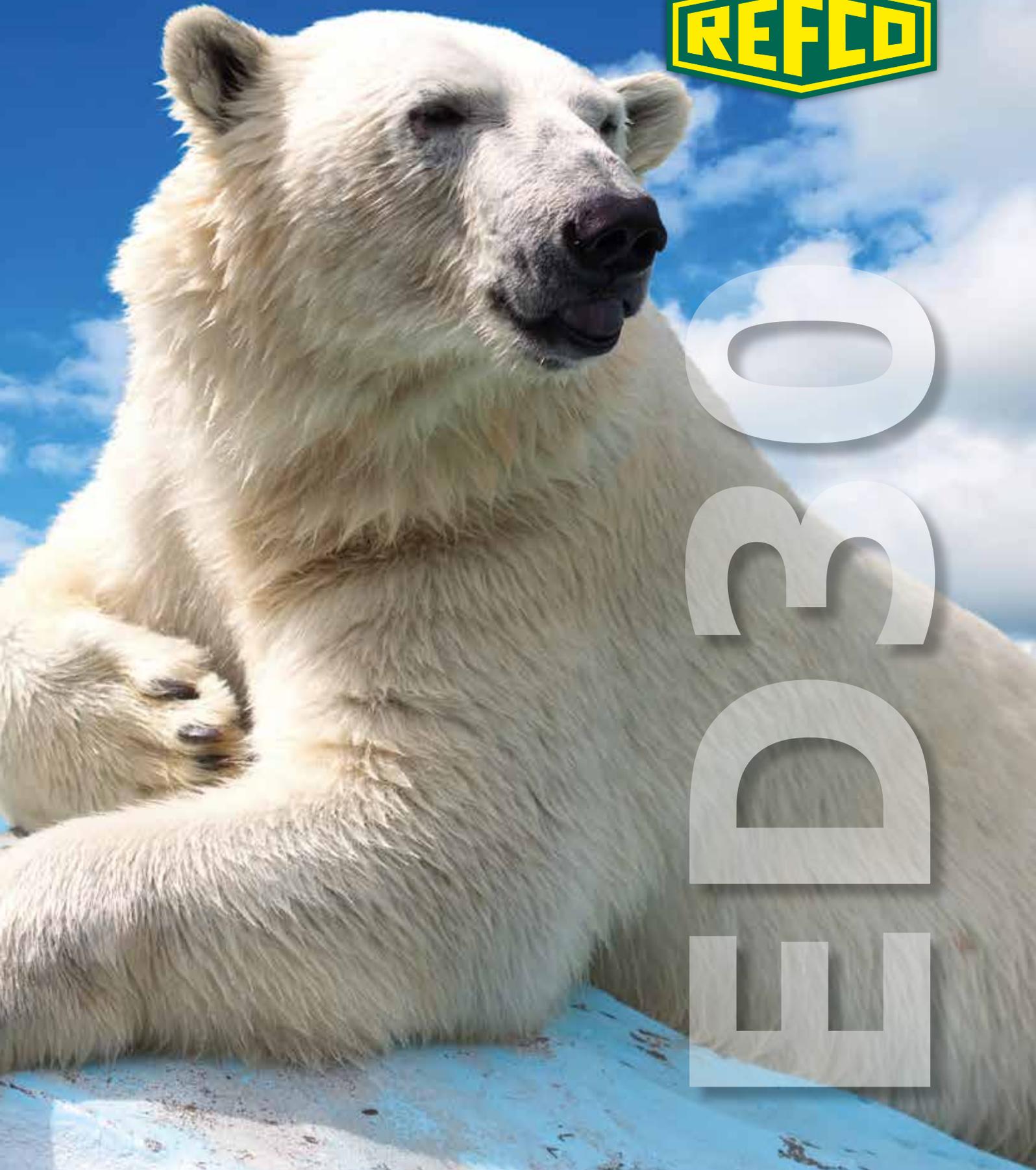


**HVAC/R
Service Products**



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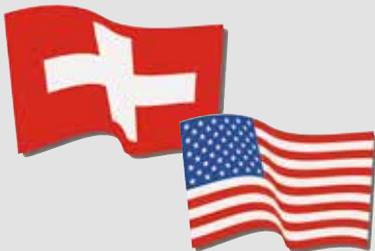
Swiss Quality



REFCO Manufacturing (US) Inc. is pleased to introduce our new full line catalog. REFCO, headquartered in Hitzkirch (Switzerland) has long been recognized as a world leader in the manufacturing of service equipment for the refrigeration and air conditioning industry. With this full line catalog, our manufacturing facility stocking warehouse in the USA and an excellent sales representative network, we will show North America what the rest of the world already knows, that REFCO Manufacturing (US) Inc. is the highest quality and best value refrigeration and air conditioning service tool manufacturer available today.

Manfred P. Ulrich
President / CEO

Steve Secord
Vice-President





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Production





Logistic





Trade Shows Worldwide



Germany, Chillventa



Italy, Mostra Convegno



UK, RAC



China, China Refrigeration



Mexico, AHR Expo



USA, ASHRAE Expo

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 ¼" and ⅜" SAE inlet connections allow for flexibility of connections
- Integrated blank off ball-valve to isolate pump from system
- Includes DV-45 vacuum pump oil (1pt. / 500 ml)

RL-2



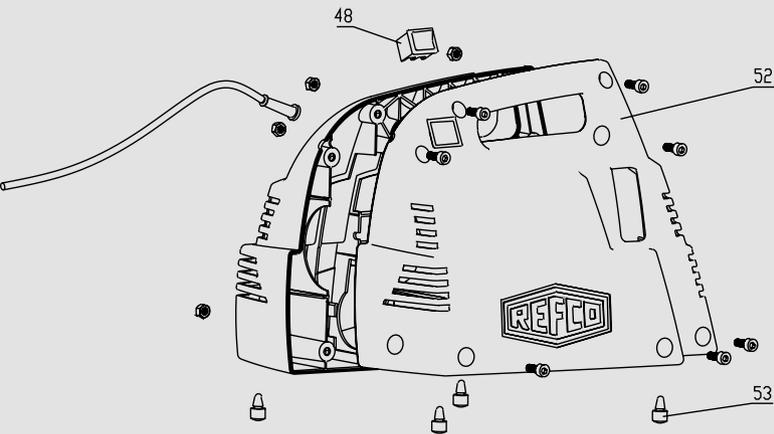
RL-8



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:	¼" SAE Flare	¼" and ⅜" SAE Flare with integrated ball valve
Motor:	⅙ horsepower, 2700 rpm	½ 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

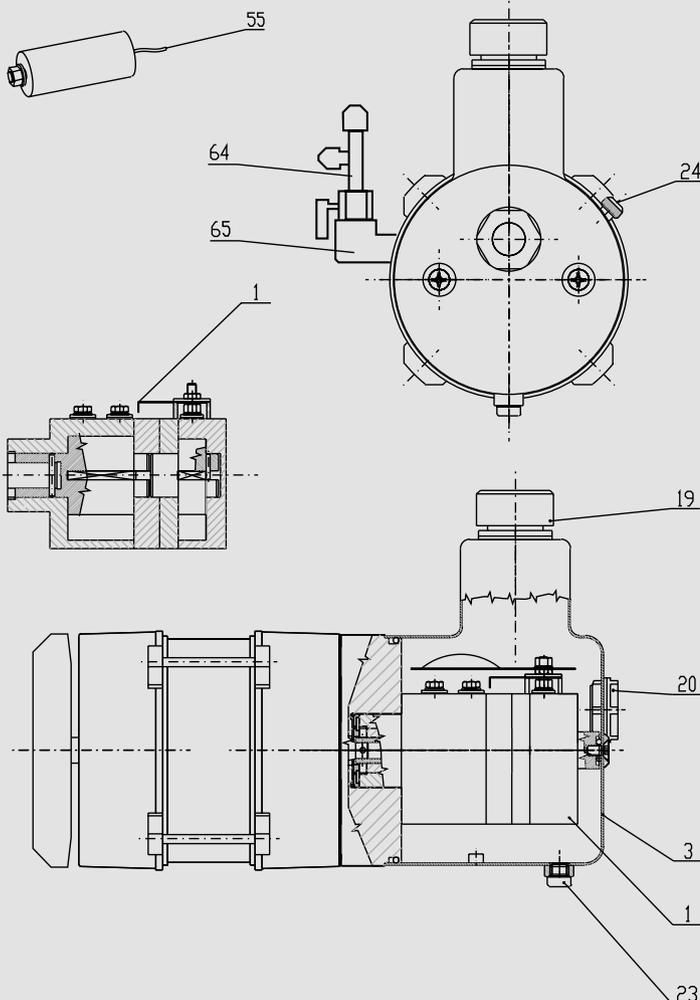
Spare Parts for RL-2, RL-4 and RL-8



Spare Parts for RL-2

Pos.	Designation	Description	Part No.
3	RL-2-3000	Oil basin complete with gasket	4661589
20	RL-2-3011	Oil sight glass with gasket + counter nut	4661597
19	RL-2/4-303	Oil mist filter with gasket	4495471
24	RL-2/4-3060	Gas ballast valve complete	4661423
53	RL-8-4071	Rubber pad set (4 pieces)	4507631
55	RL-2-406	Capacitor	4661040
48	RL-2/4/8-415	Switch	4496770
52	RL-2-4000	Housing complete	4661538
1	RL-2-2A	Vacuum stage complete	4661482
64	RL-2-64	Intake port w/cap	4668028

Spare Parts for RL-4



Pos.	Designation	Description	Part No.
3	RL-4-3000	Oil basin complete with gasket	4507674
20	RL-4-3011	Oil sight glass with gasket + counter nut	4507682
23	RL-4/8-310	Oil drain plug with gasket	4496761
19	RL-2/4-303	Oil mist filter with gasket	4495471
24	RL-2/4-3060	Gas ballast valve complete	4661423
53	RL-8-4071	Rubber pad set (4 pieces)	4507631
55	RL-4-406	Capacitor	4505051
48	RL-2/4/8-415	Switch	4496770
52	RL-4-4000	Housing complete	4661474
1	RL-4-2A	Vacuum stage complete	4661954
64	RL-4-64	Intake port w/caps	4668036
65	RL-4/8-65	Intake elbow	4668053

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
19	RL-8-303	Oil mist filter with gasket	4507445
24	RL-8-3060	Gas ballast valve complete	4507623
53	RL-8-4071	Rubber pad set (4 pieces)	4507631
55	RL-8-426	Capacitor set (2 pieces)	4508203
48	RL-2/4/8-415	Switch	4496770
52	RL-8-4000	Housing complete	4507640
1	RL-8-2A	Vacuum stage complete	4507658
64	RL-8-64	Intake port w/caps, handle, screw	4668045
65	RL-4/8-65	Intake elbow	4668053

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 1/4" and 3/8" 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

NEW: DUAL VOLTAGE

Technical Data	ECO-5	ECO-5-DV	ECO-9
Free air displacement:	5.0 cfm	5.0 cfm	9.0 cfm
Number of stages:	2	2	2
Microns:	15	15	15
Intake threads:	1/4" and 3/8" SAE Flare	1/4" and 3/8" SAE Flare	1/4" and 3/8" SAE Flare
Motor:	1/2 horsepower	1/2 horsepower	1 horsepower
Voltage:	115 Volt, 60 Hz	115/230 Volt, 60 Hz	115 Volt, 60 Hz
Power cord length:	78"	78"	78"
Oil capacity:	9.5 oz / 0.6 pt.	9.5 oz / 0.6 pt.	20 oz / 1.25 pt.
Dimensions:	14 x 5 x 10 inch	14 x 5 x 10 inch	16 x 6 x 11 inch
Weight:	24 lbs	28 lbs	37 lbs
Part No.	4667685	4682692	4669661



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 1/4" 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



DV-44/45/46

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. Oil-filled gauges allow for an even easier reading. 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: 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:

- Vapour 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



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. Oil-filled gauges allow for easier reading. 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.

**Two Piston
Recovery
Machine**

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:

- Vapour 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

Recovery

POWERMAX

Refrigerant Recovery Machine

The POWERMAX is a lightweight 22 lbs recovery system with the 1 horsepower oil-less Wizard compressor.

No other recovery system on the market is this light with a 1 horsepower compressor. The unit has a durable plastic case design which recovers all high pressure refrigerants including R12, R134a, R22, R401, R402, R404, R406, R407, R409, R410A, R411, R412, R500, R502, R507, R509 as well as many other blends.

Features

- 1 horsepower oil-less compressor
- Easy two-hose refrigerant recovery system
- Two connection systems provides automatic, straight through, liquid vapor operation
- Self-evacuation feature
- Recovery rates up to 5 lbs/minute liquid and ½ lbs/minute vapor
- Weighs only 22 lbs
- Durable plastic case, well balanced and portable

Additional Features

- Made in the USA
- High pressure safety switch
- Re-settable circuit breaker
- Over-sized condenser
- Large air cooled 7 inch fan
- Cylinder overfill protection
- Connection fittings point away from operator
- Easy to operate, oversized control knobs
- 2 year warranty
- UL certified to AHRI 740

Part No. 4663239



POWERMAX

Spare Parts POWERMAX

Recovery Ratings POWERMAX:

Refrigerant	Push/Pull Liquid (lbs/min)	Standard Liquid (lbs/min)	Standard Vapor (lbs/min)
R-12	10.25	3.75	.41
R-22	11.97	5.00	.53
R-502	10.70	4.20	.42
R134a	10.45	4.10	.41
R-410A	17.97	4.56	.48

Designation	Description	Part No.
ALF-032	Inlet filter	4670414
2277	Tune-up kit	4674079
400-15	Circuit breaker (12-Amp)	4671011
1997-1	Safety cable	4670406
1997-10	Jumper plug for safety cable (2 pieces)	4674087
2070-10	Power cord	4671526
3000-60	Drive belt	4670562
3000-72	Valve plate w/gaskets	4672441
3000-73	Gasket kit	4674096
AA-30	30# Recovery tank	4674681
AA-50	50# Recovery tank	4674699
CONTROL-KNOB	Control knob rebuild	4674478

OZ-4000

Refrigerant Recovery Machine

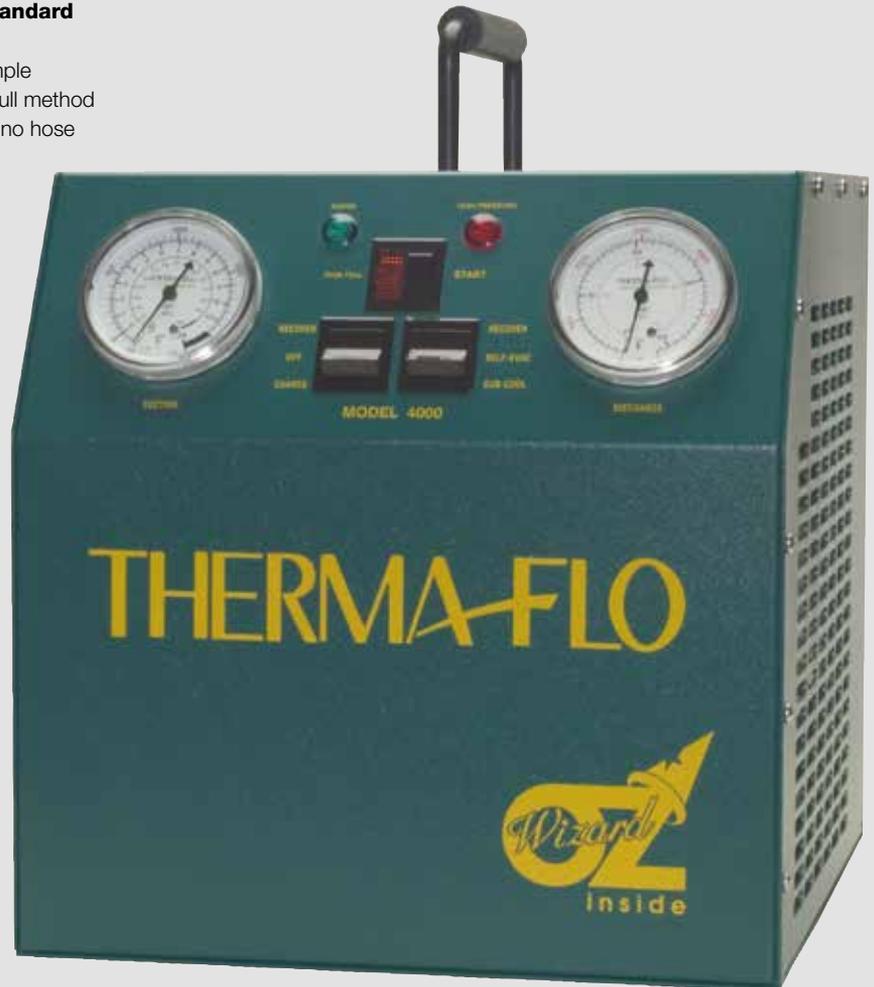
The machine that sets the HVAC/R Industry Standard

Due to the patented solenoid system design and a simple 4 hose hook up, the OZ-4000 can go from the push pull method (17 lbs/minute) to ½ lbs/minute in vapor recovery with no hose changes and without shutting off the unit.

Features

- 1 horsepower oil-less Wizard compressor inside
- Fully automatic
- Patented automatic subcool feature
- Lightweight 29 lbs
- Signal lights to indicate liquid to vapor recovery modes and high pressure shut-off
- Safety shut-off to prevent tank overflow
- Over-sized condenser
- Re-settable circuit breaker
- Self-evacuation feature
- Shipped with safety cable and 3 - 72" hoses
- Self-discriminates between liquid and vapor, routing the liquid around the compressor for longer life and maximum capacity
- 2 year warranty
- Over 150'000 units sold since 1992

Part No. 4663247



OZ-4000

Spare Parts OZ-4000

Recovery Ratings OZ-4000:

Refrigerant	Push/Pull Liquid (lbs/min)	Standard Liquid (lbs/min)	Standard Vapor (lbs/min)
R-12	10.00	3.24	.25
R-22	10.25	3.50	.40
R-502	10.50	4.09	.46
R134a	10.00	3.42	.25
R-410A	10.25	3.50	.35

Designation	Description	Part No.
ALF-032	Inlet filter	4670414
2277	Tune-up kit	4674079
400-15	Circuit breaker (12-Amp)	4671011
1997-1	Safety cable	4670406
1997-10	Jumper plug for safety cable (2 pieces)	4674087
2070-10	Power cord	4671526
3000-9-1	Ball valve	4671801
3000-60	Drive belt	4670562
3000-72	Valve plate w/gaskets	4672441
3000-73	Gasket kit	4674096
AA-30	30# Recovery tank	4674681
AA-50	50# Recovery tank	4674699

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.

**SWISS
movement**



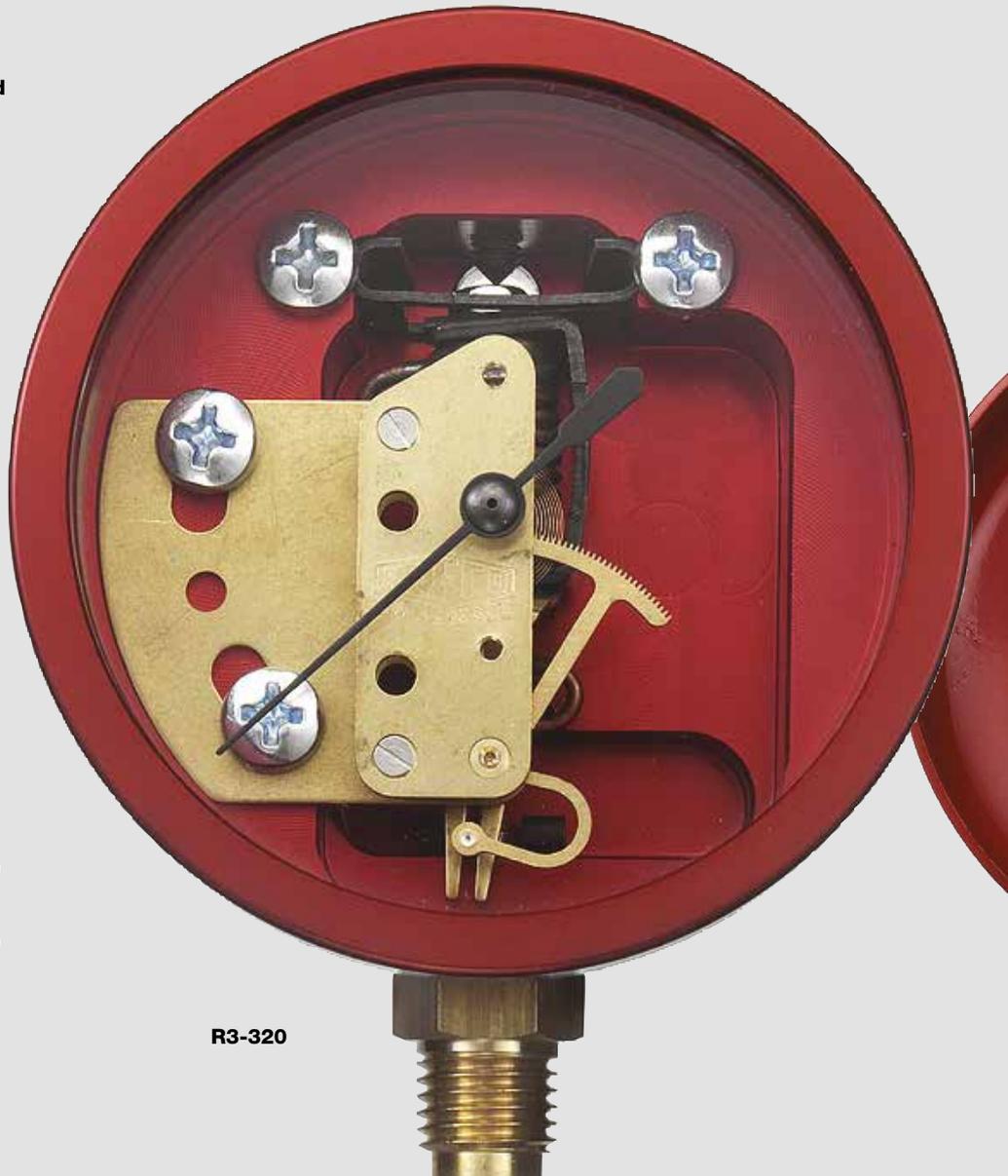
Standard Refrigerant Temperature Scales:

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



R3-320



Standard Features of REFCO KM2 and M2 Series Class 1.6

Bourdon Tube Gauges are:

- Class 1.6 accuracy
- 2 3/4" or 68 mm outside diameter
- Zero point adjustable
- Pulse free
- Color-coded for pressure and compound
- Standard 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 3/4" or 68 mm outside diameter
- Glycerine-filled
- Standard 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

Standard Features of REFCO M5 Series Class 1.0

Bourdon Tube Gauges are:

- Class 1 accuracy
- 3 1/4" or 80 mm outside diameter
- Easy to read
- Retard protection
- Zero point adjustable
- Pulse free
- All brass internal parts, no plastic

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 3/4" (68 mm) or 3 1/4" (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 1/8" 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 - 1/8" 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/R134a/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

SWISS
movement



M2-500

Pressure Gauges

Standard Bourdon Tube Pressure Gauges

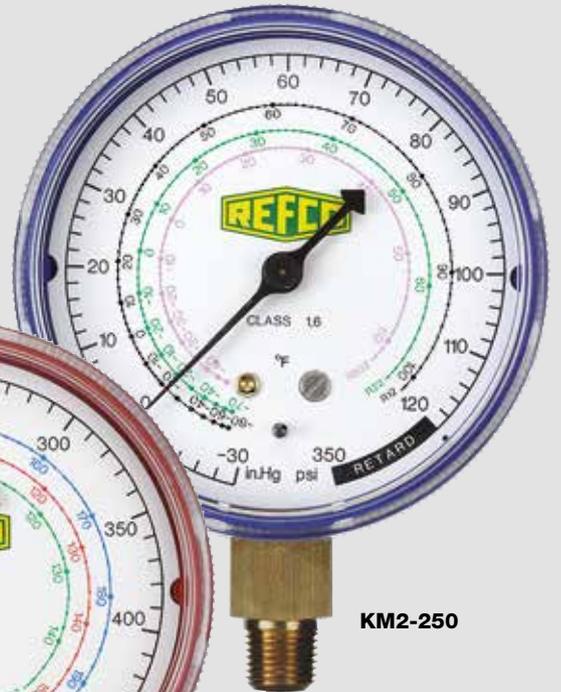
KM2 standard series

- 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



KM2-250

**SWISS
movement**



KM2-500



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/R134a/R22 scales, compound	7218188
M2-500-F-R410A-FG	R410A/R134a/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 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 ¼" (68 mm) outside diameter, easy to read
- Pulse free
- Standard ½" NPT connection

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



GR-320



GR-220

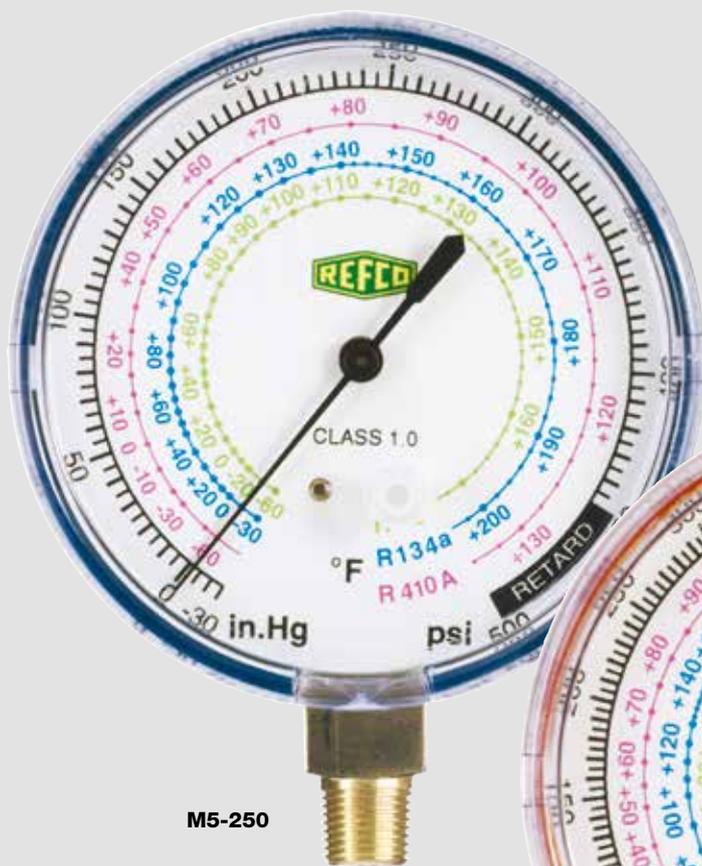
SWISS
movement

M5 Series

Large Bourdon Tube Gauges

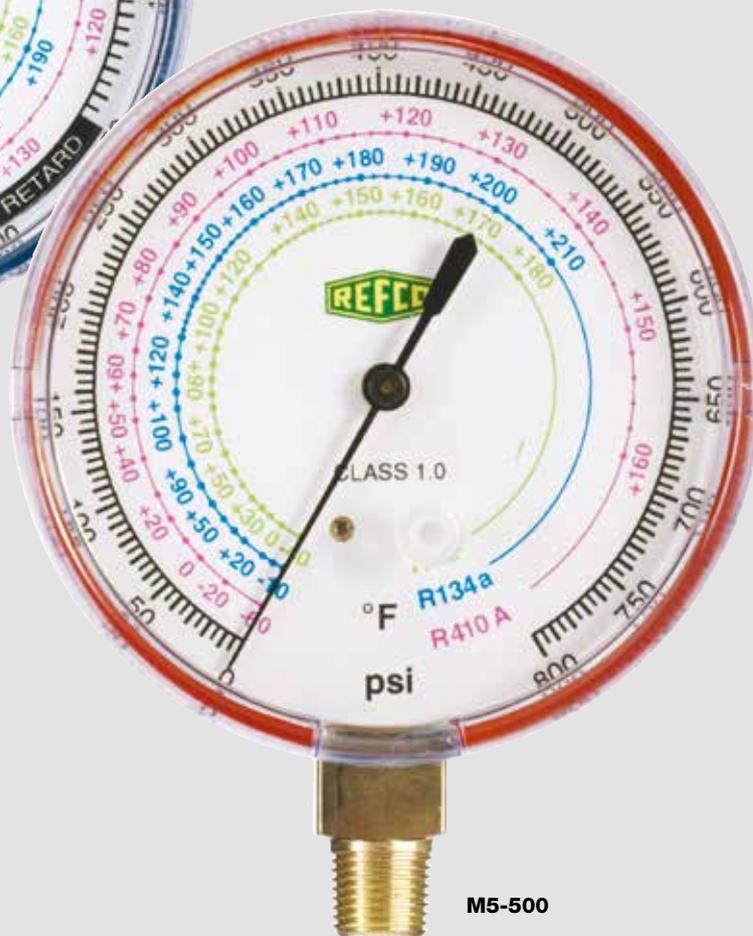
- 3 1/4" (80 mm) outside diameter, easy to read
- Bourdon tube, Class 1.0 accuracy
- Retard protection
- Zero point adjustable
- Metal housing
- Pulse free

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



M5-250

SWISS
movement



M5-500



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.



R3-320



R3 Series

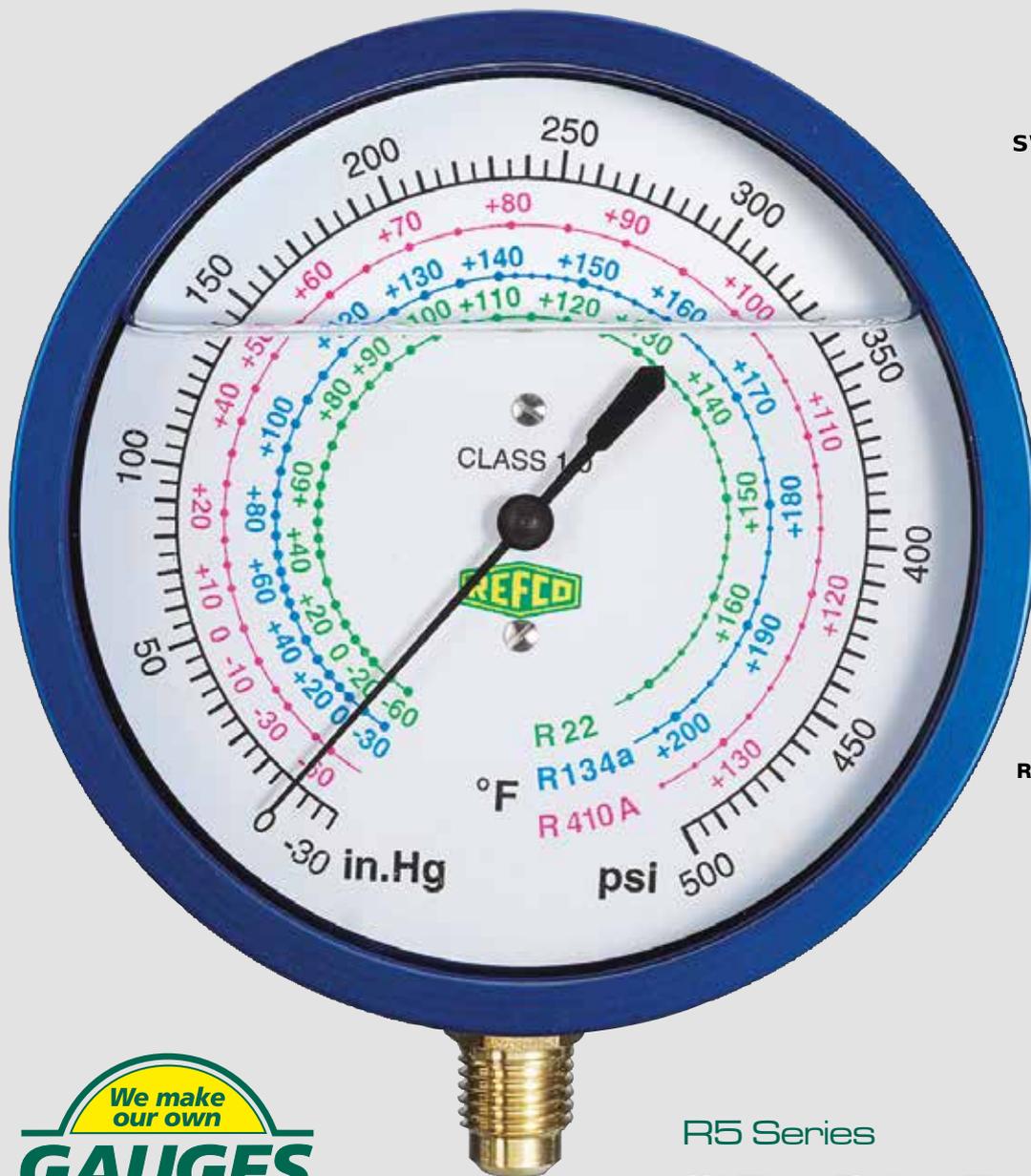
Oil Filled Bellow Type Gauges

- 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



Zero point adjustment



R5-220



R5 Series Oil Filled Bellow Type Gauges

- All of the R3 features except it has a larger outside diameter of 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/R134a/R22 scales, oil-filled, compound	4675300
R5-320-F-R410A-FG	R410A/R134a/R22 scales, oil-filled, pressure	4675318

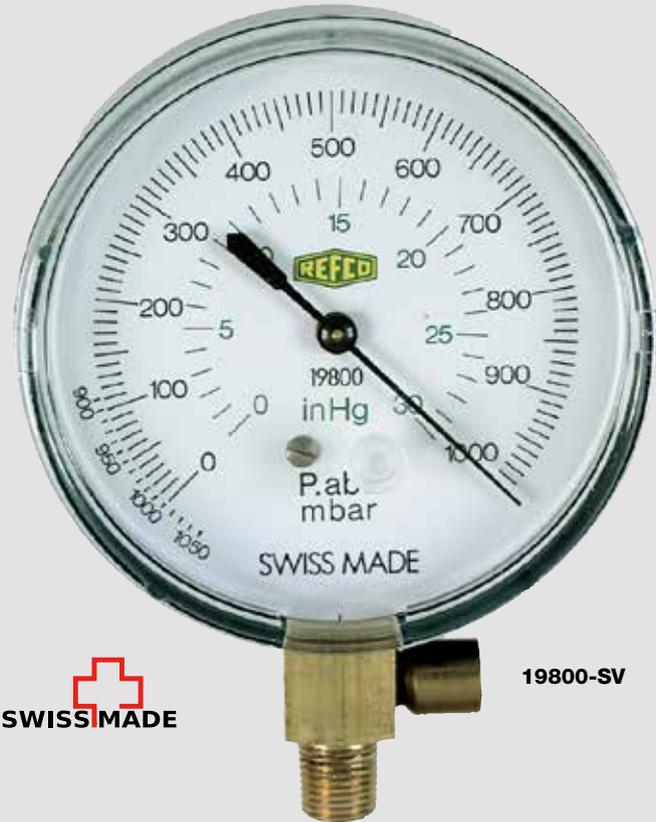
Vacuum Gauges

Mechanical Vacuum Gauges

19800-SV

- Full range Mechanical Vacuum gauge
- Complete with replaceable safety relief device if positive pressure is introduced into gauge
- 3 ¼" outside diameter for easy to read, more accurate reading than a compound gauge
- ½" 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

19801

- Full range Mechanical Vacuum gauge with pointer that indicates maximum vacuum reading attained during a given operation
- Readjustable after each use by a thumbscrew
- Complete with replaceable safety relief device if positive pressure is introduced into gauge
- 4" outside diameter for easy reading, more accurate reading than a compound gauge
- ½" G bottom connection
- Scale in 1000 - 0 mbar
- Zero point adjustable

Designation	Description	Part No.
19801	Mechanical Vacuum gauge with maximum pressure indicator pointer and replaceable safety relief device	9882474



19801



19803



19805-12

Spare Parts

for Mechanical Vacuum Gauges

Designation	Description	Part No.
19803/2	Adapter ½" G female x ¼" SAE, with integrated gasket, packaged 2 per	4687098
19805-12/2	Replaceable safety valve for 19800-SV and 19801, packaged 2 per	4687078

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: 0-18000 microns
- Display-Resolution: 0-20: 0.2 micron
21-200: 1 micron
201-500: 5 micron
- Units: microns, mbar, Pa, Torr, mTorr, psi, inHG
- Accuracy: +/-10% - 100 microns
+/-6% - 101-750 microns
- Connector Type: Standard male 1/4 inch SAE
- Operating Temp.: 32°F-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
- Hanging hook included

Part No 4686712

Designation	Description	Part No.
T6-4/5	1/4" SAE x 1/4" SAE x 1/4" SAE T-Fitting, 5 pieces	4687141



REF-VAC

Manifolds

DIGIMON - Digital Manifold

DIGIMON-SE

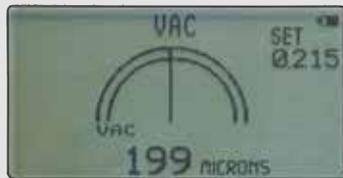
User friendly 2-way and 4-way digital manifold for the efficient and safe maintenance and operation of air conditioning and refrigeration systems. The latest generation is characterized by its compact design and sturdy construction. The modern display allows for, superheating, subcooling, vacuum levels and leakage test to be shown along with the pressure and temperature reading. Additionally, in analog mode, the digital figures are displayed visually. The DIGIMON meets the most important requirements for a digital manifold and is available in various versions. Available accessories include K-Type thermocouple as well as an external vacuum sensor.

- 48 refrigerant tables incl. R410A, R744(CO2), R1234yf
- Analog and digital display
- Accuracy: class 1.0
- Pressure resolution: 0.5 psi / 0.01 bar / 1kPa / 0.001 MPa
- Pressure gauge from -14 psi to 870 psi
- Direct calculation and display of superheat and subcool
- 2 precise K-Type temperature sensors
- Internal and external vacuum sensor
- Leak Test function
- Backlit LCD display with multiple protection
- User Friendly operation
- Fiber reinforced ergonomic knobs
- Automatic power-save mode
- Low battery indicator
- Continuous measuring rate

Part No. 4686749

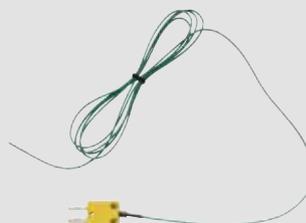


DIGIMON-VAC



Vacuum indication with DIGIMON-VAC

Designation	Description	Part No.
DIGIMON-CLAMP	K-Type thermocouple clamp	4681466
DIGIMON-SENSOR-K-TYPE	K-Type temperature sensor	4681394
DIGIMON-SE-CASE	Carrying case with storage compartment for the digital manifold	4686730
DIGIMON-VAC	External vacuum sensor	4686713



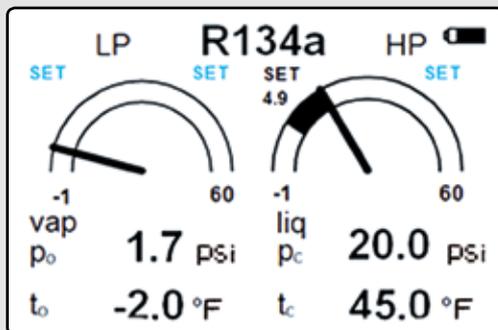
DIGIMON-SENSOR-K-TYPE



DIGIMON-CLAMP



DIGIMON-SE
patent pending



DIGIMON-SE Analog Display

2-WAY DIGITAL MANIFOLD

Designation	Description	Part No.
DIGIMON-SE-8	Digital 2-way manifold, with 2 K-type temperature sensors, packed in a sturdy plastic case	4686749
DIGIMON-SE-3	Digital 2-way manifold, 5' set hoses, packed in a sturdy plastic case	4686750
DIGIMON-SE-3-CLAMP	as above including, K-Type thermocouple clamp	4684589
DIGIMON-SE-3-CLAMP-VAC	as above including, K-Type thermocouple clamp + vacuum gauge	4684590

4-WAY DIGITAL MANIFOLD

Designation	Description	Part No.
DIGIMON4-3-CLAMP-VAC	Combination of DIGIMON4, DIGIMON-CLAMP and DIGIMON-VAC	4684591



DIGIMON4

DIGIMON-SE Accessory Chart

Designation	2-way manifold	4-way manifold	5 foot hose set	Case	K-Type thermocouple	K-Type clamp	Vacuum gauge	Part No.
DIGIMON-SE-8	X			X	X2			4686749
DIGIMON-SE-3	X		X	X	X2			4686750
DIGIMON-SE-3-CLAMP	X		X	X	X2	X2		4684589
DIGIMON-SE-3-CLAMP-VAC	X		X	X	X2	X2	X	4684590
Digimon4-3-CLAMP-VAC		X	X	X	X2	X2	X	4684591

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/R134a/R22



APEX-9-F-R410A-FG



APEX Manifolds

R410A Manifold

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

- Same features but with all metal housing gauges (M2)
- R410A manifold with refrigerant scales R22/R134a/R410A



APEX-9



APEX-9



APEX-9

Designation	Hoses	Packaging	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

Designation	Hoses	Packaging	Part No.
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

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	Packaging	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	Packaging	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/R134a/R22

Designation	Hoses	Packaging	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



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



BM4-3

M2-GS



Designation	Hoses	Packaging	Part No.
BM4-3-F-R410A-FG	none	plastic case	4675326
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

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



GM2-8



Designation	Hoses	Packaging	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

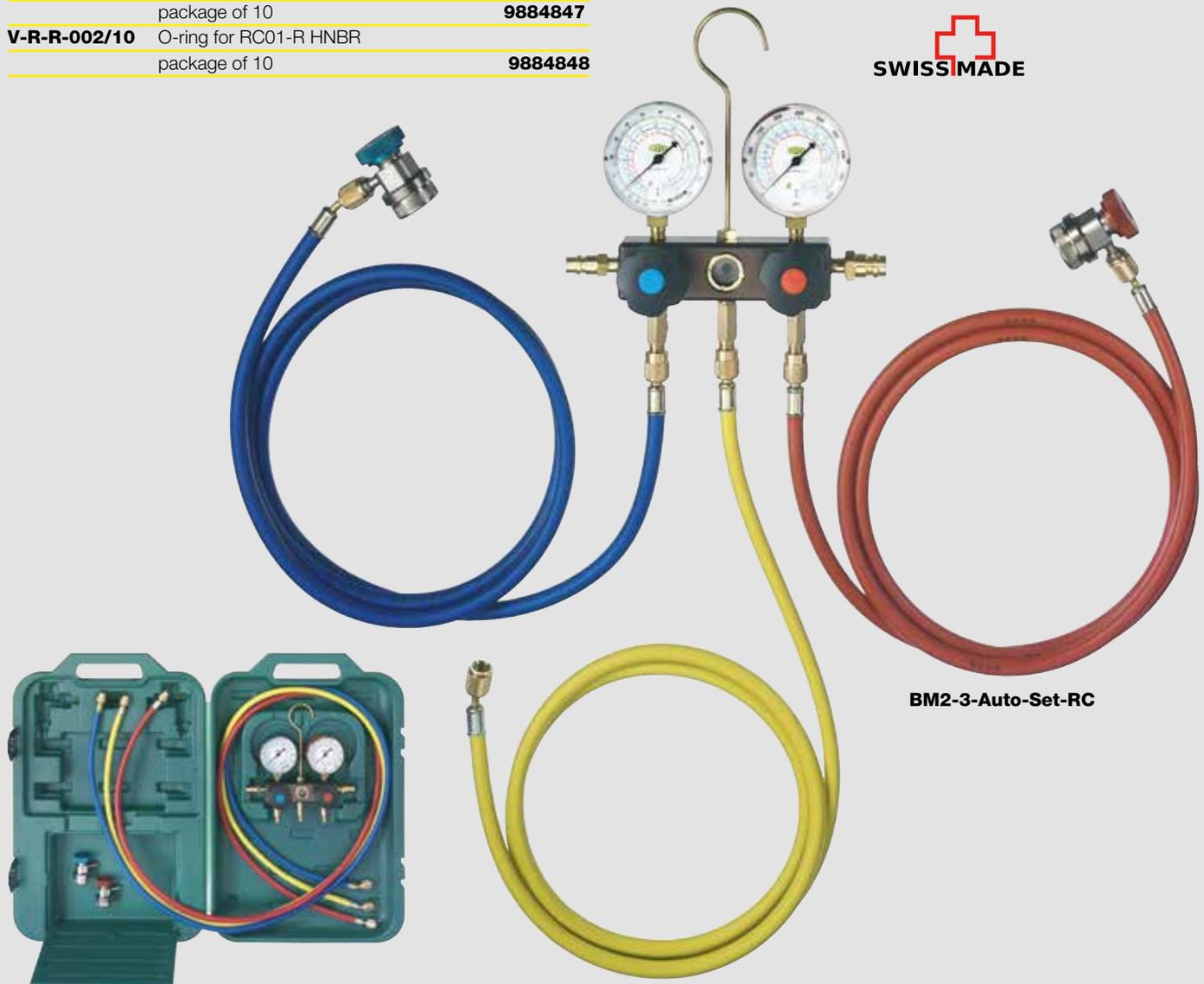
Automotive Manifold Set

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

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

- Replacement Auto Set Service Couplers

Designation	Description	Part No.
RC01-B	Blue automotive service-valve, ¼" SAE Auto Connection	9884949
RC01-R	Red automotive service-valve, ¼" SAE Auto Connection	9884948
V-R-B-001/10	O-ring for RC01-B HNBR package of 10	9884847
V-R-R-002/10	O-ring for RC01-R HNBR package of 10	9884848

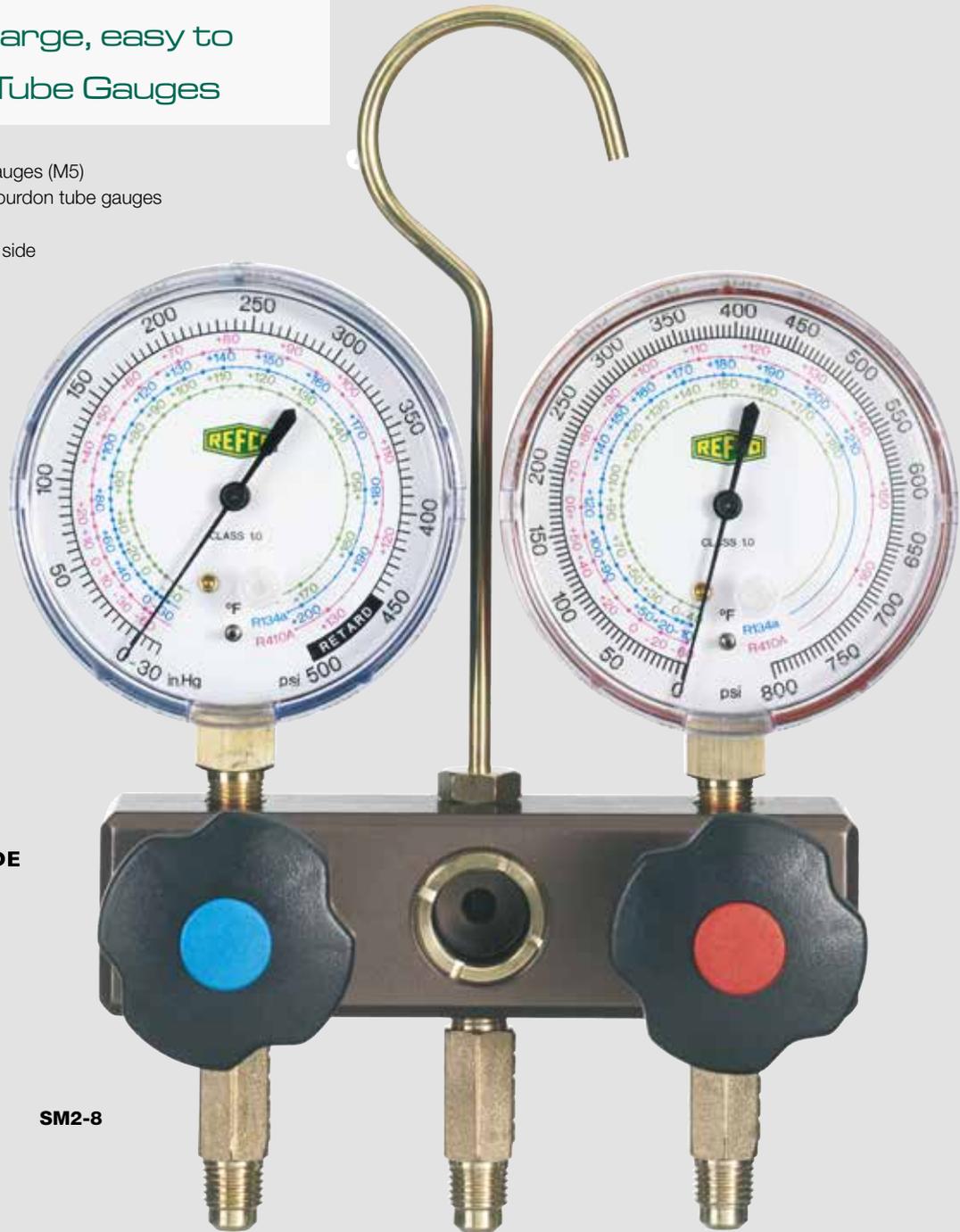
BM2-3-Auto-Set-RC

BM2-3-Auto-Set

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



SM2-8



Designation	Hoses	Packaging	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



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 1/2 times over-pressurization
- Zero point adjustable
- Easy to read 2 3/4" 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	Packaging	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 w/ball valve	plastic case	4663727

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 1/2 times over-pressurization
- Zero point adjustable
- Extra large, easy to read 3 1/4" 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 3/8" SAE yellow vacuum line 60" long with a working pressure of 465 psi and burst pressure of 2250 psi



M4-8-DELUXE



Designation	Hoses	Packaging	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

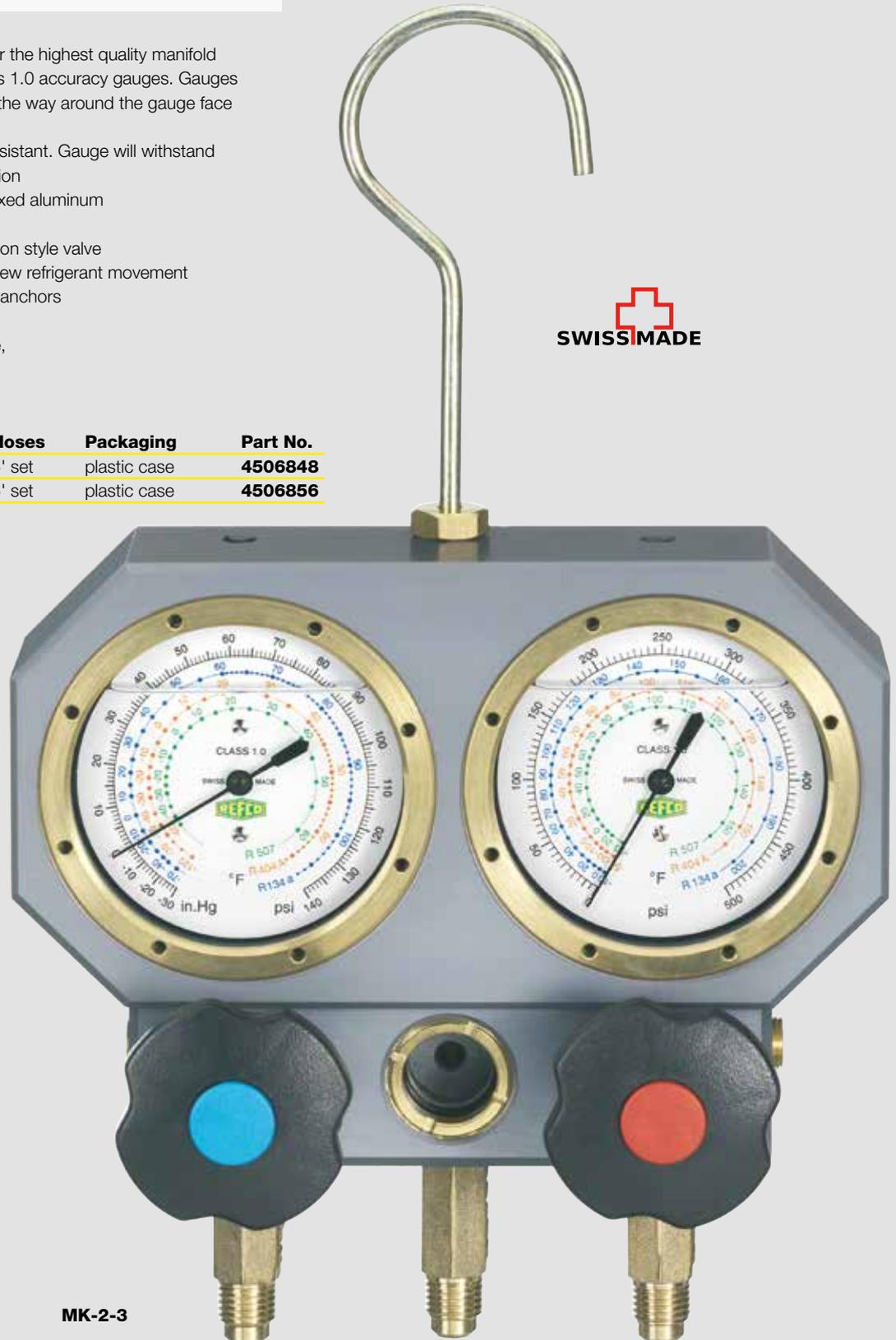


SUPERDELUXE Two-Way Manifold

- For the engineer looking for the highest quality manifold
- Oil-filled, bellow type, Class 1.0 accuracy gauges. Gauges are accurate within 1% all the way around the gauge face
- Pulse/vibration free
- Extremely over-pressure resistant. Gauge will withstand 2 ½ times over-pressurization
- Made from high quality eloxed aluminum
- Zero point adjustable
- Two-piece, O-ring seal piston style valve
- Extra large sight glass to view refrigerant movement
- Swivel hook and 45° hose anchors
- Color-coded handwheels
- All hoses are high pressure, 870 psi working pressure, 3600 psi burst pressure



Designation	Hoses	Packaging	Part No.
MK-2-3-F-R12	5' set	plastic case	4506848
MK-2-3-F-R134a	5' set	plastic case	4506856



MK-2-3

Manifolds

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	Packaging	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

REF-CLASS-GAUGE

The digital pressure test gauge takes the concept of an analog gauge, and brings it to a new level, as only digital calibrators can do. The REF-CLASS-GAUGE combines the accuracy of digital with the simplicity of an analog gauge. It achieves high level performance, ease-of-use and features unmatched in the pressure measurement world.

The versatility of this high-end product is to your benefit. The REF-CLASS-GAUGE allows you to test the pressure of gauges on your own and helps to save costs. For instance the digital manifold "DIGIMON" can easily be calibrated in-house.

The REF-CLASS-GAUGE offers a comfortable and compact solution to perform pressure calibration on-site. The setup is fast and straightforward, through a menu-driven display with minimal test and intuitive functions. A carrying case protects this precision device perfectly.

- Simple generation of test pressure on-site, in lab or in the shop floor
- For testing, setting and calibrating of any pressure gauge
- Pneumatic pressure generation of -950 mbar 500 psi
- Ergonomic handling
- Precise alignment through fine-control valve
- Accuracy: 0.05% FS (incl. calibration certificate) for pressure- and temperature measurement
- Rugged stainless steel case meets NEMA 4/IP65
- Data logger function
- Data interpretation software available on demand

Part No. 4682293



REF-CLASS-GAUGE



The REF-CLASS-GAUGE is used to verify the correct calibration of your manifold gauges or any gauges pressure reading. Make sure you are meeting the exact standards of the equipment your servicing!

Manifolds

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
M4-6-09-Y	Yellow handwheel	4491000
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



M4-6-10

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



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



CL-36-Y

Individual Charging Hoses

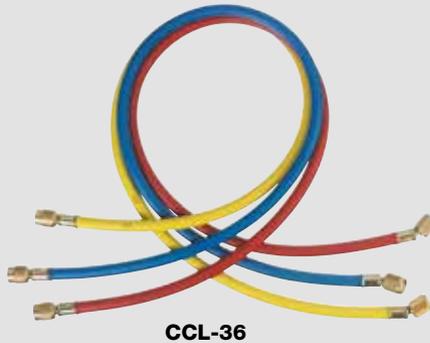
Premium REFCO Charging Hoses with 1/4" SAE Fittings

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

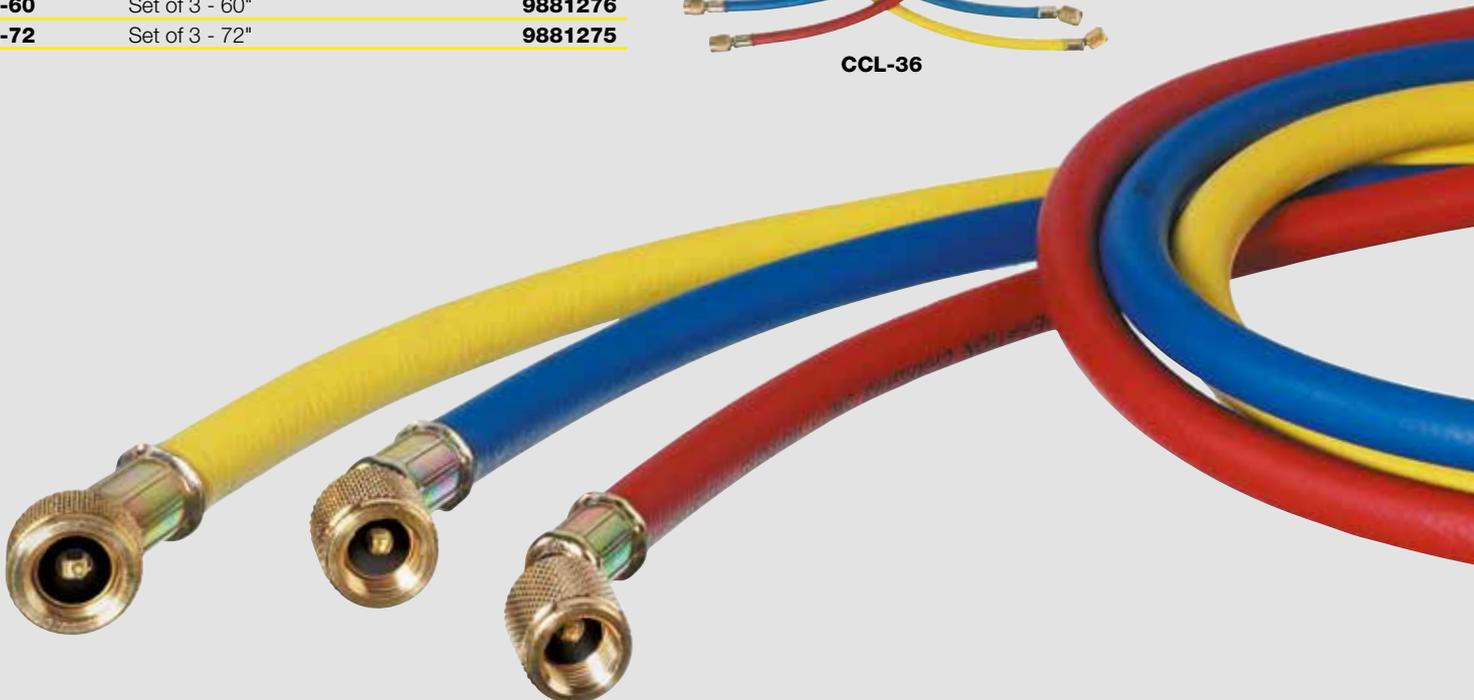
Sets of 3

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



CCL-36





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



CCL-36

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-Y-J2196	60" Yellow hose	9884722
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



CL-36-R-J2196



QC-S410A

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



P-509



P-509-T



P-513

Spare Parts for REFCO 1/4" SAE Charging Hoses

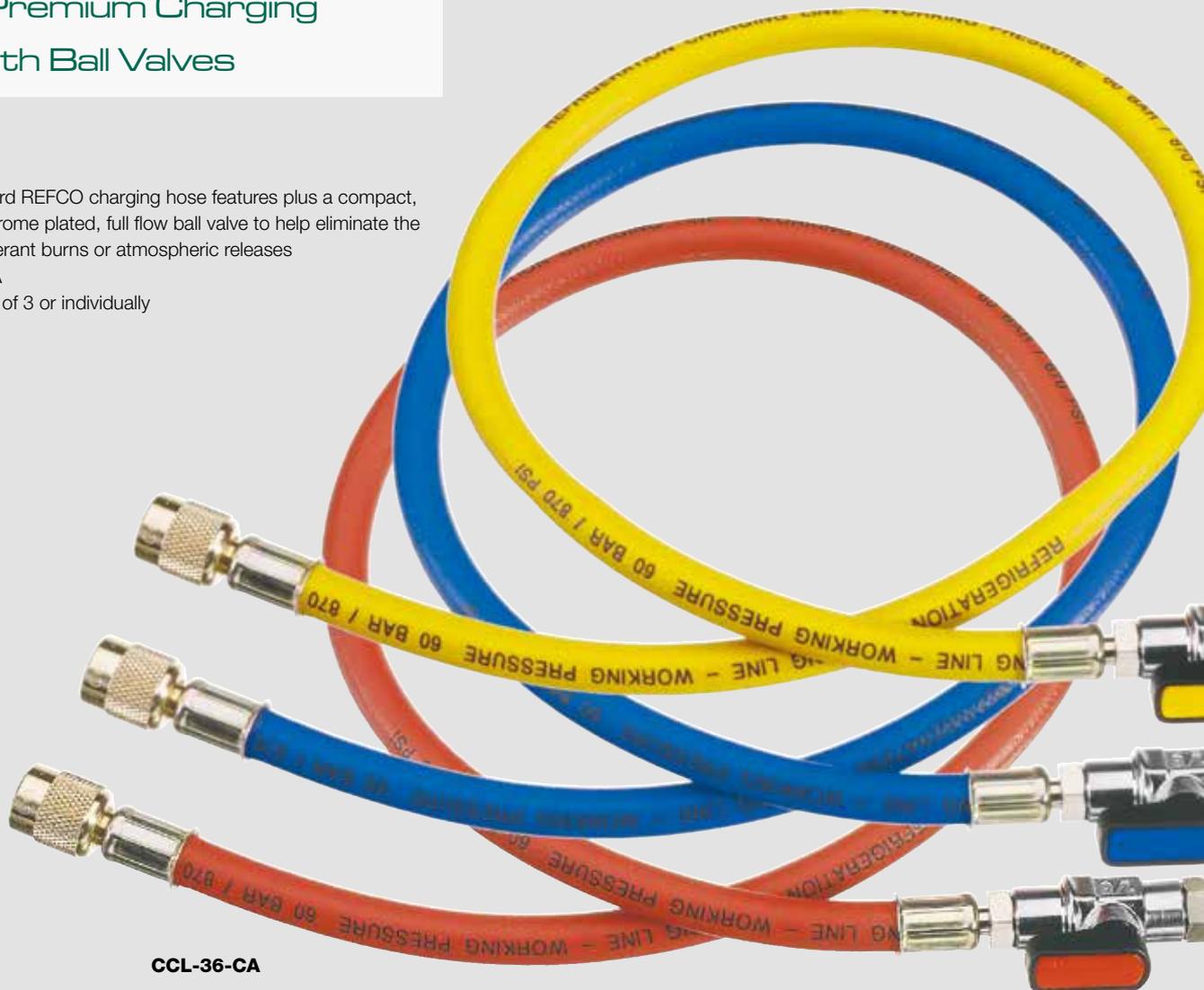
Designation	Description	Part No.
P-509/10	Ten neoprene gaskets for 1/4" SAE hoses	9880872
P-509-T/10	Ten Teflon gaskets for 1/4" SAE hoses	9880871
P-513/10	Ten core depressors for Schrader valves	9880869

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



CCL-36-CA



CA-CCL-36

Sets of 3

Premium REFCO charging hose with ball valve and flexible length of hose between ball valve and fitting. 1/4" 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



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



REFCO Ball Valves

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



CA-1/4"SAE-Y

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° bended
- 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

CPV-36-B

Sets of 3

Magic Seal charging hose

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





REFCO 3/8" SAE Charging Hoses

Features of the 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	60" 3/8" SAE Yellow hose	9881313



HCL6-60-Y

Spare Parts for REFCO 3/8" SAE Charging Hoses



A-40513

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

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



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



REF-LOCATOR

Spare Parts for REF-LOCATOR

Designation	Description	Part No.
LOCATOR-FILTER/5	spare filter (set of 5 pieces)	4686821
REF-LOCATOR-CASE	plastic case	4686707
REF-LOCATOR-TV-01	test vial	4686705
LOCATOR-LED-UV/6	Spare LED UV (set of 6 pieces)	4687034
LOCATOR-LED-WHITE/6	Spare LED white (set of 6 pieces)	4686828

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.



TRACE-LOCATOR

Technical Data:

Sensitivity:	less than 5ppm (N ₂ /H ₂ 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

Spare Parts for TRACE-LOCATOR

Designation	Description	Part No.
LOCATOR-FILTER/5	spare filter (set of 5 pieces)	4686821
TRACE-LOCATOR-CASE	plastic case	4686708
TRACE-LOCATOR-TV-01	test vial	4686703
LOCATOR-LED-UV/6	Spare LED UV (set of 6 pieces)	4687034
LOCATOR-LED-WHITE/6	Spare LED white (set of 6 pieces)	4686828

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



STARTEK-C

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**



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 Scale

Charging Scale

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:	220 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-KIT

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

Part No. 4686742

OCTA-WIRELESS-CONTROL-BOX

Control Box for OCTA-WIRELESS

Part No. 4686752



REF-METER-OCTA-PLUS



OCTA-WIRELESS



OCTA-WIRELESS-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:	¼" 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

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:	220 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-KIT

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

Part No. 4681989

Gas Pressure Test Kit

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

Thermometers



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 two red laser points.

This infrared thermometer is delivered in a durable, protective case.

Technical Data:

Temperature range:	-76 °F-1000 °F
Operating temperature:	32 °F-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

Digital Pocket Test Thermometer

This thermometer comes with an easy to read LCD digital readout, is battery operated, switchable from Fahrenheit to Celsius and comes with a protective sheath with clip.

- Range -40 °F to 300 °F
- Accuracy ±2°F
- Resolution 0.1 °F

Designation	Description	Part No.
DT-150	Pocket Test Thermometer	9884365



DT-150

K-type thermocouple clamp

- Temperature range -40 °F to +257 °F
- Jaw range ¼" - 1 ½"
- Resolution 1 °F

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



DIGIMON-CLAMP

Video Scope

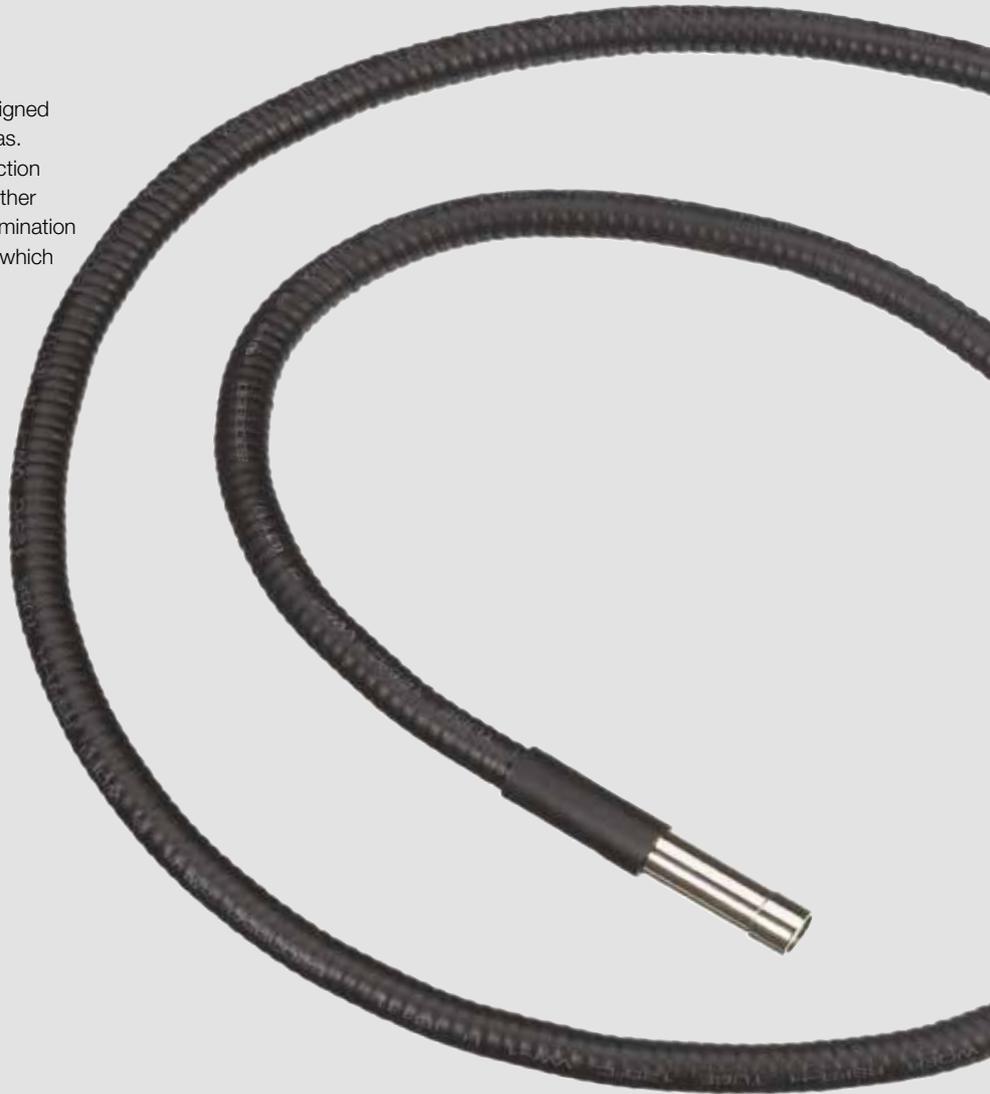
REF-SCOPE

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.

Part No. 4679705



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



REF-SCOPE

REF-SCOPE-MIRROR



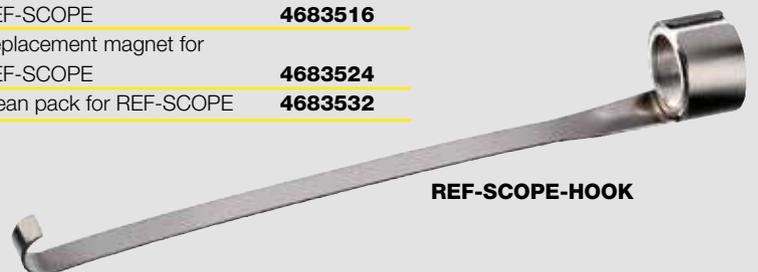
REF-SCOPE-MAGNET

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

Tools

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
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RS-67



RS-42



RS-35



RS-25



RS-16

Designation	Description	Part No.
14338	REFCO roller for tubing construction. Useful for brazed or sweat type connections	9881622



14338

Pinch Off Tools

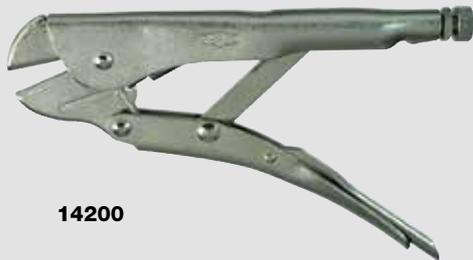


14285

Designation	Description	Part No.
14285	Up to 3/8" diameter suction tubes	9881530
RFA-105-FF	Pinch off tools for 1/4", 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



14200



14215



14210

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



RFA-209-STYLO

RFA-209-STYLO-HD



BR-4IN1

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

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



RFA-209



RFA-209-01/3

Tools

45 Degree Flaring Tools



525-F

Designation	Description	Part No.
525-F	Flaring and burnishing in one tool. Sizes from 3/16" to 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: 3/16", 1/4", 5/16", 3/8", 1/2", 5/8", 3/4". Supplied in a sturdy plastic case	4506171
RF-275-FS	Flaring and swaging tool for tubes with an outside-diameter of: 3/16", 1/4", 5/16", 3/8", 1/2", 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: 1/8", 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 5/8", 3/4". Supplied in a sturdy plastic case	4506198



RF-888-Z



RF-275-FS



RF-175-FS



BS-6

Tube Bending Springs

Designation	Description (Outside diameter of tube)	Part No.
BS-4	1/4"	9881648
BS-5	5/16"	9881642
BS-6	3/8"	9881641
BS-7	7/16"	9881640
BS-8	1/2"	9881639
BS-10	5/8"	9881638
BS-12	3/4"	9881637



Tube Benders

Designation	Description	Part No.
RFA-364-FH-08	1/2"	9881667
RFA-364-FH-10	5/8"	9881666
RFA-364-FH-12	3/4"	9881665
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



RFA-364-FH



TELL-7-AD



TELL-7

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



TELL-7

Tools

Expander Tool Set

HY-EX-6

New Hydraulic Expander tool kit with 6 expander heads to cover all size tubes of 3/8", 1/2", 5/8", 3/4", 7/8", 1 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-3/8"	3/8"	4687367
HY-EX-1/2"	1/2"	4687366
HY-EX-5/8"	5/8"	4687365
HY-EX-3/4"	3/4"	4687368
HY-EX-7/8"	7/8"	4687369
HY-EX-1 1/8"	1 1/8"	4687370



HY-EX-6

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

Spare heads		Part No.
Designation		
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



14297-RF

Tools

Punch Type Swaging Tools

Designation	Description	Part No.
	(Tube inside diameter)	
T21002	1/8"	9881620
T21003	3/16"	9881619
T21004	1/4"	9881618
T21005	5/16"	9881617
T21006	3/8"	9881616
T21007	7/16"	9881615
T21008	1/2"	9881614
T21010	5/8"	9881613
T21012	3/4"	9881612
T21014	7/8"	9881611
T21018	1 1/8"	9881610
T21000	Complete set of seven tools from 1/8" to 1/2"	9881609
T21100	Complete Bar covers all sizes from 1/8" to 1/2" in one tool	9881608



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



General Tools



RFA-124-C



RFA-127-C



RFA-127-OFFSET



KKS-38

KKS-38

Designation	Description	Part No.
RFA-124-C	Ratchet wrench. Hex openings 1/2" and 5/16" on one end and square 3/16" and 1/4" on the other end	9881467
RFA-127-C	Ratchet wrench. 1/4" by 3/16" at one end and 3/8" by 5/16" at the other end	9881466
RFA-127-OFFSET	Offset wrench	4506201
KKS-38	Ratchet wrench with extendable reversible L-shape handle, ideal if space is tight, 3/8" square. Blister packaging.	4667413



14142



14144



14225

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 1/2" diameter	9881560
21702	REFCO charging oil pump. Pumps one quart of oil in 20 strokes	9881559
21751	Change oil pump	9881557



21702



21751

Tools

Access Valve Tools for 1/4" SAE

Designation	Description	Part No.
32515	Charging and evacuation valve key for fluid filling or withdrawal through Schrader valves. Increases speed of recovery and charging	9880894
32520	Valve core replacing tool	9880893
32520-555	O-ring set complete	9880892
A-32000	Valve core tool. Contains 6 extra cores and one extra core remover and tap	9880890

Access Valve Tools for 5/16" SAE

Designation	Description	Part No.
32515-1/2" -20UNF (5/16" SAE)	Charging and evacuation valve key for fluid filling by Schrader valves. Saves about 50% of usual service time	4660915
32520-1/2" -20UNF (5/16" SAE)	Valve core replacing tool	4660923
32520-1/2" -20UNF (5/16" SAE)-555	o-ring set complete	4661245
A-33410	Access control valve R410A	4681645

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

Access Valves - 1/4" SAE

Designation	Description	Part No.
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
A-33010	Access control valve	4681636
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



32515



32520



A-32000



SVOM-18



A-31004



NFT5-4



NFT-118



A-33010

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



INVERTER-CHECK-KIT



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

16868

Part No. 4684066



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

Part No. Index

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4490976	M4-6-09-B	44	4506643	BM4-3-F-R22	35
4490984	M4-6-09-N	44	4506759	M2-3-DELUXE-F-R134a-CCL-60	39
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4492944	CA-CL-60-B	49	4507071	GM2-8-F-R134a	36
4492952	CA-CL-60-R	49	4507100	GM2-6-F-R12-CCL-60	36
4492961	CA-CL-60-Y	49	4507118	GM2-6-F-R134a-CCL-60	36
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4492987	CA-CL-72-R	49	4507445	RL-8-303	13
4492995	CA-CL-72-Y	49	4507577	ES-02	54
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4505433	BM2-3-F-R410A-CCL-60	34	4661474	RL-4-4000	13
4505477	M4-3-DELUXE-F-R12-CCL-60	40	4661482	RL-2-2A	13
4505710	BM2-6-F-R410A-CCL-60	34	4661538	RL-2-4000	13
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			4669483	TELL-7-BA-3/4"	65
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4675296	M5-500-F-R410A-FG	25	4681989	REF-METER-OCTA-KIT	57	4687078	19805-12/2	28
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4675326	BM4-3-F-R410A-FG	35	4682056	CA-CL-9-B-M	49	4687093	M4-6-04-R/4	45
4675335	BM4-3-F-R410A-FG-CCL-60	35	4682293	REF-CLASS-GAUGE	43	4687094	M4-7-SET-B-N-R-Y	44
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