VAC-T fitting

Part No. 4686712

Designation	Description	Part No.
SWIVEL-ARM-¼"SAE-N	Swivel arm ¼" SAE	4687631
REF-VAC-T	Forged female flare branch tee 3 x ¼" SAE, with O-ring	4687845













Digital Manifolds

REFMATE™

REFMATE™ - Simply better measurements

The REFMATE™ is the Digital Manifold for the professional refrigeration engineer. It communicates wirelessly with temperature clamps, pressure gauges, and the scale, and documents all measured values in the device during long-term measurements. All data can be interpreted and displayed via the App REFMesh™. The latest refrigerant and firmware updates can be easily installed via PC.

Features and Benefits

-  Patented analog display with pointers
-  High precision thanks to accuracy class 0.5
-  Large 4.3-inch TFT color display
-  Flexible power source (AA batteries or USB)
-  Superheat and subcool indicator
-  Wireless communication with App and other devices
-  Intuitive control via buttons
-  Lockable for long-term measurements
-  Connection with (wireless) Temperature clamps
-  Delivered with 5 charging hoses, Swiss Made



REFMATE-2

REFMATE-4

Acknowledged globally



WELL-STRUCTURED

The large color display shows measured values in either analog or digital format. The pointers react sensitively and in real time.



COMMUNICATIVE

The REFIMATE™ connects different peripheral and measuring devices with the REFESH™ App.



RECEPTIVE

Long-term data logging and maintenance activities are automatically stored in the REFIMATE™ and documented in the REFESH™ App.



QUICK

Access the most relevant refrigerants by setting favorites.



UP-TO-DATE

Refrigerant and software updates can be carried out independently and free of charge.



PRECISE

The sensor's high level of accuracy is complemented by the compensation of the temperature measurement errors on the tube.



ADAPTABLE

The display's screen settings can be easily adjusted depending on the light conditions and environmental factors.



Digital Manifolds

Technical Data

Property	Value
Pressure sensors:	
Pressure range:	-14 to 870 psi
Max. working pressure:	870 psi
Max. overpressure:	1160 psi
Accuracy:	±0.5% (class 0.5)
Units:	psi / bar / kPa / MPa / kg/cm ²
Resolution:	0.5 psi / 0.001 bar / 1 kPa / 0.0001 MPa / 0.01 kg/cm ²
External temperature sensors:	
Temperature range:	-40 °F to +257 °F / -40 °C to +125 °C
Connector:	K-type
Temperature accuracy:	+/-1K
Temperature units:	°F / °C
Resolution:	0.1 °F / 0.1 °C
Temperature clamps:	
Temperature range:	-40 °F to +257 °F / -40 °C to +125 °C
Connector:	K-type
Temperature accuracy:	+/-1K
Temperature units:	°F / °C
Resolution:	0.1 °F / 0.1 °C
Tube diameters:	¼" to 1 ½" / 6 mm to 38 mm
Tube dia. wireless temp.:	¼" to 1 ⅝" / 6 mm to 42 mm
Charging hoses:	3 charging hoses ¼" SAE (blue, red, yellow / 60"), with or without CA valves. REFMATE-4: special vacuum hose ⅜", 60"
Ambient temperature:	-4 °F to +122 °F / -20 °C to +50 °C
Storage temperature:	-4 °F to +140 °F / -20 °C to +60 °C
Display:	4.3" TFT color display
Ingression Protection:	42
Power source:	4 x 1.5 V AA / Mignon / LR6 or via USB
Operating hours:	50 h at low operation
Signal range:	328 ft (100 m)
Connectors:	REFMATE-2: 2 x ¼", ¼" vacuum REFMATE-4: 3 x ¼", ⅜" vacuum
Material:	Glass fibre-reinforced ABS, TPE, aluminium, brass
Dimensions of sturdy plastic case (H x W x D):	4.2" x 13.9" x 20.7" / 107 x 353 x 526 mm
Device dimensions (H x W x D):	REFMATE-2: 7.7" x 7.7" x 3.1" / 195 x 195 x 78 mm REFMATE-4: 7.7" x 8.9" x 3.2" / 195 x 227 x 81 mm
Weight:	REFMATE-2: 2.3 lbs / REFMATE-4: 3.1 lbs
Refrigerants and firmware:	Over 80 in basic version. Easy update by means of free REFRESH™ App and computer
Conformity:	CE / FCC / IC / RCM / RoHS / REACH



REFMESH™

FULLY CONNECTED
The REFRESH™ App - an IoT platform

Because everything is connected to everything, we've developed a new App called REFRESH™. As an IoT platform, the software connects a large number of peripheral devices with the REFMATE™. Data can be stored in the REFMATE™, in the App and in the cloud, and can be made available in various formats to other users or customers.



REFRESH™ App

Acknowledged globally

REFMATE-2

Components	BASIC	Standard	CA	CA-TC	CA-WTC
Sturdy plastic case	1	1	1	1	1
K-type temperature sensors	2	2	2	2	2
3-piece hose set		1			
3-piece hose set with CA valves			1	1	1
Special vacuum hose 3/8"					
Temperature clamps				2	
Wireless temperature clamps					2
	4688297	4688124	4688125	4688126	4688127



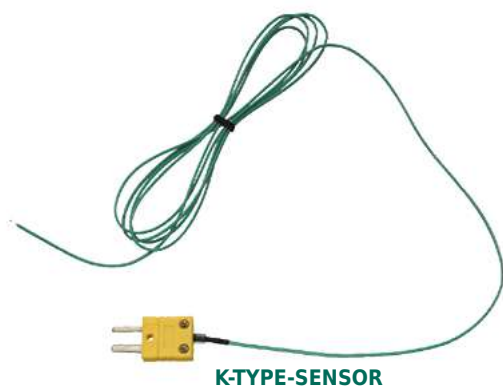
REFMATE-4

Components	BASIC	Standard	CA	CA-TC	CA-WTC
Sturdy plastic case	1	1	1	1	1
K-type temperature sensors	2	2	2	2	2
3-piece hose set		1			
3-piece hose set with CA valves			1	1	1
Special vacuum hose 3/8"		1	1	1	1
Temperature clamps				2	
Wireless temperature clamps					2
	4688298	4688129	4688100	4688130	4688131



Spare Parts

Designation	Description	Part No.
REFMATE-CASE	Protection case for REFMATE	4688082
K-TYPE-CLAMP TC	Temperature clamp for REFMATE	4681466
WIRELESS-CLAMP WTC	Wireless temperature clamp for REFMATE and TAP	4687785
K-TYPE-SENSOR	External temperature sensor K-type for REFMATE	4681394



Digital Manifolds

TAP

Wireless Temperature and Pressure Gauge Set

The new wireless digital pressure and temperature gauge set TAP is a user friendly measuring instrument to measure temperature and pressure from the low and high sides of air conditioning and refrigeration systems.

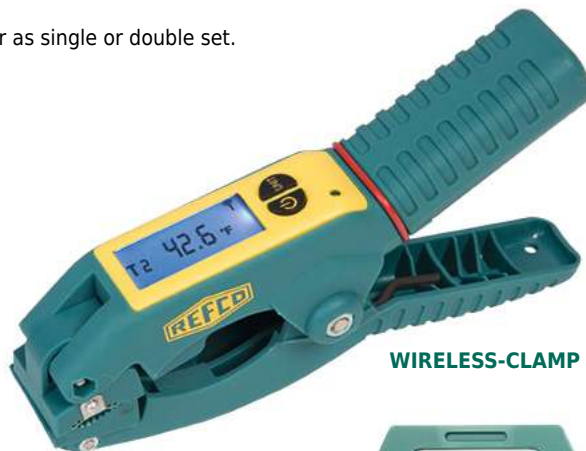
- Quick and easy connection to pressure source and temperature measuring point.
- The wireless K-type temperature clamp, equipped with digital display, is applicable for pipe diameters from $\frac{1}{4}$ " to $1\frac{5}{8}$ ".
- Measurements and calculation of superheat or subcooling can be shown on pressure gauge display and / or on your mobile device.
- Up to 6 TAP devices can be monitored on your mobile device.
- Create report on mobile phone and send by e-mail to your office.
- Use of common AAA batteries.
- TAP is delivered in a handy case either as single or double set.

Features and Benefits

-  Display on pressure gauge
-  Display on temperature clamp
-  Wireless no cable needed
-  No smart device needed
-  IOS compatible
-  Android compatible
-  Synchronized with App
-  Calculate superheat and subcooling
-  Reports stored on smart device and E-mailed
-  Library of over 50 refrigerants stored
-  Connect up to 6 pressure gauges and temperature clamps
-  Pressure Gauge and Temperature Clamp stand alone
-  Refrigerant updates available via Micro USB connection



TAP



WIRELESS-CLAMP WTC



TAP-DOUBLE-SET

Acknowledged globally

Technical Data

TAP Pressure Gauge

Refrigerant:	More than 50 refrigerant tables included
Pressure range:	Up to 870 psi
Accuracy:	≤ 1.0% FS
Resolution:	0.1 psi
Units:	psi / bar / kPa / MPa
Backlit LCD display:	1-9/16" x 1-3/16"
Automatic power save mode:	Configurable: 10 min / 20 min / Off
Low battery indication:	When battery level is less 30%
Power:	Battery 4 x AAA
Battery life:	40 h
Interface:	Micro USB
Connection fitting:	1/4" SAE
Including adapters:	1/4" SAE female/female
Size:	5" x 2-1/4" x 1-11/32"
Weight:	7 oz

TAP Temperature Clamp

Type:	K-Type
Temperature range:	-40 °F to +257 °F
Accuracy:	± 1.8 °F
Resolution:	0.2 °F
Temperature units:	°F / °C
Backlit LCD display:	1-3/8" x 19/32"
Power:	Battery 3 x AAA
Battery life:	50 h
Jaw range:	1/4" to 1 5/8"
Size:	6-3/8" x 1-9/16" x 3-9/64"
Weight:	6 oz

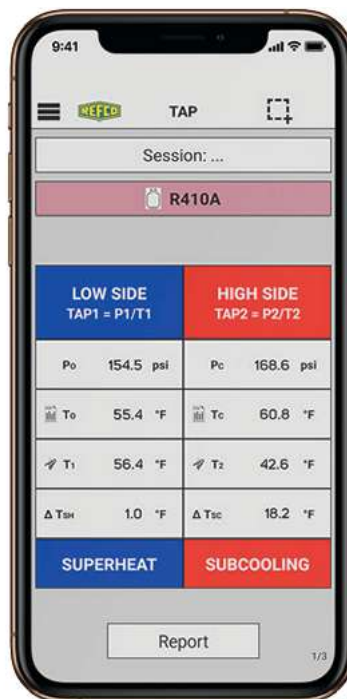
Designation	Description	Part No.
TAP-SET	1 TAP Pressure Gauge 1 TAP Temperature Clamp 1 SAE 1/4" female/female adapter 1 USB Cable 7 Batteries 1 Manual 1 Case	4687788
TAP-DOUBLE-SET	2 TAP Pressure Gauges 2 TAP Temperature Clamps 2 SAE 1/4" female/female adapter 1 USB Cable 14 Batteries 1 Manual 1 Case	4687789
TAP	Pressure Gauge	4687787
WIRELESS-CLAMP	Wireless temperature clamp for REFMATE and TAP	4687785

App Requirements

iOS: Version 8.0 or higher

Android: Version 4.4 or higher

Get the App for iPhone, iPad on App Store™, for Android on Play Store



Further available accessories (optional)

SWIVEL-ARM-1/4"SAE-N	Swivel arm 1/4" SAE	4687631
QC-S410A/2	Adapter with core depressor, 1/4" SAE x 5/16" SAE, 2 pcs	4687095
QC-S4A-1/4"SAE/2	Quick coupler straight 1/4" SAE x 1/4" SAE, 2 pcs.	4687823
QC-S4A-5/16"SAE/2	Quick coupler straight 1/4" SAE x 5/16" SAE, 2 pcs.	4687824
TAP-MARKING-RING-SET	Marking rings for TAP 4x5 pcs. per size	4687793
TAP-SET-CASE	Case for TAP-SET	4687860
TAP-DOUBLE-SET-CASE	Case for TAP-DOUBLE-SET	4687859



QC-S4A



QC-S410A



SWIVEL-ARM



Analog Manifolds



REFCO Manifolds General Information

F- pressure scale in psi and temperature scale in degrees F

Temperature scales:

R12	= R12/R22/R502
R22	= R22/R134a/R404A
R32	= R32/R410A
R134a	= R134a/R404A/R507
R410A	= R410A
R410A-FG	= R410A/R404A/R22



APEX-9-F-R410A-FG

Acknowledged globally

APEX Manifolds

Standard Two-Way Brass Manifold

- Class 1.6 bourdon tube gauges (KM), easy to read, zero point adjustable, pulse free and color-coded
- Two piece, O-ring seal piston style valve, repairable
- Swivel hook and 45° hose anchors
- Color-coded handwheels
- High quality brass body
- All hoses are high pressure, 870 psi working pressure, 3600 psi burst pressure



APEX-9

R410A Manifold

- Same features but with all metal housing gauges (M2)
- R410A manifold with refrigerant scales R22/R404A/R410A

Designation	Hoses	Description	Part No.
APEX-9-F-R12	none	blister package	4675458
APEX-9-F-R22	none	blister package	4675466
APEX-9-F-R134a	none	blister package	4675475
APEX-7-F-R12	3' set	blister package	4675377
APEX-7-F-R22	3' set	blister package	4675386
APEX-7-F-R134a	3' set	blister package	4675394
APEX-7-F-R12-CCL-60	5' set	blister package	4675416
APEX-7-F-R22-CCL-60	5' set	blister package	4675424
APEX-7-F-R134a-CCL-60	5' set	blister package	4675432
APEX-7-F-R32-CCL-60	5' set	blister package	4687455
APEX-9-F-R410A-FG	none	blister package	4675483
APEX-7-F-R410A-FG	3' set	blister package	4675407
APEX-7-F-R410A-FG-CCL-60	5' set	blister package	4675440
APEX-7-F-R410A-FG-CA-CCL-60	5' set	blister package	4686280



APEX-9



APEX-9



Analog Manifolds

BM Series Manifolds

Premium Two-Way Manifold

- All metal housing Class 1.6 bourdon tube gauges (M2), easy to read, zero point adjustable, pulse free and color coded
- Two-piece, O-ring seal piston style valve
- Extra large sight glass to view refrigerant movement
- Swivel hook and 45° hose anchors
- Anodized high quality aluminum body
- Color coded handwheels
- All hoses are high pressure, 870 psi working pressure, 3600 psi burst pressure

Designation	Hoses	Description	Part No.
BM2-8-F-R22	none	cardboard box	4506490
BM2-8-F-R134a	none	cardboard box	9884439
BM2-6-F-R22	3' set	cardboard box	4506502
BM2-6-F-R22-CCL-60	5' set	cardboard box	4506520
BM2-6-F-R22-CCL-72	6' set	cardboard box	4506554
BM2-3-F-R22	3' set	plastic case	4506562



BM2-8

R410A Manifold - Two-Way BM Series

- All the same features as the standard BM series manifolds except higher pressure gauges (M2). Low side gauge pressure to 500 psi and high side gauge pressure to 800 psi
- Comes standard with 1/4" SAE charging hoses

Designation	Hoses	Description	Part No.
BM2-8-F-R410A	none	cardboard box	4506571
BM2-6-F-R410A	3' set	cardboard box	4503261
BM2-6-F-R410A-CCL-60	5' set	cardboard box	4505710
BM2-6-F-R410A-CCL-72	6' set	cardboard box	4506589
BM2-3-F-R410A	3' set	plastic case	4505239
BM2-3-F-R410A-CCL-60	5' set	plastic case	4505433
BM2-3-F-R410A-CCL-72	6' set	plastic case	4506597

- R410A Manifold with refrigerant scales R410A/R404A/R22

Designation	Hoses	Description	Part No.
BM2-8-F-R410A-FG	none	cardboard box	4662535
BM2-6-F-R410A-FG-CCL-60	5' set	cardboard box	4662526
BM2-6-F-R410A-FG-CA-CCL-60	5' set	cardboard box w/ball valve	4665305



BM2-8

Acknowledged globally

Premium Four-Way Manifolds

- Charge and evacuate an A/C or refrigeration system without having to connect and disconnect hoses, saving time and money
- All metal housing Class 1.6 bourdon tube gauges (M2), easy to read, zero point adjustable, pulse free and color-coded
- Two piece, O-ring seal piston style valve
- Extra large sight glass to view refrigerant movement
- Swivel hook and 45° hose anchors
- Anodized high quality aluminum body
- Color coded handwheels
- All hoses are high pressure, 870 psi working pressure, 3600 psi burst pressure



M2-GS



Designation	Hoses	Description	Part No.
BM4-3-F-R12	3' set	plastic case	4506627
BM4-3-F-R22	3' set	plastic case	4506643
BM4-3-F-R410A-FG-CCL-60	5' set	plastic case	4675335

Designation	Description	Part No.
M2-GS	Rubber protection for gauges Ø 68 mm	4677451



Analog Manifolds



GM Series Manifolds

Glycerin Filled Two-Way Manifold Set

- Class 1.6 Glycerin filled bourdon tube gauges (GR), easy to read, zero point adjustable, color coded
- Two-piece, O-ring seal piston style valve
- Extra large sight glass to view refrigerant movement
- Swivel hook and 45° hose anchors
- Anodized high quality aluminum body
- Color coded handwheels
- All hoses are high pressure, 870 psi working pressure, 3600 psi burst pressure



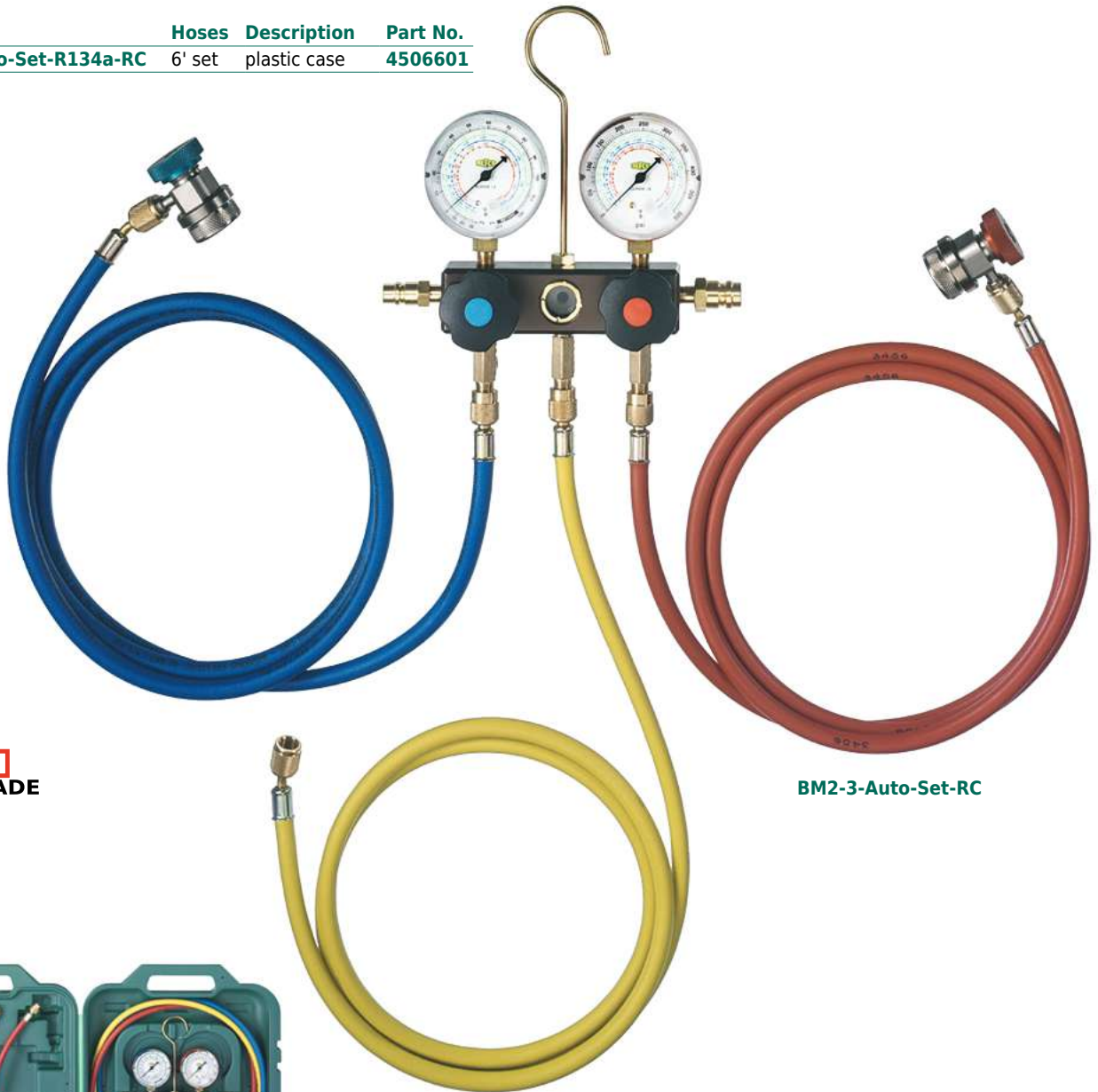
Designation	Hoses	Description	Part No.
GM2-8-F-R12	none	cardboard box	4507061
GM2-8-F-R134a	none	cardboard box	4507071
GM2-6-F-R12-CCL-60	5' set	cardboard box	4507100
GM2-6-F-R134a-CCL-60	5' set	cardboard box	4507118

Acknowledged globally

Automotive Manifold Set

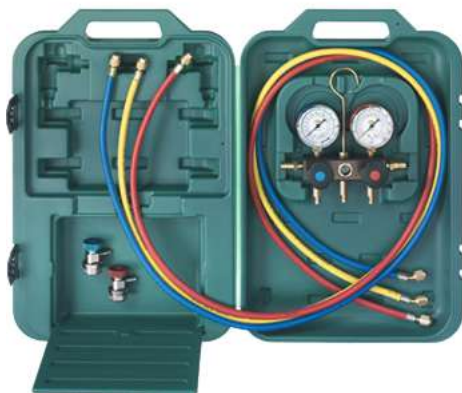
- All the same features as the standard BM series manifold except the manifold comes with high and low pressure automotive valve couplers.

Designation	Hoses	Description	Part No.
BM2-3-F-Auto-Set-R134a-RC	6' set	plastic case	4506601




SWISSMADE

BM2-3-Auto-Set-RC



BM2-3-Auto-Set

- Replacement Auto Set Service Couplers

Designation	Description	Part No.
RC01-B	Blue automotive service-valve, 1/4" SAE Auto Connection	9884949
RC01-R	Red automotive service-valve, 1/4" SAE Auto Connection	9884948

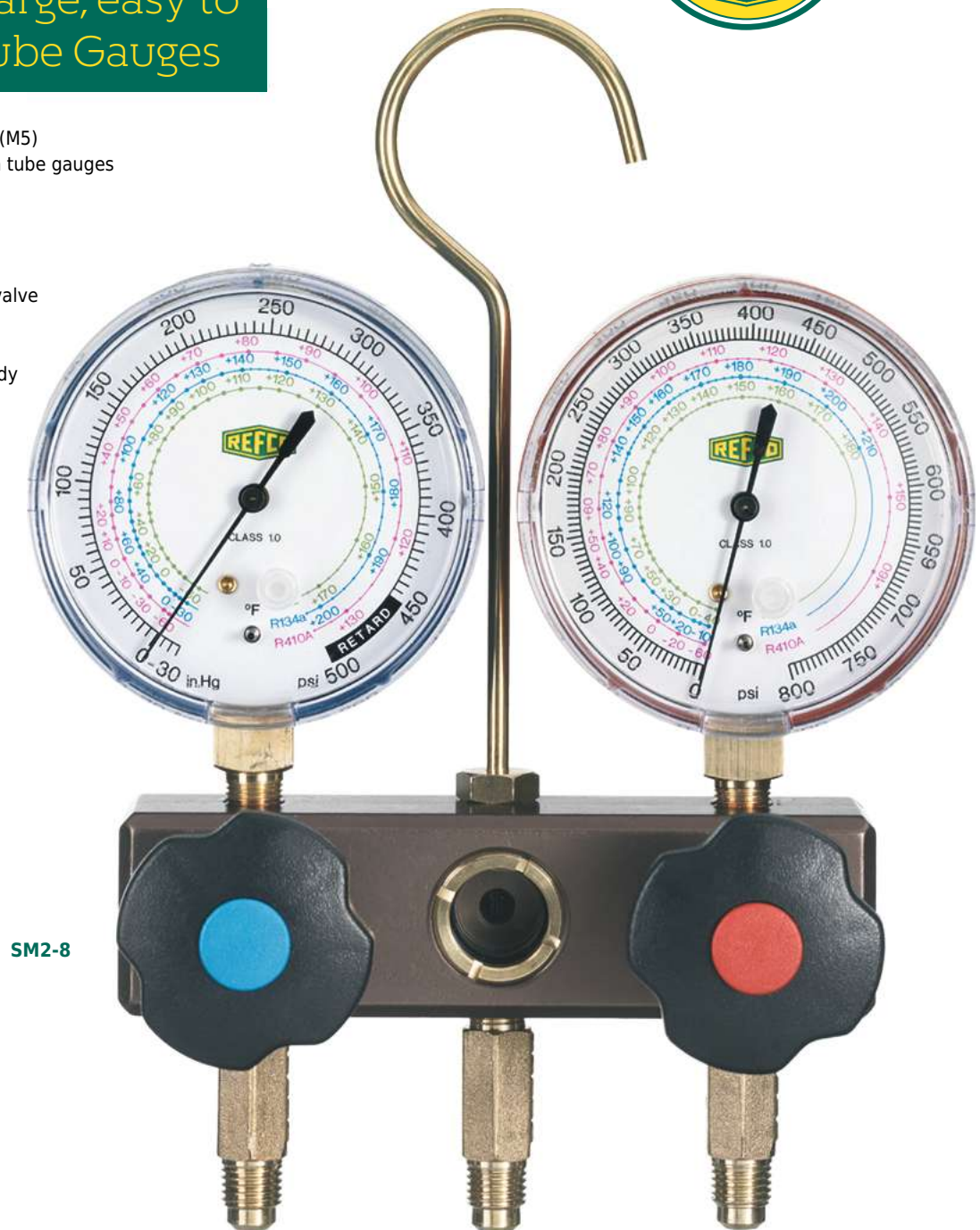


Analog Manifolds



Manifolds with large, easy to read Bourdon Tube Gauges

- Easy to read 3 1/4" (80 mm) gauges (M5)
- All metal housing Class 1.0 bourdon tube gauges
- Retard protection
- Color-coded for high and low side
- Pulse/vibration free
- Zero point adjustable
- Two-piece, O-ring seal piston style valve
- Extra large sight glass
- Swivel hook and 45° hose anchors
- Anodized high quality aluminum body
- Color-coded handwheels
- All hoses are high pressure, 870 psi working pressure, 3600 psi burst pressure



Designation	Hoses	Description	Part No.
SM2-8-F-R410A-FG	none	cardboard box	4675343
SM2-6-F-R410A-FG-CCL-60	5' set	cardboard box	4675351
SM2-3-F-R410A-FG-CCL-60	5' set	plastic case	4675369

Acknowledged globally

Manifolds with Bellow Type Oil Filled Gauges

Bellow type gauges are the most accurate found in the industry today. Bellow type gauges are accurate within 1% all the way around the gauge dial, extremely over pressure resistant and pulse free. There is no oil or glycerin fill nipple on these gauges to have weepage, seepage or leakage from.



DELUXE Two-Way Oil Filled Manifolds Bellow Type

- Oil-filled, bellow type, Class 1.0 accuracy gauges (R3). Gauges are accurate within 1% all the way around the gauge face
- Made from anodized aluminum
- No plastic
- No fill nipple on the top of the gauge to allow leakage
- Pulse/vibration free
- Extremely over-pressure resistant. Gauge will withstand 2 ½ times over-pressurization
- Zero point adjustable
- Easy to read 2 ¾" gauges (R3)
- Color-coded for high and low side
- Two-piece, O-ring seal piston style valve
- Extra large sight glass to view refrigerant movement
- Swivel hook and 45° hose anchors
- Anodized high quality aluminum body
- Color-coded handwheels
- All hoses are high pressure, 870 psi working pressure, 3600 psi burst pressure

M2-8-DELUXE

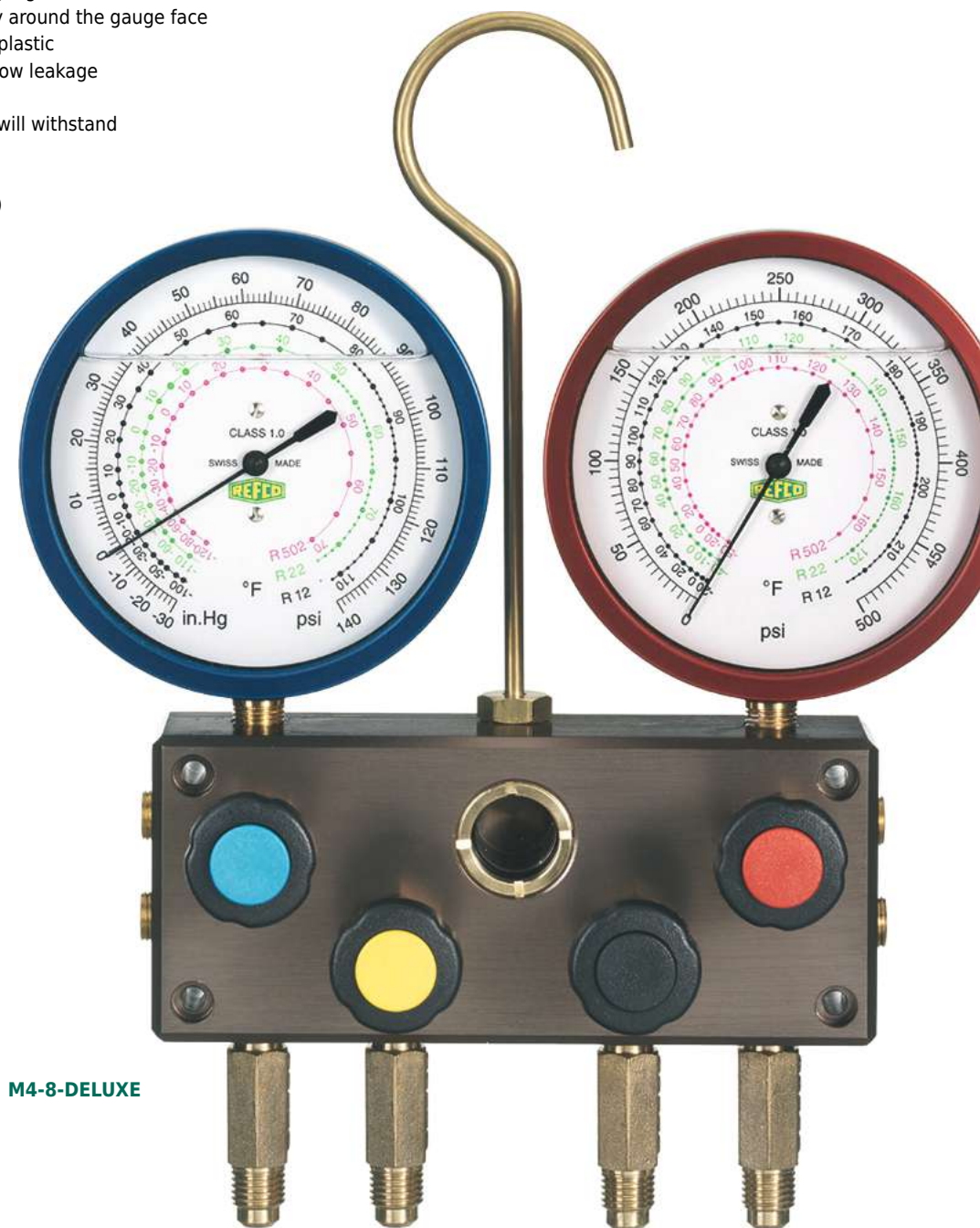
Designation	Hoses	Description	Part No.
M2-8-DELUXE-F-R12	none	cardboard box	4505817
M2-8-DELUXE-F-R22	none	plastic case	4667498
M2-8-DELUXE-F-R410A-FG	none	plastic case	4675491
M2-3-DELUXE-F-R12-CCL-60	5' set	plastic case	4505809
M2-3-DELUXE-F-R22-CCL-60	5' set	plastic case	4667510
M2-3-DELUXE-F-R134a-CCL-60	5' set	plastic case	4506759
M2-3-DELUXE-F-R410A-FG-CCL-60	5' set	plastic case	4662543
M2-3-DELUXE-F-R410A-FG-CA-CCL-60	5' set	plastic case	
	w/ball valve		4663727



Analog Manifolds

DELUXE Four-Way Oil Filled Manifolds Bellow Type

- Oil-filled, bellow type, Class 1.0 accuracy gauges (R5).
Gauges are accurate within 1% all the way around the gauge face
- Gauge housing is anodized aluminum. No plastic
- No fill nipple on the top of the gauge to allow leakage
- Pulse/vibration free
- Extremely over-pressure resistant. Gauge will withstand 2 ½ times over-pressurization
- Zero point adjustable
- Extra large, easy to read 3 ¾" gauges (R5)
- Color-coded high and low side gauges
- Two-piece, O-ring seal piston style valve
- Extra large sight glass to view refrigerant movement
- Swivel hook and 45° hose anchors
- Anodized high quality aluminum body
- Color-coded handwheels
- All hoses are high pressure, 870 psi working pressure, 3600 psi burst pressure
- Manifolds that come with hose sets also come with one ¾" SAE yellow vacuum line 60" long with a working pressure of 465 psi and burst pressure of 2250 psi



M4-8-DELUXE

Designation	Hoses	Description	Part No.
M4-3-DELUXE-F-R12-CCL-60	5' set	plastic case	4505477
M4-3-DELUXE-F-R410A-FG-CCL-60	5' set	plastic case	4669997

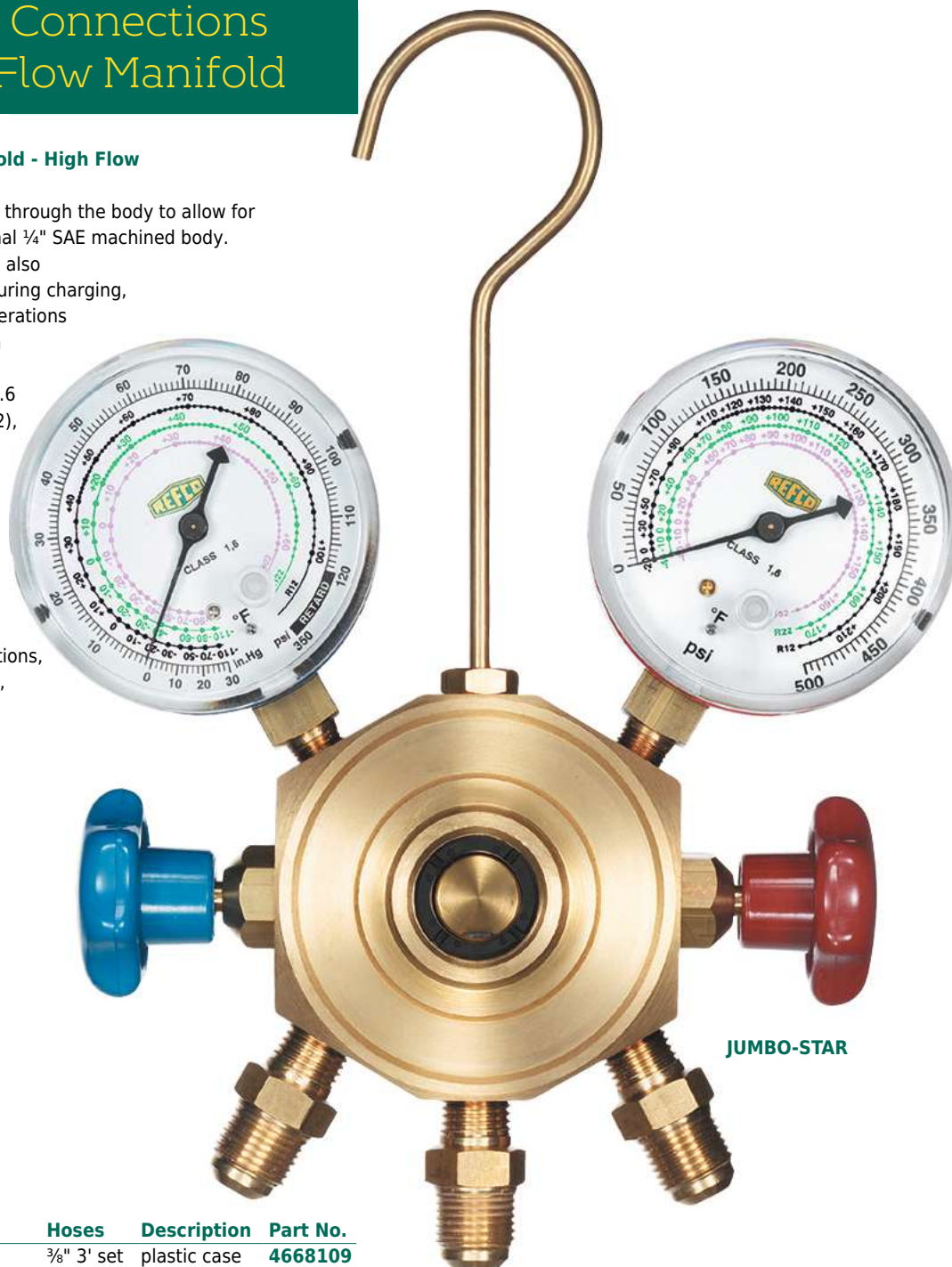
Acknowledged globally

JUMBO-STAR

$\frac{3}{8}$ " Bores and Connections Super High Flow Manifold

Standard Two-Way Manifold - High Flow

- $\frac{3}{8}$ " SAE bores all the way through the body to allow for increased flow over normal $\frac{1}{4}$ " SAE machined body.
- Standard $\frac{3}{8}$ " connections also
- Saves time and money during charging, recovery and vacuum operations
- Compact brass body with extra large sight glass
- All metal housing Class 1.6 bourdon tube gauges (M2), easy to read, zero point adjustable, pulse free and color-coded
- Two-piece, O-ring seal piston style valve
- Swivel hook 45° hose anchors
- Color-coded handwheels
- All hoses $\frac{3}{8}$ " SAE connections, 465 psi working pressure, 2250 psi burst pressure



JUMBO-STAR

Designation	Hoses	Description	Part No.
JUMBO-STAR-2-3-F-R12	$\frac{3}{8}$ " 3' set	plastic case	4668109
JUMBO-STAR-2-3-F-R134a	$\frac{3}{8}$ " 3' set	plastic case	4668117
JUMBO-STAR 2-3-F-R410A-FG	$\frac{3}{8}$ " 3' set	plastic case	4686417

Analog Manifolds

CO2-Manifold

M2-3-DELUXE-F-R744-TC

2-way-manifold with oil filled bellow type gauges,
3 charging hoses 3/4" SAE, 72 inches, 1160/2320 psi,
packed in a sturdy plastic case
Part No. 4688060

This manifold is suitable for transcritical applications.
Metal sealed needle valves are being used to handle the high
pressures. This allows for a very precise adjustability.



M2-3-DELUXE-F-R744-TC

CCL-72-DN6-R744-TC

Pressure hose DN6, transcritical, 2320 psi
Connection at both ends 3/4" SAE
Length: 72 inches, 3 pcs.
Part No. 4687906



CCL-72-DN6-R744-TC

Spare Parts

Designation	Description	Part No.
M2-10-350BAR/2	Valve for R744-TC Manifold, 2 pcs.	4687917
M2-6-N-SET	Handle set for R744 Manifold	4687918
M4-6-14-R744-TC	Case complete with inlay and lettering	4687928



M2-10-350BAR/2

Acknowledged globally

Manifold Spare Parts

Spare Handwheels for Two-Way Manifold Series:

Designation	Description	Part No.
M2-6-09-B+R	Blue, Red handwheel	4687080
M2-7-SET-B+R	Blue, Red handwheel	4687079

Spare Handwheels for Four-Way Manifold Series:

Designation	Description	Part No.
M4-6-09-B	Blue handwheel	4490976
M4-6-09-N	Black handwheel	4490984
M4-7-SET-B+N+R+Y	Blue, Black, Red, Yellow handwheel	4687094

Hook for all manifolds apart from the DIGIMON:

Designation	Description	Part No.
M4-6-10	Hook for manifold	9882584

Complete Manifold Valve Replacement Kit:

Designation	Description	Part No.
M2-10-95-R/2	Package of 2 replacement valves	4687104
M2-10-95-R/4	Package of 4 replacement valves	4687105



M4-6-11



M4-6-04-R



M4-6-11T



M4-6-15



A-31452-Y



M2-GS



M2-6-09-B+R

M2-7-SET-B+R



M4-6-09



M4-7-SET-B+N+R+Y



M4-6-10



M2-10-95-R

Replacement Valve Seat Assembly:

Designation	Description	Part No.
M4-6-04-R/4	Package of 4 valve seat assemblies	4687093
M4-6-04-R/10	Package of 10 valve seat assemblies	4662624
M4-6-04-JUMBO	Single valve seat assembly for JUMBO-STAR	4666726

Sight Glass Replacement Parts:

Designation	Description	Part No.
M4-6-11	Sight glass w/O-ring and brass threaded ring for R410A manifolds	4491018
M4-6-11-T	Special sight glass threaded ring installation tool	4493169

Hose holder for REFCO manifolds:

Designation	Description	Part No.
A-31452-Y	Y-plug hose holder for manifolds	4665118

Plastic Carrying Multi-Case:

Designation	Description	Part No.
M4-6-15	Carrying case with storage compartment for 2- and 4-way REFCO manifolds made of sturdy plastic	4666106

Rubber protection for gauges:

Designation	Description	Part No.
M2-GS	Rubber protection for gauges Ø 68 mm, set of 1 red and 1 blue	4677451



Charging Hoses

Charging and Testing Hoses

Features of REFCO Charging hoses include:

- Standard 870 psi working pressure, 3600 psi burst pressure making the REFCO charging hoses good for all refrigerants including R410A
- Eight sided crimp ensures maximum hose life
- Neoprene seals
- Knurled brass nut for easy finger tightening
- Multiple lengths available
- Color coded for convenience
- Available in packs of 3 (one red, one yellow and one blue hose) or individually

Individual Charging Hoses

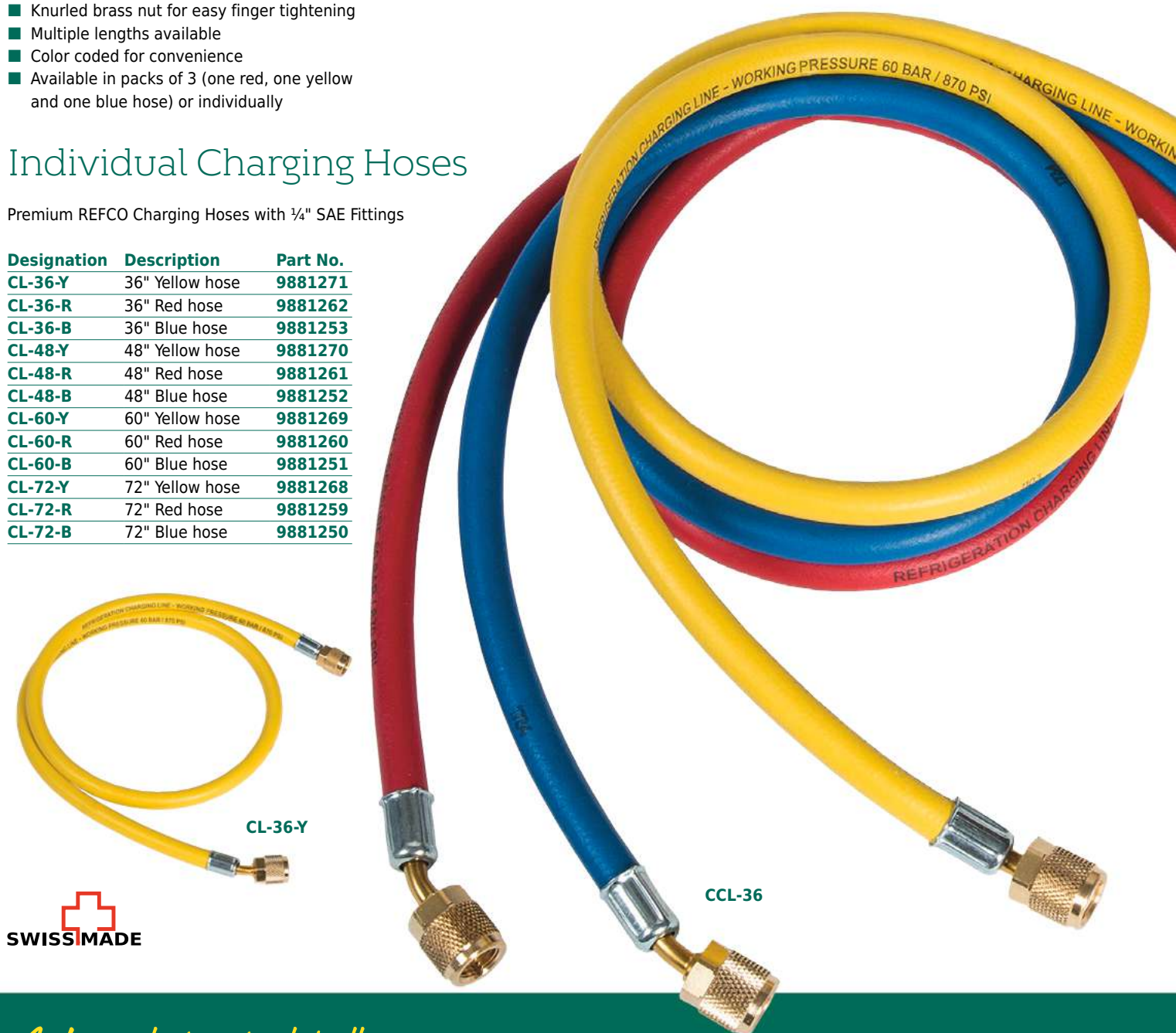
Premium REFCO Charging Hoses with 1/4" SAE Fittings

Designation	Description	Part No.
CL-36-Y	36" Yellow hose	9881271
CL-36-R	36" Red hose	9881262
CL-36-B	36" Blue hose	9881253
CL-48-Y	48" Yellow hose	9881270
CL-48-R	48" Red hose	9881261
CL-48-B	48" Blue hose	9881252
CL-60-Y	60" Yellow hose	9881269
CL-60-R	60" Red hose	9881260
CL-60-B	60" Blue hose	9881251
CL-72-Y	72" Yellow hose	9881268
CL-72-R	72" Red hose	9881259
CL-72-B	72" Blue hose	9881250

Sets of 3

Premium REFCO Charging Hoses with 1/4" SAE Fittings

Designation	Description	Part No.
CCL-36	Set of 3 - 36"	9881278
CCL-48	Set of 3 - 48"	9881277
CCL-60	Set of 3 - 60"	9881276
CCL-72	Set of 3 - 72"	9881275



Acknowledged globally

Environmentally Friendly REFCO Charging Hoses with Special Barrier Protection

Features include:

- All of the features of the standard charging hose but are made from a special material which prevents virtually any permeation of refrigerant, yet remain flexible and easy to work with
- Meets SAE J2196 for permeation allowance

Sets of 3

Designation	Description	Part No.
CCL-36-J2196	Set of 3 - 36"	9884728
CCL-60-J2196	Set of 3 - 60"	9884729
CCL-72-J2196	Set of 3 - 72"	9884730



Individual Charging Hoses

Designation	Description	Part No.
CL-36-Y-J2196	36" Yellow hose	9884719
CL-36-R-J2196	36" Red hose	9884720
CL-36-B-J2196	36" Blue hose	9884721
CL-60-R-J2196	60" Red hose	9884723
CL-60-B-J2196	60" Blue hose	9884724
CL-72-Y-J2196	72" Yellow hose	9884725
CL-72-R-J2196	72" Red hose	9884726
CL-72-B-J2196	72" Blue hose	9884727



Adapter to take a hose from 1/4" SAE to 5/16" SAE (1/2"-20UNF)

Designation	Description	Part No.
QC-S410A/2	Adapter with core depressor 1/4" SAE male x 5/16" SAE female Packaged 2 per	4687095

Spare Parts for REFCO 1/4" SAE Charging Hoses

Designation	Description	Part No.
P-509/10	Ten neoprene gaskets for 1/4" SAE hoses	9880872
P-509-T/10	Ten Teflon gaskets for 1/4" SAE hoses	9880871
P-513/10	Ten core depressors for Schrader valves	9880869

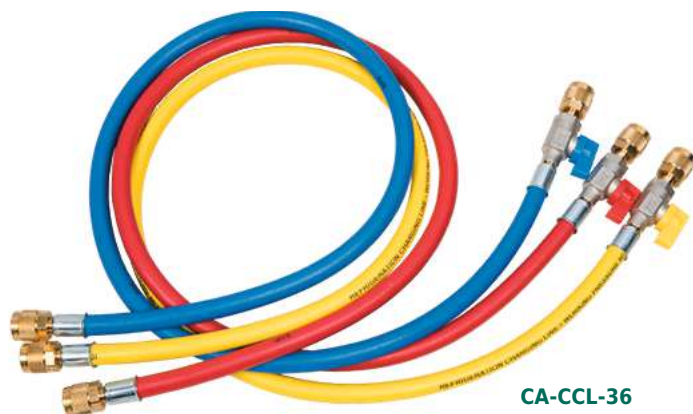


Charging Hoses

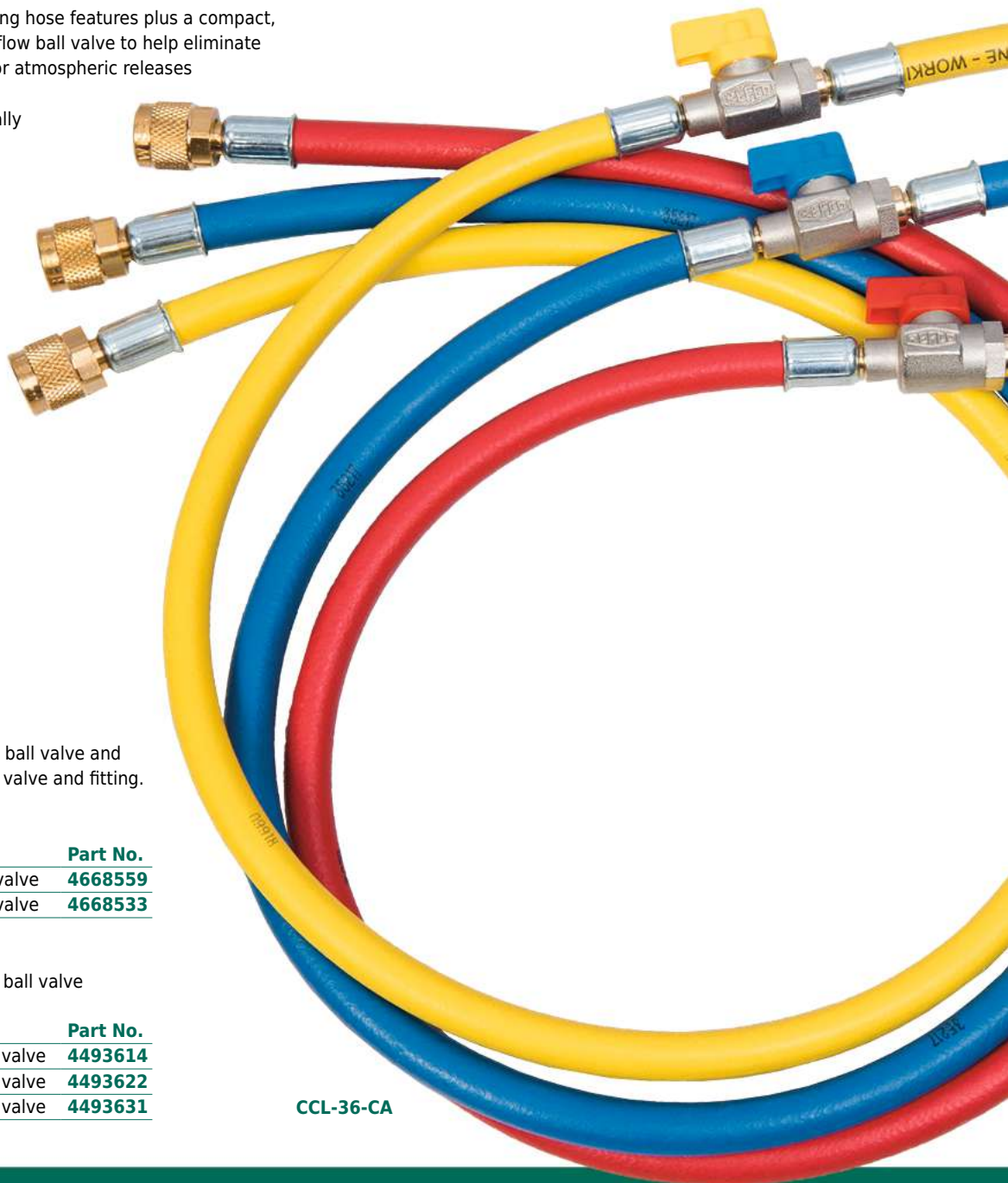
REFCO Premium Charging Hoses with Ball Valves

Features include:

- All of the standard REFCO charging hose features plus a compact, color-coded, chrome plated, full flow ball valve to help eliminate the chance of refrigerant burns or atmospheric releases
- Good for R410A
- Available in sets of 3 or individually



CA-CCL-36



CCL-36-CA

Sets of 3

Premium REFCO charging hose with ball valve and flexible length of hose between ball valve and fitting.
3/4" SAE on both ends.

Designation	Description	Part No.
CCL-36-CA	Set of 3 - 36" w/CA valve	4668559
CCL-60-CA	Set of 3 - 60" w/CA valve	4668533

Premium REFCO charging hose with ball valve

Designation	Description	Part No.
CA-CCL-36	Set of 3 - 36" w/ball valve	4493614
CA-CCL-60	Set of 3 - 60" w/ball valve	4493622
CA-CCL-72	Set of 3 - 72" w/ball valve	4493631

Acknowledged globally

Individual Charging Hoses

Premium REFCO charging hoses with ball valve

Designation	Description	Part No.
CA-CL-9-B-M	9" Blue hose w/ball valve	4682056
CA-CL-9-R-M	9" Red hose w/ball valve	4682047
CA-CL-9-Y-M	9" Yellow hose w/ball valve	4682039
CA-CL-36-Y	36" Yellow hose w/ball valve	4492936
CA-CL-60-Y	60" Yellow hose w/ball valve	4492961
CA-CL-60-R	60" Red hose w/ball valve	4492952
CA-CL-60-B	60" Blue hose w/ball valve	4492944
CA-CL-72-Y	72" Yellow hose w/ball valve	4492995
CA-CL-72-R	72" Red hose w/ball valve	4492987
CA-CL-72-B	72" Blue hose w/ball valve	4492979

CA-CL-9

CA-CL-36

CA-1/4"SAE-Y

REFCO Ball Valves

Ball Valve with 1/4" SAE male and female fittings, core depressor and knurled nut

Designation	Description	Part No.
CA-1/4"SAE-Y	Yellow ball valve with male & female 1/4" fittings	4493738
CA-1/4"SAE-R	Red ball valve with male & female 1/4" fittings	4493533
CA-1/4"SAE-B	Blue ball valve with male & female 1/4" fittings	4493525



Charging Hoses

REFCO Magic Seal Charging Hoses

Magic Seal charging hose features:

- Built in valve automatically closes when disconnecting the charging hose from the system, preventing refrigerant loss and burning of the skin
- One side straight connection, other side 45° bend
- Standard 870 psi working pressure and 3600 psi burst pressure make the hose good for all refrigerants including R410A
- Eight sided crimp ensures maximum life
- Knurled brass nut for easy finger tightening
- Neoprene seals
- Multiple lengths available
- Color-coded for convenience

Designation	Description	Part No.
CPV-60-Y	60" Yellow hose w/built in shut off valve	9881230
CPV-60-R	60" Red hose w/built in shut off valve	9881240
CPV-60-B	60" Blue hose w/built in shut off valve	9881235

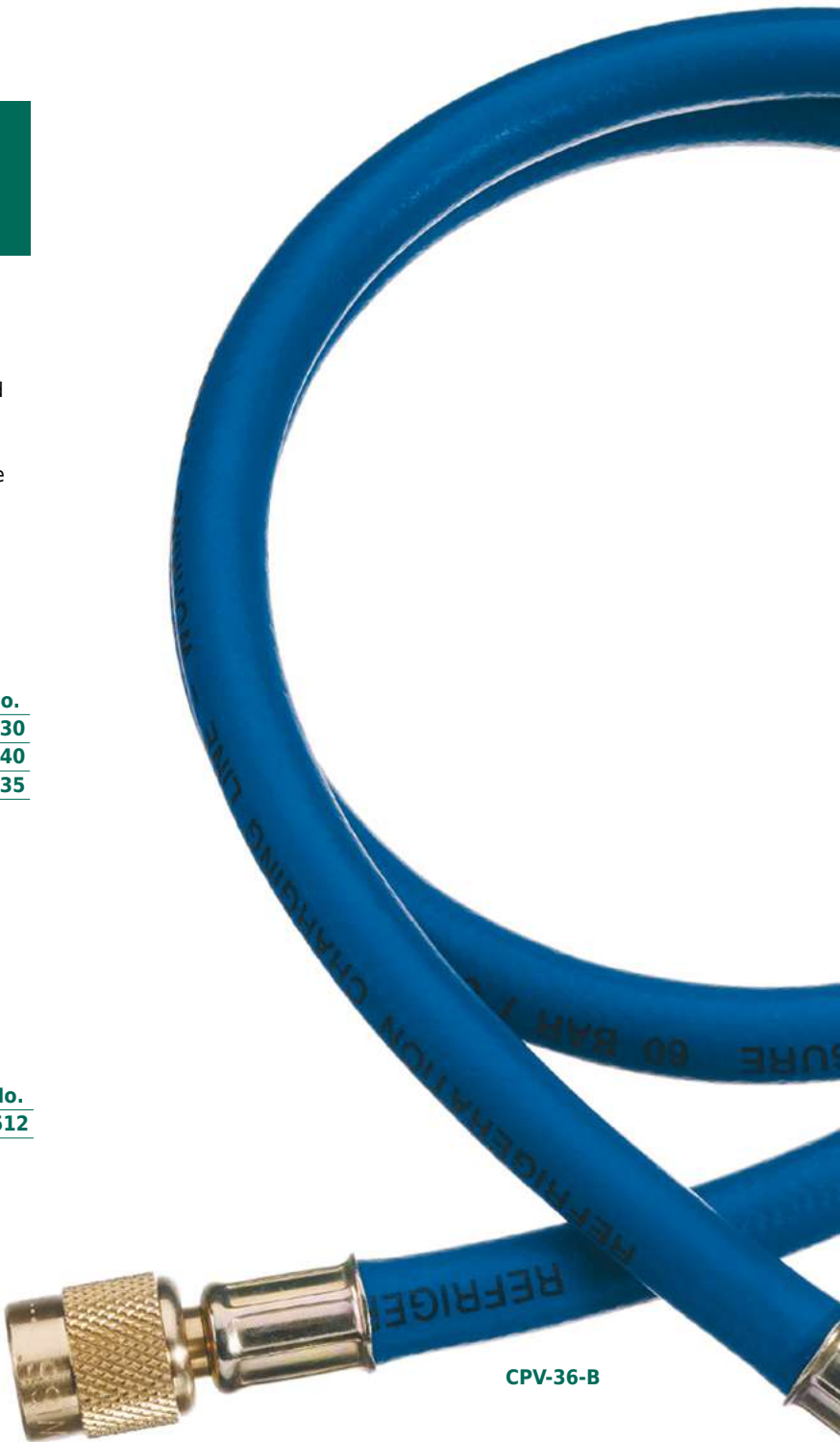


Designation	Description	Part No.
CPV-DS	Gasket set for CPV hoses	4684512

Sets of 3

Magic Seal charging hose

Designation	Description	Part No.
CPV-CCL-60	Set of 3 - w/built in shut off valve, 60"	4495421



CPV-36-B

Acknowledged globally



REFCO $\frac{3}{8}$ " SAE Charging Hoses

Features of the $\frac{3}{8}$ " SAE charging hose are as follows:

- Standard 465 psi working pressure, 2250 psi burst pressure
- Eight sided crimp to ensure maximum hose life
- Knurled brass nut for easy finger tightening
- Multiple hose lengths available
- Color-coded for convenience

Designation	Description	Part No.
HCL6-60-Y	$\frac{3}{8}$ " SAE Yellow hose, 60"	9881313



HCL6-60-Y

Spare Parts for REFCO $\frac{3}{8}$ " SAE Charging Hoses

Designation	Description	Part No.
P-510/10	10 Neoprene O-rings for $\frac{3}{8}$ " SAE charging hoses Packaged 10 per	9880870
A-40513/10	Core depressor for $\frac{3}{8}$ " SAE charging hoses Packaged 10 per	9884813



A-40513









Leak Detection

TRITECTOR™

The mobile leak detector for specialists

The TRITECTOR™ is the practical 3-in-1 solution for the professional refrigeration engineer – with easily replaceable sensors, all common refrigerants, combustible gases and tracer gases can be detected with only one device. The adjustable sensitivity levels find even the smallest leaks, and the ambient concentration is continuously compensated automatically or can also be compensated manually. As soon as a leak is detected, the color LCD display gives a visual signal and an optional sound is emitted. As with other REFCO products, either AA batteries or Micro-USB supplies power – making annoying delays caused by dead batteries a thing of the past.

Features and Benefits

-  Exchangeable sensors for refrigerants, combustible gases and tracer gases
-  Variable power supply (batteries and USB)
-  Intuitive handling
-  High quality LCD display
-  Automatic and manual reset of the ambient concentration
-  Intelligent electronics that automatically detects the connected sensor



Acknowledged globally



TRITECTOR-RCT

Technical Data:

Sensor Technology:	Semiconductor (heated diode)
Minimum sensitivity:	
Refrigerant (R):	0.04 oz/yr (1 g/yr) R134a
Combustibles (C):	0.04 oz/yr (1 g/yr) R290; <5 ppm methane
Tracer (T):	0.11 oz/yr (3 g/yr)
Sensor life:	Approx 10 years with proper filter changes. Exposing the sensor to a high density of refrigerant (>30,000 ppm) will shorten its lifetime rapidly
Display:	4-colored LCD display
Power supply:	4 x 1.5 V AA batteries Operation time of approx. 12 hours when use continuously
Alternative power supply:	Micro USB
Tube length:	16" / 40 cm
Automatic power save mode:	10 min. without pressing any button
Certifications:	CE/RCM Refrigerant: EN-14624:2012, SAE J1627, SAE J2791, SAE J2913 Combustible gases: BS 7348 Tracer gases: SAE J2970, EN 35422

	R	T	C
Low (L)	0.5 oz/yr (14 g/yr)	0.5 oz/yr (14 g/yr)	N/A
Mid (M)	0.25 oz /yr (7 g/yr)	0.25 oz /yr (7 g/yr)	N/A
High (H)	0.04 oz/yr R134 a (1 g/yr)	0.11 oz/yr (3 g/yr)	0.04 oz/yr R290 (1 g/yr)

R= Refrigerant, T = Tracer gases, C= Combustible gases

Designation	Part No.
TRITECTOR-R	Leak detector including refrigerant sensor (green), delivered in sturdy protection case 4688375
TRITECTOR-RCT	Leak detector including 3 sensors: Refrigerant sensor (green), Combustible sensor (red), Tracer gas sensor (yellow), delivered in sturdy protection case 4688374
R-SENSOR	Refrigerant sensor (green) 4688370
C-SENSOR	Combustible gas sensor (red) 4688371
T-SENSOR	Tracer gas sensor (yellow) 4688372
TRITECTOR-FILTER/5	Sensor filter, 5 pcs. 4688367
TRITECTOR-CASE	Protection case 4688364



Leak Detection

REF-LOCATOR

Electronic Leak Detector

The requirements for leak detectors are constantly increasing and in order to keep up with the newest developments and technologies, we have developed the REF-LOCATOR. This high-end unit fulfills all the specifications and requirements which are expected from a modern leak detector today. The basis of solid electrolyte sensor technology sets new standards in the area of leak detection. The sensor has a higher than average life cycle of approximately 10 years, which is a large advantage over conventional leak detectors. With the large LCD display, one is always informed about the ongoing activities. Through the adjustment of the 3 sensitivity levels, it is easy to localize large leaks. In addition, the inspection light is ideal for having a good overview, even in the dark. The REF-LOCATOR is delivered in a practical, rugged case.

Technical Data:

Sensitivity:	0.05 oz/yr (1.4 g/year) All HFC's incl. R410A, R404A, R407C & R134a 0.025 oz/yr (0.7 g/year) HCFC R22 0.03 oz/yr (0.9 g/year) HFO R-1234yf
Standards:	SAE-J2791 (R-134a), SAE-J2913 (R-1234yf)
Certifications:	Complies to standard SAE-J2791, SAE-J2913 EN14624:2012, CE, ROHS, ASHRAE Standard 173
Inspection light:	3 white LED's and 3 UV - auto shut off in 5 minutes
Sensor life:	>10 years / 4000 hours
Sensor Technology:	Solid electrolyte semi-conductor
Warm-up time:	approx. 30 seconds
Response time:	instantaneous
Display:	BTN-LCD with 10 segment color "pie graph" showing leak size
Sensitivity levels:	MAX- 0.15oz/yr (4 g/yr) MED- 0.25 oz/yr (7 g/yr) MIN- 0.5 oz/yr (14 g/yr)
Mute function:	Silent mode – Display shows leak indication
Power supply:	4 AA Alkaline or 4 AA NiMH Batteries
Battery life:	2.5 hours
IP-classification:	54
Probe length:	17"
Dimensions:	10 x 3 x 2.5 in
Weight:	1.3 lb

Part No. 4686714



REF-LOCATOR



New with both UV and LED lights to help find refrigerant leaks! For REF-LOCATOR and TRACE-LOCATOR. No UV enhancement eyeglasses needed.



REF-LOCATER-CASE

Spare Parts for REF-LOCATOR

Designation	Description	Part No.
REF-LOCATER-CASE	plastic case	4686707
REF-LOCATOR-TV-01	test vial	4686705

Acknowledged globally

TRACE-LOCATOR

Electronic Leak Detector

The leak detector for professional leak detection with trace gas 95/5 (95% nitrogen, 5% hydrogen), featuring the latest technology. The 95/5 trace gas is environmentally friendly, non-toxic, nonflammable and non-corrosive. The gas escapes at the leaky spot which then can easily be localized with the TRACE-LOCATOR. In addition, after evacuating the unit, the nitrogen in the trace gas binds with the possible remaining moisture. Additionally, during and after the leak detection, no environmentally harmful refrigerants will leak out. Due to the low density of hydrogen which is lighter than air, even minor leakages can be detected quickly. By means of a colored pie chart, the large LCD display, always shows the latest data. The TRACE-LOCATOR is delivered in a practical, rugged case.

Technical Data:

Sensitivity:	less than 5ppm (N2/H2 tracer gas)
Certifications:	Fulfills the limits of standard EN35422 The tracer gas conforms to article 6, paragraph 3 of the EU directive 2006/40/EG Pending SAE-J2970 certification
Inspection light:	3 white LED's and 3 UV - auto shut off in 5 minutes
Sensor life:	1000 hours
Sensor Technology:	Solid electrolyte semi-conductor
Warm-up time:	approx. 30 seconds
Response time:	instantaneous
Display:	BTN-LCD with 10 segment color "pie graph" showing leak size Backlight included
Sensitivity levels:	3 levels
Mute function:	Silent mode – display shows leak indication visually
Power supply:	4 AA Alkaline or 4 AA NiMH Batteries
Battery life:	4.5 hours
IP-classification:	54
Probe length:	17"
Dimensions:	10 x 3 x 2.5 in
Weight:	1.3 lb

Part No. 4686715



TRACE-LOCATOR



Leak Detection

STARTEK

Electronic Leak Detector for all Halogenated Refrigerants

- Extremely compact design concept similar to a cell phone
- Ergonomical design focused on performance and simplicity of operation
- Microprocessor controlled unit and state of the art microelectronics
- Detects all halogenated refrigerants **incl. R410A**
- Certified to SAE J1627 standard
- Simple one-button operation
- Two sensitivity levels using a double-click computer mouse action
- One touch reset-mode
- High performance true mechanical pump to provide positive airflow through the sensing tip
- Leak indication using both variable frequency audible and visual alarm
- Automatic shut-off after extended period of non-use to preserve battery life
- Battery life indicator
- Prevents incorrect readings by providing visual and audible warning followed by an automating shut-off when battery reaches a critical level
- State of the art sensor technology for higher reliability and longer life time
- Includes a practical belt clip holster that also protects the unit in your tool box
- Specially designed 12" flexible probe for easy reach
- Additional replacement sensor included inside the battery compartment
- **Packed up in a sturdy plastic case**



STARTEK

Technical Data:

Dimensions:	6 x 1.4 x 2.1 inch
Weight:	6.7 oz
Batteries:	2 x AA batteries
Battery lifetime:	40 hours
Sensitivity:	less than 0.1 oz/year
Sensor lifetime:	approx. 30 hours
Operating temperature:	32 °F to 125 °F
Warm up time:	less than 2 seconds
Response time:	instantaneous
Reset time:	instantaneous
Probe length:	12 inches
Warranty:	2 years

Part No. 4507917

Designation	Description	Part No.
ES-02	Replacement sensor (Pack of 2)	4507577
STARTEK-CASE	Replacement carrying case	4664333

Acknowledged globally

STARTEK-C

Electronic Leak Detector for Combustible Gases

- This Combustible Gas Leak Detector with its new state of the art design is the most technologically advanced of its kind
- The STARTEK-C's low power requirements, small size and high sensitivity combine to create a tool which is easy to handle and ultra effective at locating even the most difficult-to-find leaks
- The STARTEK-C's long life sensor will detect concentrations of combustible gases as low as 5 ppm
- It is sensitive to all combustible gases
- The STARTEK-C also features a low sensitivity mode, enabling quick and easy location of large combustible gas leaks
- **Packed up in a sturdy plastic case**



STARTEK-C



Technical Data:

Dimensions:	6 x 1.4 x 2.1 inch
Weight:	6.7 oz
Batteries:	2 x AA batteries
Battery lifetime:	11 hours
Sensitivity:	less than 50 ppm (Propane, Isobutane, Methane, Natural Gas)
Sensor lifetime:	less than 1 year normal use
Operating temperature:	32 °F to 125 °F
Warm up time:	45 seconds (conditioned sensor)
Calibration:	automatic
Response time:	5 seconds
Reset time:	5 seconds or more
	depending on gas concentration
Probe length:	12 inches
Warranty:	2 years

Part No. 4660664

Designation	Description	Part No.
ES-C	Replacement sensor	4660672
STARTEK-C-CASE	Replacement carrying case	4665593










Charging Scales

REFSCALE

New electronic charging scale

The electronic charging scale REFSCALE can be easily connected to the REFIMATE™ and/or REFIMESH™. It consists of two solid aluminium plates on which large refrigerant cylinders can be safely placed thanks to the octagonal shape. The highly sensitive measuring cell indicates the exact weight even with asymmetrically positioned cylinders. The wireless control box or the App allows the input of a variety of helpful functions.

Features and Benefits

-  Connection with the REFIMATE™ and/or REFIMESH™
-  High Accuracy and Automatic Resolution
-  Programmable alarm
-  Can be calibrated in the field with reference weights
-  Refrigerant Tank Capacity Indicator
-  Measures weight in kg, lbs and oz
-  Flexible power supply by battery or via USB

Technical Data:

Measuring technology:	Strain gauge	
Power supply:	4x AAA batteries	
Alternative power supply:	Micro USB Type B	
Capacity:	242 lbs	
Accuracy:	0.05% of reading or 0.022 lbs	
Automatic resolution:	0.1 oz / 0.005 lbs	0 to 44 lbs
	0.2 oz / 0.010 lbs	44 to 110 lbs
	0.4 oz / 0.020 lbs	110 to 243 lbs
Units strain:	lb / oz/ lb & oz, kg	
Functions:	Set Tare, Alarm, Hold, Mute, Backlight, Tank capacity, Calibration, connecting to REFIMATE™ and REFIMESH™	

Part No. 4688292



REFSCALE

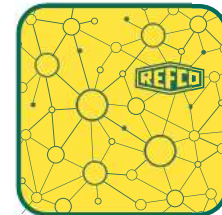
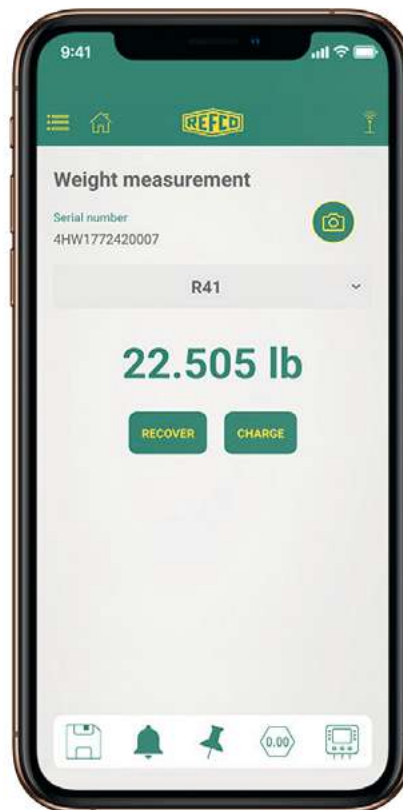
Acknowledged globally

Buttons and navigation:

-  ON / OFF
-  Confirm
-  Zeroing / Tare
-  Units
-  Start / Stop
-  Alarm
-  Hold
-  Up
-  Brightness
-  Down

Functions:

- Set Tare
- Units
- Automatic resolution
- Hold
- Mute
- Alarm
- Tank capacity
- Battery Management
- Calibration and Factory calibration



REFMESH™

FULLY CONNECTED
The REFRESH™ App - an IoT platform

Because everything is connected to everything, we've developed a new App called REFRESH™. As an IoT platform, the software connects a large number of peripheral devices with the REFRESH™. Data can be stored in the REFRESH™, in the App and in the cloud, and can be made available in various formats to other users or customers.



REFRESH™ App



Charging Scales

OCTA-WIRELESS

This reliable, electronic charging scale transmits the measurement data to the wireless display, allowing for mobile operation of the scale within a radius of 33 ft. The light, solid, aluminum housing along with the slim design, make the OCTA-WIRELESS particularly suitable for large refrigerant cylinders. Through the convenient, wireless control panel, the OCTA-WIRELESS can easily be programmed or recalibrated. REF-METER-OCTA-PLUS, the automatic charging system, is an ideal addition to the OCTA-WIRELESS. The wireless electronic charging scale is delivered in a durable carrying pouch.



Technical Data:

Capacity:	240 lbs
Platform:	Diameter 12.6 in
	Height 1.75 in
Accuracy:	+/-0.5%
Resolution:	0.1 oz, 0.005 lbs
Power Supply:	2x 4 AAA- batteries
Battery lifetime:	60 h control panel + platform
Weight:	1.2 lbs with batteries
Signal range:	33 ft

Part No. 4686663

OCTA-WIRELESS-CONTROL-BOX

Control Box for OCTA-WIRELESS
Part No. 4686752



OCTA-WIRELESS-CONTROL-BOX



OCTA-WIRELESS

OCTA-WIRELESS-KIT

Combination kit including OCTA-WIRELESS and REF-METER-OCTA-PLUS.
Part No. 4686742



OCTA-WIRELESS-KIT

Acknowledged globally

REF-METER-OCTA

REF-METER-OCTA is a new electronic refrigerant scale built in high quality, sturdy and modern design.

- New design
- Sturdy aluminium platform
- Unique cable auto reel
- Easy to read LCD display
- Compact and lightweight (5.5 lbs)
- Large refrigerant cylinder platform
- Extremely high accuracy
- Programmable
- Field calibratable
- Supplied in a carrying pouch

Technical Data:

Capacity:	240 lbs
Platform:	diameter 12.6 inches
Accuracy:	±0.5%
Resolution:	0.005 lbs, 0.1 oz
Power supply:	Four AAA batteries
Battery lifetime:	30 hours

Part No. 4679462



REF-METER-OCTA

REF-METER-OCTA CONTROL-BOX

Control Box for REF-METER-OCTA

Part No. 4686813



REF-METER-OCTA-CONTROL-BOX

REF-METER-OCTA-KIT

Combination kit including REF-METER-OCTA and REF-METER-OCTA-PLUS

Part No. 4681989



REF-METER-OCTA-KIT

REF-METER-OCTA-PLUS

Automatic charging module for the OCTA-WIRELESS and REF-METER-OCTA. It is suitable for all refrigerants. Through a visual and an acoustic signal the exact programmed filling weight is achieved.

Technical Data:

Charging Port:	1/4" SAE
Max. Valve operating pressure:	500 psi, 34 bar
Power supply:	4 x 1,5 V AA Alkaline Batteries
Battery lifetime:	> 200 hours
Materials:	Valve Body Brass, Seal Neoprene-W
Operating temperature:	0 °C to 50 °C / 32 °F to 122 °F
Weight:	1.2 lbs with batteries
Dimensions:	8.6 x 6.6 x 1.9 inch

Part No. 4681823



REF-METER-OCTA-PLUS



Test Equipment

GAS PRESSURE TEST KIT

Precision test instrument used to accurately set manifold pressure for Natural and L.P. Gas

- Includes sensitive diaphragm gauge that is calibrated in inches of water column and ounces per square inch for extreme accuracy
- Scale in 0-35" W.C.
- Kit includes brass barb fitting on gauge, rubber tube and nipple for easy connection to system manifold
- High impact carrying case
- Easier to use than a manometer

Designation	Description	Part No.
GPK-35	Gas Pressure Test Kit	4683477

Spare Parts:

GPK-35-01	Gauge with barb fitting for GPK	4680096
GPK-35-02	Hose with nipple fitting for GPK	4680087
GPK-35-03	Rubber nipple for GPK	4680109
GPK-35-04	Barb fitting for GPK	4680079
GPK-35-SIGHT-GLASS	Gauge cover for GPK	4680117



GPK-35

Acknowledged globally

Digital Thermometers

Infrared Non-Contact Thermometer

The LP-88 is a rugged and practical infrared thermometer with a pistol grip, which allows for contact free temperature measurement. Various temperatures can efficiently be measured within a room. The built-in laser pointer simplifies the measurement by marking the measurement area with eight red laser points. This infrared thermometer is delivered in a durable, protective case.

Technical Data:

Temperature range:	-76 °F to 1000 °F
Operating temperature:	32 °F to 122 °F
Resolution:	0.1 °F
Accuracy:	± 2% of display or 4 °F Depending on which is greater
Battery life:	18 h
Distance spot:	12.1
IP classification:	54
Automatic shut-off:	after 15 seconds of inactivity
Emissivity:	0.95 – adjustable 0,1 to 1 in .01-steps
Weight:	0.4 lbs incl. 2x AAA batteries

Part No. 4686697



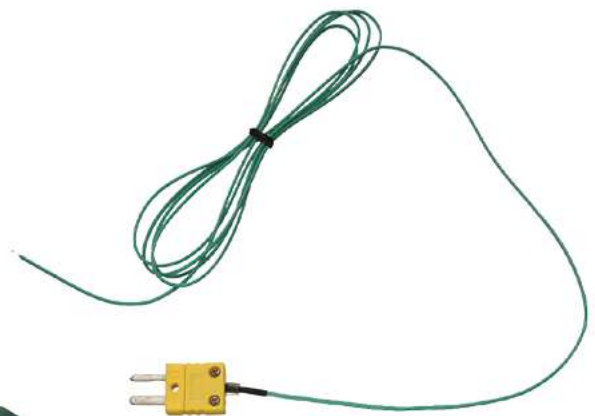
LP-88

K-TYPE-SENSOR

Universal K-Type sensors for easy temperature measurement in refrigeration systems.

- Direct temperature transfer from pipe to sensor
- Easy to fix with adhesive tape

Part No. 4681394



K-TYPE-SENSOR

K-type thermocouple clamp

- Temperature range -40 °F to +257 °F
- Jaw range ¼" - 1 ⅝"
- Resolution 1 °F

Designation	Description	Part No.
K-TYPE-CLAMP TC	K-type thermocouple clamp	4681466



K-TYPE-CLAMP TC



Test Equipment

REF-SCOPE

Video inspection camera

The Inspection Camera REF-SCOPE Insightvision is designed for the visual analysis of unreachable or hard to reach areas. The Inspection camera is crucial for a clear, internal inspection of engines, A/C systems, interior structures of walls and other industrial and similar applications. Optical imaging and illumination is provided by a full color image sensor and 6 LED lamps which are controlled by an on/off rotary switch.

Technical Data:

Display:	3.5" (8.9 cm) TFT digital panel Resolution 320 x 240 pixel
LCD backlight:	LED
Image orientation:	Normal- and mirroring display
Camera Head & Distal tip diameter:	0.39" (10 mm)
Shaft length:	42" (107 cm)
Shaft:	water resistant
Video output:	RCA phono jack
Weight:	0.55 lb / 250 g (without batteries)
Power source:	4 Alkaline AA batteries (3 hours full functional operation)
Attachments:	cleaning material, batteries, AV cable, mirror, hook, extra strong magnet

Part No. 4679705



Acknowledged globally



REF-SCOPE

REF-SCOPE-MIRROR



REF-SCOPE-MAGNET

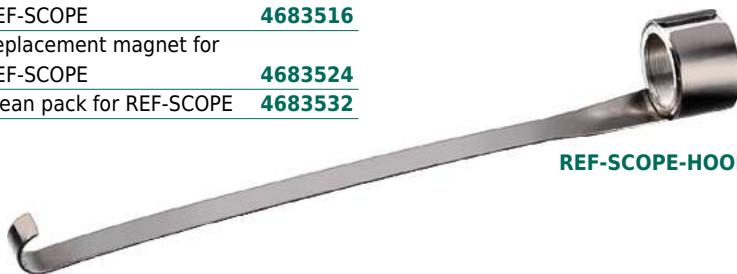


Spare Parts

Designation	Description	Part No.
REF-SCOPE-MIRROR	Replacement mirror for REF-SCOPE	4683507
REF-SCOPE-HOOK	Replacement hook for REF-SCOPE	4683516
REF-SCOPE-MAGNET	Replacement magnet for REF-SCOPE	4683524
REF-SCOPE-CLEAN	Clean pack for REF-SCOPE	4683532



REF-SCOPE-CLEAN



REF-SCOPE-HOOK




TUBE-CUTTERS


The new, durable telescopic tube cutter accurately cuts copper tubing

- Four roller tracking system keeps tube from threading
- Smooth turning of adjustment knob
- Full-stop feed system prevents wheels and rollers from coming into contact
- Heavy duty
- High quality
- Includes spare cutting wheel

Designation	Description	Part No.
RS-16	Tube cutter 1/8" to 5/8"	4682722
RS-25	Tube cutter 1/8" to 1"	4682730
RS-35	Tube cutter 1/8" to 1 3/8"	4682748
RS-42	Tube cutter 1/8" to 1 5/8"	4682756
RS-67	Tube cutter 1/4" to 2 5/8"	4686904
RS-001/3	Spare cutting wheel for tube cutter Packaged 3 per	



4687097



RFA-209-01/3 Spare blades for RFA-209-STYLO-HD and RS tube cutter series, made of tough long life cobalt (set of 3 pieces)

4687065



RS-67



RS-42



RS-35



RS-16

RS-25

Pinch Off Tools

Designation	Description	Part No.
14285	Up to 3/8" diameter suction tubes	9881530
RFA-105-FF	Pinch off tools for 1/4", 5/16, 3/8" and 1/2"	9881528
14200	Pinch off pliers up to 3/8" O.D.	9881527
14215	Capillary tube cutter, without swaging the tube	9881087



RFA-105-FF



14215



14285



14200

Recovery-Service Piercing Pliers

Designation	Description	Part No.
14210	Piercing pliers with changeable piercing needle and access fitting	9881526
14210-01/10	Package of 10 spare needles	4665550



14210

Designation	Description	Part No.
BR-4IN1	Cleaning brush 4 in 1	4677621



BR-4IN1



RFA-209-STYLO



RFA-209



RFA-209-01/3

RFA-209-STYLO-HD

Tubing Tools

Designation	Description	Part No.
RFA-209	Inner-Outer reamer	9881649
RFA-209-STYLO	Tube deburring tool, rotate blade	9883750
RFA-209-STYLO-HD	Heavy duty deburring tool with rotating blade Removes rough or irregular edges of steel, aluminium, copper and plastic Replaceable blades made of tough long life cobalt	4687051
RFA-209-01/3	Spare blades for RFA-209-STYLO-HD and RS tube cutter series, made of tough long life cobalt (set of 3 pieces)	4687065



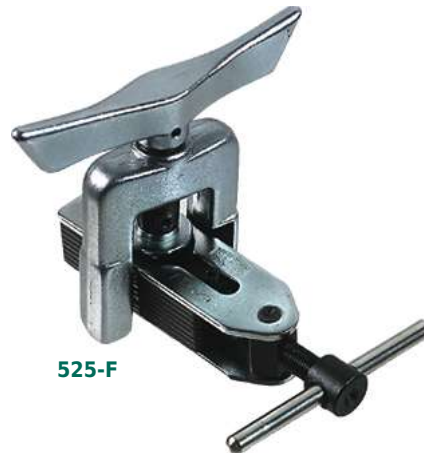
Tools

45 Degree Flaring Tools

Designation	Description	Part No.
525-F	Flaring and burnishing in one tool. Sizes from $\frac{3}{16}$ " to $\frac{5}{8}$ " O.D.	9881571
RF-888-Z	45° Eccentric flaring tool in inch-sizes. Made of forged high quality steel for tubes with an outside-diameter of: $\frac{3}{16}$ ", $\frac{1}{4}$ ", $\frac{5}{16}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{5}{8}$ ", $\frac{3}{4}$ ". Supplied in a sturdy plastic case	4506171
RF-275-FS	Flaring and swaging tool for tubes with an outside-diameter of: $\frac{3}{16}$ ", $\frac{1}{4}$ ", $\frac{5}{16}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{5}{8}$ ". Supplied in a plastic case	9881575
RF-175-FS	45° Flaring and swaging tool in inch-sizes. Made of forged high quality steel for tubes with an outside-diameter of: $\frac{1}{8}$ ", $\frac{3}{16}$ ", $\frac{1}{4}$ ", $\frac{5}{16}$ ", $\frac{3}{8}$ ", $\frac{7}{16}$ ", $\frac{1}{2}$ ", $\frac{5}{8}$ ", $\frac{3}{4}$ ". Supplied in a sturdy plastic case	4506198



RF-888-Z



525-F



RF-275-FS



RF-175-FS

Acknowledged globally

Tube Benders

Designation	Description	Part No.
RFA-368-FH	Triple-header tube bender. Bends all tubes with an outside diameter of 1/4", 5/16" and 3/8" to a 90-degree bend	9881657



RFA-368-FH



HY-TELL



HY-TELL bending adapters



TELL-7-AD



TELL-7

TELL-7

Designation	Description	Part No.
HY-TELL	The new hydraulic pipe bender is suitable for tube sizes of 1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 7/8" diameter and offers the following features: Bending angle assistance Little effort for tube bending Solid position on the desk Easy and quick change of the tools Weight: 60 lbs Supplied in a sturdy plastic case	4688017
HY-TELL-BA-1/4"	Bending adapter 1/4"	4688022
HY-TELL-BA-5/16"	Bending adapter 5/16"	4688023
HY-TELL-BA-3/8"	Bending adapter 3/8"	4688024
HY-TELL-BA-1/2"	Bending adapter 1/2"	4688025
HY-TELL-BA-5/8"	Bending adapter 5/8"	4688026
HY-TELL-BA-3/4"	Bending adapter 3/4"	4688027
HY-TELL-BA-7/8"	Bending adapter 7/8"	4688028
HY-TELL-SB	Cross bar short	4688029
HY-TELL-MB	Cross bar middle	4688030
HY-TELL-LB	Cross bar long	4688031

Designation	Description	Part No.
TELL-7	Cross-Bow type tube bender set for easy, ergonomic handling. For following outside diameters: 1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 7/8". Supplied with tube cutter in a sturdy plastic case.	4666076
TELL-7-BA-1/4"	Bending adapter 1/4"	4669432
TELL-7-BA-5/16"	Bending adapter 5/16"	4669440
TELL-7-BA-3/8"	Bending adapter 3/8"	4669458
TELL-7-BA-1/2"	Bending adapter 1/2"	4669466
TELL-7-BA-5/8"	Bending adapter 5/8"	4669475
TELL-7-BA-3/4"	Bending adapter 3/4"	4669483
TELL-7-BA-7/8"	Bending adapter 7/8"	4669491
TELL-7-SB	Short bar	4669416
TELL-7-LB	Long bar	4669407
TELL-7-HANDLE	Handle complete	4669513
TELL-7-AD	Reverse bend adapter	4669679



Tools

HY-EX-6 EXPANDER TOOL SET

New Hydraulic Expander tool kit with 6 expander heads to cover all size tubes of $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{5}{8}$ ", $\frac{3}{4}$ ", $\frac{7}{8}$ ", $1\frac{1}{8}$ " diameter. This set includes a sturdy deburring tool and is delivered in a handy plastic case. Using hydraulic power this lightweight expander makes a perfect expansion of copper and aluminium tubing with only a few pumps.

This tool offers you the following features:

- Easy single hand operation:
Hydraulic mechanism and release button make one-handed swages possible. Simply select the correct laser-engraved expander head, thread it on the tool and make a quality swage.
- Small space capable:
A compact, pistol shape allows it to fit into the smallest and hard to reach spots.
- 120° angle:
Requires less power to pump, provides a natural wrist angle.
- Interchangeable heads:
Fits all common HVAC/R size copper tubing.
- Compatible with REFCO expander systems:
Perfect accessory to upgrade existing manual expander kits.
- Includes deburring tool RFA-209-STYLO-HD:
Allows easy installation for expander heads.

Specifications:

Dimensions:	Length: 10", width: 1.75", height: 5"
Weight:	2.6 lbs
Tube materials:	Soft tubing only: copper, aluminium, brass

Part No. 4687047

Spare heads

Designation	Spare heads	Part No.
HY-EX- $\frac{1}{4}$ "	$\frac{1}{4}$ "	4687344
HY-EX- $\frac{5}{16}$ "	$\frac{5}{16}$ "	4687346
HY-EX- $\frac{3}{8}$ "	$\frac{3}{8}$ "	4687367
HY-EX- $\frac{1}{2}$ "	$\frac{1}{2}$ "	4687366
HY-EX- $\frac{5}{8}$ "	$\frac{5}{8}$ "	4687365
HY-EX- $\frac{3}{4}$ "	$\frac{3}{4}$ "	4687368
HY-EX- $\frac{7}{8}$ "	$\frac{7}{8}$ "	4687369
HY-EX-1"	1"	4687345
HY-EX- $1\frac{1}{8}$ "	$1\frac{1}{8}$ "	4687370
HY-EX- $1\frac{1}{4}$ "	$1\frac{1}{4}$ "	4687478
HY-EX- $1\frac{3}{8}$ "	$1\frac{3}{8}$ "	4687347
HY-EX- $1\frac{1}{2}$ "	$1\frac{1}{2}$ "	4687477
HY-EX- $1\frac{5}{8}$ "	$1\frac{5}{8}$ "	4687348



HY-EX



HY-OIL

Hydraulic oil for HY-EX, 50 ml
Part No. 4687579



HY-EX-6

Acknowledged globally



14297-RF

EXPANDER TOOL SET

Designation	Description	Part No.
14297-RF	Expander tool set. Complete with expander plier and 6 heads in steel box. Tube sizes $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{5}{8}$ ", $\frac{3}{4}$ ", $\frac{7}{8}$ " and 1 $\frac{1}{8}$ " diameter	4677817

Designation	Spare heads	Part No.
14297-RF- $\frac{3}{8}$ "	$\frac{3}{8}$ "	4669709
14297-RF- $\frac{1}{2}$ "	$\frac{1}{2}$ "	4669717
14297-RF- $\frac{5}{8}$ "	$\frac{5}{8}$ "	4669726
14297-RF- $\frac{3}{4}$ "	$\frac{3}{4}$ "	4669734
14297-RF- $\frac{7}{8}$ "	$\frac{7}{8}$ "	4669742
14297-RF-1"	1"	4669750
14297-RF-1 $\frac{1}{8}$ "	1 $\frac{1}{8}$ "	4669768
14297-RF-1 $\frac{3}{8}$ "	1 $\frac{3}{8}$ "	4669776
14297-RF-1 $\frac{5}{8}$ "	1 $\frac{5}{8}$ "	4669785



14165

Process Tube Valve Kit

Designation	Description	Part No.
14165	Process tube valve kit consists of 2 pieces valve model 14575 and 2 sets of gaskets and inserts covering all sizes as $\frac{3}{16}$ ", $\frac{3}{8}$ ", $\frac{5}{16}$ ", and $\frac{3}{8}$ " tube O.D.	9881780



RATCHET WRENCH

The new, high-quality fine tooth ratchet wrench with 72-teeth gear provide always a perfect working angle. Developed for the demanding HVAC/R service engineer.

SW-127-C

- Requires less work room for ratcheting
- Quick ratcheting action with reverse levers at both ends
- Heat treated chrome forged body for increased durability
- Square: $\frac{1}{4}$ " x $\frac{3}{8}$ "
- Square: $\frac{3}{16}$ " x $\frac{5}{16}$ "



Part No. 4687626

SW-127-C

SW-127-OFFSET

- With 25° angulation
- Requires less work room for ratcheting
- Quick ratcheting action with reverse levers at both ends
- Heat treated chrome forged body for increased durability
- Square: $\frac{1}{4}$ " x $\frac{3}{8}$ "
- Square: $\frac{3}{16}$ " x $\frac{5}{16}$ "



Part No. 4687628

SW-127-OFFSET

SW-124-C

- Requires less work room for ratcheting
- Quick ratcheting action with reverse levers at both ends
- Heat treated chrome forged body for increased durability
- $\frac{9}{16}$ " hex for dust cap on valves and for bolts on compressors
- $\frac{1}{2}$ " hex for screws
- $\frac{1}{4}$ " square for valves
- $\frac{3}{16}$ " square for refrigerant cylinders



SW-124-C

Part No. 4687627

Designation	Description	Part No.
RFA-124-C	Ratchet wrench. Hex openings $\frac{1}{2}$ " and $\frac{5}{16}$ " on one end and square $\frac{3}{16}$ " and $\frac{1}{4}$ " on the other end	9881467
RFA-127-C	Ratchet wrench. $\frac{1}{4}$ " by $\frac{3}{16}$ " at one end and $\frac{3}{8}$ " by $\frac{5}{16}$ " at the other end	9881466
RFA-127-OFFSET	Offset wrench	4506201



RFA-127-C



RFA-124-C



RFA-127-OFFSET

SW-127-C-BOX/10

- Counter display containing 10 pcs. per box.

Part No. 4687869



SW-127-C-BOX

SW-127-OFFSET-BOX/10

- Counter display containing 10 pcs. per box.

Part No. 4687868



SW-127-OFFSET-BOX

VALVE CORE TOOLS

$\frac{1}{4}$ " AND $\frac{5}{16}$ " SAE



32525

- Used for faster vacuum, charging and recovery
- Designed to remove and replace Schrader valve cores without losing refrigerant charge
- Increases evacuation and charging speeds by creating unrestricted access to the system
- 32525 and 32525- $\frac{5}{16}$ " have a blank off valve and a 360° movable vacuum gauge access port which allows for easy access in tight spaces
- $\frac{5}{16}$ " is similar to $\frac{1}{4}$ " valve core tool but for use with R410A systems and mini splits with larger service ports



A-32000

Valve Core Tools for $\frac{1}{4}$ " SAE

Designation	Description	Part No.
32525	Vacuum/Charging Valve with adjustable vacuum port	4687701
A-32000	Valve core Tool Contains 6 extra cores and 1 extracore remover and tap	9880890



32525- $\frac{5}{16}$ " SAE

Valve Core Tools for $\frac{5}{16}$ " SAE

Designation	Description	Part No.
32525-$\frac{5}{16}$" SAE	Vacuum/Charging Valve with adjustable vacuum port	4687740



Tools

Access Valves - 1/4" SAE and 5/16" SAE

Designation	Description	Part No.
A-38010	Access control valve 1/4" SAE x 1/4" SAE	4687957
A-38410	Access control valve 1/4" SAE x 5/16" SAE	4687960
A-38410-5/16"	Access control valve 5/16" SAE x 5/16" SAE	4687989
A-33010	Access control valve 1/4" SAE	4681636
A-33410	Access control valve R410A (5/16" SAE)	4681645
A-31004/10	Extended copper tube, diameter 1/4" Packaged 10 per	9883544
A-31006/10	With swaged tube suitable for 3/8" diameter Packaged 10 per	9884830
NFT5-4/10	Quick seal 1/4" SAE flare cap with gasket Packaged 10 per	9884244
NFT-118/10	Quick seal cap with built-in core remover 1/4" SAE Packaged 10 per	9884961



A-38010



A-38410



A-38410-5/16"



A-33010



A-31004



NFT5-4



NFT-118

Solenoid Valve Operating Magnet

- The quickest and easiest way to operate solenoid valves manually
- Converts electronically operated solenoid valves into hand operated valves in seconds
- Proven design that fits about 90% of solenoid valves
- Opening is 18 mm or 0.75 inch

Designation	Description	Part No.
SVOM-18	Solenoid valve operating magnet	4660507



SVOM-18

Acknowledged globally

General Tools

Designation	Description	Part No.
14142	Fin comb, 6 in 1 with sizes marked on the comb. Comes with additional spare head in bag	9881562
14144	Fin comb for cleaning and straightening fins quickly and easily. Adjustable tension	9881561
14225	Circular pocket mirror, telescopic 1 ½" diameter	9881560
21702	REFCO charging oil pump. Pumps one quart of oil in 20 strokes	9881559
21751	Change oil pump	9881557



14144



14225



21702



21751



Tools

Punch Type Swaging Tools

Designation	Description	Part No.
T21100	Complete Bar covers all sizes from 1/8" to 1/2" in one tool	9881608

Torque Wrench Kit

Designation	Description	Part No.
TW-8	The complete torque wrench kit in a handy case Torque: 10-80 ft/lbs Size of wrenches: 17, 19, 22, 24, 26, 27, 29 mm	4666034



INVERTER CHECK-KIT

The Inverter Check-Kit is an invaluable tool for the analysis of problems with Duct Free Mini Split Systems. The kit is designed to be used in both installation and maintenance of Duct Free Systems. The Inverter Check-Kit performs two basic functions. First it will tell you if the phase outputs in the inverter are operating correctly. Secondly, the data flow function tells you if there is data flowing in both directions between the indoor and outdoor sections. Since inverters are controlled by solid state boards that do multiple functions, the Inverter Check-Kit will tell you if there is a bad board and help you identify if the indoor, outdoor or both boards are not functioning correctly.

The inverter phase checker will indicate whether the Inverter board is faulty and by implication (if the inverter works then the compressor must be faulty) whether the compressor is faulty but it will not work if there are faults on both.

The kit comes complete with the electronic module with a set of leads for testing the serial communication links, as well as a selection of cables and connectors for the power output terminals of the inverter.

Designation	Description	Part No.
INVERTER-CHECK-KIT	3.19 x 2.87 x 1.10 inch	4678571



Acknowledged globally



16868

16868

Ergonomic Piezo igniting head brazing torch for propane and Map Pro gas cylinder.

- Pressure adjustment function
- Safety locking system
- Focused cyclone flame with high temperature
- Removable flame diffuser

Part No. 4684066

EZ-125/12

- Leak Lock
- Easy to reopen any connection.
- Perfect sealing of all joints, 12 pcs.

Part No. 4503635



EZ-125/12

TOOLBAG

Superior quality tool bag designed with the professional trades person in mind. It provides maximum convenience and durability suitable for even the most demanding work environments.

- Large pockets for quick and easy access
- 600 Denier polyester cordura
- Lightweight design
- Reinforced points of wear
- Strong handle

Part No. 4683078



TOOLBAG



Swiss Quality



Manfred P. Ulrich
CEO



Steve Secord
Vice President

Refrigeration Service Products and Components

The Swiss enterprise REFCO was founded in 1972 and has successfully developed from a small company to a world wide renown supplier of Refrigeration Service Products and Components. Right from the beginning our aim has been to manufacture products of the highest quality and this is still in force today. A key event in our progress has been to absorb our customers' specific requirements and, with our technology, provide a product range unequalled for durability and reliability.

Acknowledged globally





CERTIFICATE



This is to certify that

Refco Manufacturing Ltd.
Industriestraße 11
6285 Hiltz Kirch
Switzerland

has implemented and maintains a **Quality Management System**.

Scope:
Development, production and sale of refrigeration and air-conditioning service products and components

Through an audit, documented in a report, it was verified that the management system fulfills the requirements of the following standard:

ISO 9001 : 2015

Certificate registration no.	460813 QM15
Excerpt from certificate registration no.	001830 QM15
Valid from	2018-07-06
Valid until	2021-07-05
Date of certification	2018-07-06




DQS GmbH

Stefan Heine

Stefan Heine
Managing Director

Accredited Body: DQS GmbH, August-Schanz-Straße 21, 60433 Frankfurt am Main, Germany



CERTIFICATE



This is to certify that

Refco Manufacturing Ltd.
Industriestraße 11
6285 Hiltz Kirch
Switzerland

has implemented and maintains an **Environmental Management System**.

Scope:
Development, production and sale of refrigeration and air-conditioning service products and components

Through an audit, documented in a report, it was verified that the management system fulfills the requirements of the following standard:

ISO 14001 : 2015

Certificate registration no.	460813 UM15
Excerpt from certificate registration no.	001830 UM15
Valid from	2018-07-20
Valid until	2021-07-19
Date of certification	2018-07-20




DQS GmbH

Stefan Heine

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Managing Director

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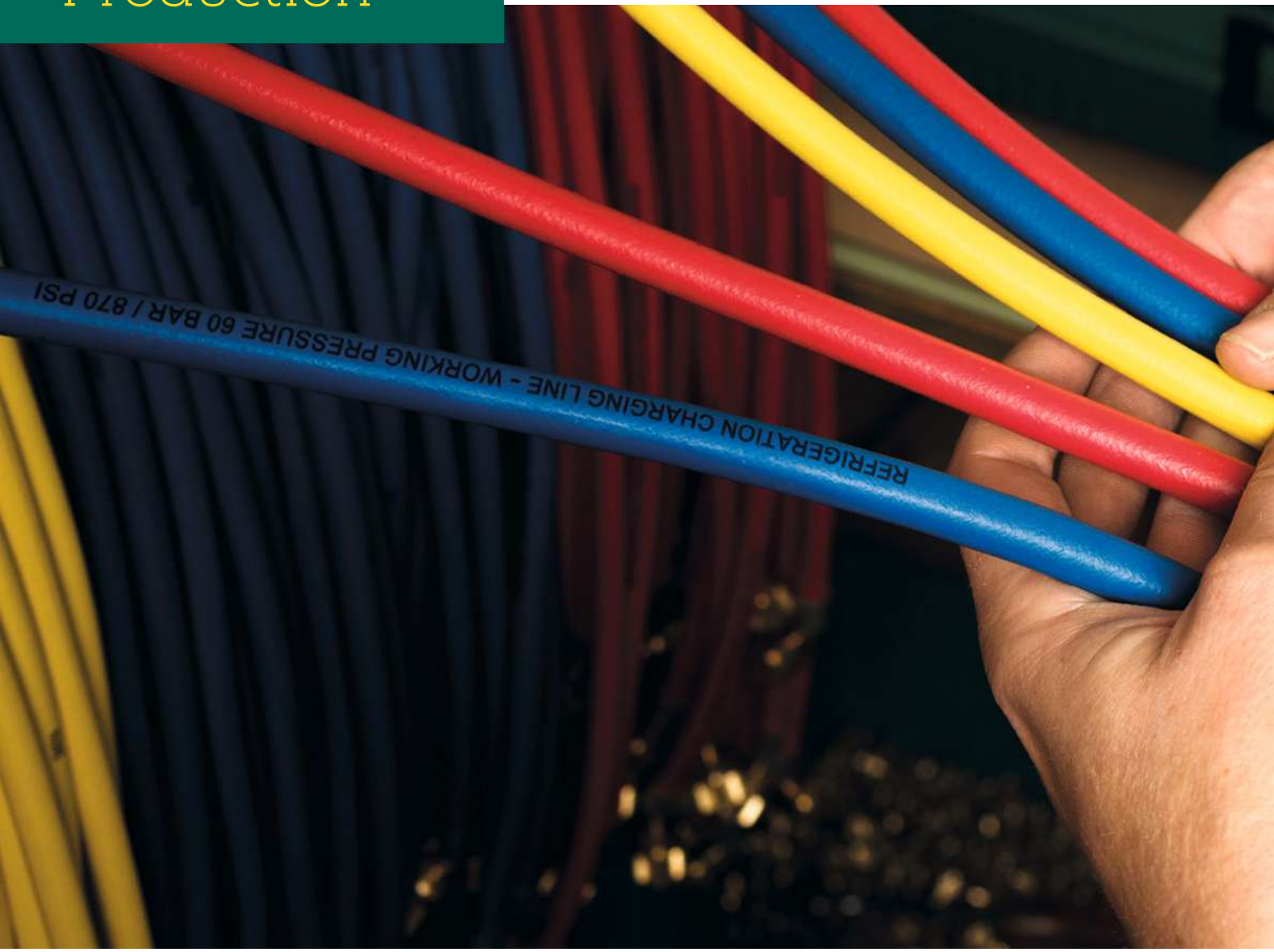
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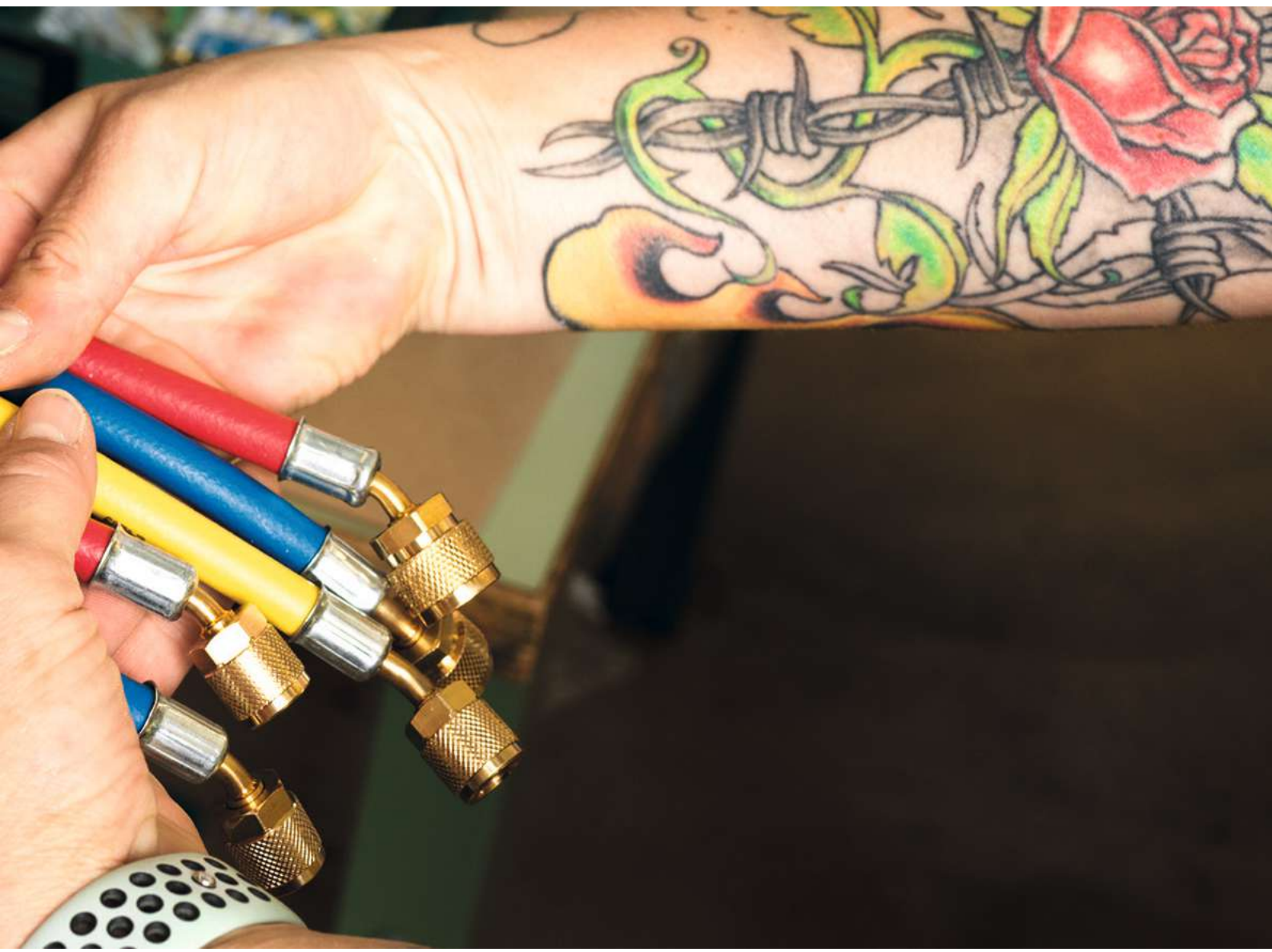
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Production



Acknowledged globally



Logistic



Acknowledged globally



Exhibitions



Acknowledged globally



Impressions



Acknowledged globally



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World Headquarters:
REFCO Manufacturing Ltd.

Industriestrasse 11
6285 Hitzkirch - Switzerland

Phone: 011 41 41 919 72 82

Fax: 011 41 41 919 72 83

info@refco.ch

www.refco.ch

North American Headquarters:
REFCO Manufacturing (US) Inc.

66 B Industry Avenue
Springfield MA 01104

Phone: 413 739 4761

Fax: 413 733 9267

sales@refcoswiss.com

www.refcoswiss.com

www.refco.com

24/7 customer service:

1 800 848 4232

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www.refcoswiss.com