



*Model shown is Single Phase, fully loaded with upgraded purification tower

High Pressure Breathing Air Compressors

Model # Max-Air 90 9.0 cfm

Available in the following:

Gas, Diesel, Single and 3 Phase

Owner's Operating Manual & Parts List

MAX-AIR • 2807 Peddler Lane • Kerrville, Texas 78028 • USA • 830-257-5006 • FAX 830-257-3720

www.max-air.com

sales@max-air.com

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This owner's manual uses signal words recommended by the American National Standards Institute (see ANSI Z535.4) to designate levels of hazards. These signal words and their definitions are as follows:

Thank you for choosing MAX-AIR, where quality and commitment give you the best in technology and support available today. Be sure to ask your MAX-AIR dealer about our complete line of compressors and accessories.

DANGER This warning indicates a very hazardous situation, which, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations.

WARNING indicates a potentially hazardous situation, which if not avoided, could result in death or serious injury.

CAUTION indicates a potentially hazardous situation, which if not avoided, might result in minor or moderate injury. It is also used to alert against unsafe practices.

NOTICE

Follow manufacturers recommendations and cautions, of drive engines and electric motors. Carefully read and follow these instructions prior to operation of your compressor.

CAUTION

As a new owner of a cylinder-filling compressor you are now "a filling station." You must follow all local, state and federal regulations. Prior to filling a cylinder, check the pressure rating and current hydro date stamped on cylinder neck. Do not fill out-of-date, (hydro-date) cylinders for anyone. You should also control that you and your buddies have a valid scuba certification, nationally and/or internationally accepted and issued by a recognized instructional agency.

GENERAL

In the interest of health and safety, we strongly recommend that you follow these operating instructions precisely. Damage resulting from any deviation from these operating instructions is excluded from the warranty and liability of **Max-Air**.

Special Attention Must Be Paid To The Following:

a) Correct maintenance of the filtering system.

b) Regular drainage of the condensate.

When opening the condensate drain tap, both condensate and air should escape profusely. Contaminated or wet filters result in contaminated air.

c) Fill "in test" air cylinders only. Normal rated operating pressures must not be exceeded.

d) Air intake.

The intake of exhaust gases (e.g. from the driving motor) could have fatal consequences. When operating the compressor, ensure that the air intake draws clean air and cannot be contaminated by noxious exhaust gases.

TECHNICAL DESCRIPTION

Model:	MAX-AIR 90(9.0cfm)
Weight:	335 lbs (152kg)
Dimensions:	42"L x 20"W x 28.5"H
Construction:	Air cooled, three stage, three cylinder high pressure compressor, all stainless steel interstage cooling
Max. pressure:	414 bar (000 psig) (upgraded filter tower required for 6K operations)
Approx. output:	MAX-AIR 90 (265 L/min.) (9.0cfm)
Interstage pressure:	1 stage 10 bar (145 psig) with interstage safety 2 stage 100 bar (1450 psig)
Safety valves:	On all stages. 3 stage 414 bar (6000 psig) Maximum with upgraded tower
Bearings:	Entire crankshaft assembly on roller bearings
Lubrication:	Splash lubrication with oil thrower pin
Oil content:	1.7 Liter/58 Fl. oz. Standard units
Oil type:	MaxLube 501 synthetic oil
Permissible inclination:	10° of compressor at maximum oil level
Drive motors:	7.5 HP single/three phase electric motor 9 HP Gas Honda, 9 HP Gas Kohler 9 HP Diesel Yanmar, 9 HP Kohler
Warranty:	One year from delivery date
Standard equipment:	Intake filter, cartridge filter, high pressure hoses, pressure gauge, choice of (2) SCUBA yoke, DIN, SCBA or Painball cylinder filling attachments, pressure relief valves, synthetic compressor oil, spare parts list and owners manual.

Working System

Ambient air, which must be free from exhaust fumes, is drawn through the intake filter and inlet valve into the 1st stage cylinder, where it is pre-compressed.

A portion of the compression heat is dissipated through the valve head, piston, cylinder, crankcase and lubricating oil to the cooling airflow. The larger portion remains in the compressed air and cooled down in the following intercooler to a few degrees above ambient temperature. The air is then passed on to the next stages, where it is compressed in the same way. The after cooler cools the air to 10° C above ambient temperature at the maximum.

Operating temperatures are:

inlet nipples of suction valves approximately 15° - 20° C above ambient temperature (hand warm);

outlet nipples of pressure valves and valve heads approximately 90° - 105° C.

Each stage incorporates an independent preset safety relief valve.

The intake air always contains a certain amount of humidity depending on the weather. During compression and the consequent cooling down, this humidity largely condensates and forms the condensate together with small particles of lubricating oil. This condensate is a milky fluid and precipitates in the separators.

Technical details of the compressor Block

Crankcase, crankshaft, piston, cylinder

The crankcase is made of light alloy; the bearing cover is sealed by means of an O-ring. The crankshaft, connecting rods and piston pins all incorporate roller bearings and grooved ball bearings. The connecting rods are mounted on the single throw of the crankshaft.

The pistons of the 1st and 2nd stage are made of light alloy and incorporate piston rings.

The 2nd and 3rd stage piston is a free-floating piston with piston rings. The free-floating piston is driven by a guide piston, the lateral surface of which is flattened to improve the lubrication of the free piston. The cylinders are made of cast iron.

Valve heads, valves, intercoolers, separators, filters

The valves are screwed into the well-ribbed valve heads. Valves are arranged side by side and can be removed by a valve key.

Maintenance of the pressure valves can be carried out from outside, the suction valves can only be removed after removal of the valve heads. Torque for tightening the valve head screws of the 3rd stage: start with 1 kpm (7ft.-lb), finish with 2,2 kpm (16 ft.-lb) ensure yourself that piston is down into the cylinder.

DANGER

Safety valves

The safety valves prevent damage to the compressor by overpressure and are factory set at the following pressures:

1st stage: 145 psi (10 bar) 2nd stage: 1450 psi (1000 bar) 3rd stage: 10% above filling pressure.

In case a safety valve blows, do not adjust to a higher pressure but check for the cause. Refer to trouble shooting.

Adjustment of the safety valves, by non-authorized persons, may result in the loss of the warranty and may result in serious injury or death.

Cooling, lubrication

The 1st and 2nd stage intercoolers and the after cooler consist of steel pipes and are smooth. The splash lubrication operates with oil thrower pins. The high-pressure stage is lubricated by oil vapors.

Pressure holding valve

This valve is mounted after the carbon filter.

Working Procedure

This valve will only open when the internal pressure of the compressor has reached 1800PSI \pm 10% PSI (80 \pm 10 bar) to permit a constant and optimum separation.

Base Frame, Protective Frame, Covers

Depending on the specifications of the buyer, the compressor rests on a base frame consisting of welded section steel with an additional frame bracket for the mounting of electric motors or it is further equipped with an allover protecting frame. This frame is also made of section steel and its entire surface is painted to make it weather and corrosion-resistant.

The flywheel of the compressor, in the basic version, is covered by a steel cover or a grid, both being designed with a view to safety and optimum air guidance.

The front panel incorporates 2 filling valves, final stage pressure gauges and the side panel incorporates the condensate drain manifold for the manual draining of the filters (special frame version mod. compact).

WARNING

Safety Precautions for The Filling of Cylinders

General Precautions for the filling of cylinders

Take care that the intake air is pure and free from noxious gases and exhaust fumes.

Make use of the intake hose and secure it in such a way as to ensure that no engine exhaust fumes are taken in.

Filling hoses must be in perfect condition, connecting threads faultless. Particular attention should be paid to damage of the connecting fittings. If the rubber is scored, the hose must not be used any longer because water can enter and attack the wire gauze. In that case it is not guaranteed that the hose is able to hold the pressure.

Do not open disconnected filling valves when under pressure since the highly compressed air can cause serious injury or death.

Check air tightness of the complete unit regularly by brushing all fittings and couplings with soap solution and repair all leaks. **(DO NOT USE YOUR HAND/FINGERS TO DETECT LEAKS)**

All work on the compressor unit must be carried out with the compressor shut down and depressurized.

On a compressor with an electric motor, disconnect at the power source prior to any work.

Never weld high-pressure tubing.

Never empty air-cylinders completely. The closed cylinder should always contain some residual pressure in order to avoid the entrance of humid ambient air.

WARNING

Installation, Operation, Maintenance, Service

Installation

Make sure there is good ventilation.

Install the unit on a level ground (maximum permissible sloping 10°), clearance of minimum 2 ft (24") completely around the compressor to ensure proper ventilation.

In order to prevent health hazards the intake air must be free from exhaust fumes. This can be effected by stretching the intake snorkel to its full length, considering the direction of the wind and securing it approximately 2 m above level ground. Check that the hose is not bent or broken (Table 3).

Do not operate the unit in closed or partly closed rooms, whatever size. This applies to all units with gas or diesel engines.

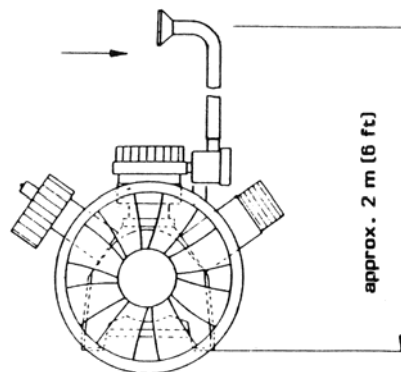


Table 3: Location of the intake hose

Starting-up

Before starting engine check oil level in the crankcase of the horizontally placed compressor (see oil level check, change of oil pg.11)

Use MAXLUBE 501 synthetic oil.

Starting of the engine:

Before starting electric motors, check voltage. Electric connections must comply with the respective regulations. Verify fan direction. Compare motor with mains and frequency. Fuse motor correctly.

Check direction of rotation. The use of a motor starting contactor is recommended. If using a gasoline engine driven compressor, check oil level in motor and compressor (see oil level check, change of oil pg.11)

Before starting the engine, open condensate drain valve so that engine starts without load. Pull the choke (half open). As soon as the motor has been started, switch to full power, then close condensate drain so that pressure is built up in the individual stages.

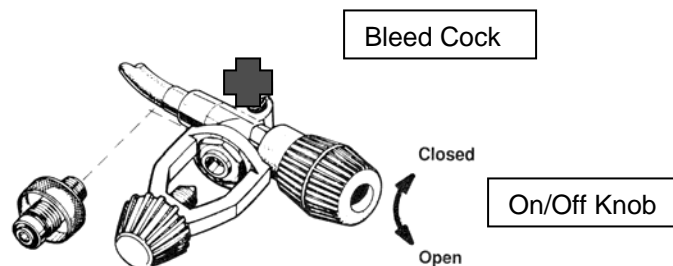
WARNING

Filling procedure

Use only cylinders that are within hydro test date and pressure rated to the fill pressure preset on your compressor. The preset pressure relief (blow-off) on the final stage is usually 10% above the cylinder rated pressure.

Example: if you are filling a 3000 psi rated cylinder you should close the fill valve or shut off the compressor at 3000 psi (NOT ABOVE IT). The 10% additional pressure, preset on the relief valve, is just an added safety in case you can not shut off in time. Letting the relief valve blow-off often will damage it, as it is designed to blow-off for emergency only.

To check the pressure blow-off of your final relief valve, close the fill valve and bleed, let the compressor build up pressure. When safety valve blows-off read the pressure at the final pressure gauge and make a note of it for the future. After you are satisfied that the setting is correct for your fill pressure fully open filling valve first, then open cylinders valve – monitor fill pressure during filling operation. After reaching the desired pressure, always close cylinder valve first, then close the fill valve. To remove fill valve from cylinder you must bleed the residual pressure by opening the bleed cock on the fill valve.



Operation of filling valve

Shutdown procedure

On compressors using gasoline drive, close hand lever on carburetor and turn "On/Off" switch off. Close fuel cylinder valve and drain condensate out of compressor. In addition, check oil level of compressor, gasoline level in engine tank and carry out current service (see service, service timetable below).

Preparation for extended storage

Prior to extended storage, the compressor should run a few minutes against a small backpressure of approximately 300PSI (20 bar), by partly closing filling valve in order to prevent possibility of corrosion. Open condensate drain valve again, then close them to prevent loss during transportation.

Preservation of compressor

Remove intake air filter cartridge. Start compressor and **slowly** add 1/2 ounce of MAXLUBE 501 synthetic oil into intake piece of compressor. Keep fill valve open and condensate drain valve closed. Operate unit for approximately 1 minute. Close filling valves and open condensate drain valves. Decompress all stages and then close all valves.

In cases of prolonged storage periods, run unit for 45 minutes every month.

Lubricating oil loses its efficiency during prolonged idle periods in the compressor and motor. This requires draining and replacing with fresh oil at least once a year.

Maintenance and air tightness test

Besides the standard stipulated service works (see service, service timetable below) we recommend you clean the compressor at regular intervals to notice any oil leakage and impairment to the efficiency of the cooling system resulting from dirt on cooler coils and fins. Test air tightness by regularly brushing all fittings, valves and tubing of the condensate drain with soap-water or with leak test spray. Air leaks considerably impair the output of the compressor.

Service, service timetable

Oil level check, change of oil

Check oil level daily before putting the unit into operation. Oil level must be between minimum and maximum of transparent tube, sight glass or dipstick or on the front oil level sight glass for cabinet models. Oil level must not be too high because excessive oil can result in over-lubrication and coking of the valves. When oil level is too low, oil thrower pins do not any longer dip into oil, lubrication stops and the unit is destroyed. **Remove vent cap before refilling oil to prevent overflow from trapped air, see page 9.**

Oil change: first oil change after 15 operating hours, further oil changes every 50 operating hours. If the operating hours indicated above are not reached within 5 months, oil must be changed after the season or before storing for the winter. Do not use oils of different brands at the same time: do not use openly stored oil, but only from original oil containers. Change oil as follows:

See page 10 for item descriptions.

- Remove vent cap and drain plug.
- Drain oil into pan, use of funnel may be required.
- Replace drain plug and remove oil fill tube cap.
- Add 1.7L of MaxLube 501 slowly and continually verify level on dipstick or sight window.
- Replace vent cap. Replace oil fill tube cap.

WARNING

Safety valve control

The final safety valve protects the 3rd stage and the high-pressure cylinders and is factory set to 10% above the requested filling pressure. The safety valve of the 3rd stage must be checked for proper functioning periodically. Pump unit to final pressure, with filling valve closed, until safety valve releases. Blow-off pressure of the safety valve to be checked on pressure gauge, then open filling valve.

V-belt adjustment

Check V-belts after the first 10 and after further 30 and 120 operating hours. Maximum yield at center of V-belt should not exceed 10 mm when subject to a pressure of 5 kg.

Intake filter

Check every 25 operating hours. The 5 micron filter cartridge (air intake cartridge) must be changed after having it turned 3 times by 90°.

Cleaning: only wipe out with damp cloth. DO NOT blow air inside filter case. Check O-ring in the filter case and make sure that the holding spring, on top, is installed properly. Only use original cartridges.

Condensate drain system

Condensate = water/oil vapors = emulsion

The color of this emulsion should be milky-white; traces of brown discoloration are acceptable. If the emulsion suddenly turns dark brown and smells, stop the unit and check oil level. If oil level is okay, check for adequate, cool air circulation around the unit.

CAUTION

Drain off the condensate every 8-10 minutes for manual drain units.

For automatic drain units with preset drain timing, make sure the automatic condensate drain is working and drain time, frequency and duration is adequate for your climate.

CAUTION

Purifier cartridge, replacement intervals

The cartridge must be changed before air starts to reek of oil. The quality of breathing air depends to a large extent on the condition of the cartridge. For this reason, see filter spec sheets on pages 15 and 16. The replacement intervals will vary depending on the climate you are operating in (i.e.. temperature, excessive moisture(rain) and humidity).

Important for filter maintenance: Service only when unit is turned off and totally depressurized. Check filter case, threads and O-rings and maintain or replace if necessary. It is recommended to record the quantity of pressure cylinders filled in order to reassure that the precise replacement intervals are kept. Leave the cartridge in the filter during idle periods. Leave unit at approximately 1000 – 600 psi//75 - 40 bar to prevent ambient humidity from penetrating into the compressor pipe system.

Suction and pressure valves

Valves should be taken out and cleaned after 1,000 operating hours. The seats must be carefully treated to prevent even the slightest damage. Use only gasoline, soft brushes of copper or nylon. Do not use steel brushes, screwdrivers, etc. Should you detect even the smallest damage (ruptures, worn, seats, etc.), replace the entire part. In order to service the valves, the valve heads must be removed.

Drive motors

Upon request: gasoline engine - 4 stroke; Diesel engine; Electric engine 7,5 HP.

For further details, see data sheet of manufacturer.

Mounting of cooler and belt guard

After approximately 50 operating hours, check fixation of cooler and retighten. Check distance between rotating parts and guard so that smooth operating is guaranteed even after lengthening of the v-belt.

Maintenance schedule:

Prior to every cylinder filling:

- drain condensate
- check safety valve
- filling procedures
- check oil level daily
- purification cartridge replacement intervals



Oil drain plug



Oil fill tube cap

Vent cap

Maintenance after operating hours:

<u>Hours</u>	<u>Recommended Service</u>
1/2	Check valve heads. Intake piping must be hand warm; outlet piping must be hot
15	First oil change and check tension of v-belt
25	Maintenance of intake filter
30	Check tension of v-belts
50	Check fixation of cooler and belt guard and Oil change
120	Check tension of v-belt
1000	Check suction and pressure valves
2000	Replace all suction and pressure valves
3000	Replace piston ring, check suction and pressure valve and 3 rd stage piston sleeve

Start-up procedure and workshop instruction

Gaskets and O-rings can be replaced and serviced by the user themselves, if he or she, has sufficient experience to do so. Repairs on the crankcase and bearings shall only be carried out by an authorized workshop. Safety valves must be replaced as complete parts.

Cylinders

When removing and replacing cylinders note that the piston is in the top position, must be on the same level with the cylinder top edge. Correct differences with gaskets under the cylinder.

Piston

The 1st and 2nd stage pistons are equipped with piston rings. The 2nd and 3rd stage piston is a floating piston and runs with piston rings in a piston case (3rd stage rings not sold separately). In repairs or reassembly, take care that the piston rings are replaced in the correct sequence.

Piston ring gap

Should piston rings exhibit excessive wear and high oil consumption, check piston ring gap.

Test procedure: Insert piston ring into respective cylinder. The upper rim should be approximately 10 mm from upper edge of cylinder. Check gap with feeler gauge.

Permissible, maximum piston ring gaps.

<u>Stage</u>	<u>Max-Air 55</u>	<u>Max-Air 90</u>	
1st stage	Ø88 mm	Ø95 mm	s= 0,6 mm
2nd stage	Ø36 mm	Ø38 mm	s= 0,36 mm

If gap is not as above, replace the piston rings and cylinder.

Tightening torque

<u>screw</u>	<u>thread</u>	<u>max. torque</u>
hex.screw	M 6	1,0 kpm / 7 ft-lbs
inner hex. screw		
hex screw	M 8	2,5 kpm / 18 ft-lbs
inner hex. screw		
hex. screw	M 10	4,5 kpm / 32 ft-lbs
inner hex. screw		

Valve head screw requires torque wrench tightening

Trouble Shooting

Trouble	Cause	Remedy
Gas engine does not start		See operating manual
Electric motor does not start	One phase failed	Check fuses
Safety valve I blows off	2nd stage valves defective	Clean valves or replace
Safety valve II blows off	3rd stage valves defective	Replace
Safety valve III blows off	Maximum operating pressure exceeded	Stop compressor, disconnect cylinder
Final safety valve blows off below 210 bar	Safety valve not well adjusted	Replace safety valve
Safety valve 1st or 2nd stage blows off below normal intermediate pressures	Safety valve defective	Replace safety valve
Engine speed and output decrease	Engine power insufficient v-belt slipping	Adjust v-belt
Output decreases although engine speed is correct	Valves blocked or leaking Damaged piston of 3rd stage Blocked cooling tubes or gaskets leaking Intake filter blocked Intake hose bent Worn pistons or rings	Clean or replace Replace Tighten or replace Check; brush with soap, replace Replace Readjust Replace
Oil taste in delivered air	Activated carbon filter saturated	Replace
Compressor gets too hot	Wrong direction of rotation Dirt on outside of cooler Dirty valve(s) not closing properly (causing over-charge of another stage) V-belt torn (loose)	See arrow on compressor Clean Clean or replace Replace (tighten)

Strict observance of the operating instructions increases the life of the compressor and reduces down time.

Compressor Pumping Group Identification Sheet

Model Max-Air 55, 90 and 180 Twin

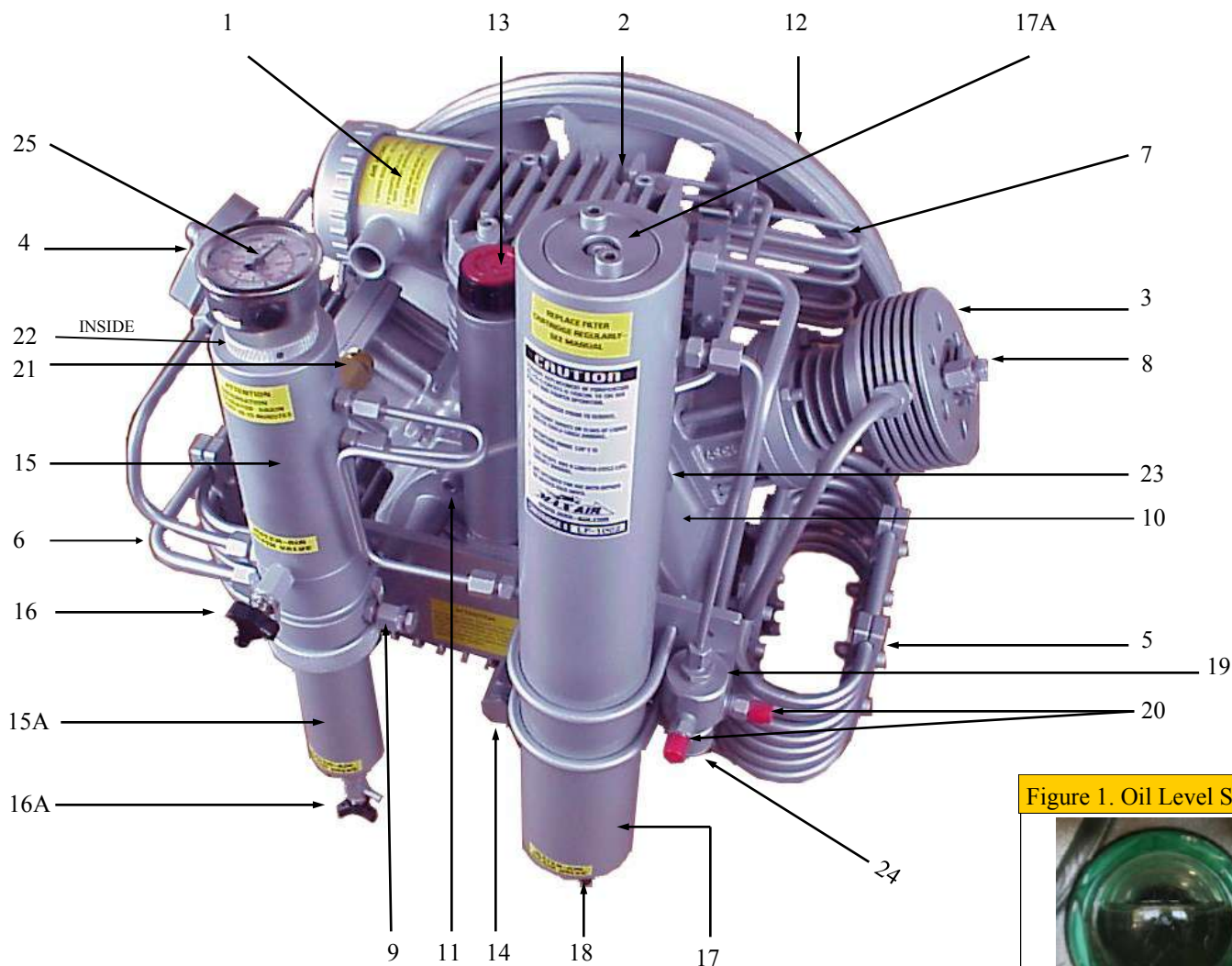
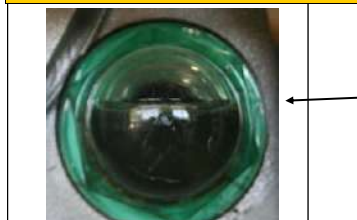


Figure 1. Oil Level Sight Glass



- | | |
|-------------------------------------|--|
| 1. Intake filter housing | 15. Oil and water separator (high pressure) |
| 2. Valve Head 1st Stage | 15.A. Oil and water separator (low pressure) |
| 3. Valve Head 2nd Stage | 16. Oil and water separator drain tap, high pressure |
| 4. Valve Head 3rd Stage | 16.A. Oil and water separator drain tap, low pressure |
| 5. Interstage cooler I – 2nd stage | 17. Purifier housing |
| 6. Interstage cooler II – 3rd stage | 17.A. Purifier housing cap |
| 7. After cooler | 18. Filter housing drain tap |
| 8. Safety valve 1st stage | 19. Pressure maintaining valve (1800 psi) |
| 9. Safety valve 2nd stage | 20. Purified air outlets (2) |
| 10. Crankcase casting | 21. Final safety relief valve (factory preset to customer requirement) |
| 11. Front bearing cover | 22. Check valve—INSIDE upper separator |
| 12. Fan wheel | 23. Oil fill vent cap screw |
| 13. Oil filler cap | 24. Oil level indicator, behind filter housing (not shown) See figure 1. |
| 14. Oil drain plug | 25. Final pressure gauge bar/psi |

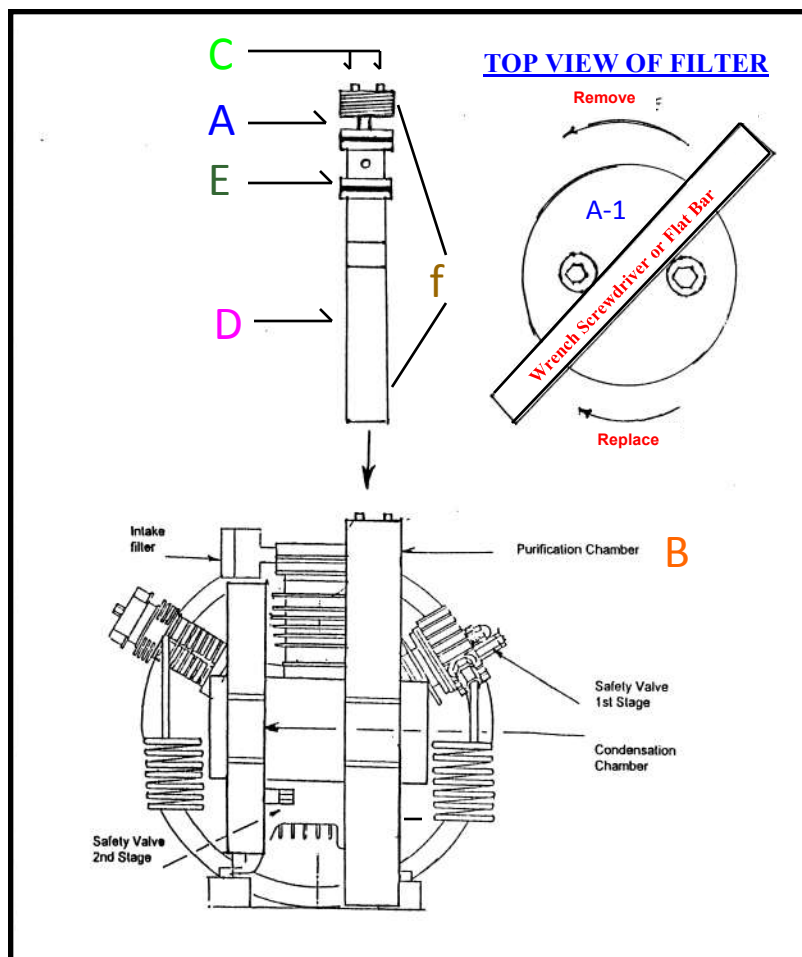
NOTE: DO NOT RE-ADJUST SAFETY VALVES #8, 9 and 21, unless you are a licensed, qualified high pressure compressor mechanic (CALL THE FACTORY)!



PURIFICATION FILTER CARTRIDGE REMOVAL & INSTALLATION For Max-Air Compressor Models 90 & 180

MAKE SURE that the engine/motor is **OFF** and that all air pressure (high and low) is completely drained (bled) from the system.

In a counter clockwise motion remove the pressure cap assembly "A-1" from the purification chamber "B" by inserting a wrench, screw driver or flat bar between the two protruding Allen screws "C". **DO NOT REMOVE THESE SCREWS OR THE CENTER LARGE ONE** as they are simply for leverage. Remove plastic filter cartridge "D" by unscrewing by hand, counter clockwise, while holding the double sealed, sealer cap "E" with the other hand, dispose of cartridge "D" as indicated on cartridge. If you must lay down pressure cap "A" & "E" make sure it is **NOT** in contact with sand, dust or dirt. It is recommended to thoroughly clean and re-grease the threads of cap "A" and O-rings of sealer cap "E" prior to reinstallation. Follow instructions marked on replacement filter "D". Remove both orange plastic end plugs or you will not make air. Tighten cartridge snugly (don't over tighten) into sealer cap "E" so that it will not back out with vibration. Tighten the entire assembly "F" into chamber "B" in a clockwise motion until it stops then back out 1/8 of a turn. **DO NOT** leave it tight and run compressor as it can seize inside the chamber.



BREATHING AIR PURIFICATION FILTER CARTRIDGE (DISPOSABLE) Part Number LF-1002 or X302414

Fits only compressor model Max-Air 55 and Max-Air 90 with standard filtration
(Part Number PU-10000)

Typical processing capacity (cartridge life) @ 72°F intake temperature for
Grade "E" breathing air SCUBA or SCBA @ 5000 psi.

Compressor model Max-Air 55 = 10,000 cubic feet (or prox 30 hours of running time)

Compressor model Max-Air 90 = 10,000 cubic feet (or prox 18 hours of running time)

**MAKE SURE WHENEVER CHECKING FILTRATION THAT THE
SYSTEM IS SHUT OFF AND COMPLETELY DRAINED OF AIR PRESSURE**

NOTE:

1. The cartridge life is based on 72°F intake temperature, draining the condensate every 15 minutes or more often if in hot and humid climate.
2. The 10,000 cubic feet must be de-rated by 2% for every 1°F above 72°F.
The reverse applies to temperatures below 72°F.

i.e. @ 82°F decrease capacity by 20%

@ 92°F decrease capacity by 40%

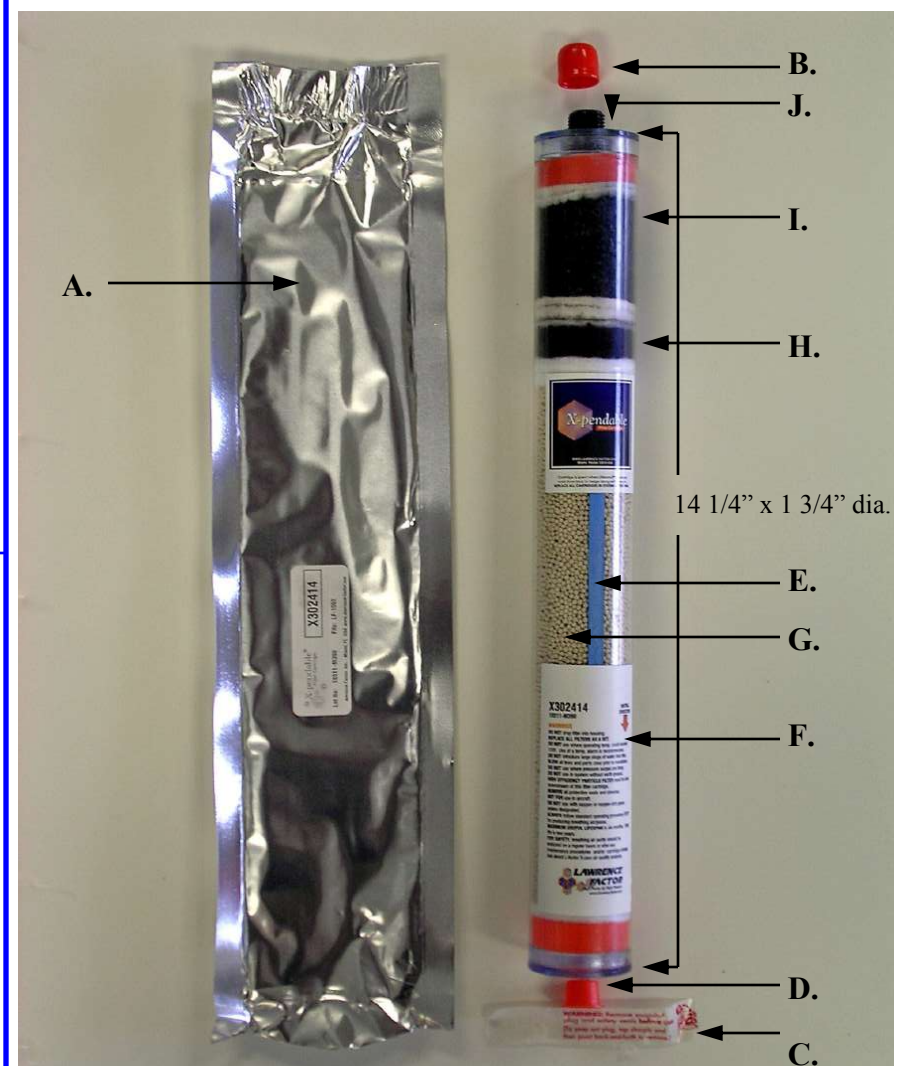
@ 102°F decrease capacity by 60%

DO NOT use where temp. could exceed 120°F.

CARTRIDGE COMPONENT IDENTIFICATION:

- A. Sealed foil envelope –makes sure it is not torn or punctured.
Do not open until ready to install. For extended storage re-wrap in two or three heavy duty zip lock bags. Store in a cool, dry, dark place.
- B/C/D/ Remove and dispose of protective cap B & D and tape C prior to installing or filter will not function and may implode in filter housing, causing extensive damage to the compressor and contaminating the air.
- E. LifeBand™ changes color from blue to beige along entire length.
Replace **ALL** cartridges in system at this time. It is advisable to pull out cartridge every 5 hours to inspect LifeBand™ and for any sign of moisture.
- F. Warning label read and understand this and any labels on the filter.
- G. Molecular sieve (beige beads) removes humidity
- H. Hopcalite catalyst converts trace amounts of carbon monoxide to carbon dioxide
- I. Activated charcoal removes bad odors and taste of lubricant
- J. O'ring seal – make sure the O'ring is in place and in good condition.

- **Maximum cartridge life, once installed, is six months regardless if it has not reached the full processing capacity.**
- **Maximum shelf life in unopened package is two (2) years**



Part Number LF-1002 or X302414 - 10,000 cft @ 72°F @ 5000psi

NOTE: Dimensions exclude threaded plastic nipple w/O'ring

**YOU MUST READ AND UNDERSTAND THIS INFORMATION
PRIOR TO FILLING BREATHING AIR CYLINDER!!**

BREATHING AIR PURIFICATION FILTER CARTRIDGE (DISPOSABLE)

Part Number LF-65247

Fits all Max-Air compressors with upgraded purification **PU-35000** for breathing air

Typical processing capacity (cartridge life) @ 72°F intake temperature for
Grade “E” breathing air SCUBA or SCBA @ 5000 psi.

Compressor model Max-Air 55 = 35,000 cubic feet (or prox 106 hours of running time)

Compressor model Max-Air 90 = 35,000 cubic feet (or prox 65 hours of running time)

MAKE SURE WHENEVER CHECKING FILTRATION THAT THE SYSTEM IS SHUT OFF AND COMPLETELY DRAINED OF AIR PRESSURE

NOTE:

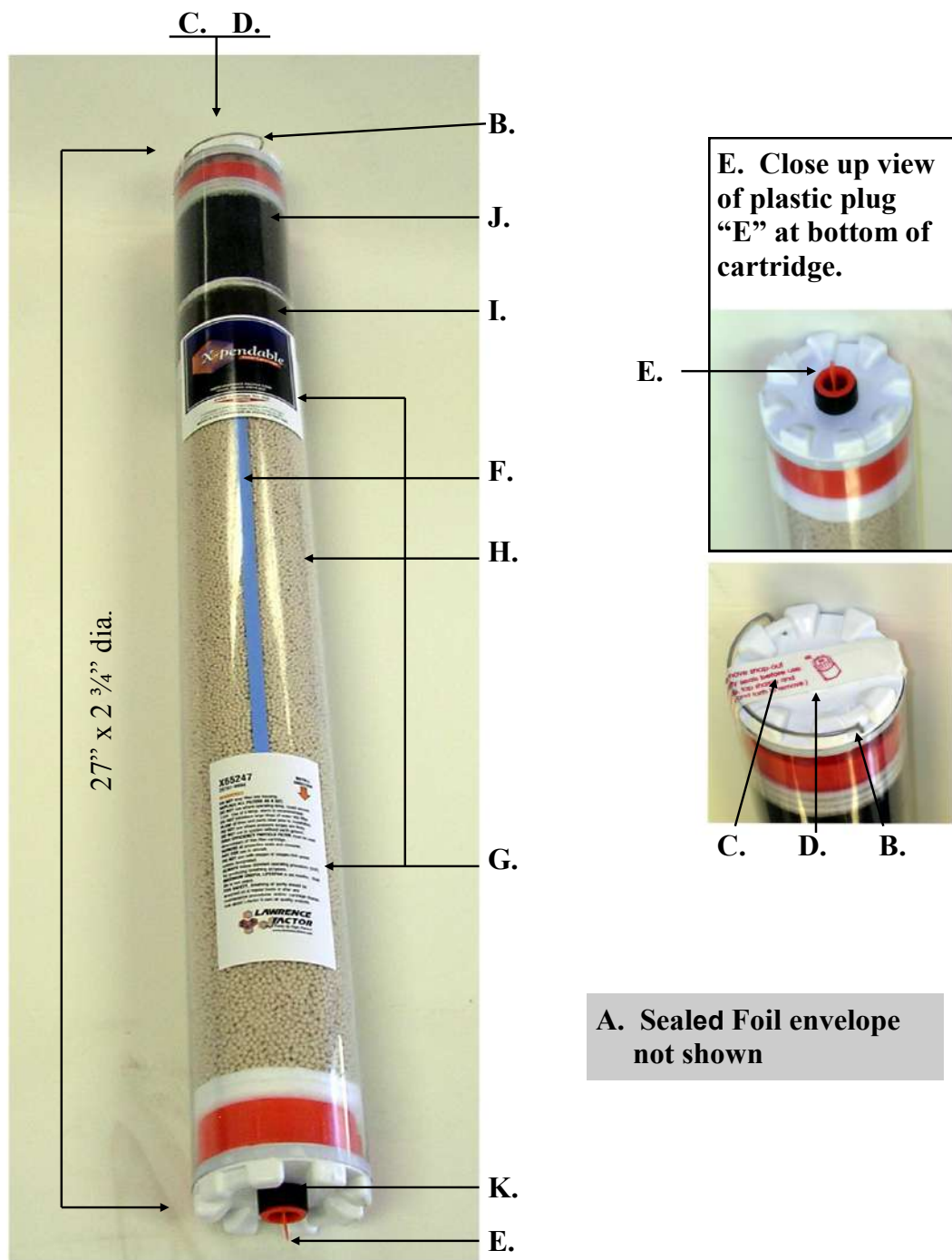
1. The cartridge life is based on 72°F intake temperature, draining the condensate every 15 minutes or more often if in hot and humid climate
 2. The 35,000 cubic feet must be de-rated by 2% for every 1°F above 72°F.
The reverse applies to temperatures below 72°F.
- i.e. @ 82°F decrease capacity by 20%
 @ 92°F decrease capacity by 40%
 @ 102°F decrease capacity by 60% }

DO NOT use where temp. could exceed 120°F.

CARTRIDGE COMPONENT IDENTIFICATION:

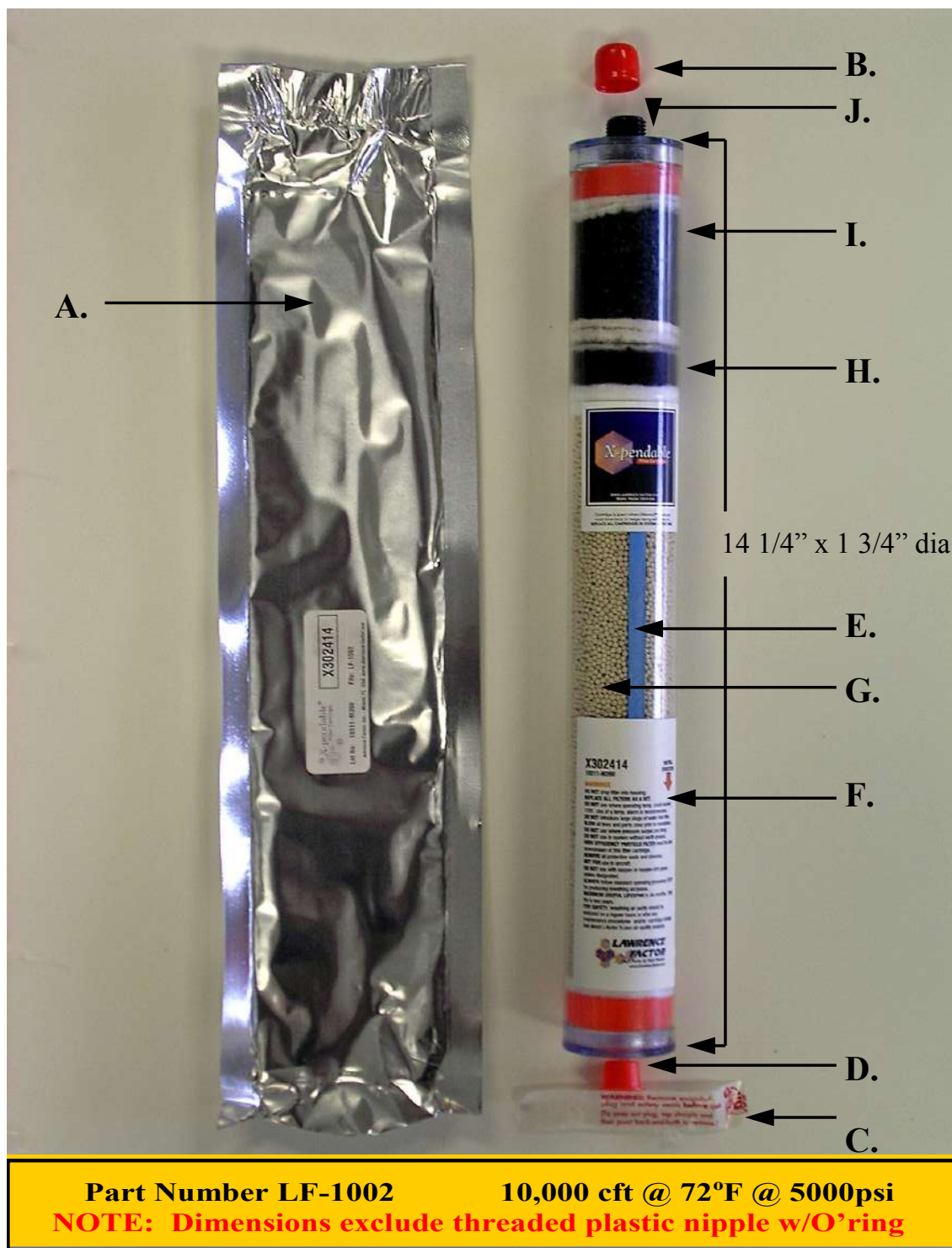
- A. Sealed foil envelope (not shown) –makes sure it is not torn or punctured.
Do not open until ready to install. For extended storage re-wrap in two or three heavy duty zip lock bags. Store in a cool, dry, dark place.
- B. Lifting handle for ease of installation, fold back flat prior to screw down housing cap.
- C. Read and remove tape c
- D. Remove snap-out plastic plug under tape.
- E. Remove plastic plug, make sure internal O’ring is present and lubricated (use silicone grease only)
- F. LifeBand™ changes color from blue to beige along entire length.
Replace **ALL** cartridges in system at this time. It is advisable to pull out cartridge every 5 hours to inspect LifeBand™ and for any sign of moisture.
- G. Warning label read and understand this and any labels on the filter.
- H. Molecular sieve (beige beads) removes humidity
- I. Hopcalite catalyst converts trace amounts of carbon monoxide to carbon dioxide
- J. Activated charcoal removes bad odors and taste of lubricant
- K. Internal O’ring is located inside black plastic sleeve and can only be seen after removing “E”. Make sure the O’ring is in place and in good condition.

- **Maximum cartridge life, once installed, is six months regardless if it has not reached the full processing capacity.**
- **Maximum shelf life in unopened package is two (2) years**



Part Number LF-65247

35,000 cft @ 72°F @ 5000psi



CARBON MONOXIDE ELEMENT #MI-4002R

DESCRIPTION

This detector consists of a 'Visual' indicator (#MI-4000), into which a small (15 mm diameter) replaceable disc is inserted. The 'Visual' indicator has a clear sight lens through which the disc may be seen. The disc changes color in the presence of low concentrations of carbon monoxide within 5 to 10 minutes of exposure and therefore acts as a clear visible warning before the proportion of gas reaches an unacceptable level. If higher and more dangerous concentrations of carbon monoxide are present, the disc changes color within a few seconds.

USAGE

The detection disc is specially treated to prolong its life. A color change from tan to dark grey will occur in the presence of carbon monoxide. The rate of change of color is directly related to the concentration of carbon monoxide present. The detector will change color in five to ten minutes at 50 –100 ppm of carbon monoxide, but will change color within a few seconds if the level reaches 500-1,000 ppm (0.05%-0.1%), at which concentration it can be lethal.

BENEFIT

The detector is a quick, inexpensive and simple means of showing the presence of carbon monoxide in the sample air. There is no need for troublesome sampling equipment or expensive analytical equipment. The change in color is easy to spot and the results can be interpreted by non- specialist staff.

Assembly and Disassembly Model MI-4000 Visual Indicator

Item	Qty	Part No.	Description
1	1	583	Body
2.	1	584	Cap
3	1	593	Window
4	1	592-1	O ring 2-018
5	1	592-2	O ring 2-019
6	1	592-3	Spring
7	1	592-5	Indicator humidity (blue)
8	1	592-6	Indicator CO (beige)

NOTES:

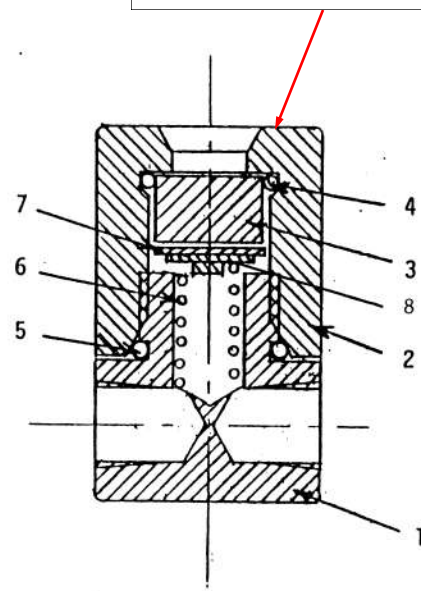
1. Technical bulletin – 588
2. Use Dow silicone grease 111 or equivalent on seals and threads
3. Tighten cap hand tight only
4. Install window (3) with smooth, small diameter against O ring (4)
5. Insure window (3) is fully against shoulder of cap (2)
6. Avoid spring or other hard objects touching window
7. Install so both elements can be seen through window, insure spring is in place to hold element against window
8. When installing humidity element place it in cap (2) with blue face against window
9. COLOR CHANGE:
 - Blue to pink means high humidity
 - Beige to dark brown means dangerous levels of carbon monoxide

NOTE:

1. **DO NO TOUCH ELEMENTS WITH HANDS
USE CLEAN TWEEZERS OR CLEAN NEEDLE
NOSE PLIERS**
2. **MAKE SURE COMPRESSOR AND FILTER
HOUSING ARE COMPLETELY DRAINED OF
ALL AIR PRESSURE PRIOR TO ATTEMPTING
REMOVAL OF CAP FOR MAINTENANCE.**

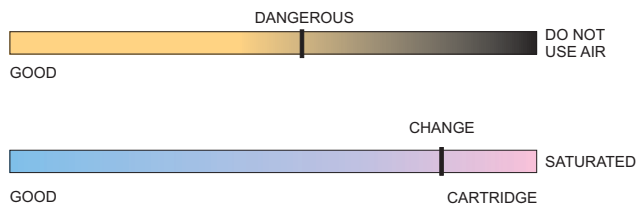
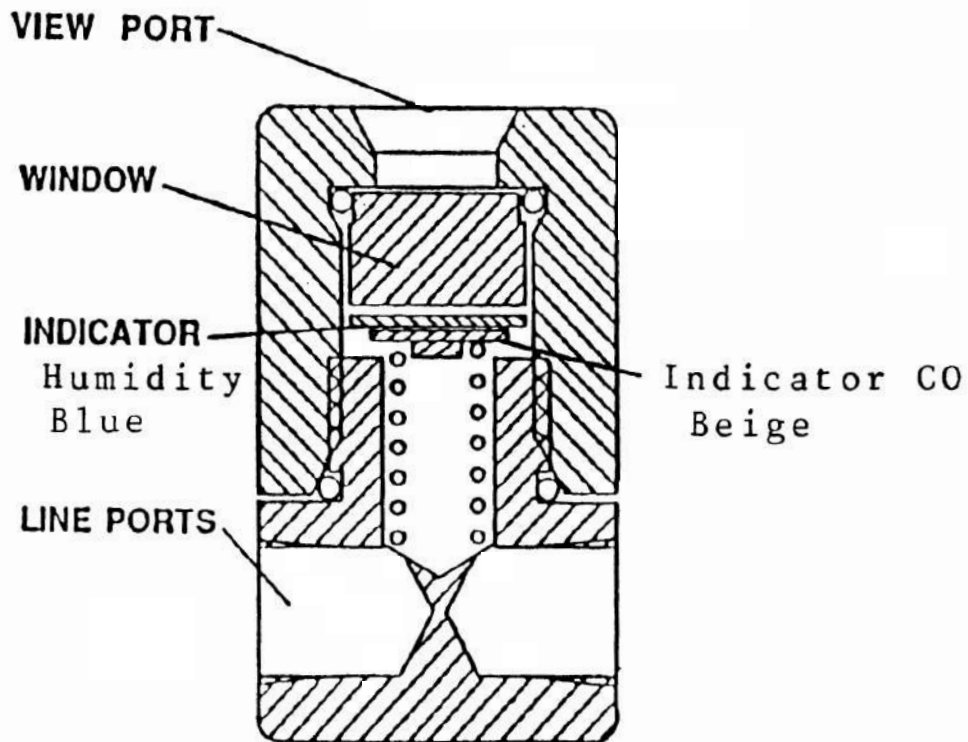
**BLEED ALL PRESSURE FROM
UNIT AND SHUT OFF POWER**

Unscrew by hand , counter-clockwise,
to remove and replace elements.
Reinstall cap hand tight.



MI-4000K

Remove top half of element housing and invert.
 Place the blue moisture indicator down inside element against the glass taking care not to touch the blue element with your fingers.
 Place the beige element on top of the spring.
 Re-attach the top half of the element housing hand tight.



Good Conditions: INNER RING - YELLOW
 OUTER RING - BLUE

Warranty

IMPORTANT:

The materials supplied by Max-Air are covered by a 12-month warranty, the validity of which begins on the date of delivery as proven by the delivery document.

Max-Air shall repair or replace those parts it acknowledges to be faulty during the warranty period. In replacing the faulty part Max-Air shall not be liable for any other expenses sustained by the dealer or his customer such as presumed damage (present or future), lost earnings or fines.

Routine and unscheduled maintenance must be carried out in compliance with the instructions contained in this manual. Should the required work not be covered by the manual or assistance be required you are advised to contact Max-Air directly by email, even where agreements have already been made on the phone. Max-Air cannot be held liable for any delays or failure to execute work.

Max-Air cannot be held liable for any damage or malfunctions caused by work carried out on the compressor by unauthorized personnel.

Max-Air guarantees that its compressors are free from defects vis-à-vis design, workmanship and materials for a period of 12 months starting from the date of delivery of the compressor; should the customer note any flaws and/or defects they must report them, in writing, to **Max-Air** within 30 (thirty) days of their discovery otherwise the warranty could be rendered null and void. The warranty only covers flaws and faults that occur where the compressor is used properly in compliance with the instructions contained in this manual and where periodic maintenance is carried out. The warranty does not cover faults caused by improper use of the compressor, exposure to atmospheric agents (rain etc.) or damage during transport; all materials subject to wear and those subject to periodic maintenance are not covered by the warranty and are to be paid for by the customer in full; in any event the warranty is rendered null and void if the compressor is tampered with or if work is carried out on it by personnel who have not been authorized by **Max-Air**.

A compressor that has been acknowledged as faulty on account of flaws in design, workmanship or materials shall be repaired or replaced free of charge by **Max-Air** at its plant in Kerrville, Texas; costs regarding transport, delivery of spare parts and any materials subject to wear shall be met by the customer. Should warranty-covered work need to be carried out on the customer's premises, travel and accommodation costs for personnel sent by **Max-Air** shall be met by the customer. The act of taking delivery of machines and/or faulty components or the sending of technicians to assess the presumed defects and/or flaws reported by the customer does not in itself imply acknowledgement that the defect is covered by warranty. Repairs and/or replacements made by **Max-Air** during the warranty period do not in any way prolong the latter itself. Acknowledgement that a defect is covered by warranty does not in itself mean that **Max-Air** is in any way liable to award compensation. **Max-Air** cannot be held liable for any other direct or indirect damages imputable to compressor defects and flaws (loss of production or earnings etc.) except in cases where serious negligence is demonstrated.

This image shows a single sheet of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



Max-Air®
HIGH PRESSURE BREATHING AIR COMPRESSORS

www.max-air.com

MAX-AIR

55/90/180 Series & Tropic-Max

High Pressure Compressor For Breathing Air

Compressor Pumping Group

Parts Manual

2807 Peddler Lane West • Kerrville • Texas 78028 • USA
Tel. (830) 257-5006 • Fax (830) 257-3720 • e-mail: sales@max-air.com

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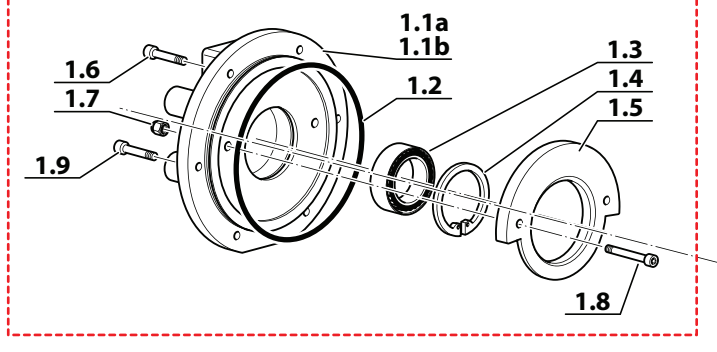
CRANKCASE

Pos.	Qty	Code	Description
KIT1a	1	13-00-0050/R	FILTER SIDE FLANGE MCH13/16 KIT
1.1a	1	13-00-0050	FILTER SIDE FLANGE MCH13/16
1.2	1	13-00-0062	FLANGE O-RING 2562
1.3	1	13-00-0042	FLANGE ROLLER BEARING NU305
1.4	1	13-00-0055	SEEGER RETAINING RING J 62
1.5	1	13-01-0042/N	HALF MOON FLANGE
1.6	6	13-00-0048	SCREW ZINC. DIN 912
1.7	2	13-00-0137	SELF LOCKING NUT
1.8	2	13-00-0067	SCREW ZINC. DIN 912
KIT1b	1	13-00-0050/TR/R	FILTER SIDE FLANGE MCH13/16 FOR TROPICAL KIT
1.1b	1	13-00-0050/TR	FILTER SIDE FLANGE MCH13/16 FOR TROPICAL
1.2	1	13-00-0062	FLANGE O-RING 2562
1.3	1	13-00-0042	FLANGE ROLLER BEARING NU305
1.4	1	13-00-0055	SEEGER RETAINING RING J 62
1.5	1	13-01-0042/N	HALF MOON FLANGE
1.6	4	13-00-0048	SCREW DIN 912
1.7	2	13-00-0137	SELF LOCKING NUT
1.8	2	13-00-0067	SCREW ZINC. DIN 912
1.9	2	13-00-0075	SCREW ZINC
KIT2a	1	13-00-0026/R	KIT CRANKCASE MCH13-16 SIGHT GLASS
KIT2b	1	13-00-0001/R	CRANKCASE MCH13-16
KIT2c	1	05-00-001/1/R	KIT CRANKCASE MCH5 CNG SIGHT GLASS
KIT2d	1	05-00-002/R	KIT CRANKCASE MCH5 CNG
2.1a	1	13-00-0026	CRANKCASE MCH13-16 SIGHT GLASS
2.1b	1	13-00-0001	CRANKCASE MCH13-16
2.1c	1	05-00-001/1	CRANKCASE MCH5 CNG SIGHT GLASS
2.1d	1	05-00-002	CRANKCASE MCH-5 CNG
2.2	1	6-00-029	OIL PURGE CAP MCH6
2.3	1	13-00-0174	STRAIGHT 1/8 PIPE FITTING
2.4	4	13-01-0008	FIRST STAGE TIE ROD MCH13/16
2.5	8	13-02-0040	2ND/3RD STAGE TIE ROD
KIT3a	1	13-00-0071/R	FAN SIDE FLANGE MCH13-16 KIT
KIT3b	1	13-00-0071/TR/R	FAN SIDE FLANGE MCH13-16 TROPICAL PLUS KIT
3.1a	1	13-00-0071	FAN SIDE FLANGE MCH13-16
3.1b	1	13-00-0071/TR	FAN SIDE FLANGE MCH13-16 TROPICAL
3.2	1	13-00-0070/N	ROLLER BEARING NUP 206 C3
3.3	1	13-00-0062	FLANGE O-RING 2562
3.4	1	13-00-0055	SEEGER RETAINING RING J 62
3.5	4	13-00-0048	SCREW ZINC. DIN 912
3.6	1	13-00-0073	OIL SPLASH GUARD
3.7	2	13-00-0075	SCREW ZINC
4	1	13-00-0074	FAN-HOLDING HUB MCH13/16
5	1	13-00-0077	COOLING FAN WHEEL MCH13-16
6	1	13-00-0082	COOLING FAN FLANGE MCH13/16
7	1	VITE1045Z	SCREW ZINC.
8	4	13-00-0080	SCREW ZINC. DIN912
9	1	RON10ZG	WASHER
10	4	13-00-0079	WASHER

CRANKCASE

KIT 1a - 13-00-0050/R

KIT 1b - Tropical Plus - 13-00-0050/TR/R

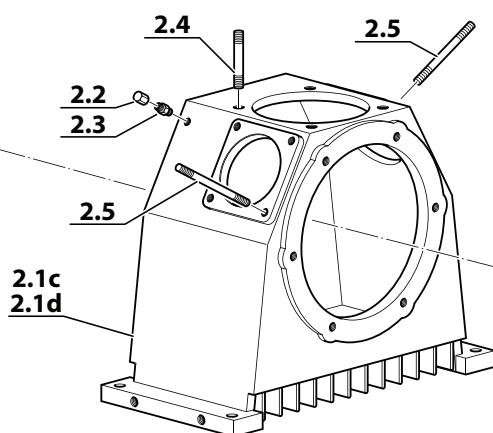


KIT2c - 05-00-001/1/R Standard-Tech-MiniTech

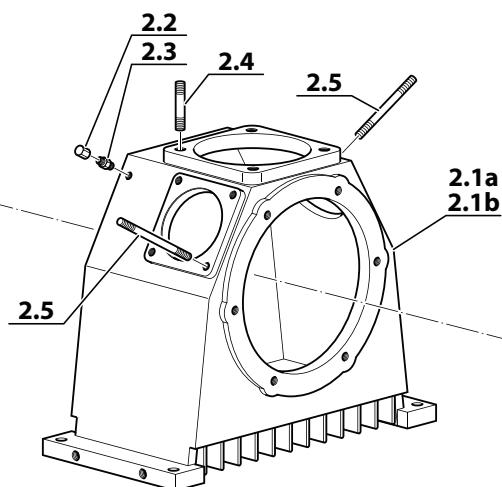
KIT2d - 05-00-002/R Compact-MiniSilent-SuperSilent-Mark

Standard-Tech-MiniTech **KIT2a - 13-00-0026/R**

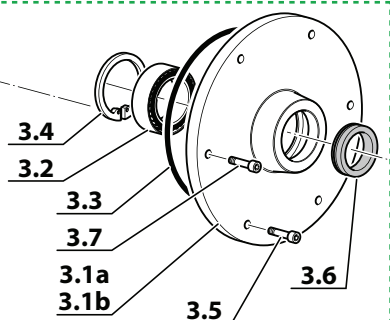
Compact-MiniSilent-SuperSilent-Mark **KIT2b - 13-00-0001/R**



CRANKCASE MCH-8

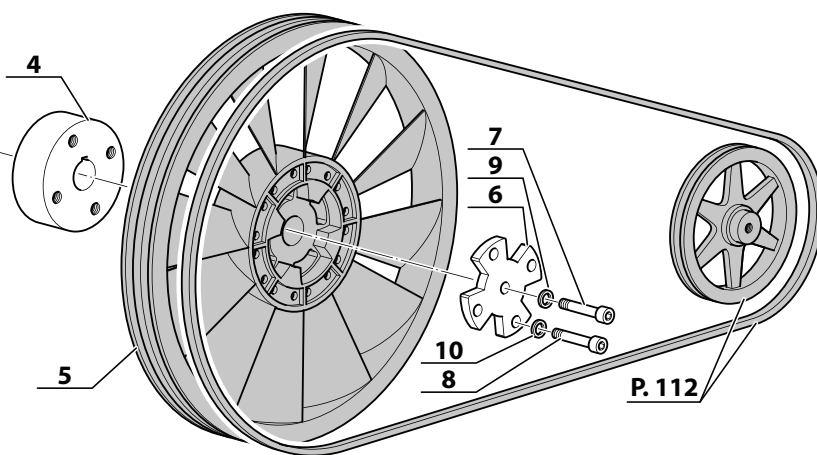


CRANKCASE MCH-11-13-16



KIT 3a - 13-00-0071/R

KIT 3b Tropical Plus - 13-00-0071/TR/R

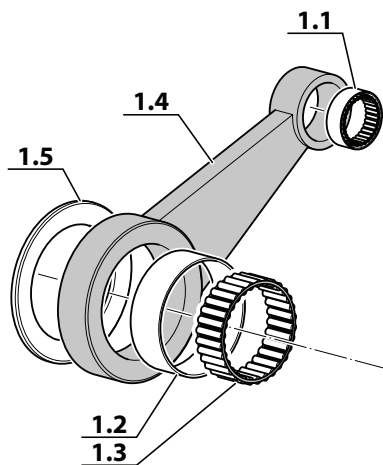


CRANKSHAFT

Pos.	Qty	Code	Description
KIT1	1	13-01-0107/R	1ST/3RD STAGE CON-ROD ASS.BLY KIT
1.1	1	13-00-0192	BEARING ROLLER
1.2	1	13-00-0126	HARDENED RING
1.3	1	13-00-0128	BEARING ROLLER
1.4	1	13-01-0107	1ST/3RD STAGE CON-ROD ASS.BLY
1.5	1	13-00-0106	SPACER
KIT2	1	13-00-0105/R	2ND STAGE CON-ROD ASS.BLY MCH13/16 KIT
2.1	1	13-00-0192	BEARING ROLLER
2.2	1	13-00-0126	HARDENED RING IR 42X47X15,1
2.3	1	13-00-0128	BEARING ROLLER
2.4	1	13-00-0105	2ND STAGE CON-ROD ASS.BLY MCH13/16
2.5	1	13-00-0106	SPACER
KIT3	1	13-00-0098/R	CRANKSHAFT MCH13/16 KIT
3.1	1	13-00-0104	SCREW ZINC
3.2	1	13-00-0101	8MM SELF-LOCKING NUT
3.3	1	13-00-0100	COUNTERWEIGHT
3.4	3	13-00-0132	HARDENED RING
3.5	1	13-00-0098	CRANKSHAFT MCH13/16
3.6	1	13-00-0099	KEY
3.7	1	13-00-0072	SEEGER RETAINING RING
3.8	1	RON10ZG	WASHER
3.9	1	13-00-0081	SCREW ZINC.

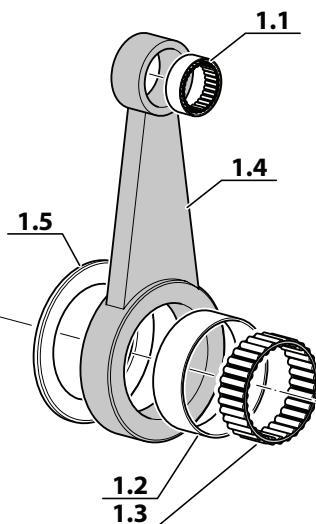
CRANKSHAFT

KIT 1
13-01-0107/R



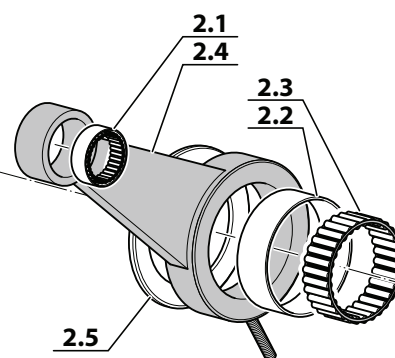
3rd STAGE

KIT 1
13-01-0107/R



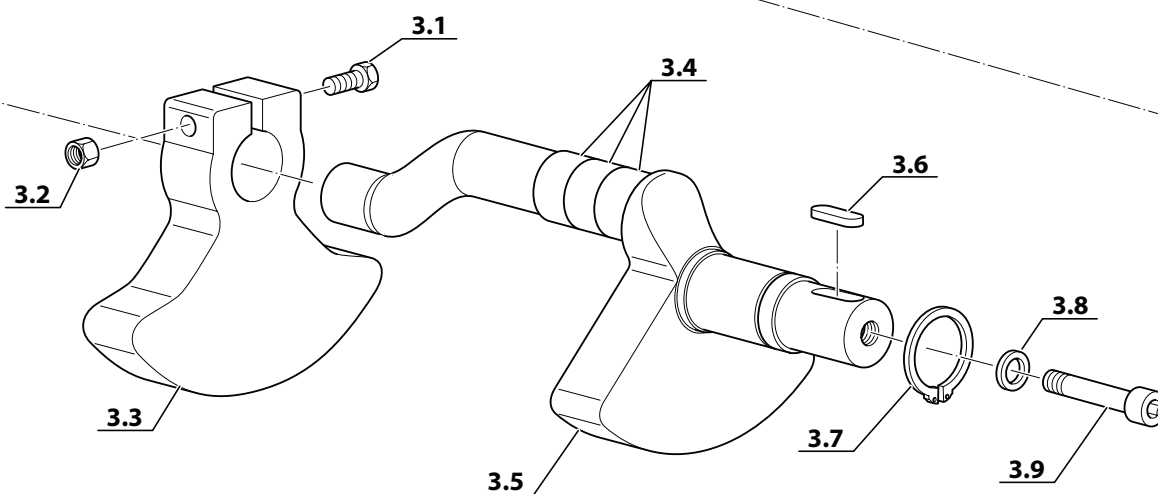
1st STAGE

KIT 2
13-00-0105/R



2nd STAGE

KIT 3
13-00-0098/R



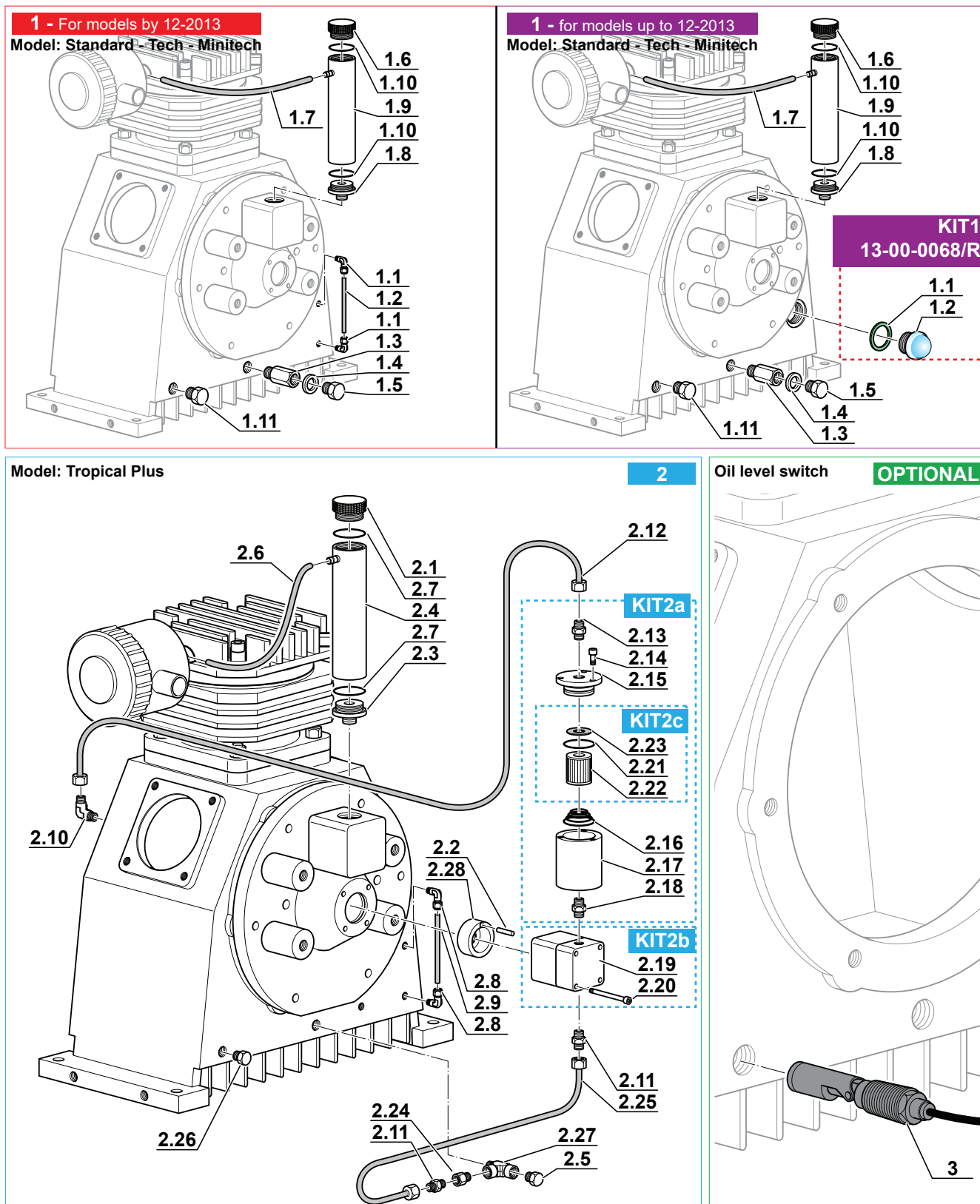
OIL LEVEL

Mod: Standard - Tech - Minitech - Tropical Plus

Pos.	Qty	Code	Description
1.1	1	13-00-0021	FITTING 90°
1.2	1	13-00-0064	OIL LEVEL CHECK TUBE MCH13/16
1.3	1	13-00-0052	FITTING FOR OIL DISCHARGE
1.4	1	13-00-0053	COPPER GASKET
1.5	1	13-00-0063	OIL DRAIN PLUG
1.6	1	13-00-0090	OIL FILLING CAP 1/2 (RED) MCH13/16 WITH BREATHER
1.7	0,3	TUBRILSAN6X4	RILSAN HOSE 6X4
1.8	1	13-00-0065	LOWER OIL CHARGE TUBE FITTING MCH13/16
1.9	1	13-00-0076	OIL FILLING TUBE MCH13/16
1.10	2	13-01-0013	O-RING 3137 NBR70
1.11	1	13-00-0063/NPT	OIL ALERT 1/2-14 NPT - MCH-13/16 PLUG
KIT1	1	13-00-0068/R	OIL LEVEL KIT
1.1	1	13-00-0078	GASKET
1.2	1	13-00-0068	OIL LEVEL VIEWER
1.3	1	13-00-0052	FITTING FOR OIL DISCHARGE
1.4	1	13-00-0053	COPPER GASKET
1.5	1	13-00-0063	OIL DRAIN PLUG
1.6	1	13-00-0090	OIL FILLING CAP 1/2 (RED) MCH13/16 WITH BREATHER
1.7	0,3	TUBRILSAN6X4	RILSAN HOSE 6X4
1.8	1	13-00-0065	LOWER OIL CHARGE TUBE FITTING MCH13/16
1.9	1	13-00-0076	OIL FILLING TUBE MCH13/16
1.10	2	13-01-0013	O-RING 3137 NBR70
1.11	1	13-00-0063/NPT	OIL ALERT 1/2-14 NPT - MCH-13/16 PLUG
2.1	1	13-00-0090	OIL FILLING CAP 1/2 (RED) MCH13/16 WITH BREATHER
2.2	1	SPINA/3,5x26	PIN
2.3	1	13-00-0065	LOWER OIL CHARGE TUBE FITTING MCH13/16
2.4	1	13-00-0076	OIL FILLING TUBE MCH13/16
2.5	1	13-04-0231	OIL DRAIN PLUG 1/2"
2.6	0,3	TUBRILSAN6X4	RILSAN HOSE 6X4
2.7	2	13-01-0013	O-RING 3137 NBR70
2.8	1	13-00-0021	FITTING 90°
2.9	1	13-00-0064	OIL LEVEL CHECK TUBE MCH13/16
2.10	1	13-00-0144	FITTING 90°
2.11	1	13-00-0035	STRAIGHT FITTING 1/4 TUBE 8MM
2.12	1	13-03-0025/TR	SS TUBE 6X1 MCH-13-16 TROPICAL PLUS OIL DRAIN
KIT2a	1	36-06-007/R	KIT OIL FILTER COVER
2.13	1	13-00-0025E	FITTING 1/4 G -PIPE
2.14	1	VITE0512Z	SCREW ZINC
2.15	1	36-06-004	MCH-36 OIL FILTER PLUG
2.16	1	RE2ST/11	CONICAL SPRING
2.17	1	36-06-007	OIL FILTER CARTER
2.18	1	RACC25301/41/8	FITTING 2530 1/4 1/8
KIT2b	1	36-06-009/R	KIT OIL PUMP
2.19	1	36-06-009	OIL PUMP MCH36
2.20	4	36-06-010	MCH36 SCREW
KIT2c	1	36-06-006/R	KIT OIL FILTER
2.21	1	13-01-0013	O-RING 3137 NBR70
2.22	1	36-06-006	OIL FILTER
2.23	1	36-06-005	OIL FILTER GASKET IN NBR
2.24	1	RIDUZIONE/E2151004	M-F 1/2 1/4 REDUCTION
2.25	1	13-03-0024/TR	SS TUBE 8X1 DRAIN FITTING-OIL PUMP
2.26	1	13-00-0063/NPT	OIL ALERT 1/2-14 NPT - MCH-13/16 PLUG
2.27	1	RACC20701/2	T FITTING FXFXM 1/2
2.28	1	36-06-019/T	OIL PUMP COUPLING MCH13/16 TROPICAL
3	1	SC000334	OIL LEVEL SWITCH

OIL LEVEL

Mod: Standard - Tech - Minitech - Tropical Plus



OIL LEVEL

Mod: Compact - Compact M - Compact Evo - MiniSilent - SuperSilent Evo - Tropical - Mark1 - MCH 26-32/ET Compact

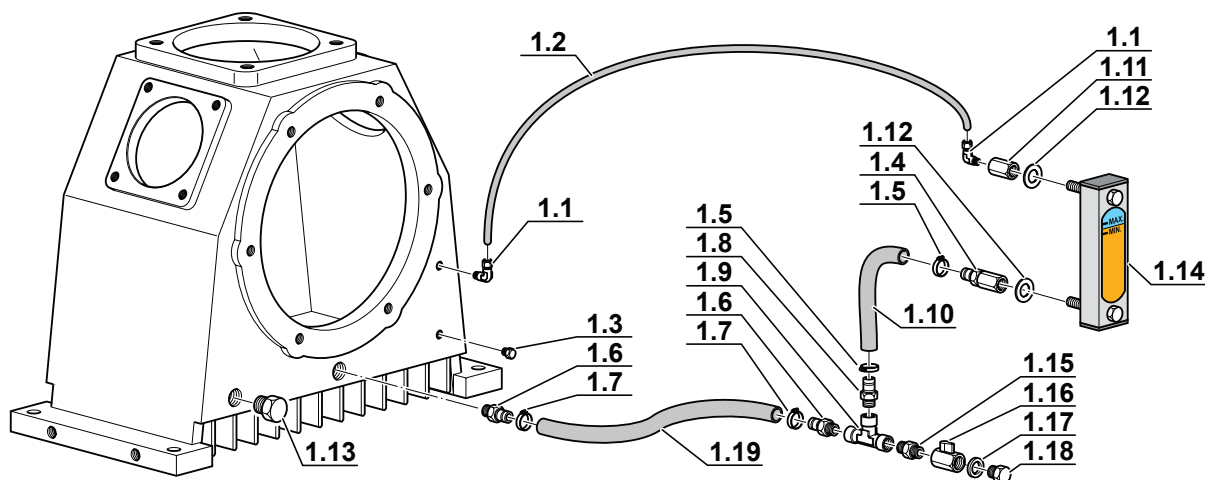
Pos.	Qty	Code	Description
1.1	2	13-00-0021	FITTING 90° 1/8 NPT
1.2	1	13-00-0064	OIL LEVEL CHECK TUBE MCH13/16
1.3	1	13-00-0139	PLUG
1.4	1	13-04-0333	LOWER OIL LEVEL FITTING
1.5	2	FASC/2/10/18	CLAMP
1.6	2	13-00-0052A	FITTING
1.7	4	FASC/3B/17/29	CLAMP
1.8	2	13-00-0063/N	1/2 CARRIER FITTING
1.9	1	13-04-0339	T FITTING
1.10	1	13-04-0335	OIL LEVEL TUBE
1.11	2	13-04-0218	OIL LEVEL UPPER FITTING
1.12	2	GUAR-LIV-OLIO	OIL LEVEL GASKET
1.13	2	13-00-0063/NPT	OIL ALERT 1/2-14 NPT - MCH-13/16 PLUG
1.14	1	13-04-0229	OIL LEVEL
1.15	1	RACC-2501-1/2	FITTING M-M 1/2"
1.16	1	13-04-0230	OIL DRAIN VALVE MCH13/16
1.17	1	13-00-0053	COPPER GASKET
1.18	1	13-04-0231	OIL DRAIN PLUG 1/2"
1.19	1	13-04-0342	OIL DRAIN TUBE MCH13/16 COMPACT
2.1	2	13-00-0021	FITTING 90° 1/8 NPT
2.2	1	13-00-0064	OIL LEVEL CHECK TUBE MCH13/16
2.3	1	13-00-0139	PLUG
2.4	2	RACC20031/2	T FITTING
2.5	1	13-00-0053	COPPER GASKET
2.6	2	13-00-0052A	FITTING
2.7	4	FASC/3B/17/29	CLAMP
2.8	1	13-04-0333	LOWER OIL LEVEL FITTING
2.9	1	13-04-0339	T FITTING
2.10	2	13-04-0338	REDUCTION
2.11	2	13-04-0218	OIL LEVEL UPPER FITTING
2.12	2	GUAR-LIV-OLIO	OIL LEVEL GASKET
2.13	2	13-00-0063/NPT	OIL ALERT 1/2-14 NPT - MCH-13/16 PLUG
2.14	1	13-04-0229	OIL LEVEL
2.15	1	TAPPO/OLIO/3/4	OIL PLUG
2.16	1	13-04-0230	OIL DRAIN VALVE MCH13/16
2.17	1	RACC/3/4-1/2	PLUG
2.18	1	13-04-0231	OIL DRAIN PLUG
2.19	1	13-04-0342	OIL DRAIN TUBE MCH13/16 COMPACT
2.20	1	13-04-0335	OIL LEVEL TUBE
2.21	1	13-00-0063/N	1/2 CARRIER FITTING
2.22a	1	T-SP-16X23-750	FOOD SPIRAL HOSE
2.22b	1	T-SP-16X23-1400	FOOD SPIRAL HOSE
2.23	2	FASC/2/10/18	CLAMP
2.24	2	RACC-2501-1/2	FITTING

OIL LEVEL

Mod: Compact - Compact M - Compact Evo - MiniSilent - SuperSilent Evo - Tropical - Mark1 - MCH 26-32/ET Compact

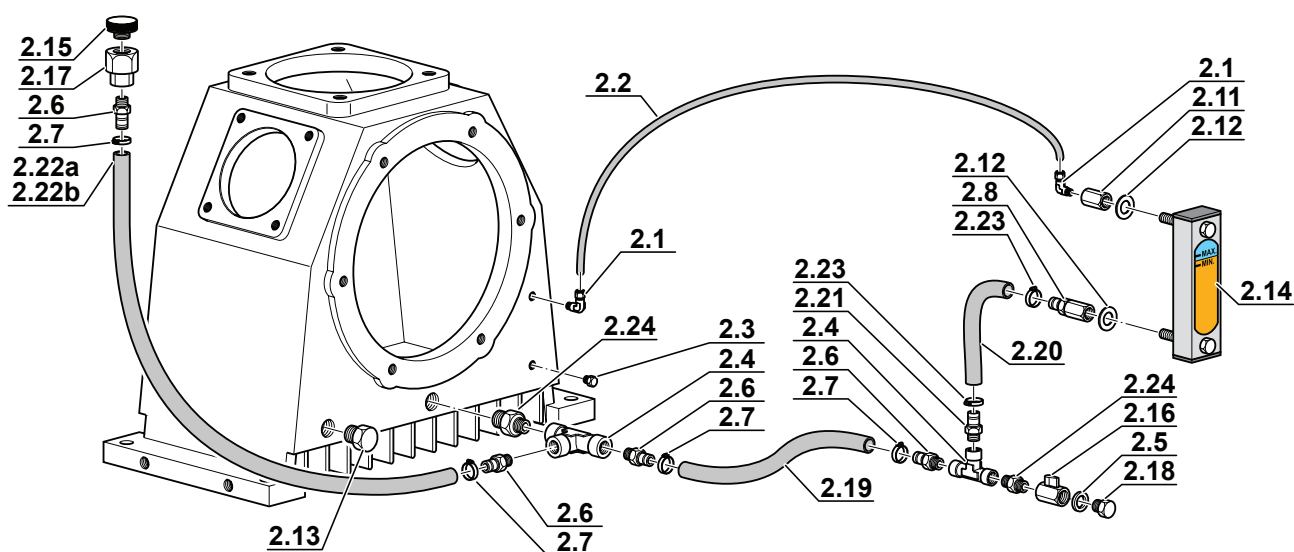
Model: Compact - Compact M - Compact Evo - MiniSilent - SuperSilent Evo - Tropical - Mark1

1



Model: MCH 26-32/ET Compact

2



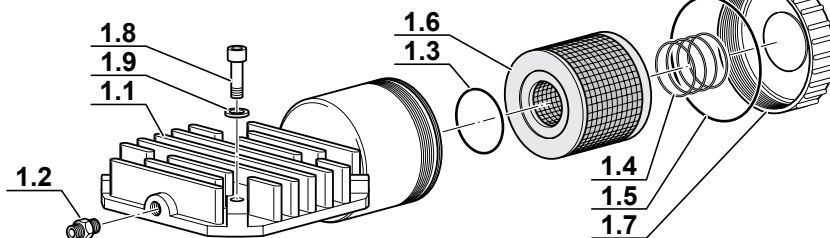
1st STAGE MCH-11-13-16-18

For models up to 12-2014

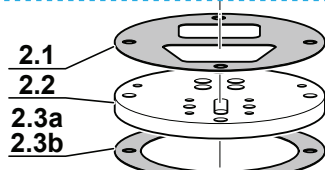
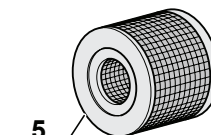
Pos.	Qty	Code	Description
KIT1	1	13-01-0006/R	1ST STAGE HEAD COVER MCH13/16 KIT
1.1	1	13-01-0006	1ST STAGE HEAD COVER MCH13/16
1.2	1	13-00-0012	STRAIGHT FITTING 1/4 TUBE
1.3	1	13-01-0013	O-R SUCTION FILTER 3137 NBR 70
1.4	1	13-01-0026	INTAKE FILTER SPRING
1.5	1	13-01-0011	INTAKE FILTER COVER O-RING MCH13/16
1.6	1	IF-90	INLET FILTER CARTRIDGE MCH13/16
1.7	1	13-01-0041	INTAKE FILTER COVER MCH13/16
1.8	4	13-00-0010	SCREW ZINC. DIN 912
1.9	4	RON/8	WASHER FLAT ZINC
KIT2a	1	13-01-0003/R	1st STAGE CYLINDER HEAD 88MM KIT
2.1	1	13-01-0005	1 st STAGE GASKET MCH/13 UPPER HEAD
2.2	1	13-01-0004	1ST STAGE REED VALVE
2.3a	1	13-01-0003	1ST STAGE 88MM. GASKET UNDER HEAD
KIT2b	1	16-01-0003/R	1st STAGE CYLINDER HEAD 97MM KIT
2.1	1	13-01-0005	1 st STAGE GASKET MCH/13 UPPER HEAD
2.2	1	13-01-0004	1ST STAGE REED VALVE
2.3b	1	16-01-0003	GASKET FIRST STAGE D. 97MM MCH16 UNDER HEAD
KIT3a	1	13-01-0117/R	1ST STAGE MCH13 KIT
3.1a	1	13-01-0117	1ST STAGE 88MM. PISTON MCH13
3.2a	4	13-01-0118	PISTON RINGS D. 88MM 1ST STAGE MCH13
3.3a	1	13-01-0116	FIRST STAGE 88MM PIN
3.4	2	13-00-0110	SEEGER RETAINING RING
KIT3b	1	16-01-0117/R	1ST STAGE MCH16 KIT
3.1b	1	16-01-0117	1ST STAGE PISTON D.95MM MCH16
3.2b	4	16-01-0118	PISTON RINGS DIA 95MM FIRST STAGE MCH16
3.3b	1	16-01-0116	FIRST STAGE 95MM PIN
3.4	2	13-00-0110	SEEGER RETAINING RING
KIT4a	1	13-01-0002/R	1ST STAGE CYLINDER 88MM. MCH13 KIT
4.1a	1	13-01-0002	1ST STAGE CYLINDER 88MM. MCH13
4.2	1	13-01-0007	O-RING 2400 NBR 70
4.3	4	13-00-0010	SCREW ZINC. DIN 912
4.4	4	RON/8	WASHER FLAT ZINC
4.5	4	13-00-0018	MIDDLE NUT ZINC
4.6	4	13-01-0008	FIRST STAGE TIE ROD MCH13/16
KIT4b	1	16-01-0002/R	1ST STAGE CYLINDER D.95MM MCH16 KIT
4.1b	1	16-01-0002	1ST STAGE CYLINDER D.95MM MCH16
4.2	1	13-01-0007	O-RING 2400 NBR 70
4.3	4	13-00-0010	SCREW ZINC. DIN 912
4.4	4	RON/8	WASHER FLAT ZINC
4.5	4	13-00-0018	MIDDLE NUT ZINC.
4.6	4	13-01-0008	FIRST STAGE TIE ROD MCH13/16
5	1	IF-90	INLET FILTER CARTRIDGE MCH13/16

1st STAGE MCH-11-13-16-18 **For models up to 12-2014**

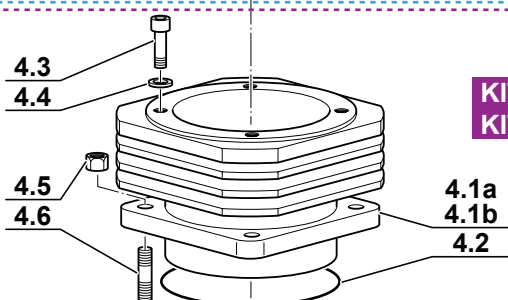
KIT 1 - 13-01-0006/R



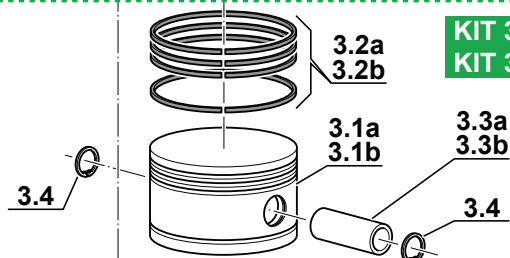
INLET FILTER CARTRIDGE



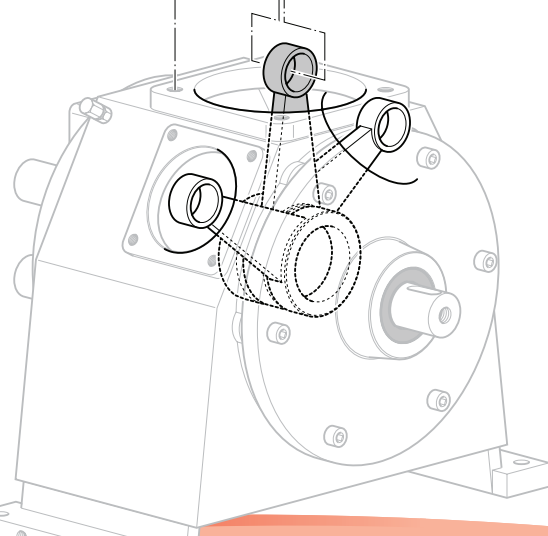
KIT 2a MCH-11-13 - 13-01-0003/R **KIT 2b MCH-16-18 - 16-01-0003/R**



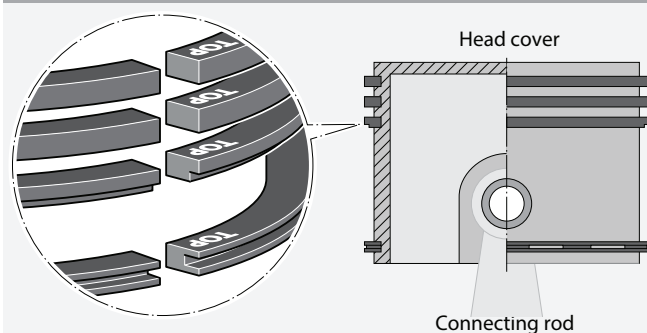
KIT 4a MCH-11-13 - 13-01-0002/R **KIT 4b MCH-16-18 - 16-01-0002/R**



KIT 3a MCH-11-13 - 13-01-0117/R **KIT 3b MCH-16-18 - 16-01-0117/R**



Direction of assembly of segments



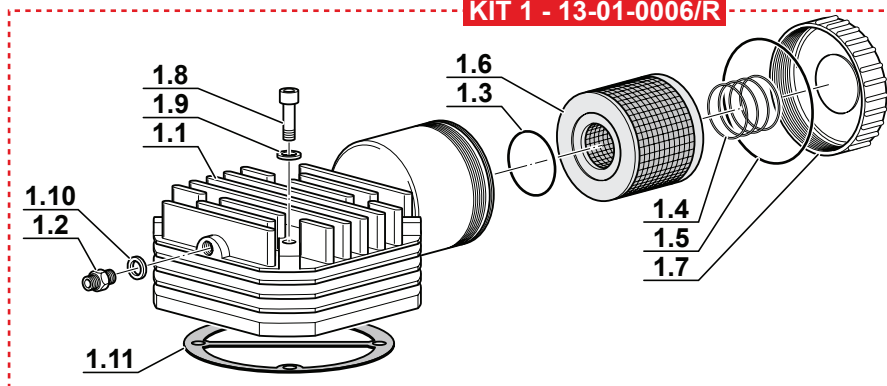
1st STAGE MCH-11-13-16-18

For models by 01-2015

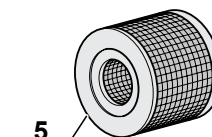
Pos.	Qty	Code	Description
KIT1	1	13-01-0006/N/R	NEW 1ST STAGE HEAD COVER MCH13/16 KIT
1.1	1	13-01-0006/N	NEW 1ST STAGE HEAD COVER MCH13/16
1.2	1	13-07-041	FITTING 3/8 TUBE
1.3	1	13-01-0013	O-R SUCTION FILTER 3137 NBR 70
1.4	1	13-01-0026	INTAKE FILTER SPRING
1.5	1	13-01-0011	INTAKE FILTER COVER O-RING MCH13/16
1.6	1	IF-90	SUCTION FILTER CARTRIDGE MCH13/16
1.7	1	13-01-0041	INTAKE FILTER COVER MCH13/16
1.8	4	VITE0890	SCREW ZINC. DIN 912
1.9	4	RON/8	WASHER FLAT ZINC
1.10	1	13-01-0009	COPPER WASHER 3/8
1.11	1	13-01-0005/N	1ST STAGE GASKET MCH/13 NEW HEAD
KIT2a	1	13-01-0003/N/R	1ST STAGE CYLINDER HEAD 88MM KIT
2.1	1	13-01-0005/N	1ST STAGE GASKET MCH/13 NEW HEAD
2.2	1	13-01-0004	1ST STAGE REED VALVE
2.3a	1	13-01-0003	1ST STAGE 88MM. GASKET UNDER HEAD
KIT2b	1	16-01-0003/R	1ST STAGE CYLINDER HEAD 97MM KIT
2.1	1	13-01-0005	1ST STAGE GASKET MCH/13 UPPER HEAD
2.2	1	13-01-0004	1ST STAGE REED VALVE
2.3b	1	16-01-0003	GASKET FIRST STAGE D. 97MM MCH16 UNDER HEAD
KIT3a	1	13-01-0117/R	1ST STAGE MCH13 KIT
3.1a	1	13-01-0117	1ST STAGE 88MM. PISTON MCH13
3.2a	4	13-01-0118	PISTON RINGS D. 88MM 1STA STAGE MCH13
3.3a	1	13-01-0116	FIRST STAGE 88MM PIN
3.4	2	13-00-0110	SEEGER RETAINING RING
KIT3b	1	16-01-0117/R	1ST STAGE MCH16 KIT
3.1b	1	16-01-0117	1ST STAGE PISTON D.95MM MCH16
3.2b	4	16-01-0118	PISTON RINGS DIA 95MM FIRST STAGE MCH16
3.3b	1	16-01-0116	FIRST STAGE 95MM PIN
3.4	2	13-00-0110	SEEGER RETAINING RING
KIT4a	1	13-01-0002/R	1ST STAGE CYLINDER 88MM. MCH13 KIT
4.1a	1	13-01-0002	1ST STAGE CYLINDER 88MM. MCH13
4.2	1	13-01-0007	O-RING 2400 NBR 70
4.3	4	13-00-0010	SCREW ZINC. DIN 912
4.4	4	RON/8	WASHER FLAT ZINC
4.5	4	13-00-0018	MIDDLE NUT ZINC.
4.6	4	13-01-0008	FIRST STAGE TIE ROD MCH13/16
KIT4b	1	16-01-0002/R	1ST STAGE CYLINDER D.95MM MCH16 KIT
4.1b	1	16-01-0002	1ST STAGE CYLINDER D.95MM MCH16
4.2	1	13-01-0007	O-RING 2400 NBR 70
4.3	4	13-00-0010	SCREW ZINC. DIN 912
4.4	4	RON/8	WASHER FLAT ZINC
4.5	4	13-00-0018	MIDDLE NUT ZINC.
4.6	4	13-01-0008	FIRST STAGE TIE ROD MCH13/16
5	1	IF-90	SUCTION FILTER CARTRIDGE MCH13/16

1st STAGE MCH-11-13-16-18 For models by 01-2015

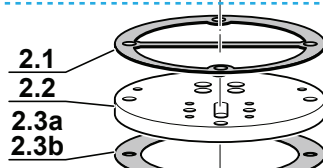
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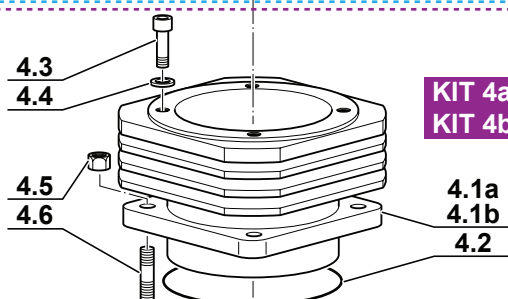
SUCTION FILTER CARTRIDGE



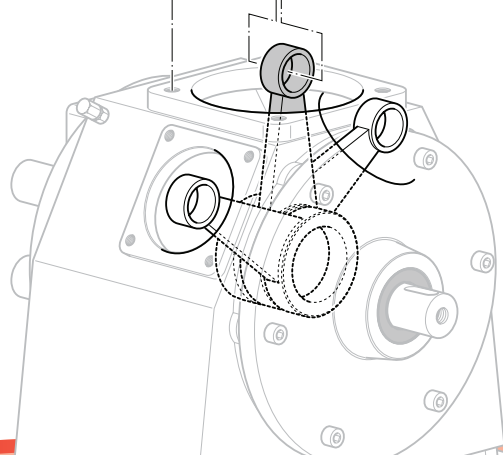
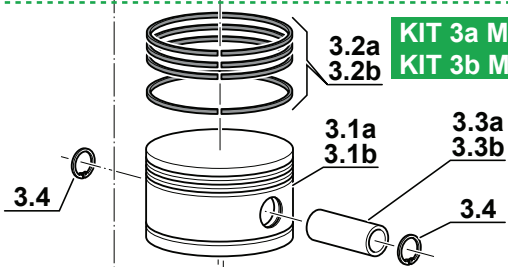
KIT 2a MCH-11-13 - 13-01-0003/R KIT 2b MCH-16-18 - 16-01-0003/R



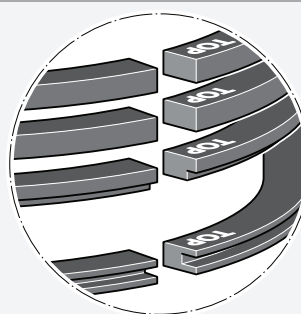
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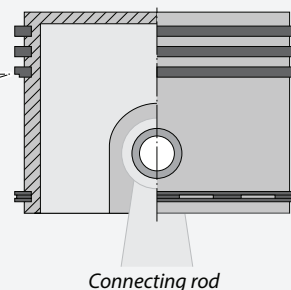
KIT 3a MCH-11-13 - 13-01-0117/R KIT 3b MCH-16-18 - 16-01-0117/R



Direction of assembly of segments



Head cover

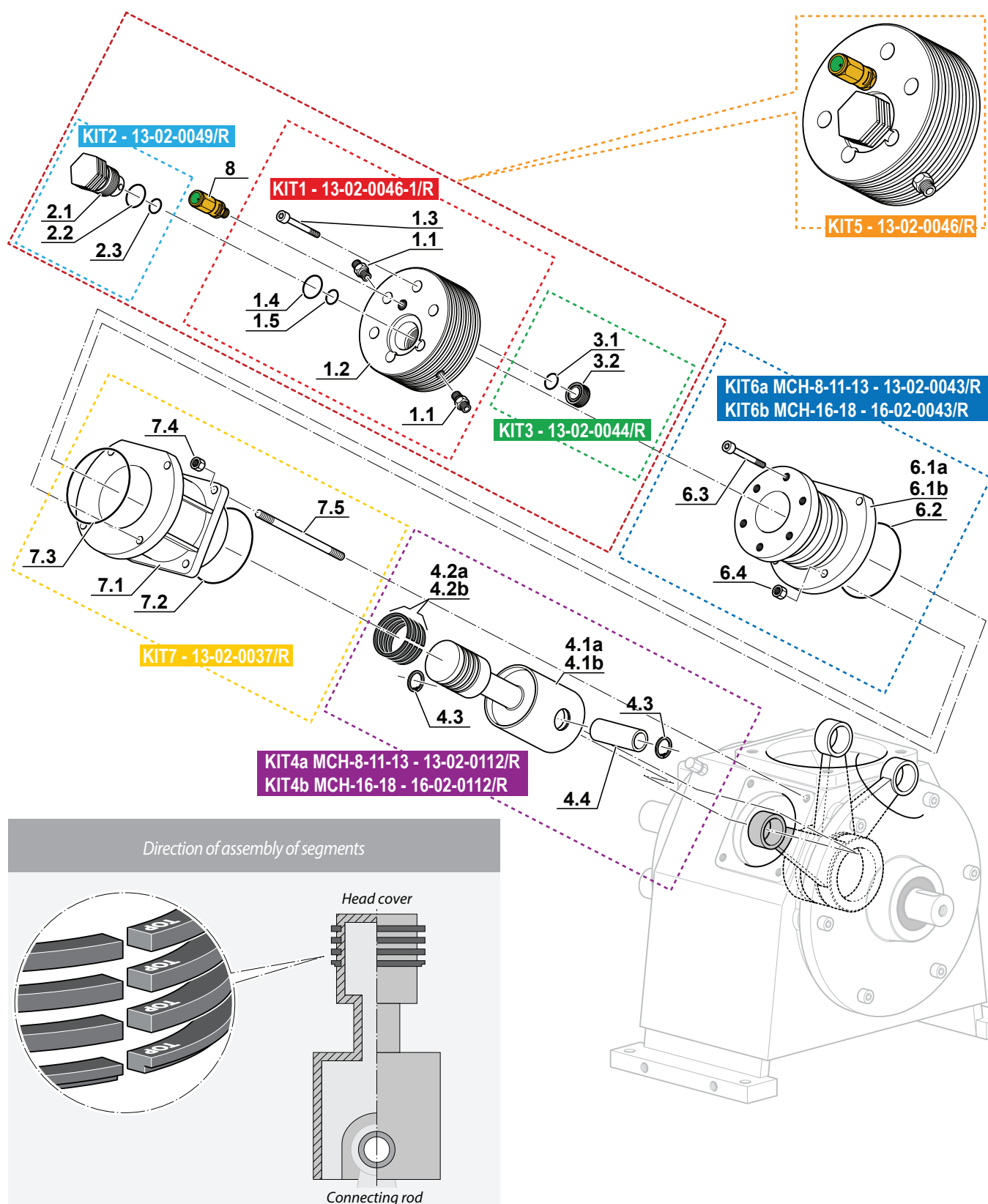


Connecting rod

2nd STAGE

Pos.	Qty	Code	Description
KIT1	1	13-02-0046-1/R	SECOND STAGE HEAD MCH13/16 KIT
1.1	2	13-02-0045/E	LONG STRAIGHT 1/4 PIPE FITTING
1.2	1	13-02-0046	SECOND STAGE HEAD MCH13/16
1.3	6	13-00-0075	SCREW ZINC.
1.4	1	13-02-0056	O-RING 4087 VITON NBR 90 SHORT
1.5	1	13-03-0029/90	O-RING VITON NBR 90 SHORT
KIT2	1	13-02-0049/R	2ND STAGE PRESSURE VALVE ASS. MCH13/16 KIT
2.1	1	13-02-0049	2ND STAGE PRESSURE VALVE ASS. MCH13/16
2.2	1	13-02-0056	O-RING 4087 VITON NBR 90 SHORT
2.3	1	13-03-0029/90	O-RING VITON NBR 90 SHORT
KIT3	1	13-02-0044/R	2ND STAGE SUCTION VALVE ASSBLY
3.1	1	13-03-0029/90	O-RING VITON NBR 90 SHORT
3.2	1	13-02-0044	2ND STAGE SUCTION VALVE ASSBLY
KIT4a	1	13-02-0112/R	2ND STAGE PISTON DIA. 60/36MM MCH13 KIT
4.1a	1	13-02-0112	2ND STAGE PISTON DIA. 60/36MM MCH13
4.2a	4	13-02-0113	PISTON RING DIA. 36MM 2ND STAGE MCH13
4.3	2	13-00-0110	SEEGER RETAINING RING
4.4	1	13-02-0111	2ND STAGE PIN
KIT4b	1	16-02-0112/R	2ND STAGE PISTON D.60/38MM MCH16 KIT
4.1b	1	16-02-0112	2ND STAGE PISTON D.60/38MM MCH16
4.2b	4	16-02-0113	2ND STAGE PISTON RINGS D.38MM MCH/16
4.3	2	13-00-0110	SEEGER RETAINING RING
4.4	1	13-02-0111	2ND STAGE PIN
KIT5	1	13-02-0046/R	2ND STAGE HEAD COMPLETE WITH FITTING-ALVE
KIT6a	1	13-02-0043/R	2ND STAGE 36MM CYLINDER MCH13 KIT
6.1a	1	13-02-0043	2ND STAGE 36MM CYLINDER MCH13
6.2	1	13-00-0039	O-RING 3237 NBR 70
6.3	6	13-00-0075	SCREW ZINC.
6.4	4	13-00-0018	MIDDLE NUT ZINC.
KIT6b	1	16-02-0043/R	2ND STAGE CYLINDER D.38MM MCH16 KIT
6.1b	1	16-02-0043	2ND STAGE CYLINDER D.38MM MCH16
6.2	1	13-00-0039	O-RING 3237 NBR
6.3	6	13-00-0075	SCREW ZINC.
6.4	4	13-00-0018	MIDDLE NUT ZINC.
KIT7	1	13-02-0037/R	2ND STAGE 60MM. GUIDING CYLINDMCH13/16 KIT
7.1	1	13-02-0037	2ND STAGE 60MM. GUIDING CYLINDMCH13/16
7.2	1	13-00-0015	O-RING 2275 NBR 70
7.3	1	13-00-0039	O-RING 3237 NBR 70
7.4	4	13-00-0018	MIDDLE NUT ZINC.
7.5	4	13-02-0040	2ND/3RD STAGE TIE ROD
8	1	13-00-0205	1ST STAGE SAFETY VALVE MCH-13-16 10BAR

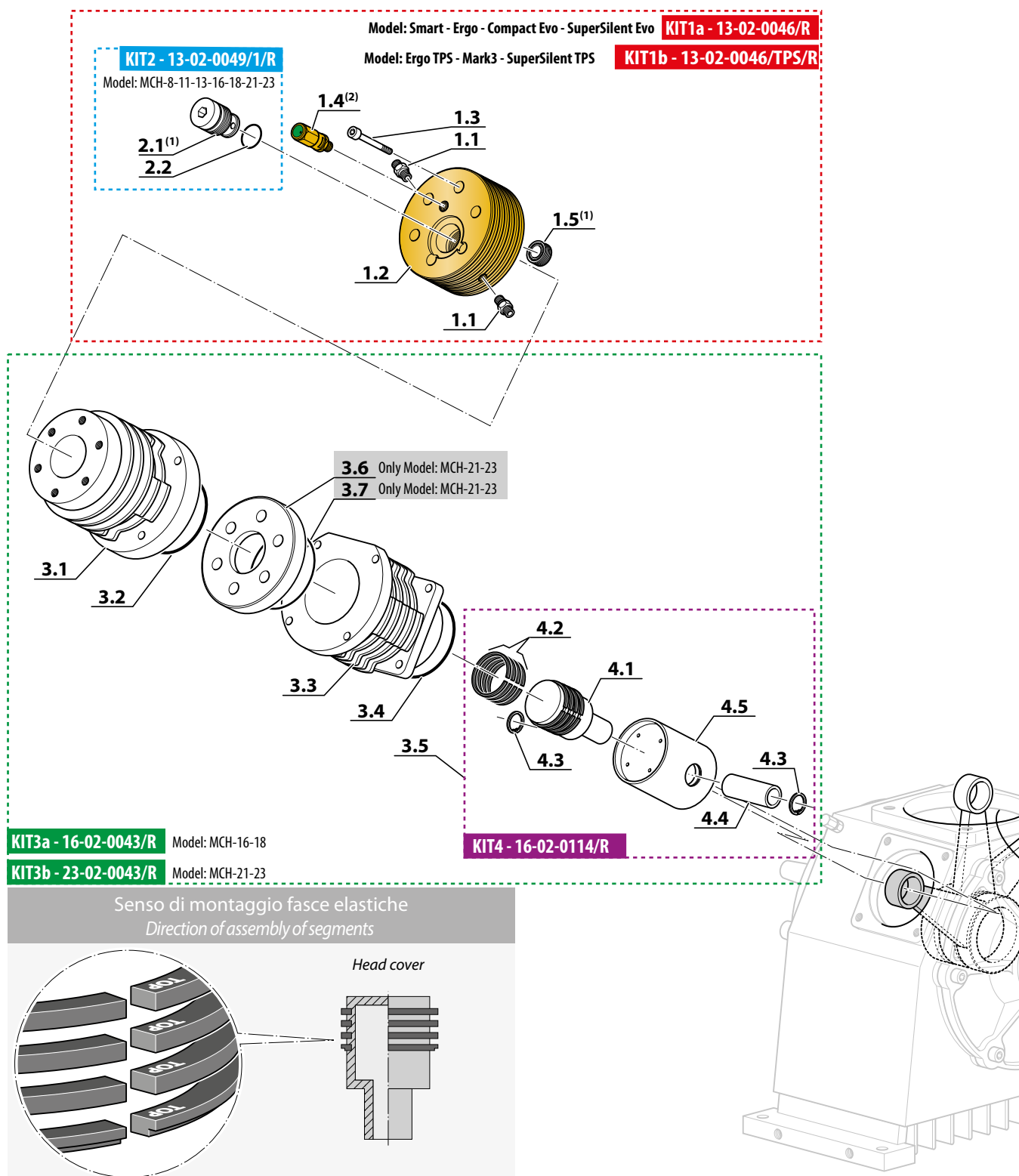
2nd STAGE



2nd STAGE

POS.	QTY	CODE	DESCRIPTION		
KIT1a	1	13-02-0046/R	2ND STAGE HEAD COMPLETE		
1.1	2		FITTING M16X1,5 - G1/4 TUBE Ø10		
1.2	1		SECOND STAGE HEAD MCH13/16		
1.3	6		SCREW 8X45 T.C.E. INOX		
1.4	1	13-00-0205	1ST STAGE SAFETY VALVE MCH-13-16 10BAR		
1.5	1	13-02-0044/P	2ND STAGE SUCTION VALVE INOX		
KIT2	1	13-02-0049/1/R	2ND STAGE PRESSURE VALVE INOX MCH13/16 KIT		
2.1	1		2ND STAGE PRESSURE VALVE ASS MCH13/16		
2.2	1		O-RING 4087 (21,82X3,53) VITON 90		
KIT1b	1	13-02-0046/TPS/R	2ND STAGE HEAD COMPLETE PER TPS MODEL		
1.1	2		FITTING M16X1,5 - G1/4 TUBE Ø12		
1.2	1		SECOND STAGE HEAD MCH13/16		
1.3	6		SCREW 8X45 T.C.E. INOX		
1.4	1	13-00-0205	1ST STAGE SAFETY VALVE MCH-13-16 10BAR		
1.5	1	13-02-0044/P	2ND STAGE SUCTION VALVE INOX		
KIT2	1	13-02-0049/1/R	2ND STAGE PRESSURE VALVE INOX MCH13/16 KIT		
2.1	1		2ND STAGE PRESSURE VALVE ASS MCH13/16		
2.2	1		O-RING 4087 (21,82X3,53) VITON 90		
KIT3a	1	16-02-0043/R	2ND STAGE CYLINDER D.38MM MCH16 KIT		
3.1	1		2ND STAGE CYLINDER MCH-16/23		
3.2	1		O-RING 3237 NBR 90SH 60X2,62		
3.3	1		2ND STAGE 60MM. GUIDING CYLINDRMCH13/16		
3.4	1		O-RING 2275 NBR 90SH (69,57X1,78)		
3.5	1		2ND STAGE PISTON D.60/38MM MCH16 KIT		
KIT3b	1	23-02-0043/R	2ND STAGE CYLINDER D.38MM MCH-21-23 KIT		
3.1	1		2ND STAGE CYLINDER MCH-16/23		
3.2	1		O-RING 3237 NBR 90SH 60X2,62		
3.3	1		2ND STAGE 60MM. GUIDING CYLINDRMCH13/16		
3.4	1		O-RING 2275 NBR 90SH 69,57X1,78		
3.5	1		2ND STAGE PISTON D.60/38MM MCH16 KIT		
3.6	1		SPACER 2ND STAGE MCH-23		
3.7	1		O-RING 3281 NBR 90SH 71,12x2,62		
KIT4	1	16-02-0114/R	2ND STAGE PISTON D.60/38MM MCH16 KIT		
4.1	1		2ND STAGE PISTON D.60/38MM MCH16		
4.2	4	16-02-0113	2ND STAGE PISTON RINGS D.38MM MCH/16		
4.3	2		SEEGER RETAINING RING		
4.4	1		2ND STAGE PIN		
4.5	1		PUSHING PISTON 60MM. MCH13-16		

2nd STAGE



2.1⁽¹⁾ The valve must be tightened with a torque of 81 ftlbs
1.4⁽²⁾ The valve must be tightened with a torque of 15 ftlbs

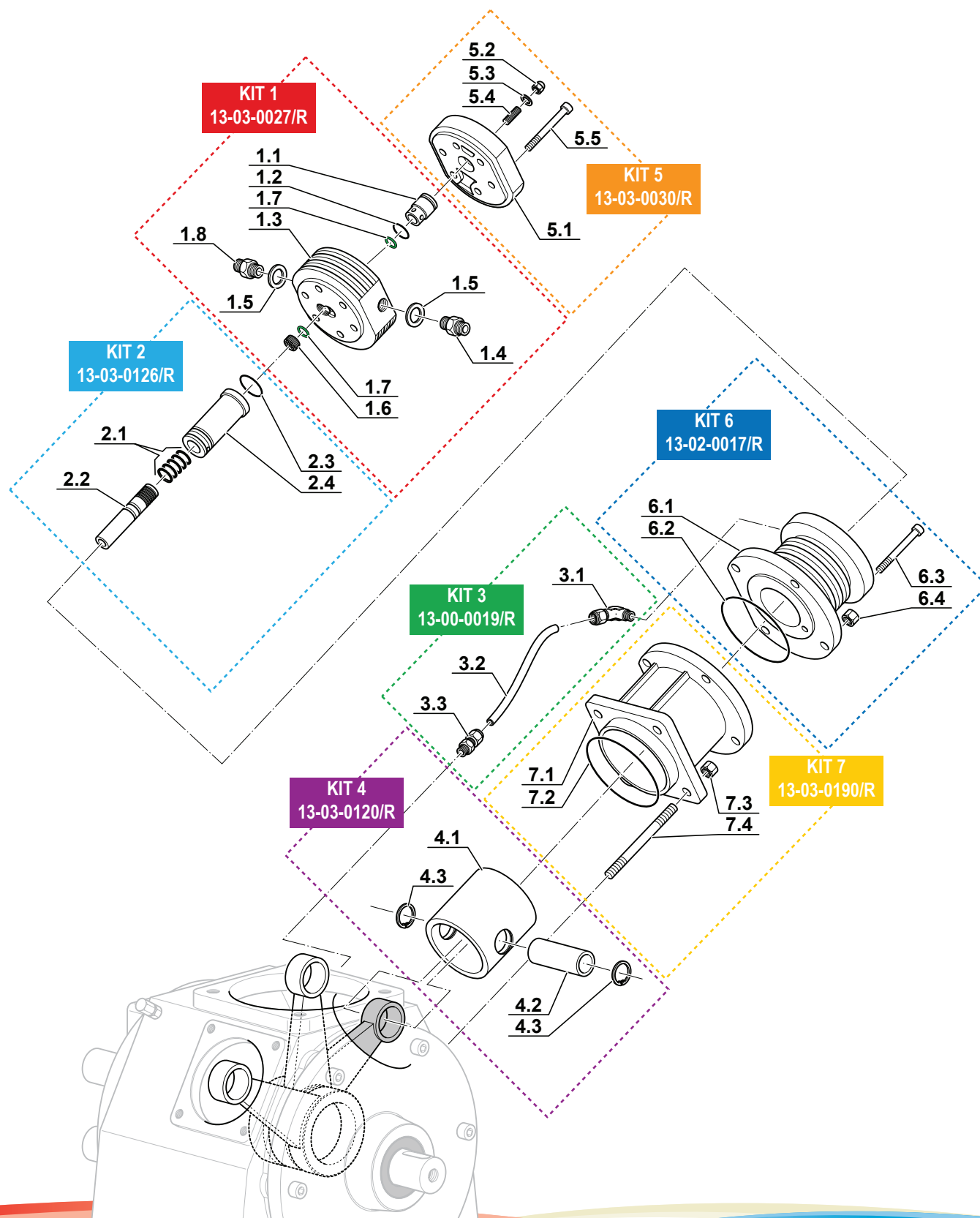
3rd STAGE G2

For models up to 03-2014

Pos.	Qty	Code	Description
KIT1	1	13-03-0027/R	3RD STAGE HEAD FOR MCH13/16 KIT
1.1	1	13-03-0028	3RD STAGE PRESSURE VALVE ASS MCH13/16
1.2	1	13-03-0029/90	O-RING VITON NBR 90 SHORT
1.3	1	13-03-0027	3RD ST.GE HEAD FOR MCH13/16
1.4	2	13-00-0025E	FITTING 1/4 G -PIPE
1.5	2	GUAR1319	COPPER WASHER
1.6	1	13-03-0020	3RD SUCTION VALVE ASSBLY MCH13/16
1.7	2	OR-2025/V-90	O-RING 2025 VITON 90
1.8	1	13-00-0175E	1/4 G TUBE 8MM FITTING
KIT2	1	13-03-0126/R	PISTON 3RD STAGE 14 MCH13/16 KIT
2.1	5	13-03-0158	3 rd STAGE SEGMENTS Ø14 COD. 0001400000 50
2.2	1	13-03-0126	PISTON 3RD ST.GE 14 DIA MM
2.3	1	13-03-0123	O-RING 2100 VITON NBR 90 SHORT
2.4	1	13-03-0125	3RD STAGE CYLINDER DIA 14MM MCH13/16
KIT3	1	13-00-0019/R	LUBRICATION TUBE 3RD STAGE MCH13/16
3.1	1	13-00-0021	FITTING 90° 1/8 NPT
3.2	1	13-00-0019	OIL LEVEL INDICATOR
3.3	1	RACC0818R	CONNECTION .DIAM. 8 1/8 FOR RILS TUBE
KIT4	1	13-03-0120/R	PUSHING PISTON 3RD STAGE MCH13-16
4.1	1	13-03-0120	PUSHING PISTON 60MM. MCH13-16
4.2	1	13-02-0111	2ND STAGE PIN
4.3	2	13-00-0110	SEEGER RETAINING RING
KIT5	1	13-03-0030/R	3RD STAGE HEAD COVER KIT
5.1	1	13-03-0030	3RD STAGE HEAD COVER
5.2	1	13-00-0032	STAINLESS STEEL CAP NUT
5.3	1	13-03-0033	COPPER WASHER MCH13/16
5.4	1	13-03-0034	8X25 STAINLESS STEEL DOWEL
5.5	6	13-00-0031	SCREW T.C.E. ZINC.
KIT6	1	13-02-0017/R	3RD STAGE GUIDING CYLINDER MCH13/16 KIT
6.1	1	13-02-0017	3RD STAGE GUIDING CYLINDER MCH13/16
6.2	1	13-00-0039	O-RING 3237 NBR 70
6.3	6	13-00-0031	SCREW ZINC.
6.4	4	13-00-0018	MIDDLE NUT ZINC.
KIT7	1	13-03-0190/R	LOWER 3RD STAGE 60MM GUIDING CYLINDER KIT
7.1	1	13-03-0190	LOWER 3RD STAGE 60MM. GUIDING CYLINDER
7.2	1	13-00-0015	O-RING 2275 NBR 70
7.3	4	13-00-0018	MIDDLE NUT ZINC.
7.4	4	13-02-0040	2ND/3RD STAGE TIE ROD

3rd STAGE G2

For models up to 03-2014



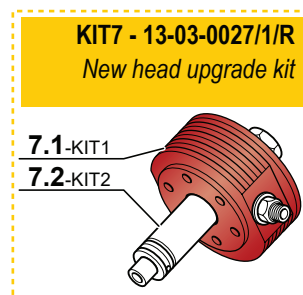
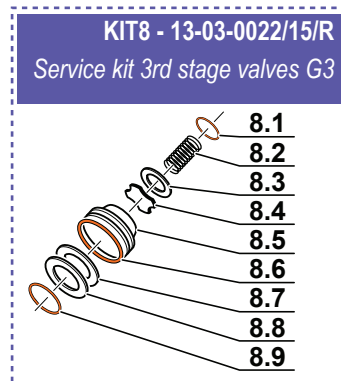
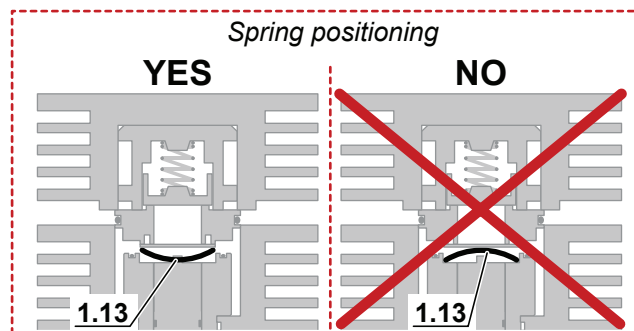
3rd STAGE G3

For models by 03-2014

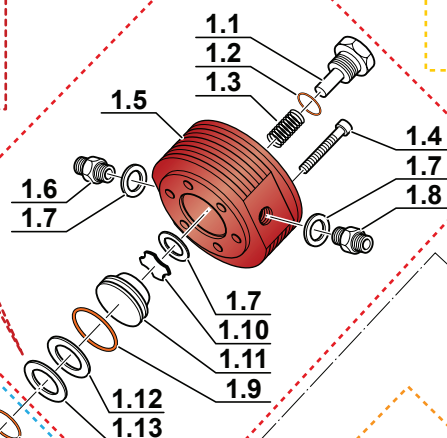
Pos.	Qty	Code	Description
KIT1	1	13-03-0022-2/R	3RD STAGE NEW HEAD MCH-13-16
1.1	1	13-03-0026	SPINDLE SPRING VALVE 3RD STAGE
1.2	1	13-03-0029/90	O-RING VITON NBR 90 SHORT
1.3	1	36-04-017	INOX SPRING
1.4	6	VITE0845	SCREW ZINC. DIN912
1.5	1	13-03-0027/1	KIT 3RD STAGE NEW HEAD MCH-13-16
1.6	1	13-00-0175E	1/4 G TUBE 8MM FITTING
1.7	3	GUAR1319	COPPER WASHER 1/4
1.8	1	13-00-0025E	FITTING 1/4 G -PIPE 6MM
1.9	1	13-03-0123	O-RING 2100 VITON NBR 70 SHORT
1.10	1	13-03-0019	STAR PLATE EXHAUST VALVE 3RD STAGE MCH-13-16
1.11	1	13-03-0022/15	BODY VALVE 3RD STAGE MCH-13-16
1.12	1	36-04-018	DISC VALVE SUCTION MCH36 (24X15,2X1)
1.13	1	36-04-020	SPRING 24X15,2 H.O,2 4° ST. MCH-36
KIT2	1	13-03-0122/R	PISTON 3RD ST.GE 14 MCH13/16 KIT
2.1	5	13-03-0158	3 rd STAGE SEGMENTS Ø14 COD. 0001400000 S0
2.2	1	13-03-0122	PISTON 3RD ST.GE Ø14MM WITH PEG ACC. AVP
2.3	1	13-03-0123	O-RING 2100 VITON NBR 70 SHORT
2.4	1	13-03-0128	3RD STAGE CYL. Ø14MM MCH13/16 SUCTION VALVE
KIT3	1	13-00-0019/R	LUBRICATION TUBE 3RD STAGE MCH13/16
3.1	1	13-00-0021	FITTING 90° 1/8 NPT
3.2	1	13-00-0019	OIL LEVEL INDICATOR
3.3	1	RACC0818R	CONNECTION .DIAM. 8 1/8 FOR RILS TUBE
KIT4	1	13-03-0120/R	PUSHING PISTON 3RD STAGE MCH13-16
4.1	1	13-03-0120	PUSHING PISTON 60MM. MCH13-16
4.2	1	13-02-0111	2ND STAGE PIN
4.3	2	13-00-0110	SEEGER RETAINING RING
KIT5	1	13-02-0017/R	3RD STAGE GUIDING CYLINDER MCH13/16 KIT
5.1	1	13-02-0017	3RD STAGE GUIDING CYLINDER MCH13/16
5.2	1	13-00-0039	O-RING 3237 NBR 70
5.3	6	VITE0845	SCREW ZINC. DIN912
5.4	4	13-00-0018	MIDDLE NUT ZINC.
KIT6	1	13-03-0190/R	LOWER 3RD STAGE 60MM. GUIDING CYLINDER KIT
6.1	1	13-03-0190	LOWER 3RD STAGE 60MM. GUIDING CYLINDER
6.2	1	13-00-0015	O-RING 2275 NBR 70
6.3	4	13-00-0018	MIDDLE NUT ZINC.
6.4	4	13-02-0040	2ND/3RD STAGE TIE ROD
KIT7	1	13-03-0027/1/R	NEW HEAD UPGRADE KIT
7.1	1	13-03-0022-2/R	3RD STAGE NEW HEAD MCH-13-16
7.2	1	13-03-0122/R	PISTON 3RD ST.GE 14 MCH13/16 KIT
KIT8	1	13-03-0022/15/R	SERVICE KIT 3RD STAGE VALVES G3
8.1	1	13-03-0029/90	O-RING VITON NBR 90 SHORT
8.2	1	36-04-017	INOX SPRING Ø11X8,6 L. 18,5 WIRE 1,2 4° ST. MCH-36
8.3	1	GUAR1319	COPPER WASHER 1/4
8.4	1	13-03-0019	STAR PLATE EXHAUST VALVE 3RD STAGE MCH-13-16
8.5	1	13-03-0022/15	BODY VALVE 3RD STAGE MCH-13-16
8.6	1	13-03-0123	O-RING 2100 VITON NBR 70 SHORT
8.7	1	36-04-018	DISC VALVE SUCTION MCH36
8.8	1	36-04-020	SPRING
8.9	1	13-03-0123	O-RING 2100 VITON NBR 70 SHORT

3rd STAGE G3

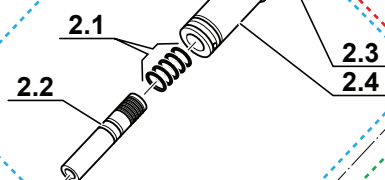
For models by 03-2014



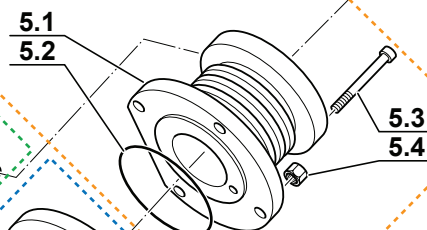
KIT 1
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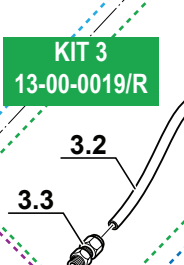
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 13-03-0122/R



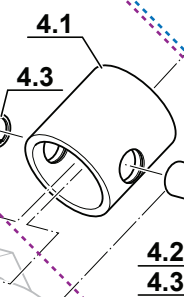
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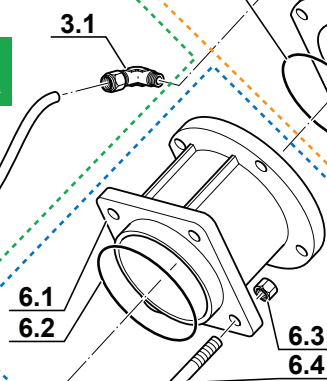
KIT 3
 13-00-0019/R



KIT 4
 13-03-0120/R



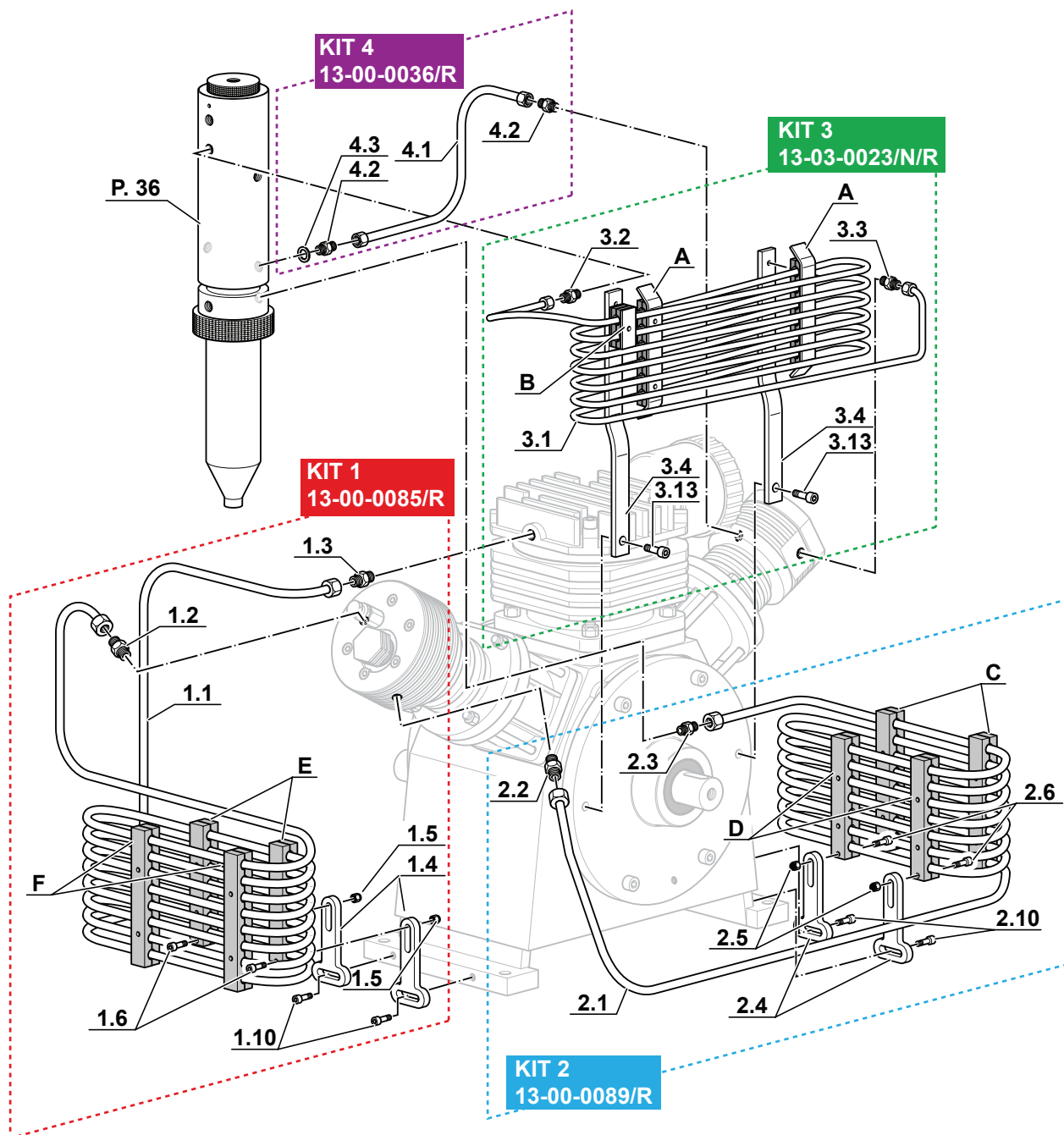
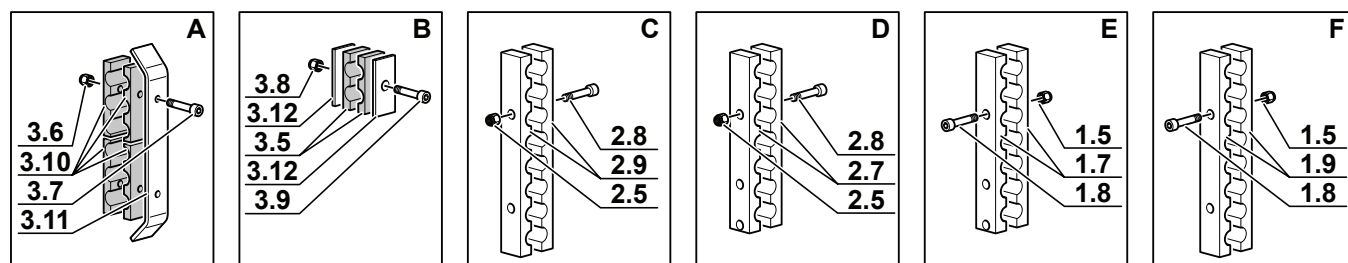
KIT 6
 13-03-0190/R



PRESSURE CIRCUIT

Pos.	Qty	Code	Description
KIT1	1	13-00-0085/R	1ST-2ND STAGE 10MM COOLING PIPE KIT
1.1	1	13-00-0085	1ST-2ND STAGE 10MM COOLING PIPE
1.2	1	13-02-0045E	FITTING 1/4 G - TUBE 10MM HEAD 2°STD MCH 13/16
1.3	1	13-00-0178E	FITTING TUBE10MM 1/4 NPT
1.4	2	13-00-0091	PIPE HOLDING BRACKET 45X15MM
1.5	10	13-00-0137	SELF LOCKING NUT
1.6	4	13-00-0067	SCREW ZINC. DIN 912
1.7	4	13-00-0186	3 HOLE PIPE-HOLDING BRACKET
1.8	8	13-00-0087	SCREW ZINC. DIN 912
1.9	4	13-00-0197	2 HOLE PIPE-HOLDING BRACKET
1.10	4	VITE0620	SCREW ZINC. DIN912
KIT2	1	13-00-0089/R	2ND-1ST STAGE 10MM COOLING PIPE KIT
2.1	1	13-00-0089	2ND-3RD STAGE 10MM COOLING PIPE KIT
2.2	1	13-02-0045E	FITTING 1/4 G - TUBE 10MM HEAD 2°STD MCH 13/16
2.3	1	13-00-0026E	STRAIGHT FITTING 1/4 G -TUBO 10MM
2.4	2	13-00-0083	PIPE HOLDING BRACKET 75X15MM. MCH13/16
2.5	10	13-00-0137	SELF LOCKING NUT HIGH
2.6	4	13-00-0067	SCREW ZINC. DIN 912
2.7	4	13-00-0186	3 HOLE PIPE-HOLDING BRACKET
2.8	8	13-00-0087	SCREW ZINC. DIN 912
2.9	4	13-00-0197	2 HOLE PIPE-HOLDING BRACKET
2.10	4	VITE0620	SCREW ZINC. DIN912
KIT3	1	13-03-0023/N/R	3RD-SEPARATOR 6MM COOLING PIPE KIT
3.1	1	13-03-0023/N	6MM COOLING PIPE 3RD-SEPARATOR
3.2	1	13-00-0174E	STRAIGHT 1/8 PIPE FITTING 6
3.3	1	13-00-0025E	FITTING 1/4 G -TUBO 6MM ERMETO
3.4	2	13-00-0133	TUBE CLAMP 6 MM SEPARATOR-4TH STAGE
3.5	2	13-00-0134/1	ANTI VIBRATION BLOCK TUBE6 2 HOLE
3.6	4	DADM6AUTBAS	SELF LOCKING NUT LOW DIN 985
3.7	4	13-00-0041	SCREW ZINC. DIN 912
3.8	1	DA05	SELF LOCKING NUT ZINC. LOW
3.9	1	VITE0525Z	SCREW ZINC. DIN912
3.10	8	13-00-0134	ANTI VIBRATION BLOCK TUBE6 3 HOLE
3.11	2	13-00-0136	DOUBLE 6MM. PIPE-HOLDING BRACKET MCH13/16
3.12	2	13-00-0135	SINGLE 6MM. PIPE-HOLDING BRACKET MCH13/16
3.13	2	13-00-0075	SCREW ZINC
KIT4	1	13-00-0036/R	SEPARATOR-3RD 8MM COOLING PIPE KIT
4.1	1	13-00-0036	TUBE 8MM. 3RD STAGE/SEPARATOR(D) MCH13/16
4.2	2	13-00-0175E	1/4 G TUBE 8MM FITTING
4.3	1	GUAR1319	COPPER WASHER

PRESSURE CIRCUIT



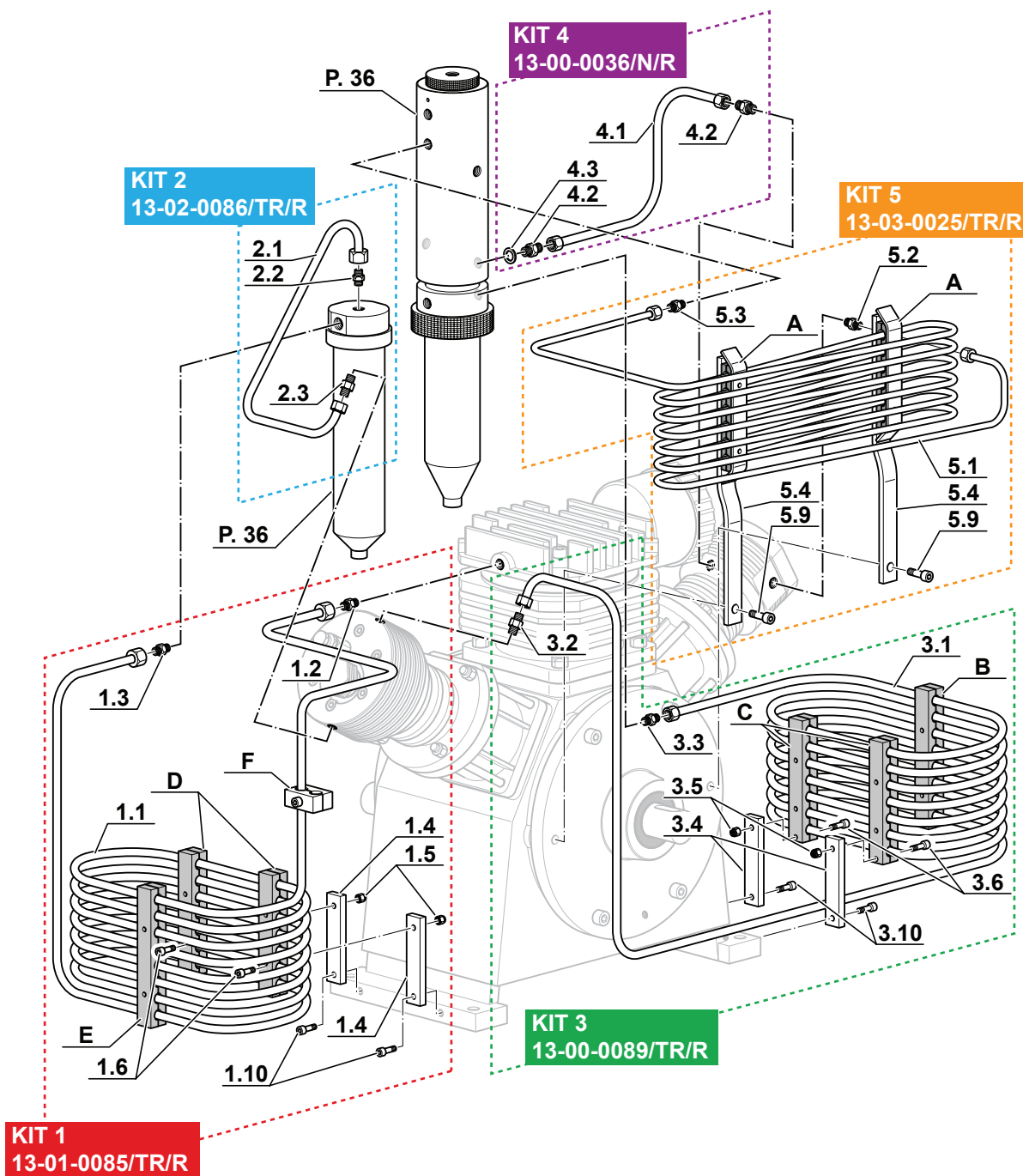
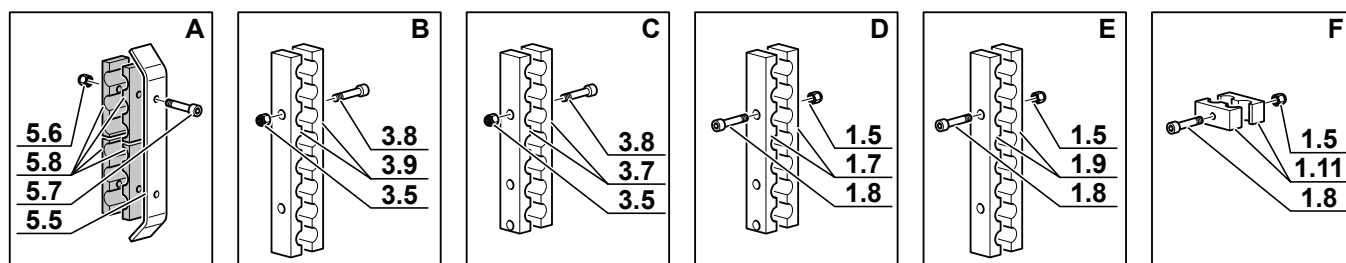
PRESSURE CIRCUIT

Mod: Tropical - Tropical Plus

Pos.	Qty	Code	Description
KIT1	1	13-01-0085/TR/R	COOLING PIPE 12MM 1ST-SEP. MCH13/16 TR-TRPL KIT
1.1	1	13-01-0085/TR	COOLING PIPE 12MM 1ST-SEPARATOR MCH13/16 T-TP
1.2	1	RACC/E2115121/4	STRAIGHT FITTING 1/4NPT TUBE 12MM SHORT
1.3	1	RACC/E212112LG1/2	FITTING E212-112L G1/2" WITH GASKET
1.4	2	13-00-0083	PIPE HOLDING BRACKET 75X15MM. MCH13/16
1.5	8	13-00-0137	SELF LOCKING NUT HIGH
1.6	2	13-00-0067	SCREW ZINC. DIN 912
1.7	4	13-00-0197/TR	2 HOLE PIPE-HOLDING BRACKET
1.8	6	13-00-0087	SCREW ZINC. DIN 912
1.9	2	13-00-0197/TR	2 HOLE PIPE-HOLDING BRACKET
1.10	4	VITE0620	SCREW ZINC. DIN912
1.11	2	13-00-0196/TR	2 HOLE PIPE-HOLDING BRACKET
KIT2	1	13-02-0086/TR/R	COOLING PIPE 12MM SEP.-2ND MCH13/16 TR-TRPL KIT
2.1	1	13-02-0086/TR	COOLING PIPE 12MM SEP.-2ND MCH13/16 T-TP
2.2	1	RACC/E212112L38	FITTING E212-112L G3/8"
2.3	1	13-02-0047E	STRAIGHT FITTING 1/4G TUBE 12MM
KIT3	1	13-00-0089/TR/R	COOLING PIPE 12MM 2ND-SEP. MCH13/16 TR-TRPL KIT
3.1	1	13-00-0089/TR	COOLING PIPE 12MM 2ND-SEP. MCH13/16 TR-TR.PL
3.2	1	13-02-0047E	STRAIGHT FITTING 1/4G TUBE 12MM
3.3	1	13-02-0048E	FITTING 1/4 - M18X1,5 TUBE Ø12
3.4	2	13-00-0083	PIPE HOLDING BRACKET 75X15MM. MCH13/16
3.5	8	13-00-0137	SELF LOCKING NUT M6 HIGH
3.6	2	13-00-0067	SCREW 6X35 T.C.E. ZINC. DIN 912
3.7	4	13-00-0197/TR	2 HOLE PIPE-HOLDING BRACKET
3.8	4	13-00-0087	SCREW T.C.E. ZINC. 6X30 DIN 912
3.9	2	13-00-0186/TR	3 HOLE PIPE-HOLDING BRACKET
3.10	4	VITE0620	SCREW T.C.E. ZINC. 6X20 DIN912
KIT4	1	13-00-0036/N/R	TUBE 8MM SEP/3° ST.(D) KIT
4.1	1	13-00-0036/N	TUBE 8MM SEP/3° ST.(D)
4.2	2	13-00-0175E	1/4 G TUBE 8MM FITTING
4.3	1	GUAR1319	COPPER WASHER 1/4
KIT5	1	13-03-0025/TR/R	COOLING TUBE MCH13/16 TROPICAL PLUS 6X1 KIT
5.1	1	13-03-0023/N	COOLING TUBE MCH13/16 TROPICAL PLUS 6X1
5.2	1	RACC/E212-106LG	FITTING E212-106L G1/4"
5.3	1	RACC/E231506L18	1/8" NPT - TUBE6 FITTING
5.4	2	13-00-0133/TR	PIPE HOLDING BRACKET 6MM MCH13/16 TROPICAL
5.5	2	13-00-0136	DOUBLE 6MM. PIPE-HOLDING BRACKET MCH13/16
5.6	4	DADM6AUBAS	SELF LOCKING NUT LOW M6 DIN 985
5.7	4	13-00-0041	SCREW T.C.E. ZINC. 6X25 DIN 912
5.8	8	13-00-0134	ANTI VIBRATION BLOCK TUBE6 3 HOLE
5.9	2	13-00-0075	SCREW T.C.E. ZINCATA 8X30

PRESSURE CIRCUIT

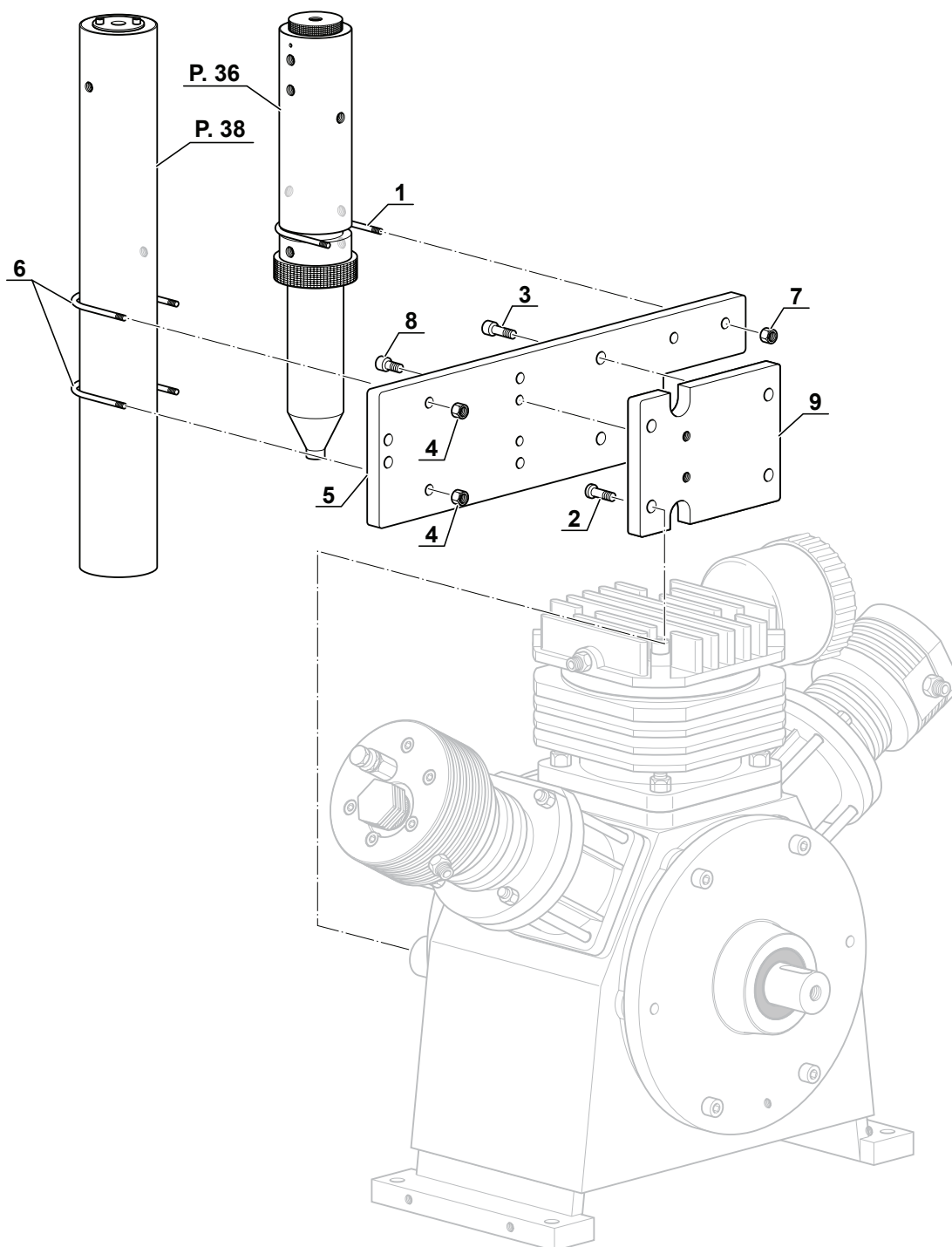
Mod: Tropical - Tropical Plus



SUPPORT

Pos.	Qty	Code	Description
1	1	13-00-0102	SEPARATOR CLAMP
2	2	VITE0825	SCREW ZINC. REDUCED HEAD
3	2	VITE0840	SCREW ZINC.
4	4	13-00-0018	MIDDLE NUT ZINC.
5	1	13-00-0094/1	HOLD-FILTERS PLATE MCH13/16
6	2	13-00-0093	FILTER HOLDING BRACKET MCH13/16
7	2	13-00-0101	SELF-LOCKING NUT
8	2	VITE0820	SCREW ZINC.
9	1	13-00-0069	COUNTER FILTERS PLATE MCH13/16

SUPPORT



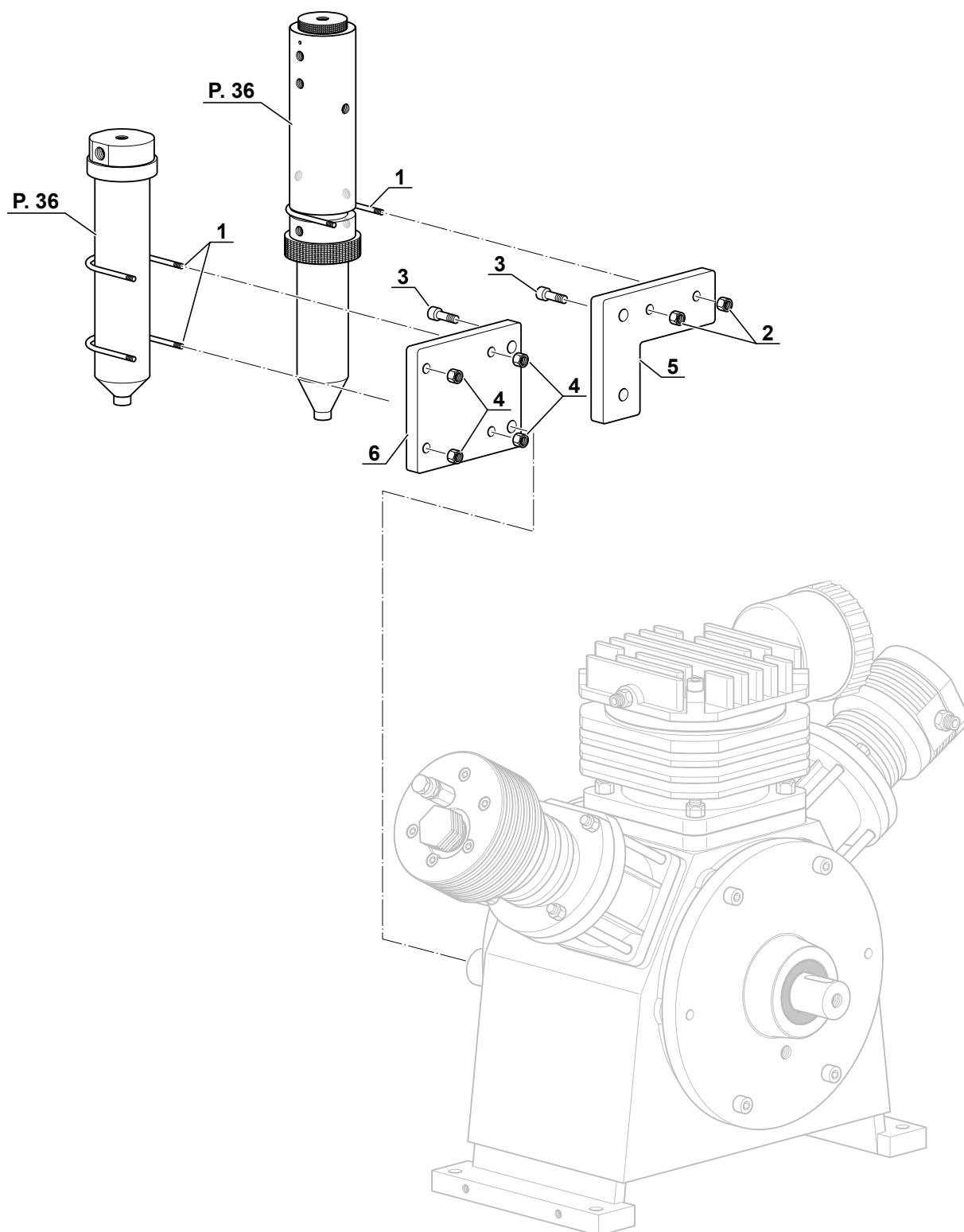
SUPPORT

Mod: Tropical - Tropical Plus

Pos.	Qty	Code	Description
1	3	13-00-0102	SEPARATOR CLAMP
2	2	13-00-0101	8MM SELF-LOCKING NUT
3	4	13-00-0048	SCREW ZINC. DIN 912
4	4	13-00-0018	MIDDLE NUT ZINC.
5	1	13-00-0094/1	CONDENSATE SEPARATOR PLATE MCH13-16 ZINC.
6	1	13-00-0094/2	SQUARE CONDENSATE SEP. PLATE MCH13-16 ZINC.

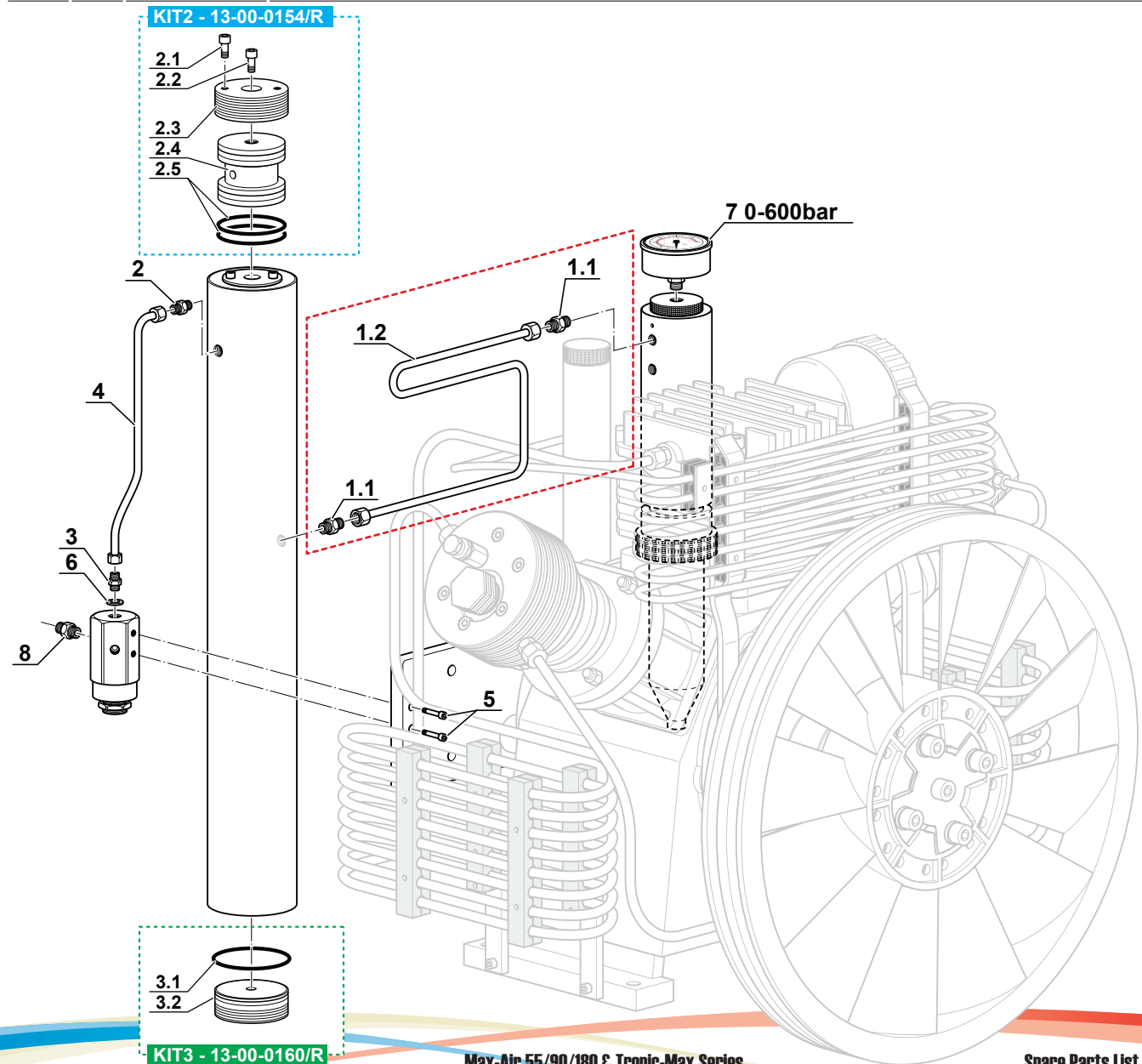
SUPPORT

Mod: Tropical - Tropical Plus



FILTERING CIRCUIT

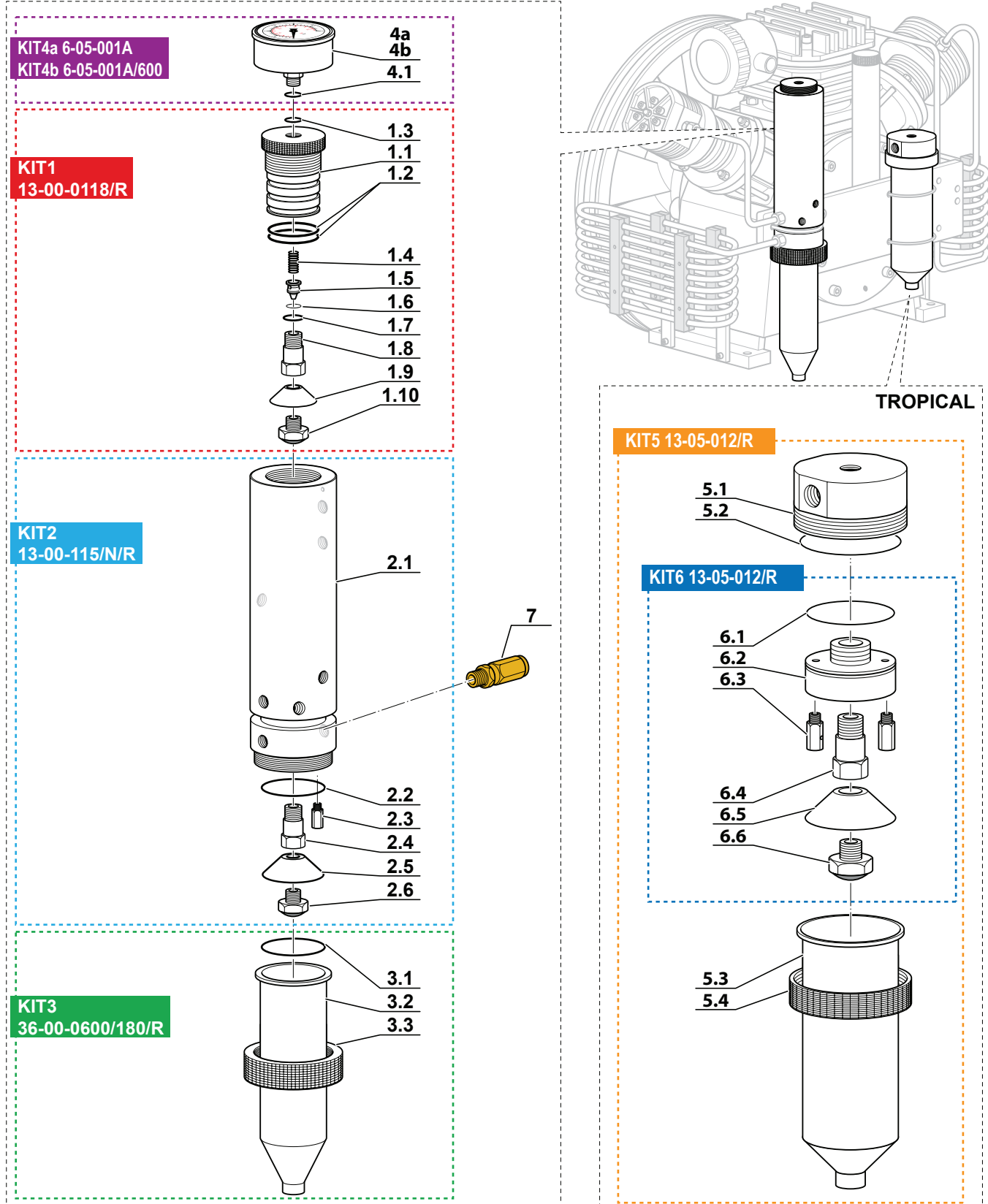
Pos.	Qty.	Code	Description
1.1	2	13-00-0174E	FITTING 1/8 NPT TUBE 6 mm
1.2	1	TUBO/MCH13/B/N	SEPARATOR-FILTER TUBE CONNECTION
2	1	13-00-0174E	FITTING 1/8 NPT TUBE 6 mm
3	1	13-00-0025E	FITTING 1/4 G -TUBO 6mm
4	1	13-04-0320	FILTER-VMP TUBE CONNECTION
5	1	13-00-0084	SCREW ZINC.
6	1	GUAR1420	COPPER GASKET
7	1	6-05-001A/600	MANOMETER 0-600 BAR
8	1	13-00-0174	STRAIGHT 1/8 PIPE FITTING 6
KIT 2	1	13-00-0154/R	MAXIFILTER TOP PLUG KIT
2.1	2	VITE0812E	T.C.E. INOX 8X12 SCREW
2.2	1	VITE0830	SCREW T.C.E. INOX 8X30
2.3	1	13-00-0154	UPPER FILTER CAP
2.4	1	13-00-0156	INTERNAL FILTER CAP
2.5	2	13-00-0155	O-R CAP FILTER
KIT 3	1	13-00-0160/R	LOWER FILTER CAP KIT
3.1	1	13-00-0155	O-R CAP FILTER
3.2	1	13-00-0160	LOWER FILTER CAP



CONDENSATE SEPARATOR

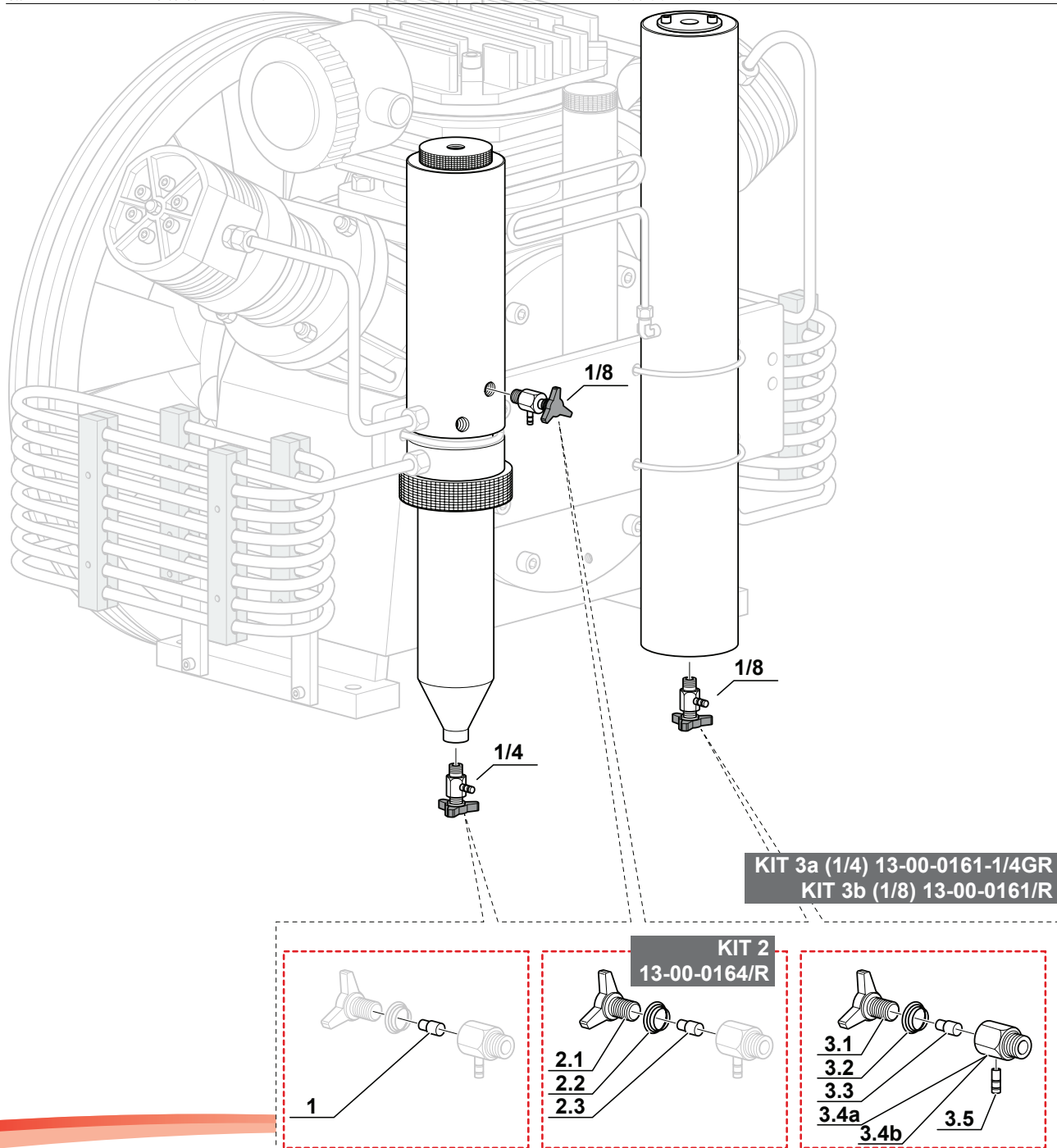
Pos.	Qty	Code	Description
KIT1	1	13-00-0118/R	CONDENSATE SEPARATOR PLUG KIT
1.1	1	13-00-0118	CONDENSATE SEPARATOR PLUG
1.2	2	OR-4143/90	O RING 4143 NBR 90
1.3	1	OR-2018/90	O RING 2018 NBR 90
1.4	1	SC000492/D	CHECK VALVE SPRING
1.5	1	SC000492/C	CHECK VALVE PISTON
1.6	1	OR-2021/90	O RING 2021 NBR 90
1.7	1	OR-114/90	O RING 114 NBR 90
1.8	1	13-00-0121	MCH-13/16 SEPARATOR FITTING
1.9	1	ROND/38/12,5	WASHER
1.10	1	SILENZ/E90A4003	SILENCER
KIT2	1	13-00-115/N/R	NEW SEPARATOR BODY MCH13/16 KIT
2.1	1	13-00-0115/N	NEW SEPARATOR BODY MCH13/16
2.2	1	36-05-008	O-RING 2212 NBR90 MCH36
2.3	1	13-00-0141	NEW CONDENSATE SEPARATOR DIFFUSER MCH13/16
2.4	1	13-00-0121	MCH-13/16 SEPARATOR FITTING
2.5	1	ROND/48/12,5	WASHER
2.6	1	SILENZ/E90A4003	SILENCER
KIT3	1	36-00-0600/180/R	D 54 AISI 316L LUNGH. 180MM SEPARATOR KIT
3.1	1	36-05-008	O-RING 2212 NBR90 MCH36
3.2	1	36-00-0600/180	SEPARATOR
3.3	1	36-05-013	SEPARATOR NUT MCH36
KIT4a	1	6-05-001A	MANOMETER 0-400 BAR MCH/6
4.1	1	OR-2018/90	O RING 2018 NBR 90
KIT4b	1	6-05-001A/600	MANOMETER 0-600 BAR MCH/6
4.1	1	OR-2018/90	O RING 2018 NBR 90
KIT5	1	13-05-012/R	CONDENSATE SEP. G3/8 MCH-13-16 TROPICAL KIT
5.1	1	36-05-012	3RD STAGE G3/8 SEPARATOR RIGHT PLUG
5.2	1	36-05-008	O-RING 2212 NBR90 MCH36
5.3	1	36-00-0600/180	CONDENSATE SEPARATOR PIPE, STAINLESS
5.4	1	36-05-013	SEPARATOR RING
6.1	1	OR-2150	OR- 2150 NBR 70
6.2	1	36-05-050/ALL	MCH-13/16 SEPARATOR FITTING INTERNAL PLUG
6.3	2	13-00-0141	NEW CONDENSATE SEPARATOR DIFFUSER MCH13/16
6.4	1	13-00-0121	MCH-13/16 SEPARATOR FITTING
6.5	1	ROND/48/12,5	WASHER
6.6	1	SILENZ/E90A4003	SILENCER
KIT6	1	36-05-050/ALL/R	MCH-13/16 SEPARATOR FITTING INTERNAL PLUG KIT
6.1	1	OR-2150	OR- 2150 NBR 70
6.2	1	36-05-050/ALL	MCH-13/16 SEPARATOR FITTING INTERNAL PLUG
6.3	2	13-00-0141	NEW CONDENSATE SEPARATOR DIFFUSER MCH13/16
6.4	1	13-00-0121	MCH-13/16 SEPARATOR FITTING
6.5	1	ROND/48/12,5	WASHER
6.6	1	SILENZ/E90A4003	SILENCER
7	1	13-00-0206	2ND STAGE SAFETY VALVE 70BAR

CONDENSATE SEPARATOR



CONDENSATE DISCHARGE

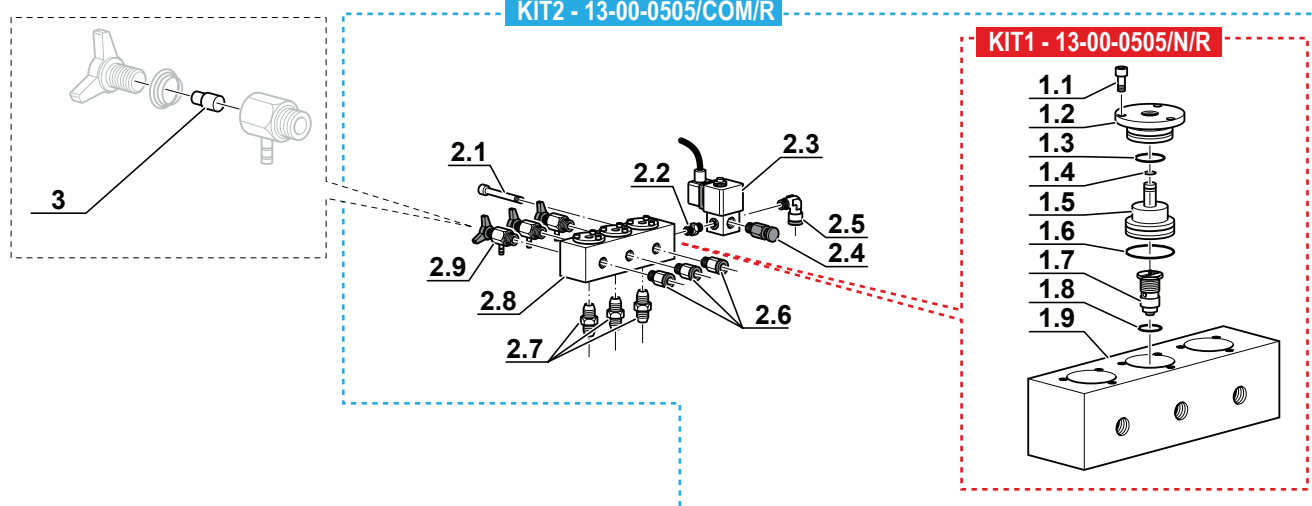
Pos.	Qty.	Code	Description
1	1	13-00-0162	CONDENSATE DISCHARGE NYLON SEAT
KIT 2	1	13-00-0164/R	CONDENSATE DISCHARGE WHEEL VALVE KIT
2.1	1	13-00-0164	CONDENSATE DISCHARGE KNOB
2.2	1	13-00-0163	CONDENSATE DISCHARGE SPRING
2.3	1	13-00-0162	CONDENSATE DISCHARGE NYLON SEAT
KIT 3a	1	13-00-0161-1/4G/R	CONDENSATE DISCHARGE BODY VALVE 1/4 COMPLETE
KIT 3b	1	13-00-0161-R	CONDENSATE DISCHARGE BODY VALVE 1/8 NPT COMPLETE
3.1	1	13-00-0164	CONDENSATE DISCHARGE KNOB
3.2	1	13-00-0163	CONDENSATE DISCHARGE SPRING
3.3	1	13-00-0162	CONDENSATE DISCHARGE NYLON
3.4	1	13-00-0161	CONDENSATE DISCHARGE BODY VALVE 1/8 NPT
3.5	1	6-05-004F	DRAIN VALVE PIN



CONDENSATE DISCHARGE

Pos.	Qty	Code	Description
KIT1	1	13-00-0505/N/R	CONDENSATE DISCHARGE VALVE KIT
1.1	12	36-07-070	SCREW TCEIZN M5X12-8.8 MCH36
1.2	3	13-00-0506	CONDENSATE DISCHARGE BODY VALVE CAP
1.3	3	OR-2118	O RING 2118 70-75 SH (29.87X1.78)
1.4	3	OR-2018	O RING 2018 70-75 SH (4,48X1,78)
1.5	3	13-00-0507/A	CONDENSATE DISCHARGE VALVE PISTON
1.6	3	OR-2100	O RING 2100 NBR 70SH
1.7	3	SC000337/C/R	PRESSURE REDUCER BODY INPUT 300/200BAR
1.8	3	OR-114/90	O RING 114 90 SH
1.9	1	13-00-0505/N	CONDENSATE DISCHARGE BODY VALVE MCH13-16
KIT2	1	13-00-0505/COM/R	COMPACT CONDENSATE DISCHARGE KIT
2.1	2	VITE0645I	SCREW T.C.E. INOX 6X45
2.2	1	13-00-0142	STRAIGHT FITTING M 1/8 NPT - M 1/8 NPT
2.3	1	13-04-0221/N	LP SOLENOID VALVE
2.4	1	13-03-0179	2ND STAGE SAFETY VALVE
2.5	1	RACC/E2L31C08	TURNING FITTING 1/8M TUBE6
2.6	3	RACC/E2001007W	1/8 E2001007W FITTING WITH OR
2.7	3	13-00-0174E	STRAIGHT FITTING 1/8 NPT PIPE 6MM ERMETO
2.8	1	13-00-0505/N/R	CONDENSATE DISCHARGE VALVE KIT
2.9	3	13-00-0161/R	CONDENSATE DISCHARGE BODY VALVE 1/8 NPT KIT
3	1	13-00-0162	CONDENSATE DISCHARGE NYLON

CONDENSATE DISCHARGE



SAFETY VALVE

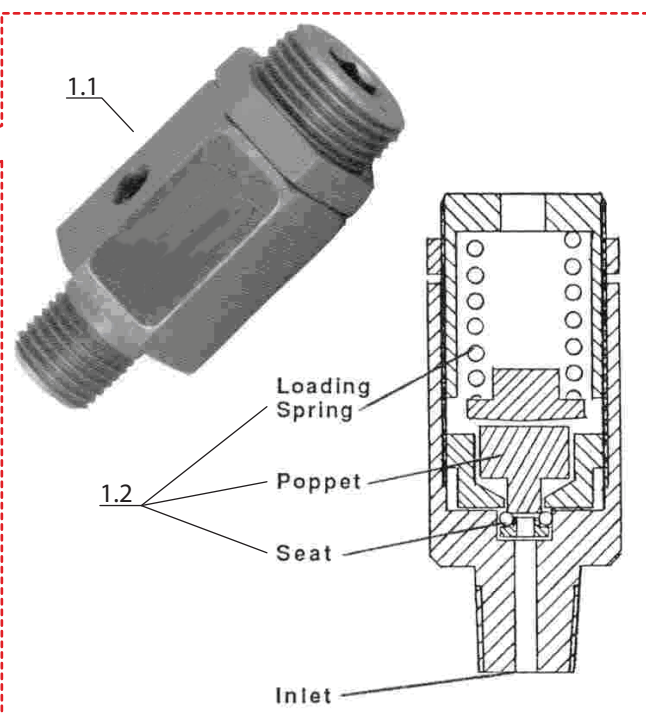
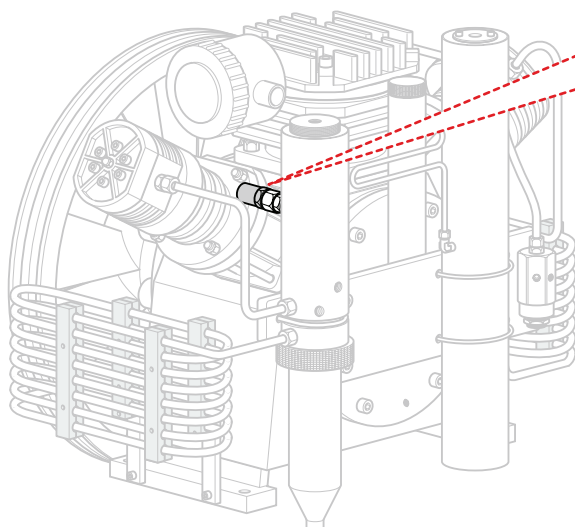
Pos.	Qty.	Code	Description
1.1	1	RV-504	FINAL SAFETY VALVE
1.2	1	RV-504-12	REBUILD KIT FOR RELIEF VALVE

PRESSURE MAINTAINING VALVE

Pos.	Qty.	Code	Description
	1	13-00-0127	MAINTAINING PRESSURE VALVE 1/8 - 1/4
1.1	1	13-00-0147/N1	MAINTENANCE VALVE SCREW
1.2	1	OR-2025	O RING 2025 NBR 70
1.3	1	13-00-0149/N	MAINTENANCE VALVE PISTON
1.4	1	OR-2015	O RING 2015 NBR 90
1.5	1	13-00-0158	O-RING 3050 NBR
1.6	1	13-00-0147/N/1/8NPT	MAINTENANCE VALVE BODY 1/8 NPT
1.7	1	13-00-0157	VMP PISTON SCREW SPACER
1.8	1	13-00-0166	SAFETY VALVE SPRING
1.9	1	13-00-0151/N	VMP CAP
1.10	1	13-00-0147D/N	VMP NUT

SAFETY VALVE - PRESSURE MAINTAINING VALVE

SAFETY VALVE



PRESSURE MAINTAINING VALVE

