Max-Air®
HIGH PRESSURE AIR COMPRESSOR SYSTEMS

ISO 9001
REGISTERED FIRM
SINCE 2007

High Pressure Breathing Air Compressors

Max-Air 90 SFD 6K 9.0 cfm

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

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.

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:

DANGER 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 Do not fill out-of-date, (hydro-date) cylinders for anyone.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 date**" 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.

Max-Air®
HIGH PRESSURE BREATHING AIR COMPRESSORS

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

BREATHING AIR PURIFICATION FILTER CARTRIDGE (DISPOSABLE)
Part Number LF-65247 or X65247

Fits all Max-Air compressors with upgraded purification PU-35000 for breathing air (Part Number PU-35000)

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.

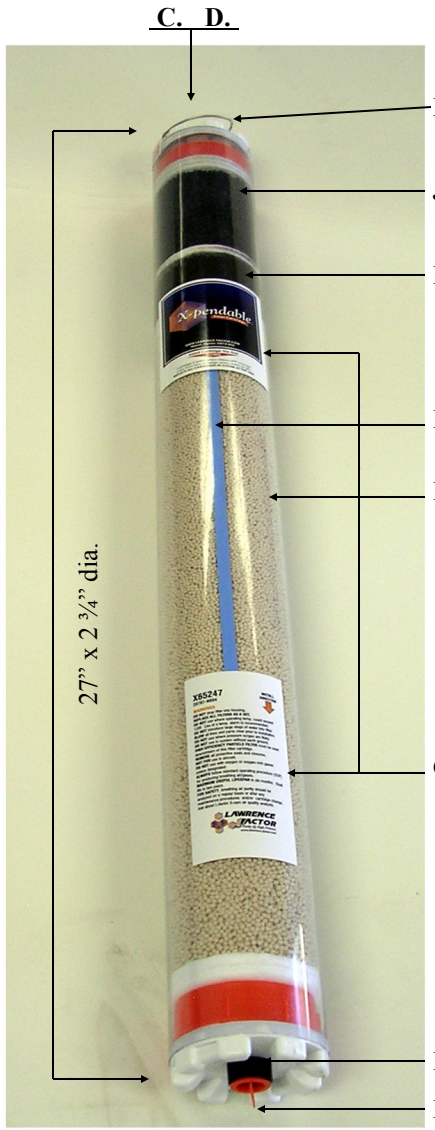
i.e. @ 82°F decrease capacity by 20%
@ 92°F decrease capacity by 40%
@ 102°F decrease capacity by 60%

DO NOT use where temp. could exceed 120F.

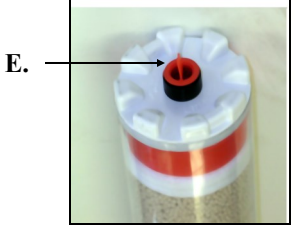
CARTRIDGE COMPONENT IDENTIFICATION:

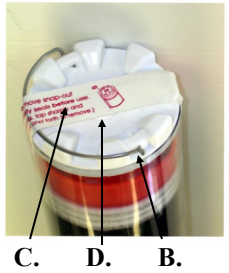
A. Sealed foil envelope (not shown) –makes sure it is not torn or punctured. **Do not open until ready to install.** For extended storage re-wrap in two or three heavy duty zip lock bags. Store in a cool, dry, dark place.
B. Lifting handle for ease of installation, fold back flat prior to screw down 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**



E. Close up view of plastic plug "E" at bottom of cartridge.





A. Seal Foil envelope not shown

Part Number LF-65247 or X65247 - 35,000 cft @ 72°F @ 5000psi

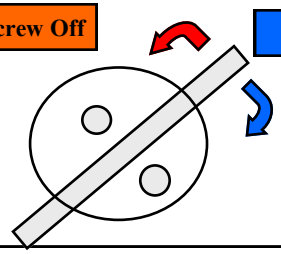
2807 Peddler Lane, Kerrville Texas 78028 Ph. 830-257-5006 / Fx.830-257-3720
service@max-air.com / www.max-air.com

Max-Air 90SE-FD or Max-Air 90SFD high pressure breathing air compressor with PU-35000 purification mounted on the left side of compressor

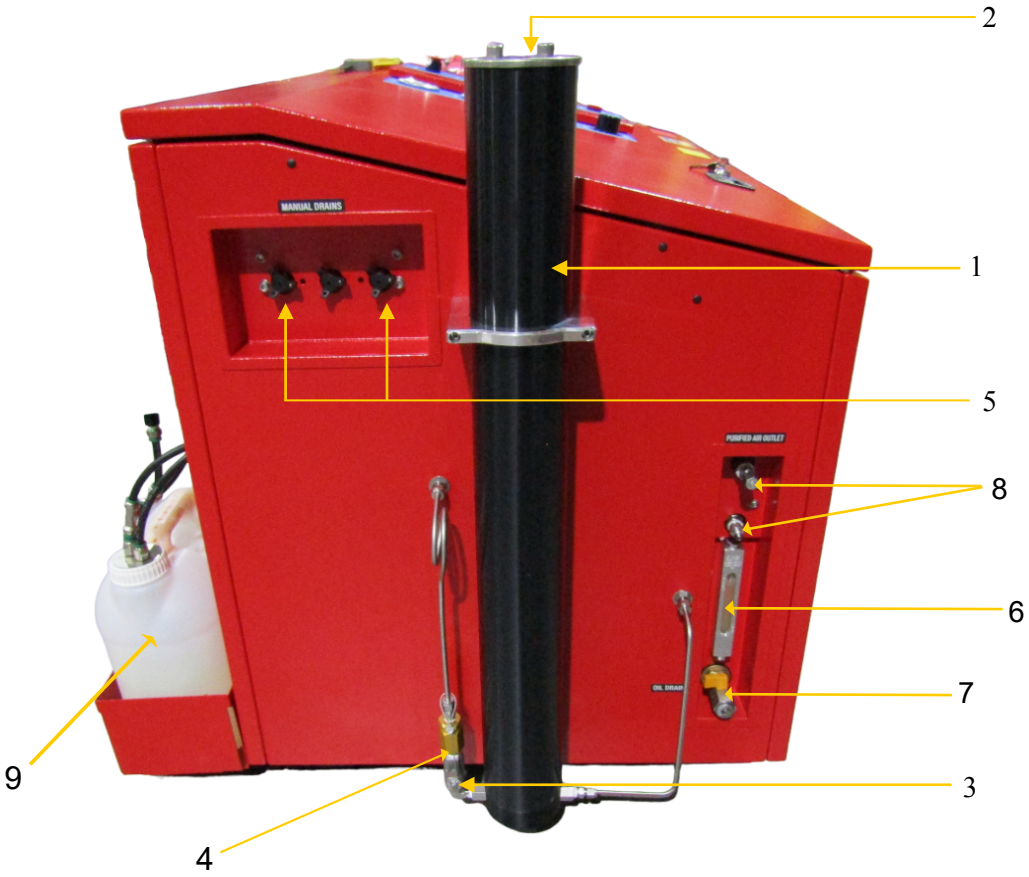
C. Filter Housing Cap

Unscrew Off

Screw On until it stops then back 1/4"



Use leverage bar between protruding screw heads. **Do not remove screws** – make sure all pressure is drained at bottom of purification chamber prior to attempting to remove the filter cap. Make sure thread & O-ring are greased with silicone grease.



1. Dryer purifier housing – **use cartridge LF-65247 or X65247 ONLY**
2. Filter housing cap – **see insert "C"**
3. Filtration bleed/drain valve - drain completely of all air pressure prior to attempt to remove #2 cap for filter maintenance
4. Check valve
5. HP & LP manual drain valves, will only drain internal system. **WILL NOT DRAIN FILTER HOUSING #1**
6. Oil level sight glass
7. Oil drain valve
8. Air outlets
9. Condensate Jug

NOTE:
Purification cartridge #LF-65247 or X65247 is rated to process approx. 35,000 cft of grade "E" breathing air @ 72°F intake temperature, draining the condensate often. You must de-rate the 35,000 by 10% for each 5°F above 72°F.
The reverse applies for temperatures below 72° F.

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 or 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 if 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.

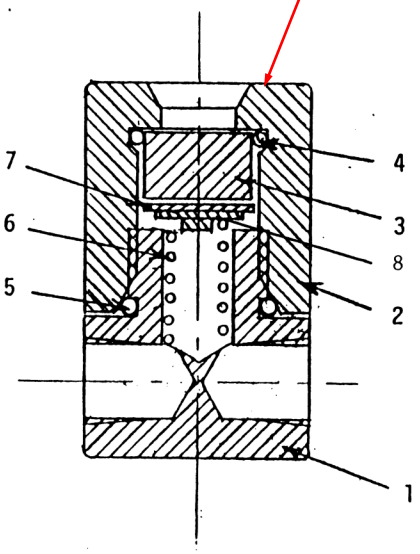
BENEFIT

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

BLEED ALL PRESSURE FROM UNIT AND SHUT OFF POWER

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



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:

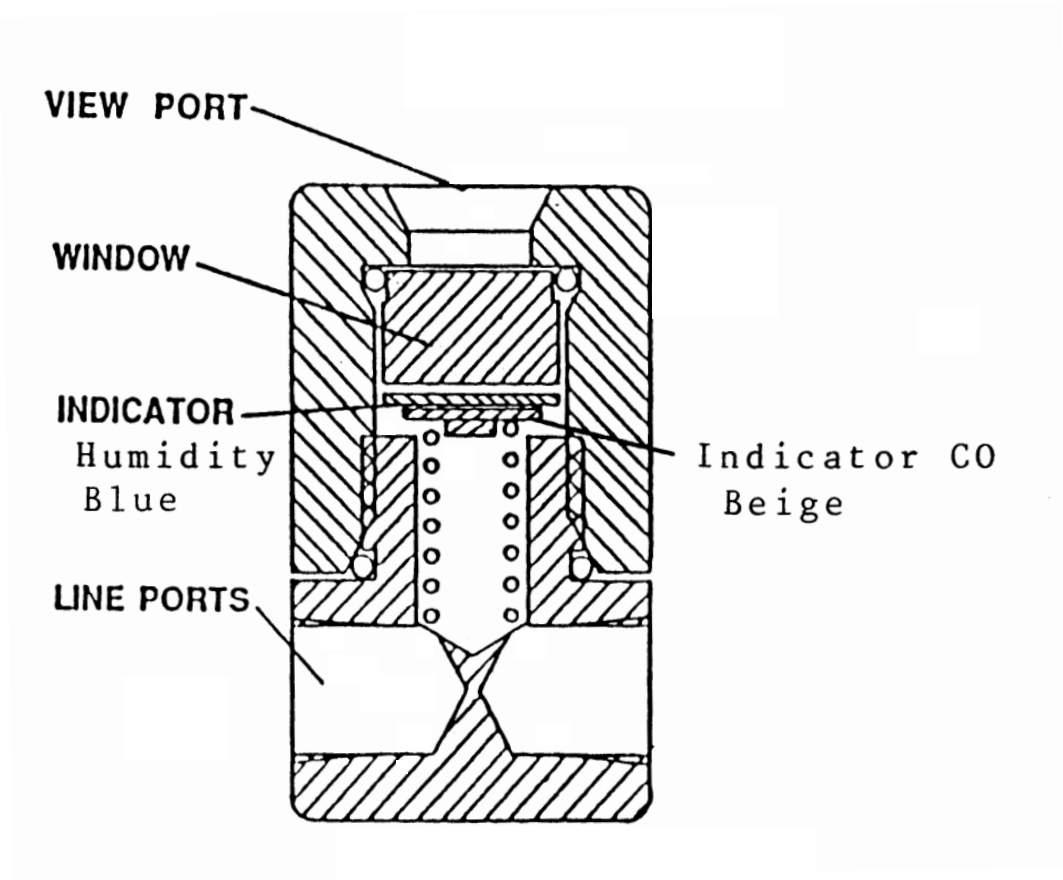
1. Technical bulletin – 588
2. Use Dow silicone grease 111 or equivalent on seals and threads
3. Tighten cap hand tight only
4. Install window (3) with smooth, small diameter against O ring (4)
5. Insure window (3) is fully against shoulder of cap (2)
6. Avoid spring or other hard objects touching window
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

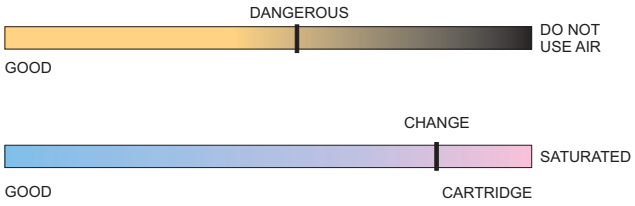
NOTE:

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.

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

Compressor Pumping Group Identification Sheet
Model Max-Air 55, 90 and 180 Twin

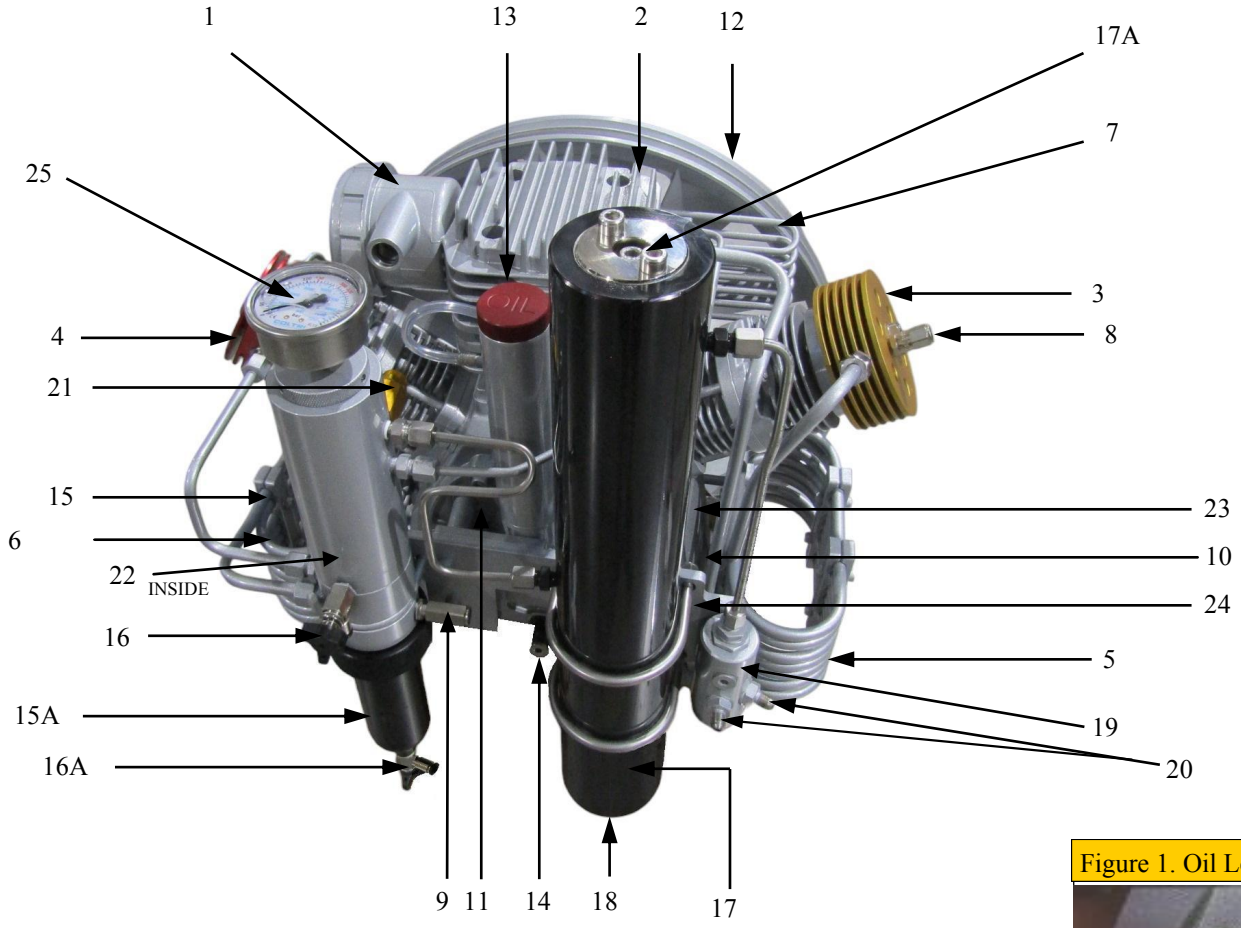
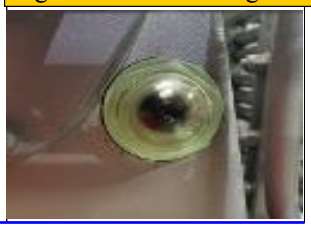


Figure 1. Oil Level Sight Glass



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)!

TECHNICAL DESCRIPTION

Model:	MAX-AIR 90 SFD (9.0cfm)
Weight:	500 lbs (125kg)
Dimensions:	48"L x 28"W x 36"H
Construction:	Air cooled, three stage, three cylinder high pressure compressor, all stainless steel interstage cooling
Max. pressure:	414 bar (6000 psig)
Approx. output:	MAX-AIR 90 (265 L/min.) (9.0 cfm)
Interstage pressure:	1 stage 10 bar (145 psig) with interstage safety 2 stage 70 bar (1015 psig)
Safety valves:	On all stages. 3 stage 442 bar (6400 psig)
Bearings:	Entire crankshaft assembly on roller bearings
Lubrication:	Pressure and/or Splash lubrication with oil thrower pin 1.9 Liter/64 Fl. oz. Cabinet models
Oil type:	MAXLUBE #501 synthetic oil
Permissible inclination:	5° of compressor at maximum oil level
Drive motors:	7.5 HP single/three phase electric motor Optional 10 HP single/three phase electric motor

2.2 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.

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.

2.3 Technical details of the compressor Block

2.3.1 Crankcase, crankshaft, piston, cylinder

The crankcase is made of light alloy; the bearing cover is sealed by means of an O-ring. The crank-shaft, connecting rods and piston pins all incorporate roller 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 aluminum 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.

2.3.2 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

2.3.3 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: 1015 psi (70 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 section 5.

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.

2.3.4 Cooling, lubrication

The 1st and 2nd stage intercoolers and the 3rd stage after cooler consist of seemless stainless steel tubing. There are two block options. The splash lubrication block operates with an oil thrower pin. The pressure lubricated block operates with an oil pressue pump. The high-pressure stage is lubricated by oil vapors.

2.3.5 Backpressure maintaining valve

This valve is mounted after the purification filter.
This valve will open when the internal pressure of the filter tower has reached 1800PSI ± 10% PSI (80 ± 10% bar) to slow airflow through the filter tower cartridge.

2.4 Sound attenuated Cabinet

Powder coated steel frame and panels.
Periodically check cabinet bolts to ensure they have not loosened due to operational vibrations.

WARNING

3. Safety Precautions for The Filling of Cylinders

3.1 General Precautions for the filling of cylinders

Take care that the intake air is pure and free from noxious gases and exhaust fumes. If air quality around the compressor is suspect, attach an intake hose to the air inlet and run it to the nearest source of fresh air. For every 10 feet of hose run, double the diameter of the hose.

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

4. Installation, Operation, Maintenance, Service

4.1 Installation

Make sure there is good ventilation.

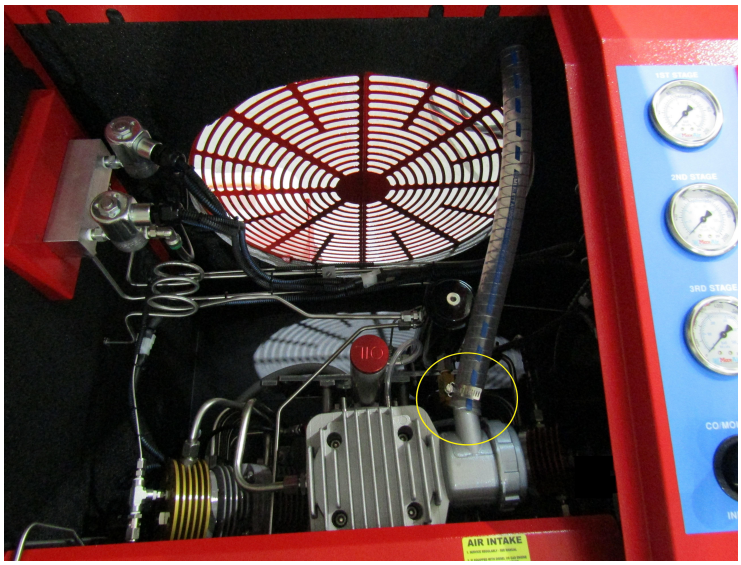
Install the unit on level ground (maximum permissible sloping 5^{o}), minimum clearance of 18" but 24" is preferred to the front and rear of the compressor to ensure proper ventilation.

In order to prevent health hazards the intake air must be free from exhaust fumes.
If air quality around the compressor is suspect, attach an intake hose to the air inlet and run it to the nearest source of fresh air.

The pictures on the following page show generally what the adding of an external air intake system would look like.

If it is necessary to pull fresh air in from outside, refer to the following pictures. A minimum of a 1" inside diameter hose can be used up to reach the nearest wall (up to 5 feet). The hose should then be tied into 2" id pvc conduit. The 2" id conduit can be used for a maximum of 10 feet. For each additional 10' increment, the pvc id needs to double starting at that point. Ex. If the run is 18', the first 10' would be 2" id and the last 8' would be 4" id. See Table 1 below. Use long sweeping 90 degree elbows so that air flow is not restricted. On the outside of the wall use a 90 sweep pointed towards the ground with a mesh barrier covering the opening to prevent insect nests from clogging intake. Do not use anything that will restrict air flow whatsoever.

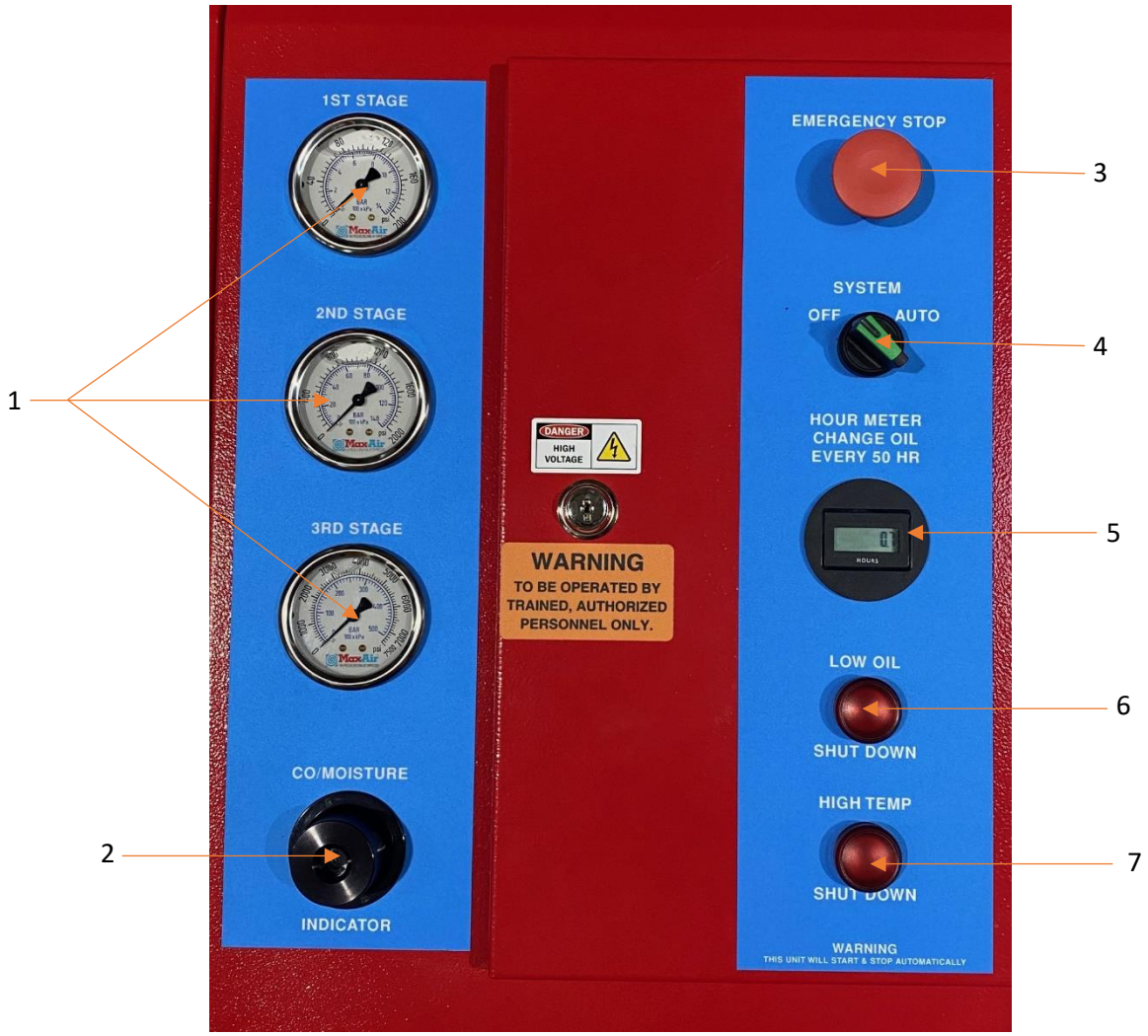
Length	PVC Diameter
1st 10'	2"
11'-20'	4"
21'-30'	8"



4.2 Starting-up

Before starting compressor check oil level in the sight glass.
Use MAXLUBE #501 synthetic oil.

Electric connections and circuit size must comply with the respective regulations. Verify proper voltage and frequency (hz). Fuse motor correctly. Ensure rotation direction is correct.



1.	Head pressure gauges
2.	Visual CO/Moisture indicator
3.	Emergency stop switch
4.	On/Off switch for unit
5.	Hour meter/oil change reminder
6.	Low oil shutdown indicator light
7.	High temp shutdown indicator light

Startup Procedures

- Ensure Emergency Stop button is pulled out
- Turn power switch to Auto to start the compressor
- The gauges will begin to display the pressure output for each head
- The third stage gauge is the current output pressure of the compressor
- The CO/Moisture indicator will show if the unit has had too high of exposure of either Carbon Monoxide or Moisture or both. You should visually check this after each fill to ensure air quality. If the element indicates CO exposure (see page 7) do not use the tank. Do not use until the source of the CO has been eliminated. Once the indicator turns color noting exposure a new indicator element will need to be installed. If the moisture indicator is blue the filter cartridge needs to be replaced.
- The timer is a continual account of hours the unit has been running. Near the 50 hour mark the timer will remind operator that the 50hr oil change is needed. Use the timer to base all periodic maintenance procedures
- If either of the 2 warning lights are illuminated, the corresponding event has occurred and shut the compressor off. Turn power switch to off. Remedy the issue before re-starting the unit

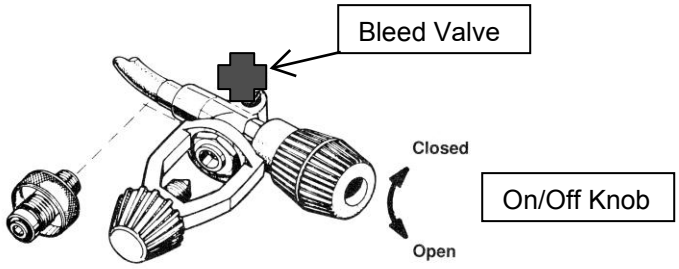
WARNING

4.3 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

4.4 Shutdown procedure

Compressor will shutdown at preset pressure setting or when manually turned off.

4.5 Maintenance and air tightness test

Besides the standard stipulated service works (§ 4.8) 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.

4.6 Service, service timetable

4.6.1 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 the oil level sight glass for cabinet models, refer to page 3 item 6.

Oil level must not be too high because excessive oil can result in over-lubrication and choking 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.

Oil change: first oil change after 60 operating hours, further oil changes every 60 operating hours. Only use MaxLube 501 oil.

WARNING

4.□.2 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.

4.□.3 V-belt condition

Check V-belts condition after every 60 hours. Maximum yield at center of V-belt should not exceed 10 mm when subject to a pressure of 5 kg. The V-belt is self tensioning.

4.6.4 Intake filter

Check every 25 operating hours. The 5 micronic 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.

4.6.5 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

4.6.6 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, it is important to keep strictly to the replacement intervals of approximately 60 operating hours. The replacement intervals will vary depending on the climate you are operating in (i.e.. rain, excessive moisture and humidity).
This purifier cartridge LF-65247 is rated for 35,000 cft @ 72°F air intake temperature, draining the condensate often, derate by 10% for every 5°F above 72°F. The reverse applies for temperatures below 72°F.

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.

4.□.7 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 degreaser and water solution, 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.

Maintenance schedule:

Prior to every cylinder filling:

- drain condensate (§4.6.5)
- check safety valve (§4.6.2)
- filling procedures (§4.3)
- check oil level daily (§4.6.1)
- purification cartridge replacement intervals (§4.6.6)

Maintenance after operating hours:

Hours	Recommended Service
25	Maintenance of intake filter. Repeat every 25 hours
60	Oil change and belt tension. Repeat every 60 hours
120	Check tension of v-belt
1000	Check suction and pressure valves
2000	Replace valves and 3rd stage piston and cylindar
3000	Replace 1st and 2nd stage piston rings Check suction and pressure valve and 3rd stage piston and cylindar

4.7 Start-up procedure and workshop instruction

Gaskets and O-rings can be replaced and serviced by the user themself, 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.

4.7.1 Cylinders

When removing and replacing cylinders verify that when the piston is in the top position, it must be on the same level with the cylinder top edge.

*4.7.2 Piston*s

All pistons are equipped with piston rings. The 2nd and 3rd stage pistons are free floating.
The 3rd stage piston comes as an assembly with piston rings and a sleeve. In repairs or reassembly, take care that the piston rings are replaced in the correct sequence with staggered ring gaps.

4.7.3 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.

Stage	**Max-Air 55**	**Max-Air 90**	
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.

4.7.4 Tightening torque

screw	**thread**	**max. torques**
hex. screw inner hex. Screw	M 6	1,0 kpm / 7 ft-lbs
hex screw inner hex. Screw	M 8	2,5 kpm / 18 ft-lbs
hex. screw inner hex. screw	M 10	4,5 kpm / 32 ft-lbs

Valve head screw requires torque wrench tightening

5. Trouble Shooting

Trouble	Cause	Remedy
Electric motor does not start	One phase failed One or more safety switches open	Check fuses Trouble shoot safety switches
Red lights in alarm section of the control panel	Open or faulty switch	Check switch
Safety valve 1 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
Safety valve 1st or 2nd stage blows off below normal intermediate pressures	Safety valve defective	Replace safety valve
Output decreases although motor 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 Automatic condensate drains not functioning properly	Replace Check ACD for proper operation
Compressor gets too hot	Wrong direction of rotation Dirt on outside of cooler Dirty valve(s) not closing property (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.

WARRANTY

Materials (parts and equipment) supplied by Max-Air are covered by a one (1) year warranty period from the date of delivery to customer. Should the customer note any flaws and/or defects, it must be reported in writing to Max-Air within one (1) month of discovery or the warranty shall be rendered null and void. Max-Air will repair or replace materials it acknowledges to be faulty during the warranty period. In replacing faulty material, Max-Air will not be liable for any other expenses sustained by the dealer or its customer, such as presumed damage (present or future), lost earnings or fines. Warranty only covers flaws and faults that occur where materials are used properly in compliance with the instructions contained in the User Manual and where periodic maintenance is carried out and documented. The warranty does not cover faults caused by improper use of materials, exposure atmospheric conditions (rain, etc.) or damage during transport. Warranty parts are shipped at customers expense. Materials subject to wear and those subject to periodic maintenance are not covered by warranty and are to be paid for by the customer in full. Routine and unscheduled maintenance must be carried out in compliance with User Manual instructions. If required work is not covered by the User Manual or if technical assistance is required, please contact Max-Air directly by email or phone. Max-Air cannot be held liable for any delays or failure to execute work.

NOTES

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

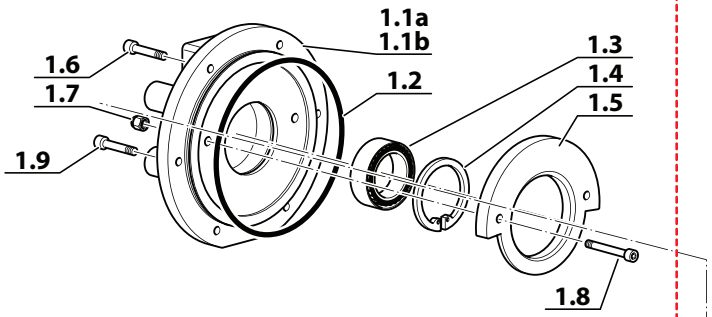
ISO 9001 : SINCE 2007
REGISTERED FIRM

CRANKCASE

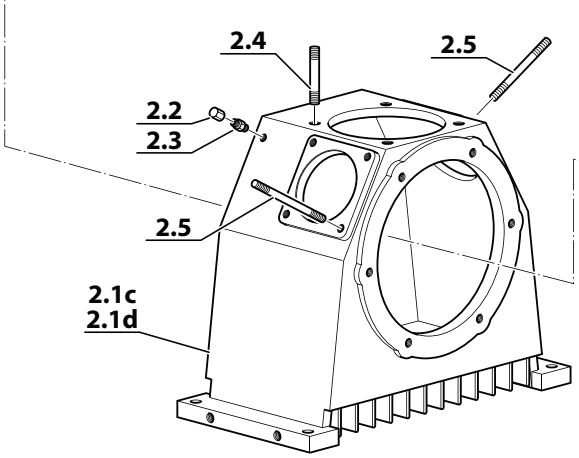
Pos.	Qty	Code	Description
KIT1a	1	13-00-0050/R	FILTER SIDE FLANGE MCH13/16 KIT
1.1a	1	13-00-0050	FILTER SIDE FLANGE MCH13/16
1.2	1	13-00-0062	FLANGE O-RING 2562
1.3	1	13-00-0042	FLANGE ROLLER BEARING NU305
1.4	1	13-00-0055	SEEGER RETAINING RING J 62
1.5	1	13-01-0042/N	HALF MOON FLANGE
1.6	6	13-00-0048	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

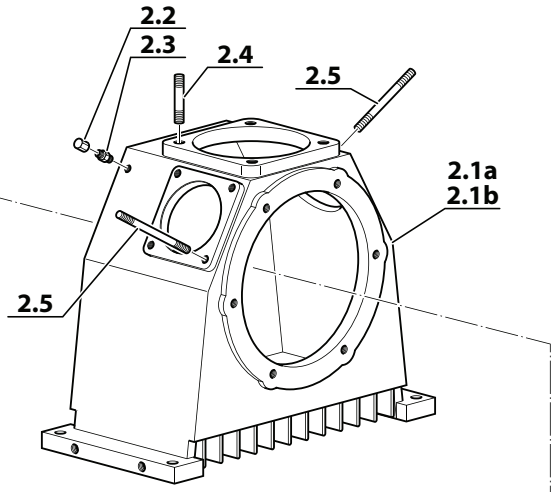


KIT2c - 05-00-001/1/R Standard-Tech-MiniTech
KIT2d - 05-00-002/R Compact-MiniSilent-SuperSilent-Mark



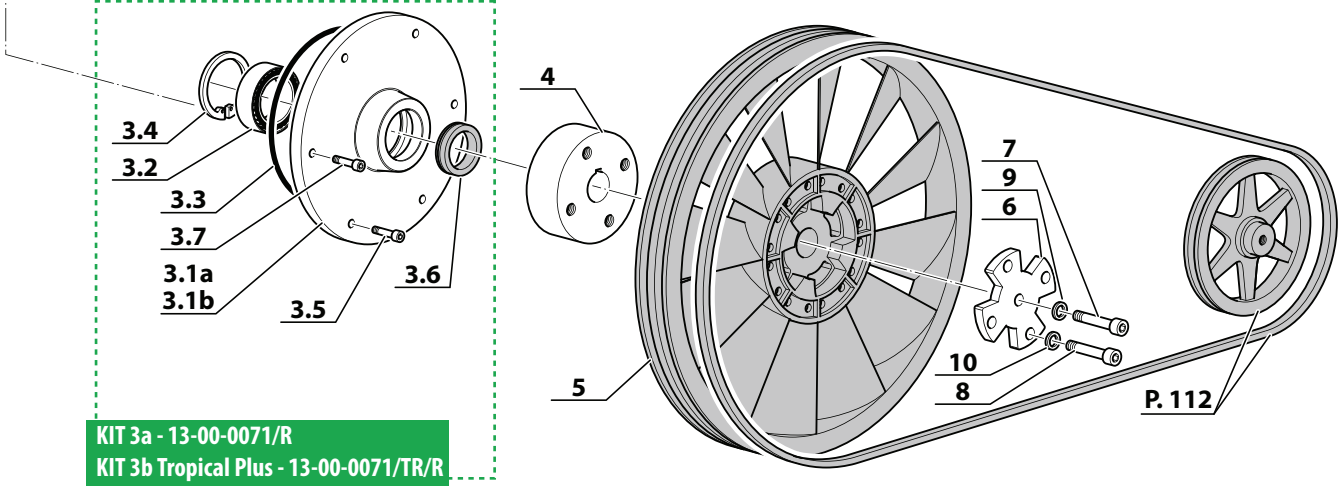
CRANKCASE MCH-8

Standard-Tech-MiniTech **KIT2a - 13-00-0026/R**
Compact-MiniSilent-SuperSilent-Mark **KIT2b - 13-00-0001/R**



CRANKCASE MCH-11-13-16

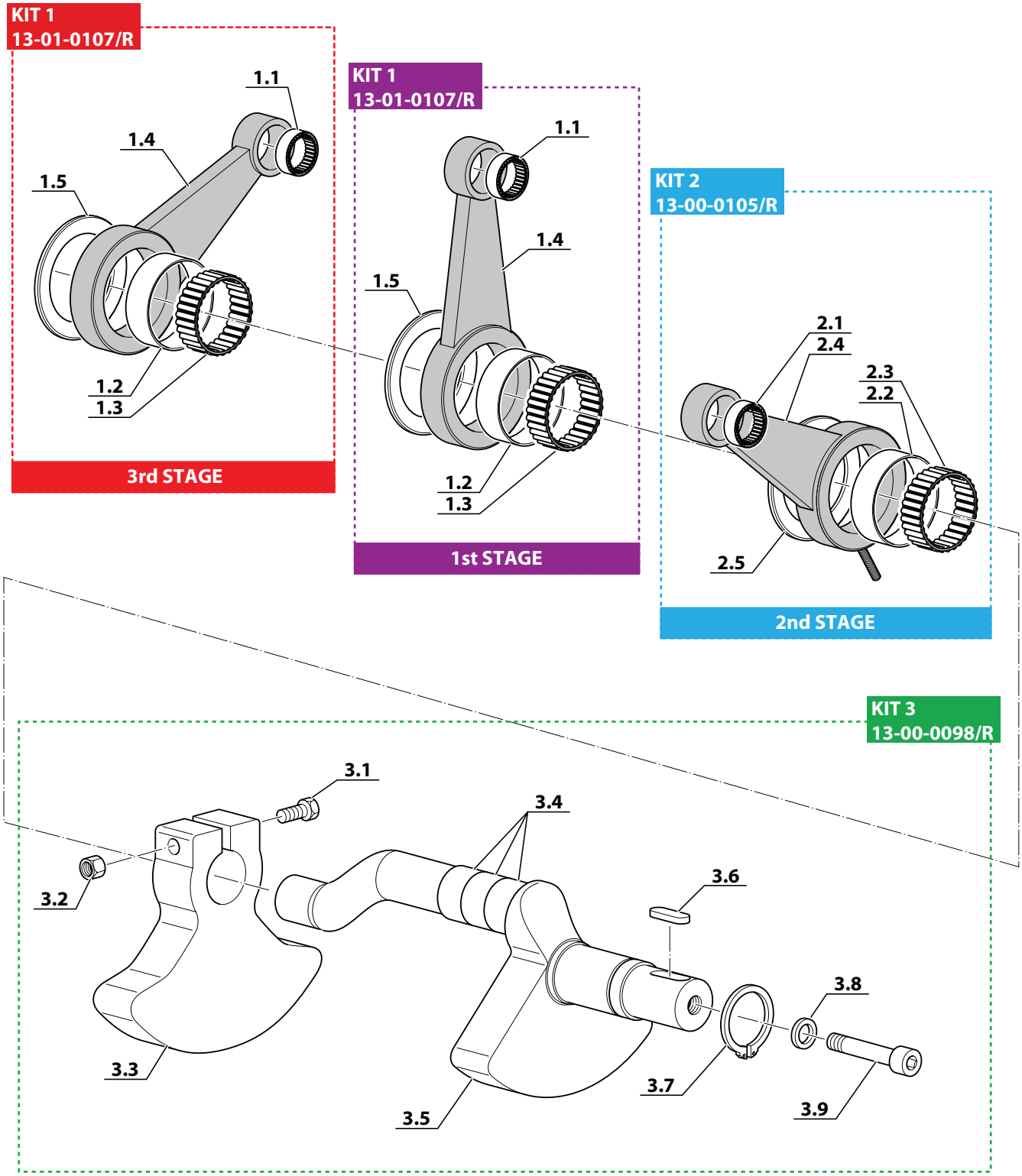
KIT 3a - 13-00-0071/R
KIT 3b Tropical Plus - 13-00-0071/TR/R



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
1.1
1.4
1.5
1.2
1.3
3rd STAGE
KIT 1
13-01-0107/R
1.1
1.4
1.5
1.2
1.3
1st STAGE
KIT 2
13-00-0105/R
2.1
2.4
2.3
2.2
2.5
2nd STAGE
KIT 3
13-00-0098/R
3.1
3.4
3.6
3.2
3.8
3.3
3.7
3.9
3.5

OIL LEVEL

Mod: Standard - Tech - Minitech - Tropical Plus

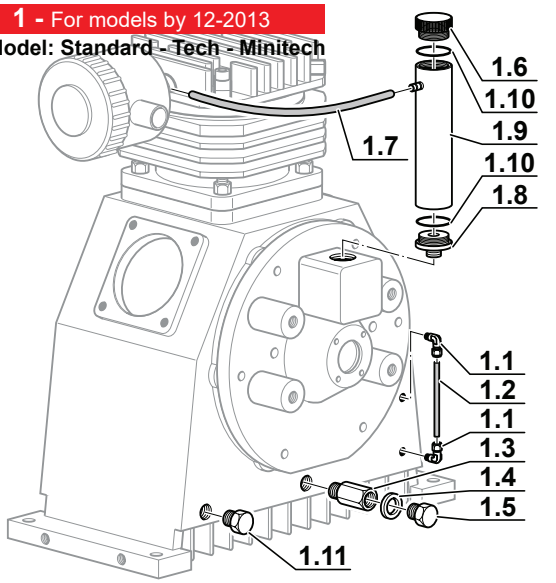
Pos.	Qty	Code	Description
1.1	1	13-00-0021	FITTING 90°
1.2	1	13-00-0064	OIL LEVEL CHECK TUBE MCH13/16
1.3	1	13-00-0052	FITTING FOR OIL DISCHARGE
1.4	1	13-00-0053	COPPER GASKET
1.5	1	13-00-0063	OIL DRAIN PLUG
1.6	1	13-00-0090	OIL FILLING CAP 1/2 (RED) MCH13/16 WITH BREATHER
1.7	0,3	TUBRILSAN6X4	RILSAN 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

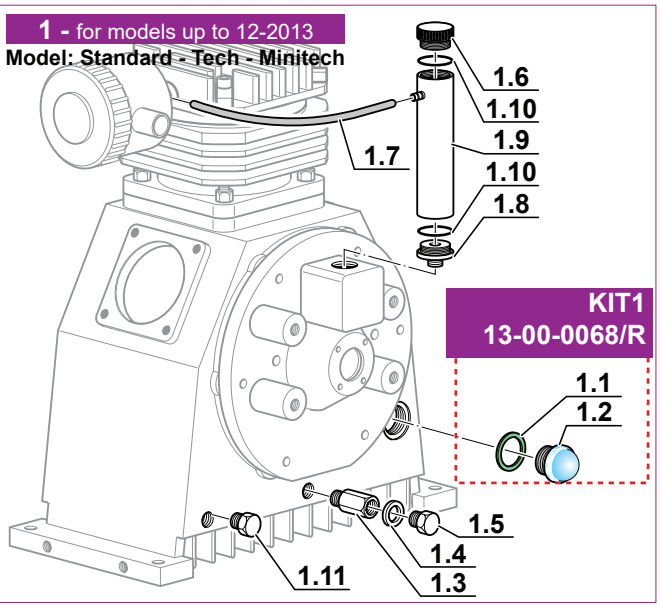
1 - For models by 12-2013

Model: Standard - Tech - Minitech



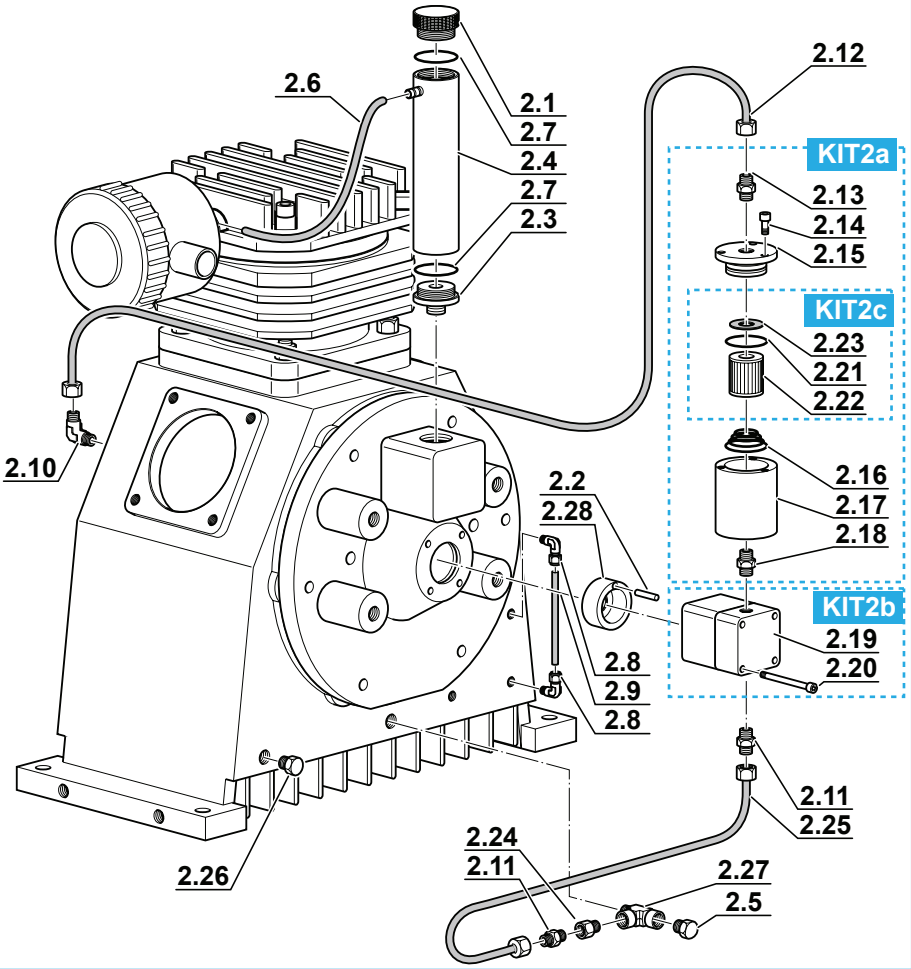
1 - for models up to 12-2013

Model: Standard - Tech - Minitech

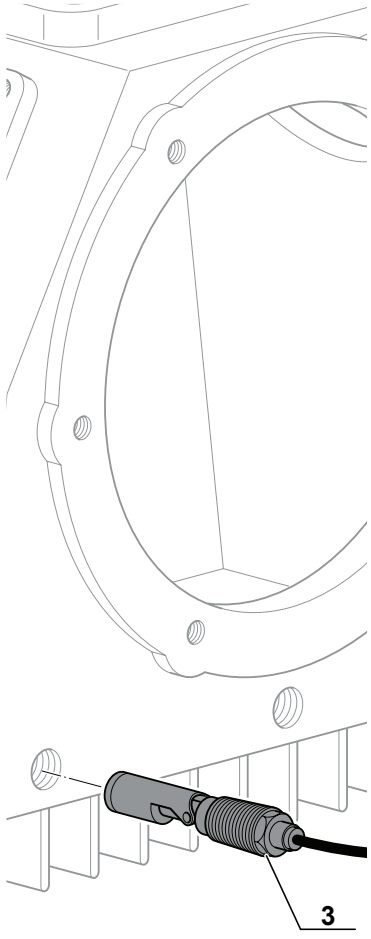


Model: Tropical Plus

2



Oil level switch **OPTIONAL**



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

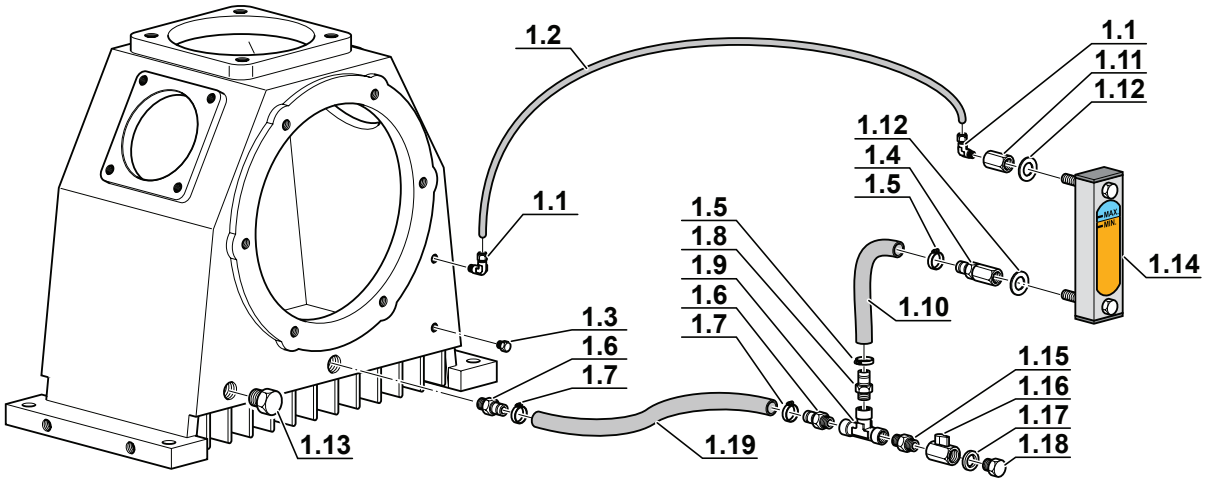
2.1	2	13-00-0021	FITTING 90° 1/8 NPT
2.2	1	13-00-0064	OIL LEVEL CHECK TUBE MCH13/16
2.3	1	13-00-0139	PLUG
2.4	2	RACC20031/2	T FITTING
2.5	1	13-00-0053	COPPER GASKET
2.6	2	13-00-0052A	FITTING
2.7	4	FASC/3B/17/29	CLAMP
2.8	1	13-04-0333	LOWER OIL LEVEL FITTING
2.9	1	13-04-0339	T FITTING
2.10	2	13-04-0338	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

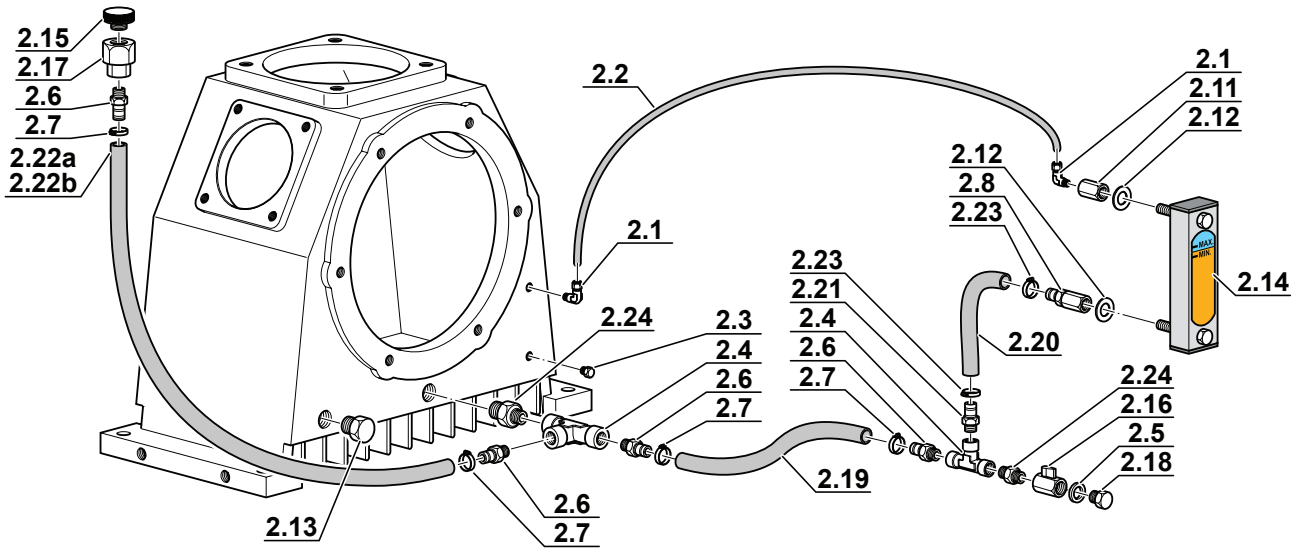
Model: Compact - Compact M - Compact Evo - MiniSilent - SuperSilent Evo - Tropical - Mark1

1



Model: MCH 26-32/ET Compact

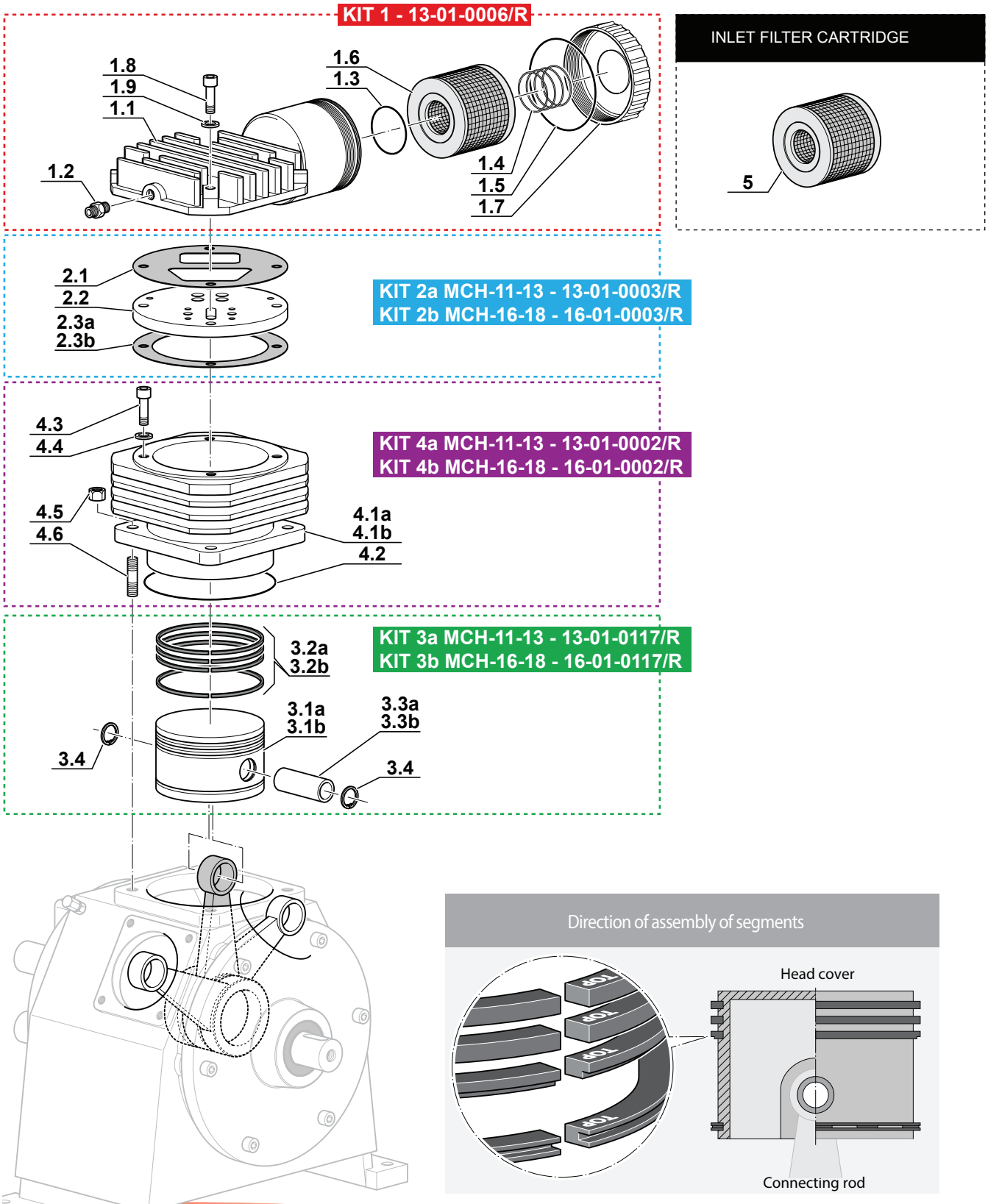
2



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	1°ST 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	1°ST 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 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	INLET FILTER CARTRIDGE MCH13/16

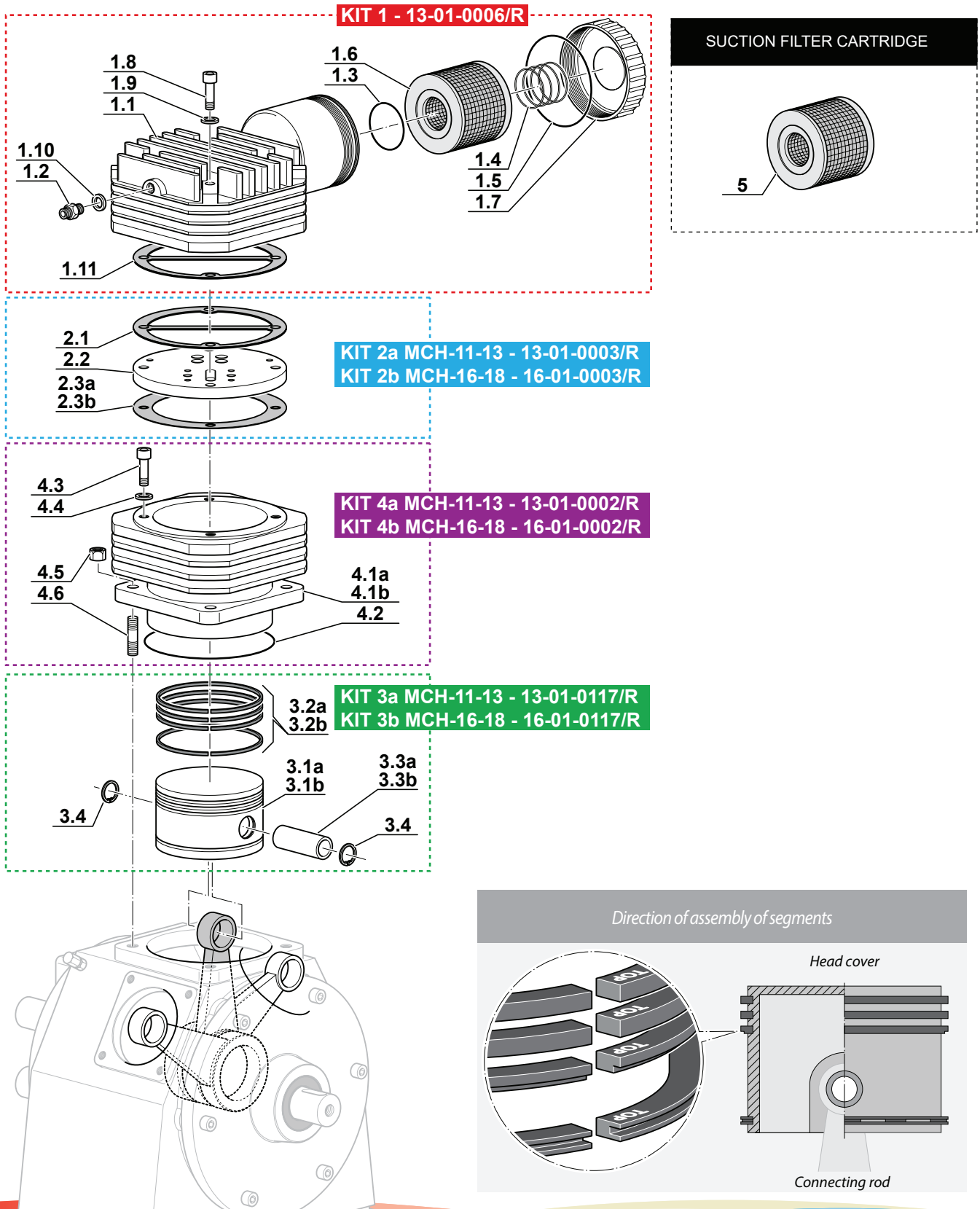
1st STAGE MCH-11-13-16-18
For models up to 12-2014



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

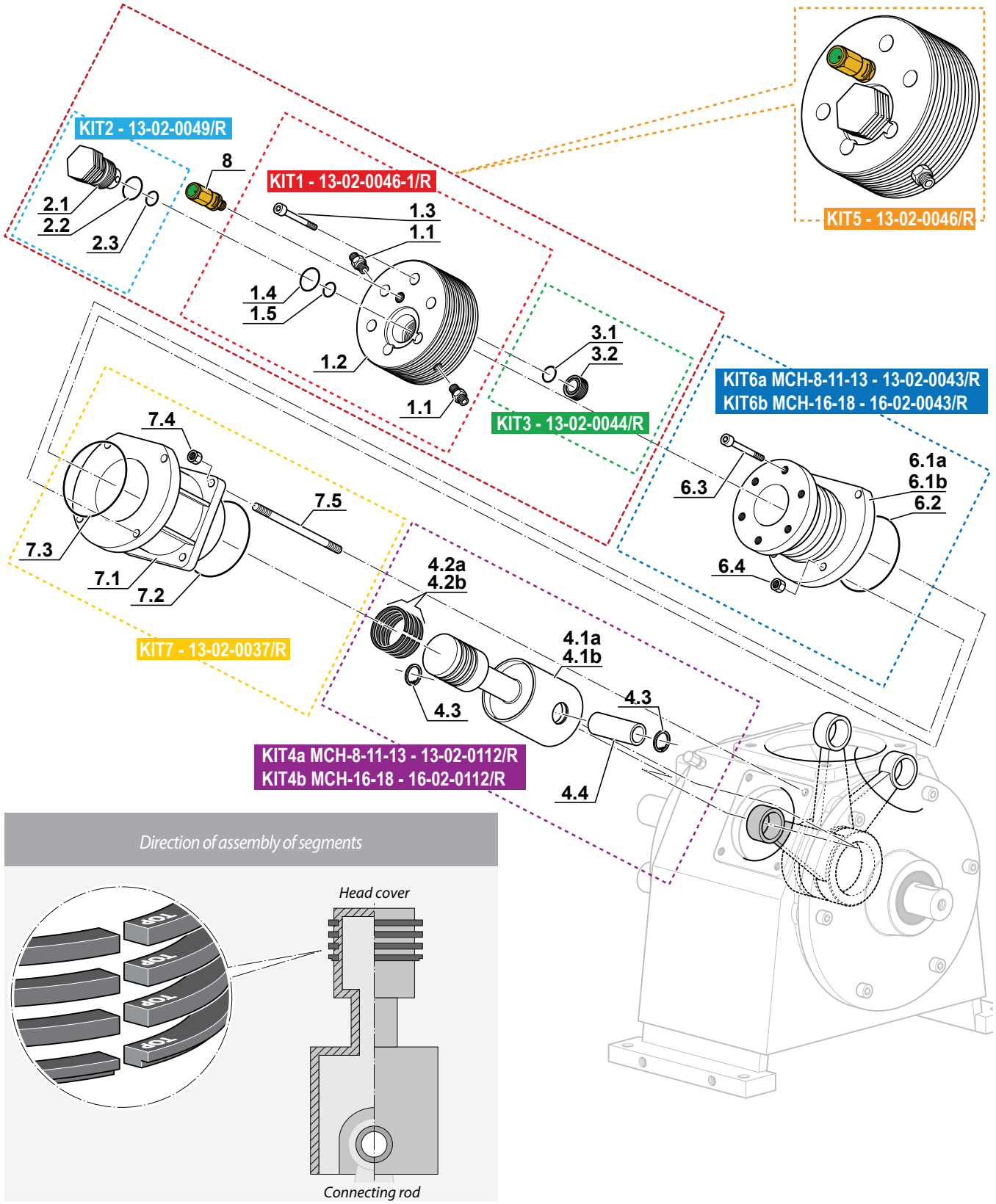
1st STAGE MCH-11-13-16-18
For models by 01-2015



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

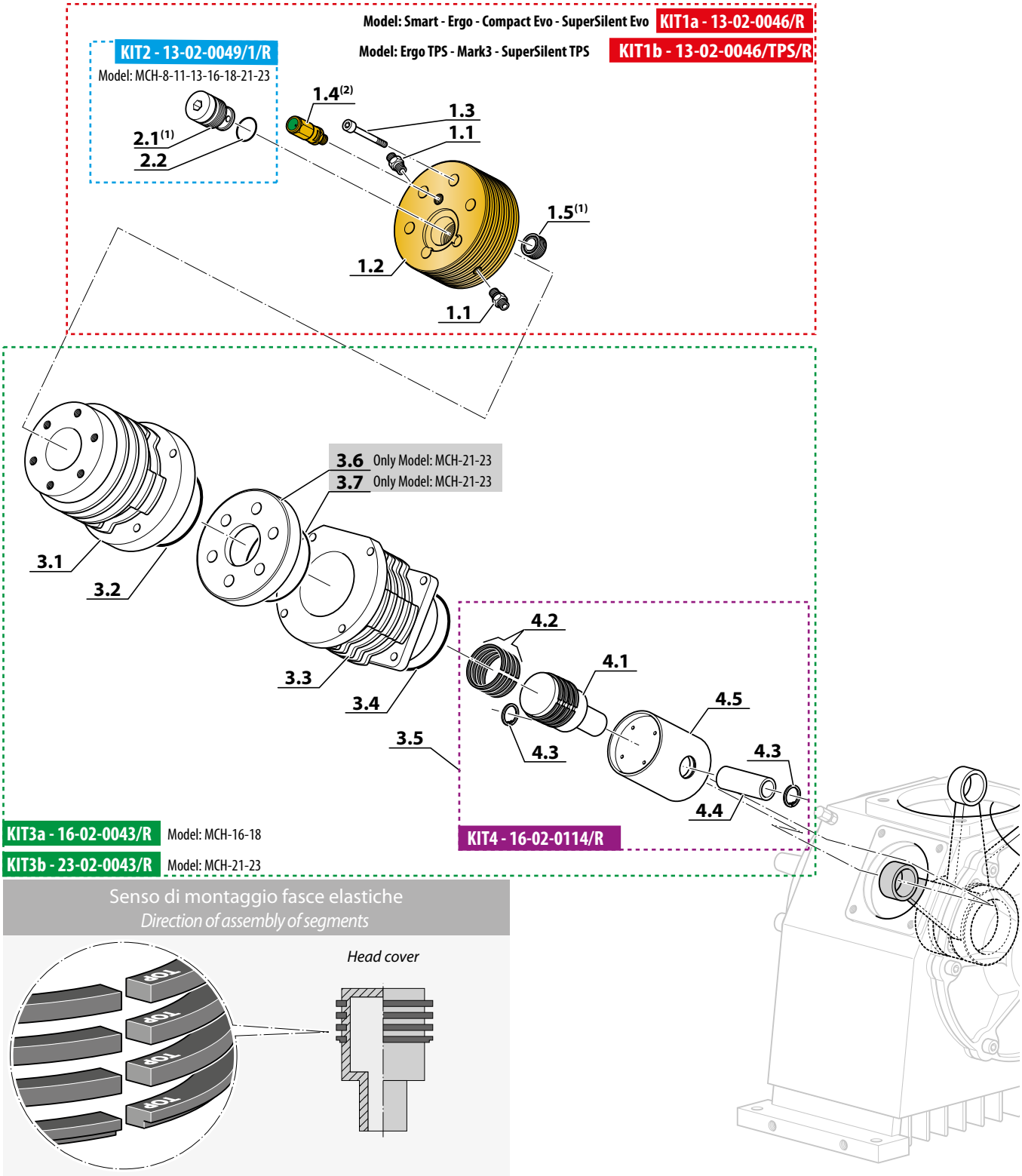

KIT2 - 13-02-0049/R
KIT1 - 13-02-0046-1/R
KIT5 - 13-02-0046/R
KIT3 - 13-02-0044/R
KIT6a MCH-8-11-13 - 13-02-0043/R
KIT6b MCH-16-18 - 16-02-0043/R
KIT7 - 13-02-0037/R
KIT4a MCH-8-11-13 - 13-02-0112/R
KIT4b MCH-16-18 - 16-02-0112/R
8
2.1
2.2
2.3
1.3
1.1
1.4
1.5
1.2
1.1
3.1
3.2
7.4
7.5
7.3
7.1
7.2
4.2a
4.2b
4.1a
4.1b
4.3
4.3
4.4
6.1a
6.1b
6.2
6.3
6.4

Direction of assembly of segments
Head cover
TOP
Connecting rod

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 CYLINDMCH13/16		
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 CYLINDMCH13/16		
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



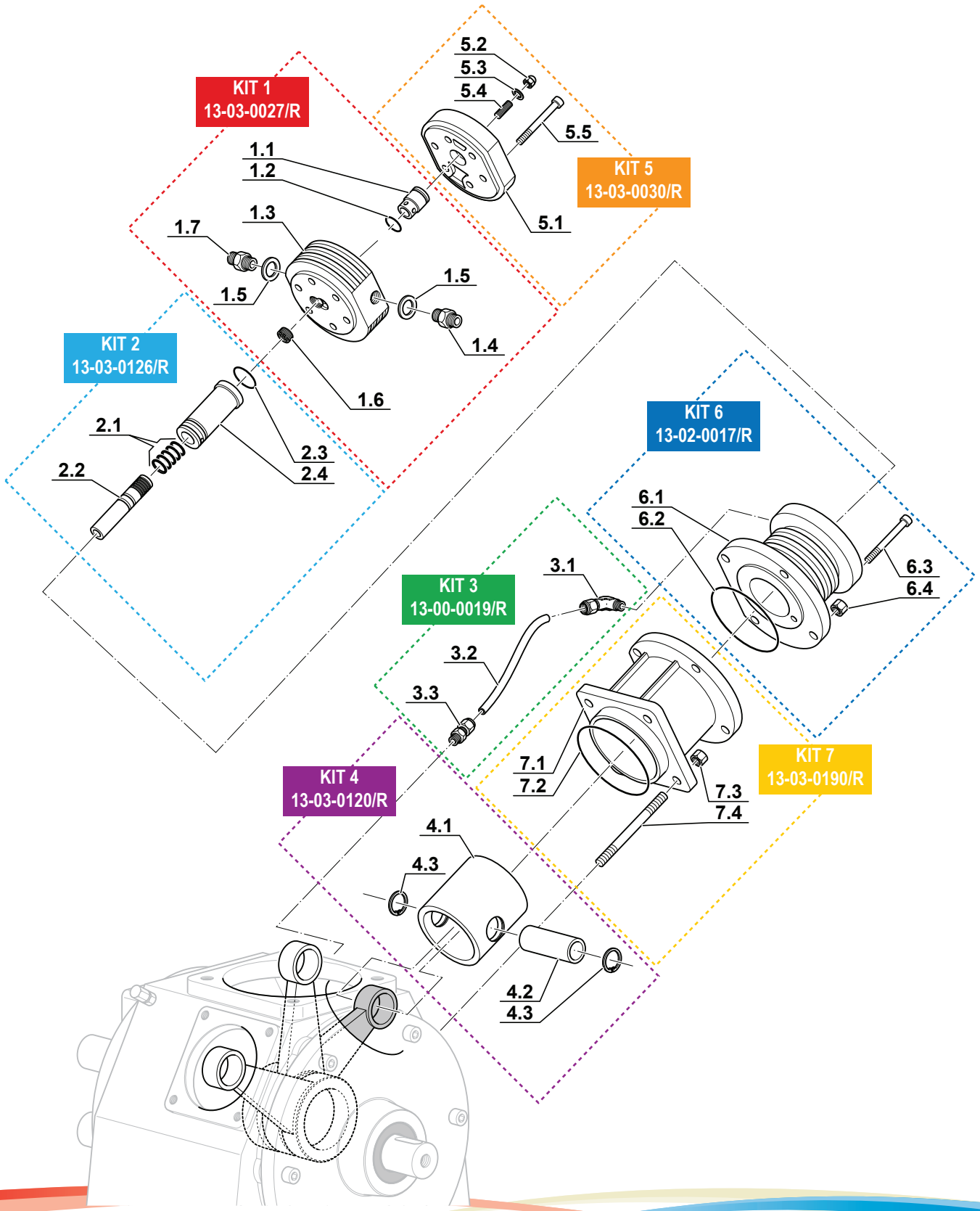
Senso di montaggio fasce elastiche
Direction of assembly of segments

2.1(1) *The valve must be tightened with a torque of* 81ftlbs
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	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 S0
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

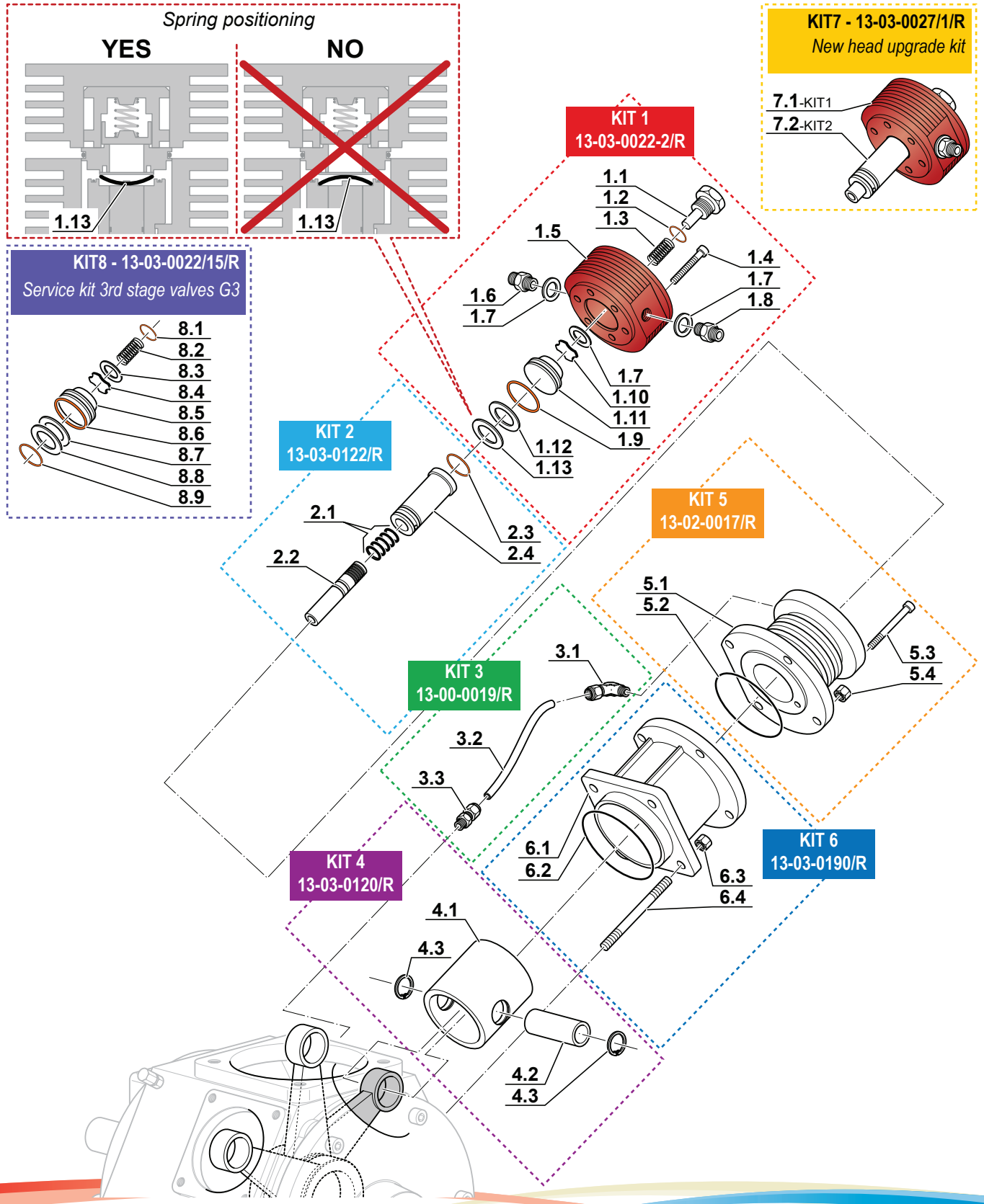
3rd STAGE G2
For models up to 03-2014



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.0,2 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 SATGE 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

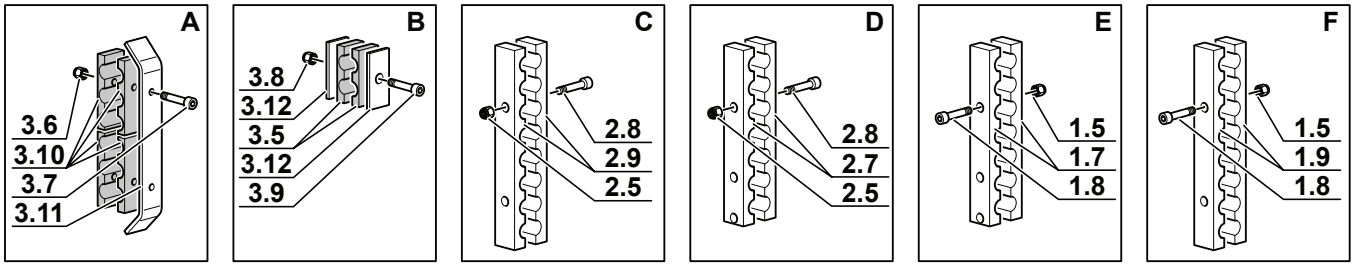
3rd STAGE G3
For models by 03-2014

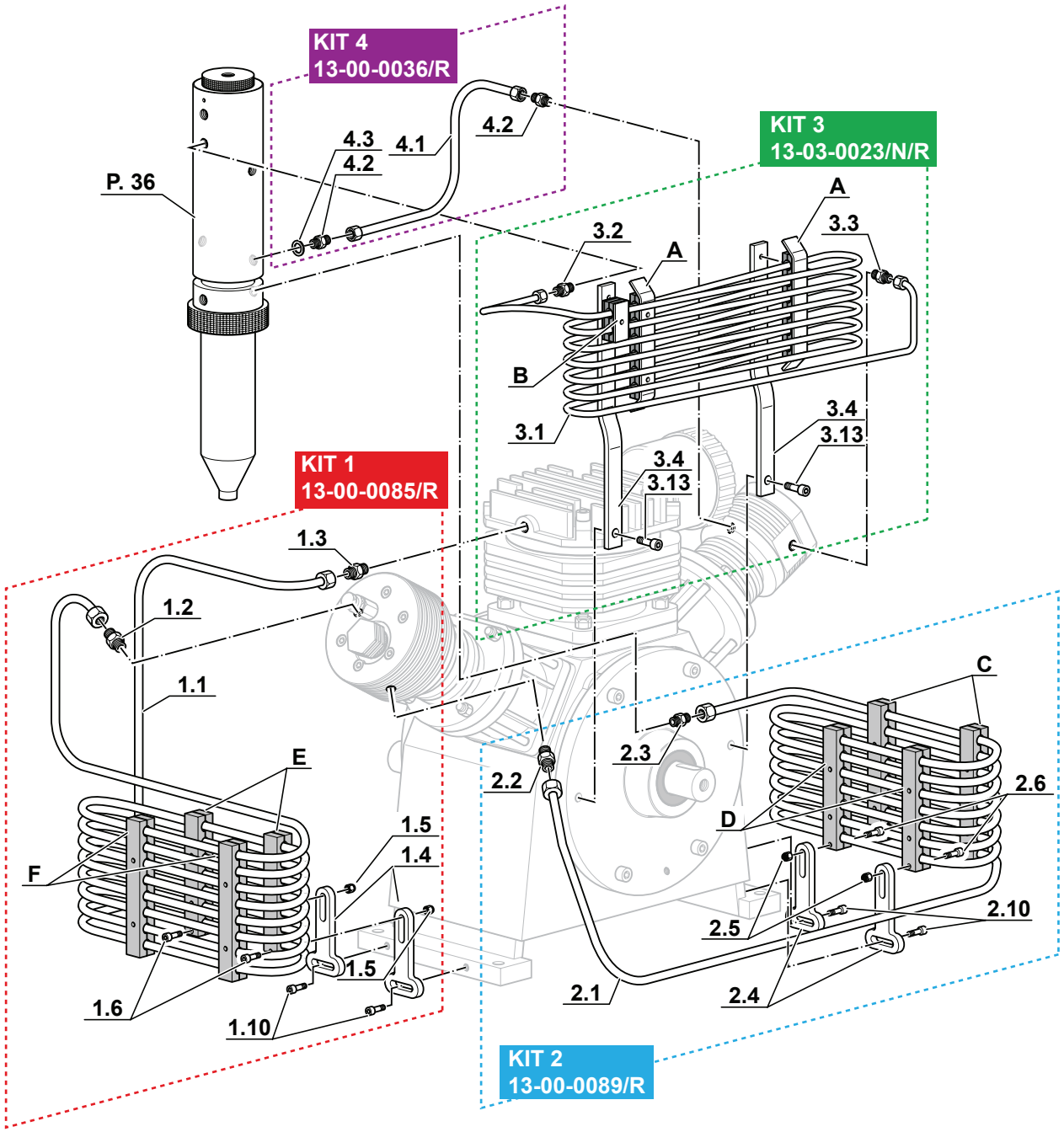


PRESSURE CIRCUIT

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





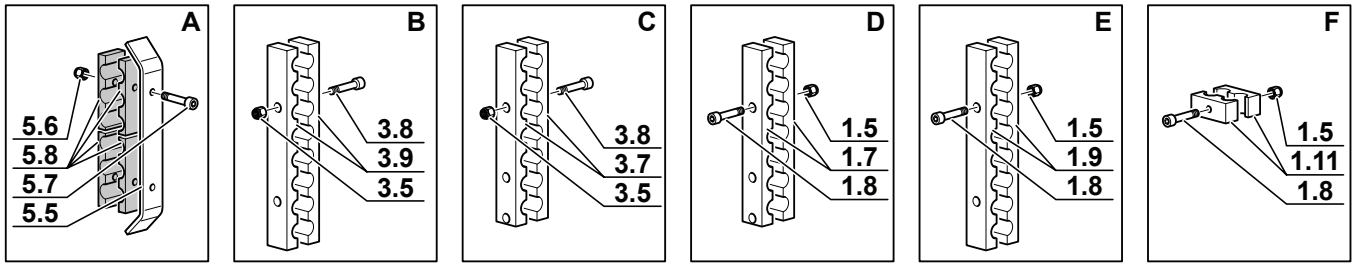
PRESSURE CIRCUIT

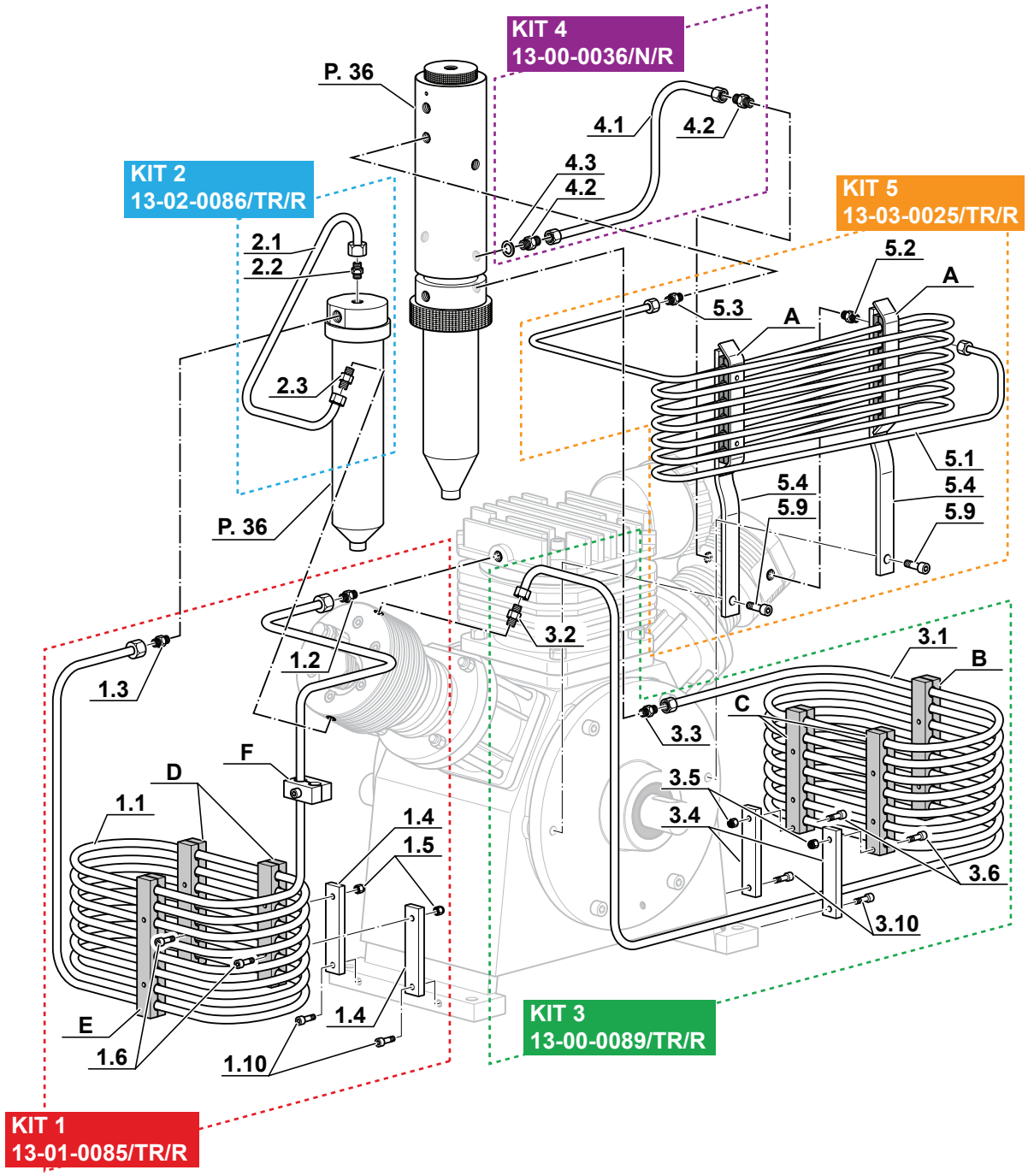
Mod: Tropical - Tropical Plus

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	RACCE212112LG1/2	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	DADM6AUTBAS	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

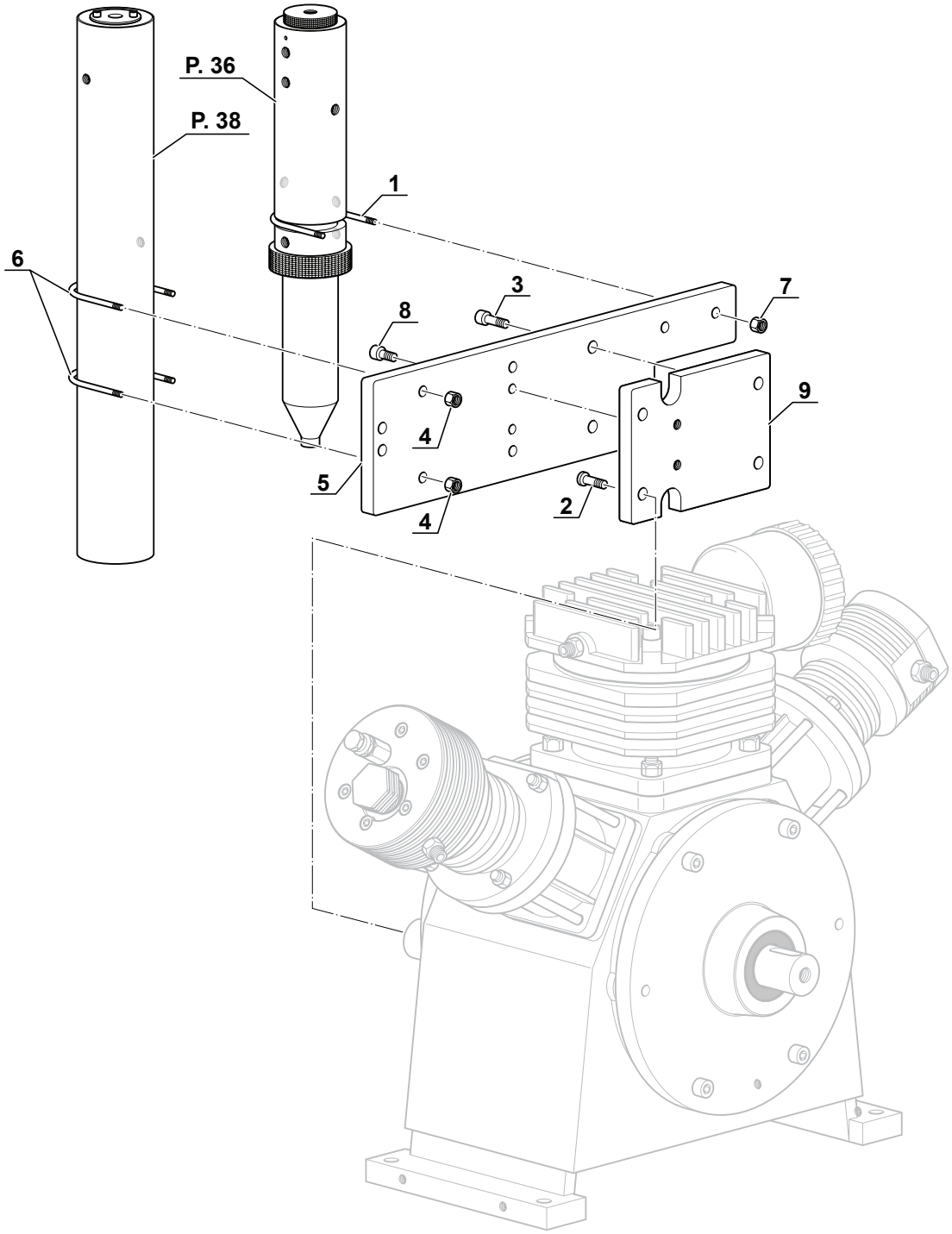




SUPPORT

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



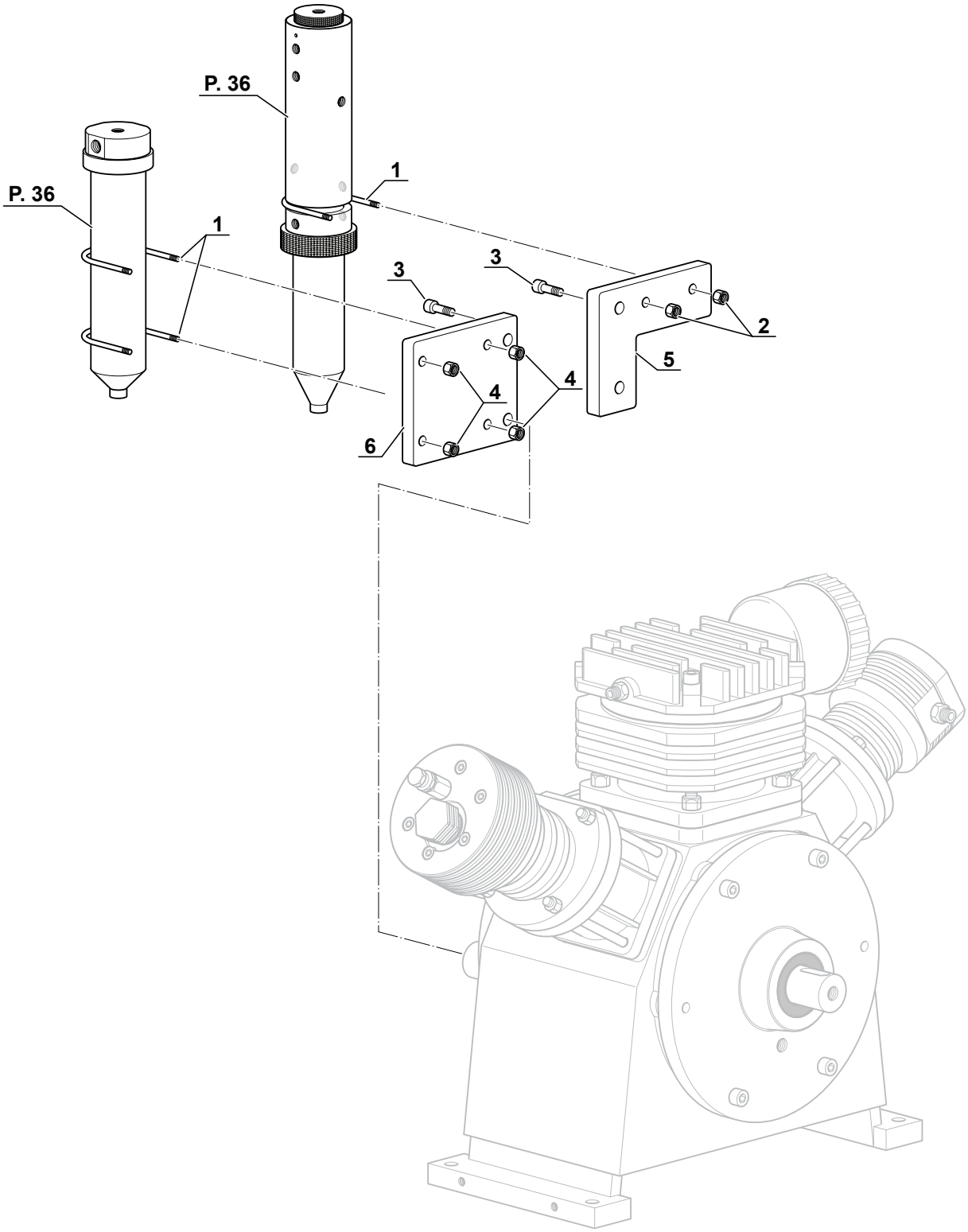
SUPPORT

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.

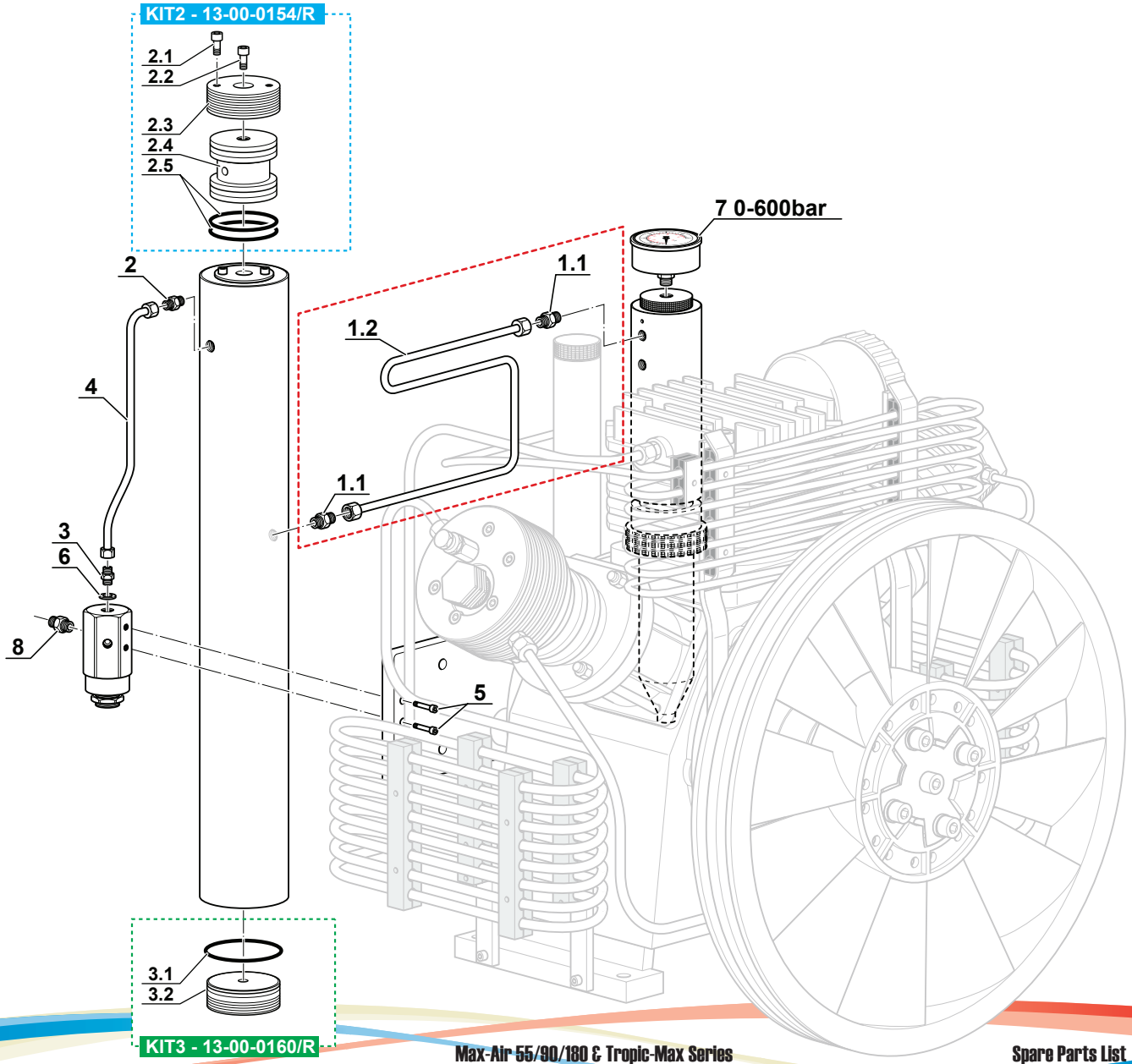
SUPPORT

Mod: Tropical - Tropical Plus



FILTERING CIRCUIT

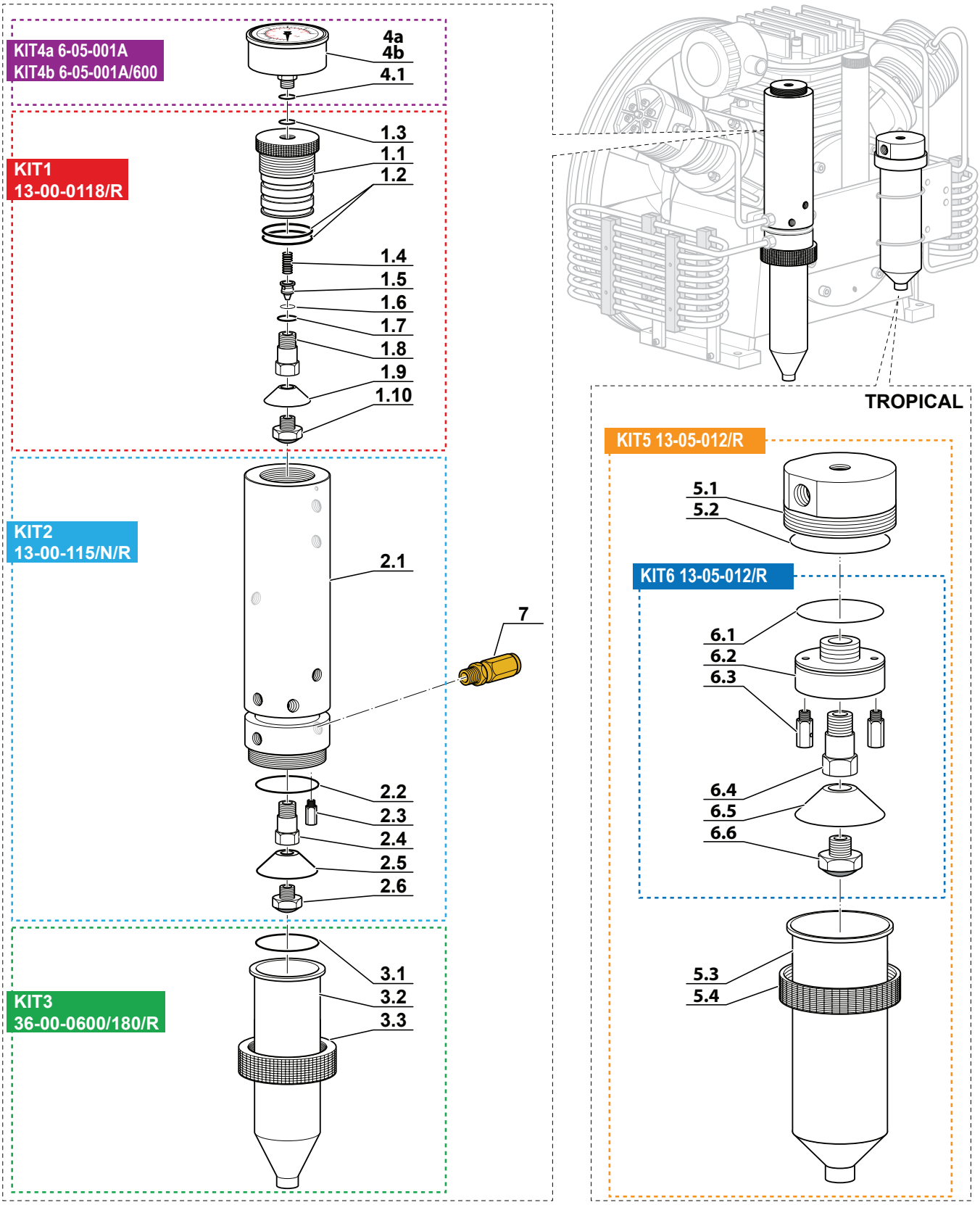
Pos.	Qty.	Code	Description
1.1	2	13-00-0174E	FITTING 1/8 NPT TUBE 6 mm
1.2	1	TUBO/MCH13/B/N	SEPARATOR-FILTER TUBE CONNECTION
2	1	13-00-0174E	FITTING 1/8 NPT TUBE 6 mm
3	1	13-00-0025E	FITTING 1/4 G -TUBO 6mm
4	1	13-04-0320	FILTER-VMP TUBE CONNECTION
5	1	13-00-0084	SCREW ZINC.
6	1	GUAR1420	COPPER GASKET
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

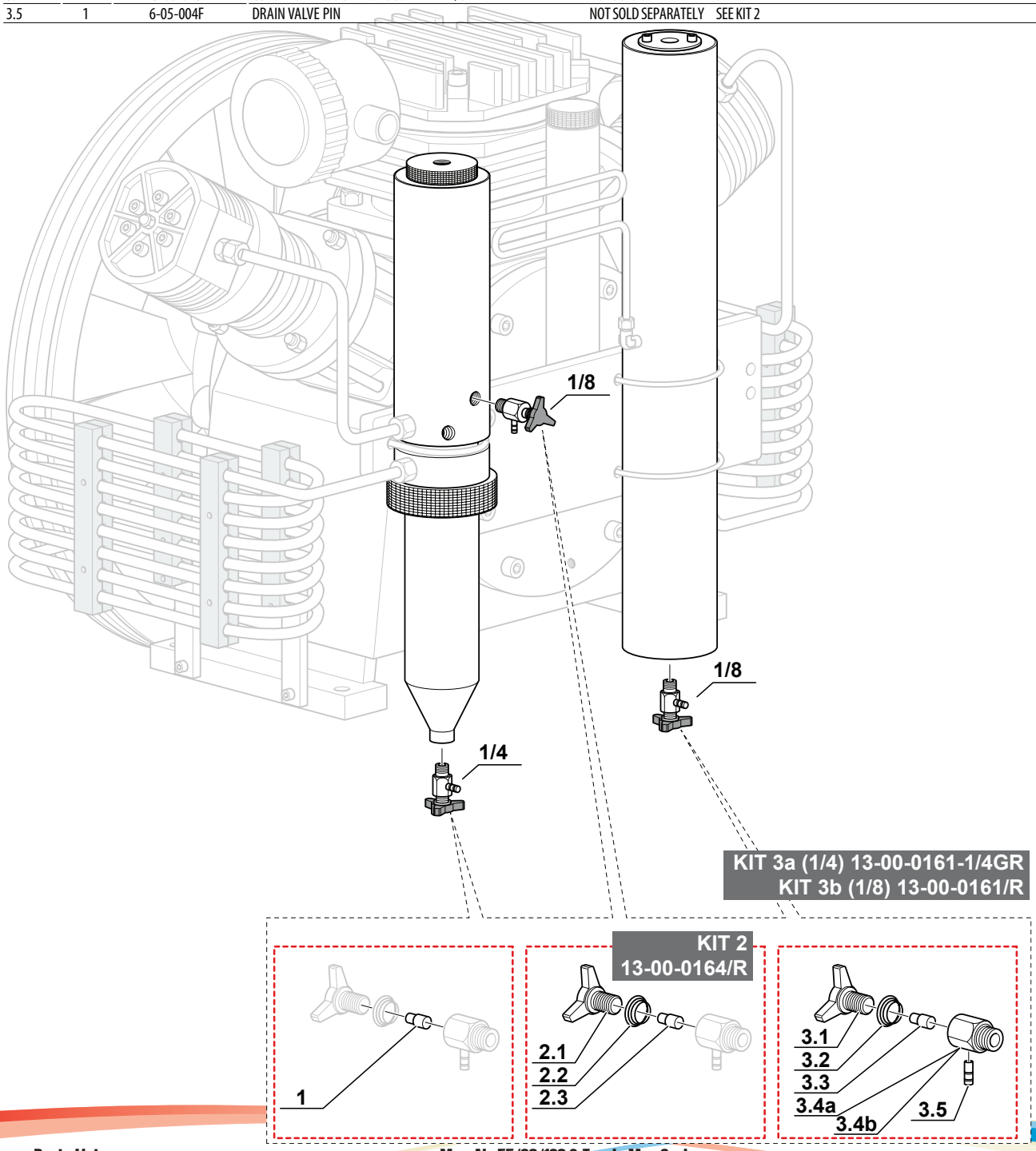
Pos.	Qty	Code	Description
KIT1	1	13-00-0118/R	CONDENSATE SEPARATOR PLUG KIT
1.1	1	13-00-0118	CONDENSATE SEPARATOR PLUG
1.2	2	OR-4143/90	O RING 4143 NBR 90
1.3	1	OR-2018/90	O RING 2018 NBR 90
1.4	1	SC000492/D	CHECK VALVE SPRING
1.5	1	SC000492/C	CHECK VALVE PISTON
1.6	1	OR-2021/90	O RING 2021 NBR 90
1.7	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

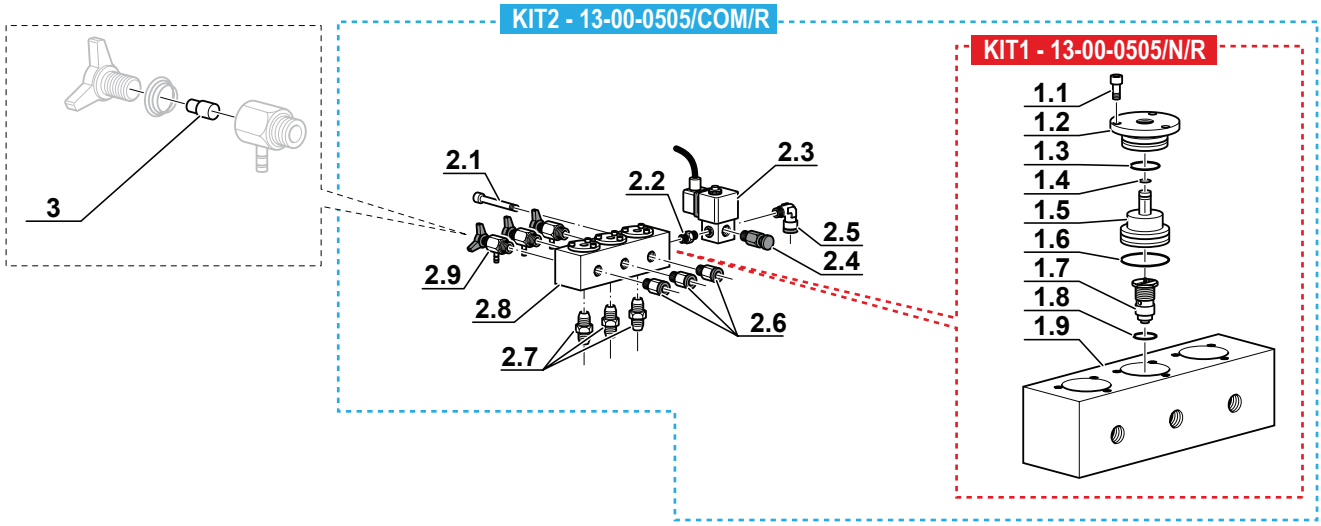
Pos.	Qty.	Code	Description	
1	1	13-00-0162	CONDENSATE DISCHARGE NYLON SEAT	
KIT 2	1	13-00-0164/R	CONDENSATE DISCHARGE WHEEL VALVE KIT	
2.1	1	13-00-0164	CONDENSATE DISCHARGE KNOB	NOT SOLD SEPARATELY SEE KIT 2
2.2	1	13-00-0163	CONDENSATE DISCHARGE SPRING	NOT SOLD SEPARATELY SEE KIT 2
2.3	1	13-00-0162	CONDENSATE DISCHARGE NYLON SEAT	NOT SOLD SEPARATELY SEE KIT 2
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	NOT SOLD SEPARATELY SEE KIT 2
3.2	1	13-00-0163	CONDENSATE DISCHARGE SPRING	NOT SOLD SEPARATELY SEE KIT 2
3.3	1	13-00-0162	CONDENSATE DISCHARGE NYLON	NOT SOLD SEPARATELY SEE KIT 2
3.4	1	13-00-0161	CONDENSATE DISCHARGE BODY VALVE1/8 NPT	NOT SOLD SEPARATELY SEE KIT 2
3.5	1	6-05-004F	DRAIN VALVE PIN	NOT SOLD SEPARATELY SEE KIT 2



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 VALVE1/8 NPT KIT
3	1	13-00-0162	CONDENSATE DISCHARGE NYLON

CONDENSATE DISCHARGE



SAFETY VALVE

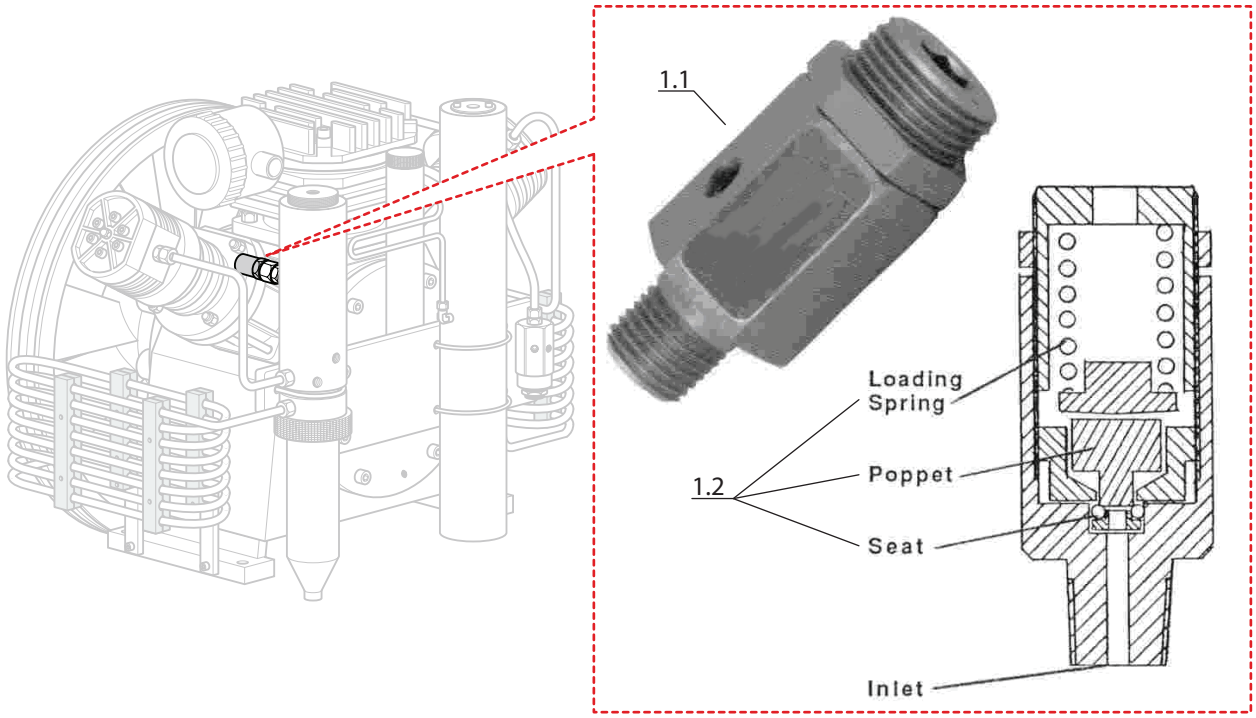
Pos.	Qty.	Code	Description
1.1	1	RV-504	FINAL SAFETY VALVE
1.2	1	RV-504-12	REBUILD KIT FOR RELIEF VALVE

PRESSURE MAINTAINING VALVE

Pos.	Qty.	Code	Description
	1	13-00-0127	MANTAINING 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