



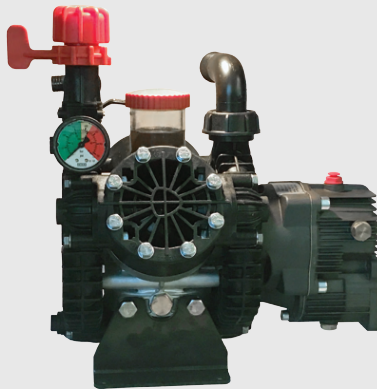
**ANNOVI
REVERBERI**®
The Power of Experience

AR 45 LFP



AR45LFP-C

140° F - Max Water Temp
1 1/4" - Suction
1" - Outlet



AR45LFP-GR-GCI

140° F - Max Water Temp
1 1/4" - Suction
1/2" - Hose Barb Outlet
3/4" - Bypass Hose Barb

INSTRUCTION MANUAL

AR45LFP - 550 RPM - SEMI-HYDRAULIC THREE-DIAPHRAGM PUMP

MODEL	MAX GPM	MAX L/MIN	MAX PSI	MAX BAR	HP POWER	WEIGHT LBS.
AR45LFP-C	11.4	43.3	290	20	2.1	24
AR45LFP-SP	11.4	43.3	290	20	2.1	24
AR45LFP-GR-GCI*	11.4	43.3	290	20	2.1	40

*Model comes standard with Viton diaphragms.

DIAPHRAGM KITS		VALVE KITS		O-RING KITS		OIL	
MODEL	DESCRIPTION	MODEL	DESCRIPTION	MODEL	DESCRIPTION	MODEL	DESCRIPTION
AR43239	BlueFlex™	AR42816	Valves	AR43081	O-Rings	AR64532D	Oil
AR43237	Desmopan					AR64532D-C	Case (6)Oil
AR43236	NBR						
AR43238	Viton						

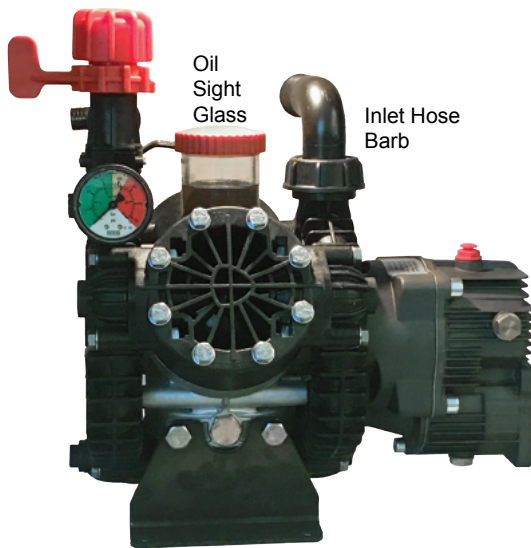
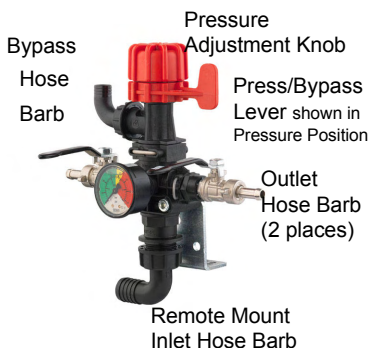


INSTALLATION INSTRUCTIONS



Full Bypass
Lever Position

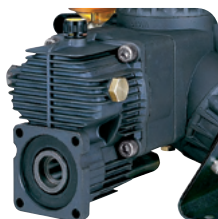
Full Pressure
Lever Position



C Version
1 3/8" 6B Splined Shaft



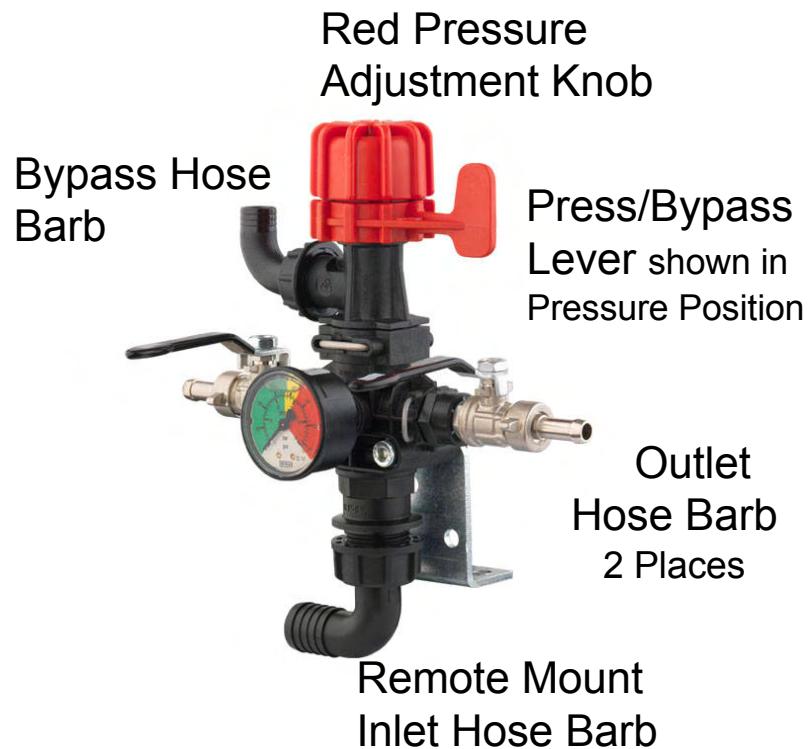
SP Version
Straight 3/4" Keyed Shaft



GR-GCI Version
Pump with Viton® Diaphragms &
Gearbox AR31185 with 3/4" Hollow
Shaft and GS25S Viton® Control Unit



Hydraulic Motor Flange Kit AR55375
For models AR45, AR60 & AR80
(SP Models Only)
Fits SAE 2-bolt A Flange Motors with 1" Shaft



1. When starting the pump, keep the control unit in the full bypass position until the pump has primed.
2. After starting the pump, and after the pump is primed, move the control unit into the pressure regulation position. Adjust the pressure by turning the red pressure adjustment knob on the control unit.
3. To stop the pump, reduce the pressure by rotating the lever to the full bypass position.
4. Stop the pump.



Intended uses

The pump is designed and constructed for incorporation in plants and machinery (spraying machines for the protective treatment of agricultural crops and garden plants). **All other uses constitute misuse unless approved by the manufacturer's technical service**

The pump must be used in a manner appropriate to its technical data (see "Technical Data"), and must not be modified or improperly used.

Misuses

Do not put the pump into service until the plant or machinery in which it is incorporated has been declared compliant with the relevant national and local legal requirements.

Do not use the pump in a potentially explosive atmosphere.

Do not use the pump for **flammable**, toxic or corrosive liquids or liquids with unsuitable density, especially **seawater, adhesives, bitumens, asphalt sealers, two-step curing compounds, concrete sealers, liquefied gases or solvents** of any kind, paints of any kind or liquids containing solids in suspension, and in all cases **do not** use with any liquid unless certain that it is compatible with the materials used in the pump circuit.

Do not draw in liquids at temperatures above 50°C or below 5°C.

Do not use the pump in drinking water supply systems.

Do not use the pump on products for human consumption.

Do not use the pump on pharmaceutical products.

Do not use the pump without first checking that the intake and delivery circuit pipelines are correctly secured and free from leaks.

Do not use the pump without the safety devices provided: guards for shafts and drive couplings and suitably rated relief valve on the delivery circuit.

Do not use the pump to wash or spray: people, animals or delicate items, live electrical equipment or chemicals whose characteristics are not known.

Safety devices



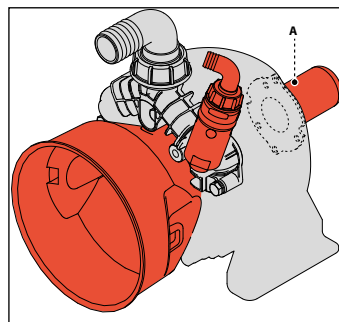
Danger - Warning

Never tamper with or by-pass the safety devices. Maintain all safety devices regularly to ensure they all work efficiently.

The drawing shows the position of the safety devices mounted on the machine.

Additional safety devices must be added as necessary during the design phase (see "Installation information").

A) Fixed guard: provides protection against accidental contacts with the drive shaft when in operation.



Residual risks

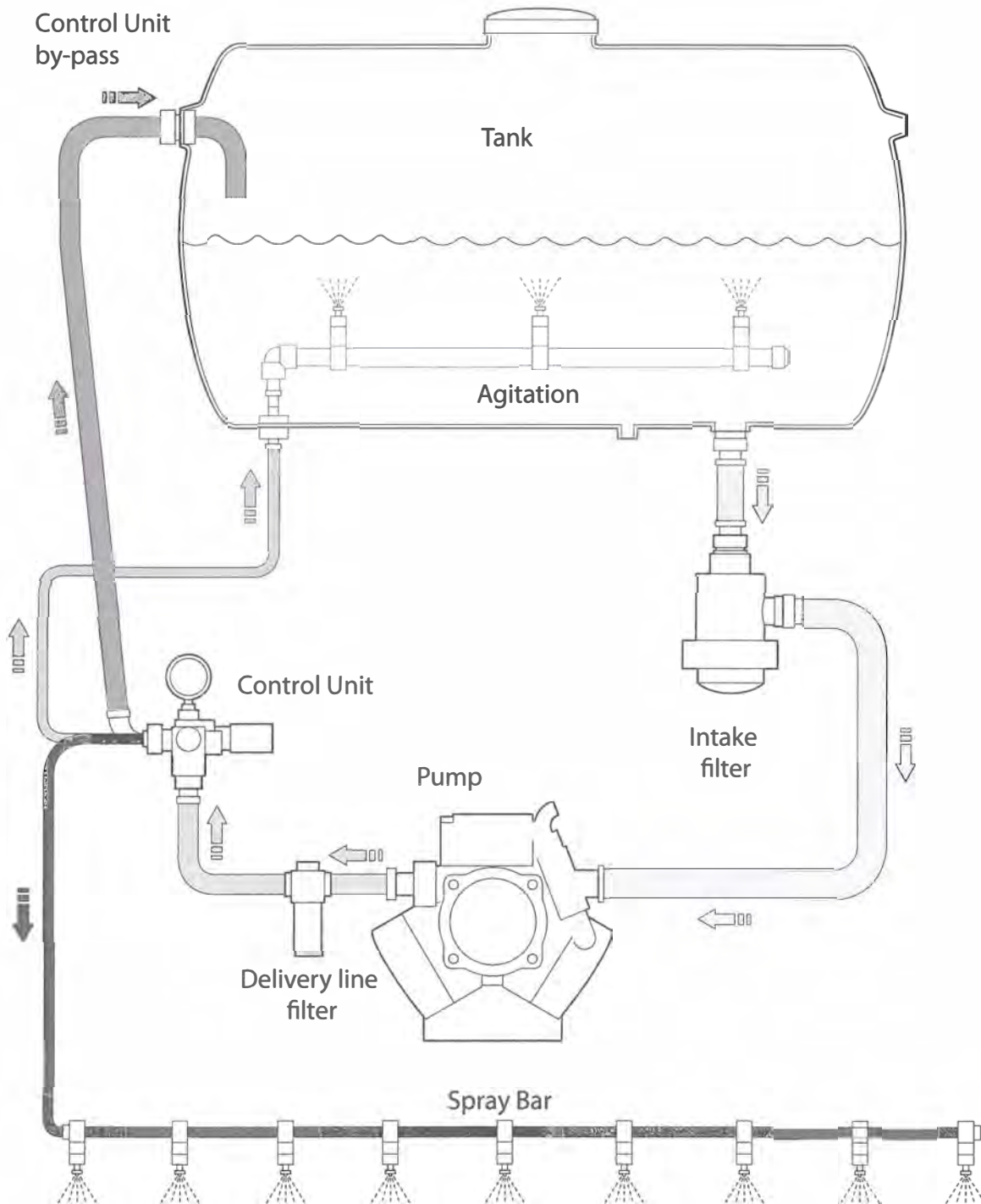
Even if the safety regulations and information provided in the manual are complied with, the residual risks described in the declaration of incorporation still apply when the pump is in operation.



INSTALLATION INSTRUCTIONS

Installation diagram (guideline)

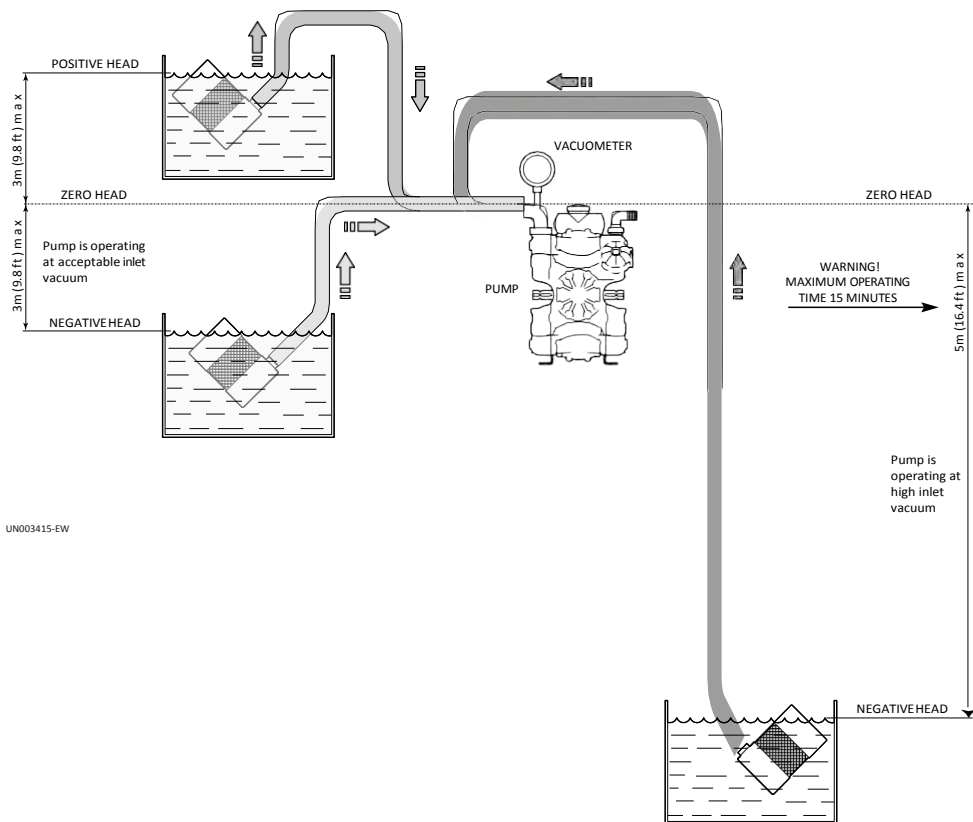
The following is a simplified illustration of the typical installation layout and is purely a guideline.



General guidelines on water supply connection

To operate correctly, the diaphragm pump must draw in liquids from containers at atmospheric pressure. **Do not supply the pump with pressurised liquids.**

For continuous duty, the pump should not draw in water by gravity from containers with liquid level at heights above 3m.



For continuous duty, the pump should not draw in liquids by vacuum from containers with the liquid level more than 3m below the pump intake fitting and the circuit must consist of hoses of length and diameter appropriate to the pump intake fitting (see "Technical Data"), free from restrictions and elbows, and with a filter of suitable capacity (see "Installation").

For occasional duty, such as filling water supply tanks, the pump can be operated at a vacuum drawing in liquids from reservoirs having the surface of the liquid up to 5m below the pump intake fitting, for periods of no more than 15minutes.

Drawing in liquids from lower levels or for longer times causes cavitation in the pump circuit and reduces the lifetime of the diaphragms, valves and mechanical parts.



Safety recommendations for handling and lifting

Before starting the operations, organise the intended working area so that the materials can be lifted and handled in safety.

Unloading, loading, handling and lifting operations must be carried out by skilled, authorised, specifically trained staff.

During lifting and handling operations, the people not involved in the operations must remain at a safe distance.

For lifting, use hooks and ropes which are free from damage and appropriate for the load to be lifted.

Packaging description and unpacking

The packaging normally consists of a cardboard box for easy, safe transport.

Depending on the quantity of goods to be shipped and the place of destination, packages may be fixed on a pallet for easier lifting and handling.

Check the weight of the item on the transport documents to allow the use of suitable lifting equipment.

When unpacking, check that all components are present and intact. If items are missing or damaged, contact the dealer or manufacturer to agree the procedures to be followed.

The packaging material must be disposed of appropriately in accordance with the relevant statutory requirements.

Transport

The pump may be shipped by a variety of means of transport (road, rail, sea or air) depending on its destination. Secure the packaging firmly to the vehicle during transport, to prevent random movement.

Storage

In the event of a lengthy period out of use, place the pump (in its packaging if possible, or otherwise protected) under cover, protected from the weather.

Do not store in places where the ambient conditions might impair the pump's operating condition over time.

Safety recommendations for installation

Take all possible precautions to allow the pump to be installed in a safe, risk-free manner.

All installation phases must be taken into consideration when designing the machinery or plant in which the pump is to be installed.

The design must consider all mounting points, the means of transmission of the energy sources, and the protective and safety devices required by the relevant regulations to prevent the risk of injury.



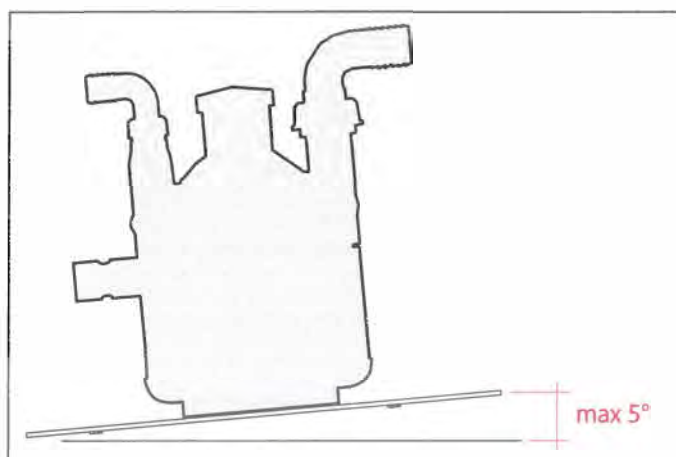
Installation

- The crankshaft may turn in either direction.
- The water connection with the pump must be made using hoses of suitable diameter, in all case no less than that of the pump fittings, securing them to the fittings using good quality clamps. The intake hose must be coil-reinforced to prevent restrictions.
- The pump inlet must be fitted with a filter having suitable capacity for the pump delivery rate and must be designed to generate a vacuum of no more than - g. This value can be measured by connecting a vacuum gauge to the pump intake fitting.
- The rated pressure of the outlet hose, fittings and clamps must be no less than the maximum rated pressure of the pump. Replacing the intake and outlet fittings provided on the pump by the manufacturer with smaller diameter alternatives may reduce the pump's performance and void the warranty.

Mounting the pump

The pump must be installed on a horizontal surface with no flexible components between it and the mounting surface.

The illustration shows the maximum permitted pump installation angle beyond which proper lubrication of the crank mechanism is not ensured.



Fix the pump by bolting the pump base onto the machine with suitable bolts, tightening appropriately.



INSTRUCTIONS FOR USE

Safety recommendations for use

Before start-up, the operator must perform the necessary safety checks.

In the event of leaks from the pressurized pipes, stop the pump at once and fix the leak.

Do not operate the pump above the limits set by the manufacturer to increase its performance.

Preliminary checks

If the pump has a pressure accumulator, check its level of inflation, see "Checking the inflation pressure".

Check the fittings of the hoses and the pump's intake and delivery circuits to prevent restrictions, the intake of air and leaks of liquid.

Check the pump tank oil level as described in the "Checking the oil level" section.

Before putting the pump into operation, check that the control unit is set for full bypass (low pressure.)

Starting and stopping the pump

To start the pump, proceed as described below.

1. When starting the pump, keep the control unit in the full bypass position until the pump has primed.
2. After starting the pump, and after the pump is primed, move the control unit into the pressure regulation position.
3. During the first few hours of operation, check that the oil level in the tank remains between the minimum and maximum limits. If top-ups are required, use A/R diaphragm pump oil, AR64532D.

To stop the pump, proceed as described below.

1. Reduce the pressure by rotating the lever to the full bypass position.
2. Stop the pump.



MAINTENANCE INSTRUCTIONS

Safety recommendations for maintenance



Caution - Take Care

Before doing any maintenance work, depressurise the water system and isolate the pump from all energy sources.

When the jobs are done, before restarting the pump, check that no tools, rags or other materials have been left close to moving parts or in hazardous zones.

Replace any excessively worn components with original parts and use the lubricants recommended by the manufacturer.

Scheduled maintenance table			
Frequency	Component	Procedure	Reference
Every working day	Filter	Inspect filter cartridge	See "Inspecting the filter"
	Pump	Checking the oil level	See "Checking the oil level"
	Connection of pump to power source (pulley, belt, coupling)	Inspection	-
	Pump	Inspect mounting	See "Inspecting the pump mounting"
	Pipes and connections	Inspection	See "Inspecting the connections and pipes"
Every 100 working hours	Pressure accumulator (if installed)	Check inflation pressure	See "Checking the inflation pressure"
	Reduction gear (if installed)	Check oil	See "Checking the oil level"

Dispose of the worn-out components and lubricants in accordance with the relevant statutory requirements.

Carry out the routine maintenance procedures specified by the manufacturer to keep the pump safe and performing well.



MAINTENANCE INSTRUCTIONS

Table of lubricants

pump i li mpl i i p m 3 i il ui l
i m i ii i m l p i limi

Inspecting the pump mounting

pump i m l
i m ii u i i ll i i

Inspecting the connections and pipes

- Inspect the connections for leaks.

m ll l i p p l
l m i pip l i l mu p i

- Inspect the hoses.

pip l u i mu pl

Inspecting the Inlet Filter

- Inspect the inlet filter cartridge.

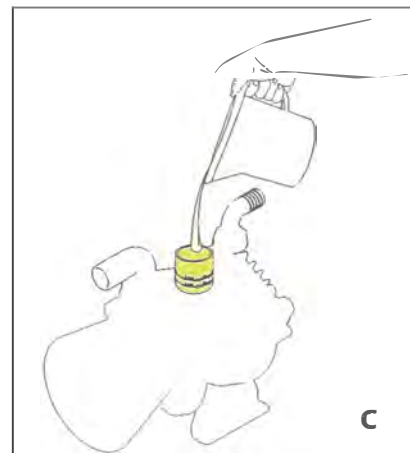
i i ul i u l m i
i i mu pl

Checking the oil level

il i pump l u i
u i l 5 mi u i
m l i i
ll li i i l mpl l ull
m il
i i p mp u i il
l mu i l m
p l i i i
pup i il i A/R P mium
Di p m Pump il P/N 6453 D
il l l ul
i i l p ii
pup i il p l
1) p p u i l.
p p



A/R Pump Oil
P/N AR64532D





Pump Storage

It is important to comply with the recommendations for storage in the operator's manual of the machine into which the pump is incorporated.

For the pump itself, at the end of pumping operations it is essential to flush out the pump by pumping clean water. After this, open the pump inlet to air and leave the pump in operation until the pump is completely empty. Following this simple procedure at the end of every operating session will prevent the retention inside the pump of products which are often corrosive and may damage its wetted parts over the long-term.

If the pump is in storage during the winter in locations with severe weather conditions, it is very important to flush out the internal circuit as described above and then fill the pump with A/R Pump Saver, AR64. Then take care to drain the liquid from the system and the pump.

Putting the pump back into service

Before putting the pump back into service after storage, check the oil level and the tightness of the mounting screws.

Scrapping the pump

Used units must be disposed of in compliance with local legislation.



A/R Pump Saver
P/N 64511
**Protects Pumps from
Freezing Conditions**



TROUBLESHOOTING

The information provided is intended to provide guidance how to deal with malfunctions which may occur during use.

Some of these procedures may be carried out by skilled staff, while others have to be performed at specialised service centres since they require the use of specific equipment as well as detailed knowledge of repair operations.

Problem	Cause	Remedy
The pump does not prime properly.	Intake circuit not airtight.	Tighten, repair or replace hoses and fittings as necessary.
	Control unit switching lever on "Pressure" setting.	Move control switching lever to "By-pass" setting.
The pump does not require the required pressure.	Seat and plate of intake and delivery valves worn.	Replace the worn valves.(1)
	Nozzles worn or too large in diameter.	Replace the worn nozzles. Use nozzles of suitable diameter.
	Restriction in intake circuit.	Remove the restriction from the circuit.
	Intake filter fouled.	Clean the filter cartridge.
Pressure gauge needle wobbles, pressure pulsating.	Intake circuit not airtight.	Clean or replace the intake and delivery valves. (1)
	Residual air left inside pump.	Discharge the air by opening a ball valve/central unit connected to the delivery side with the pump in operation.
	Valve plate stuck to its seat.	Tighten, repair or replace hoses and fittings as necessary.
	Pressure accumulator deflated	Inflate accumulator to the correct pressure.
Uneven flow of liquid to nozzles.	Pressure accumulator deflated	Inflate accumulator to the correct pressure.
Increase in noise and simultaneous drop in oil level (pump cavitation).	Restriction in intake circuit.	Remove the restriction from the circuit.
	Intake filter fouled.	Clean the filter cartridge.
	Pump drawing in liquid from too low a level.	See "Pump Intake Conditions" section.

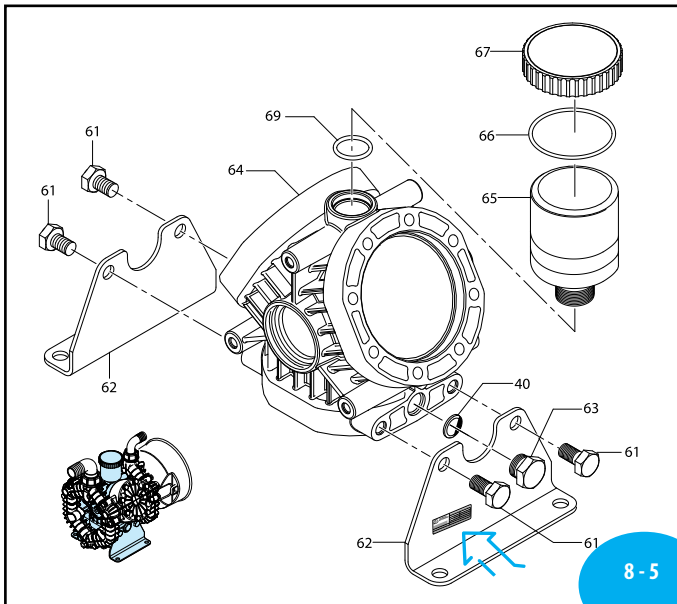
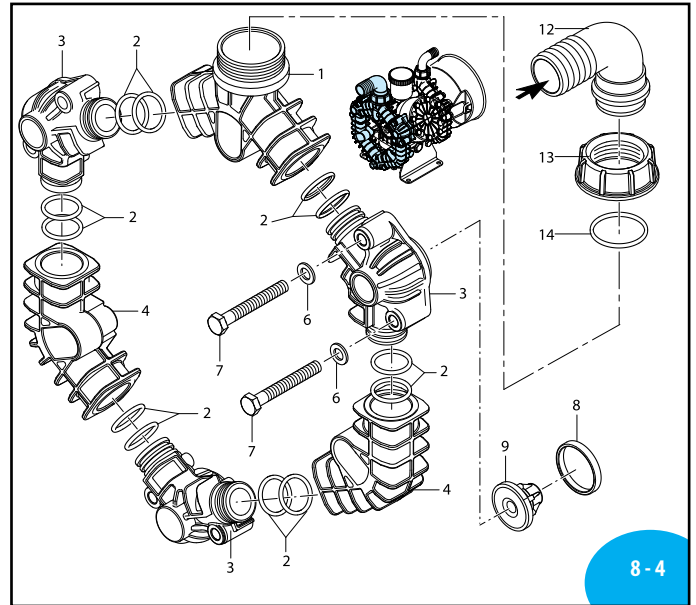
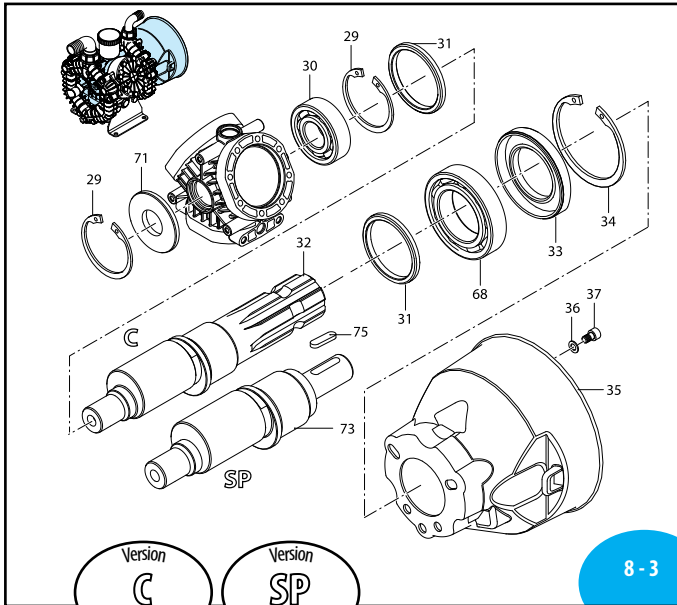
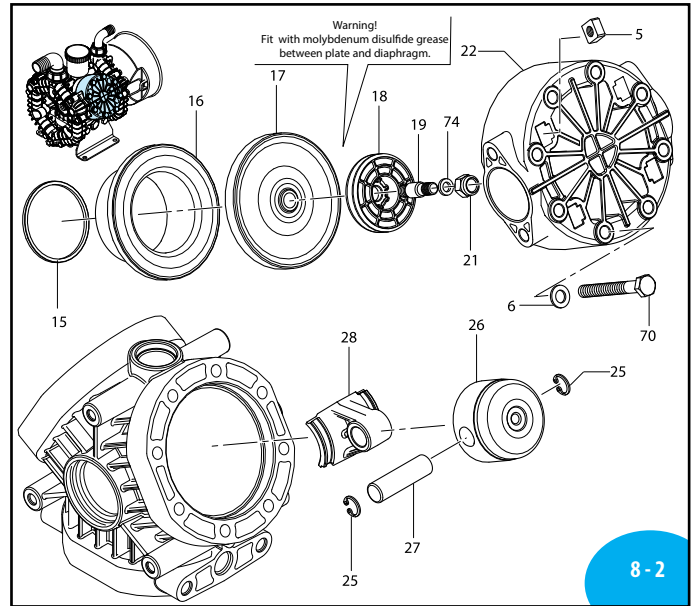
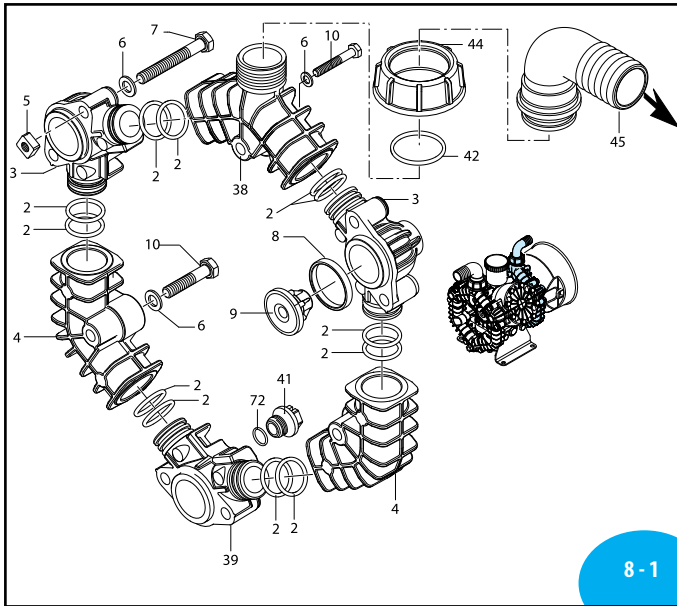


TROUBLESHOOTING

Problem	Cause	Remedy
Oil on pump body or base.	Oil seal on pump shaft worn.	Replace the worn oil seal.
	Oil pressure inside pump too high.	Restore correct oil level in tank.
Pump using too much oil (oil flowing from delivery port) or oil whitish in color (water/oil emulsion in tank).	One or more diaphragms ruptured.	Stop the pump at once. Replace the diaphragms (1)

A.R. NORTH AMERICA

AR45LFP / AR 45 bp



AR 45LFP / AR 45 bp

	C	SP	GR3/4-GCI	GR-GCI
AR45LFP	32002	33035		31878
AR45bp	31689	31690	31692	

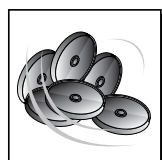
Low pressure

Pos	Code	Description	Qty	Note
1	3120410	Manifold suction	1	
2	720030	O-ring Ø 22.22x2.62	24	AR45bp
	720031	O-ring Ø 22.22x2.62	24	Viton AR45LFP
3	3120050	Manifold	5	
4	3120060	Manifold	4	
5	3120510	Nut M8	12	SS
6	3120761	Washer	42	Z/B AR45bp
	3120760	Washer	42	SS AR45LFP
7	3120251	Bolt TE M8x60	12	T90* AR45bp
	3120250	Bolt TE M8x60	12	SS T90* AR45LFP
8	3120230	Gasket	6	AR45bp
	3120680	Gasket	6	Viton AR45LFP
9	3129051	Complete valve	6	AR45LFP
	3129050	Complete valve	6	AR45bp
10	621782	Bolt TE M8x40	6	SS T90* AR45LFP
	621780	Bolt TE M8x40	6	T90* AR45bp
12	751200	Elbow 1 1/4"	1	
13	750670	Ring nut 1 1/2" G	1	
14	1880460	O-ring Ø 29x3	1	Viton AR45LFP
	390290	O-ring Ø 29x3	1	AR45bp
15	3120130	Piston ring	3	
16	3120090	Sleeve	3	
17	3120080	Diaphragm	3	NBR AR45bp
	3120082	Diaphragm	3	BlueFlex™ AR45LFP
	3120081	Diaphragm	3	Viton
	3120085	Diaphragm	3	Desmopan
18	3120120	Retaining washer	3	
19	3120101	Hub pin AISI 316L	3	T220* (a) AR45LFP
	3120100	Hub pin AISI 316L	3	T220* (a) AR45bp
21	3120790	Nut M8 AISI 304	3	T180* (a) AR45LFP
	3120110	Nut M8 AISI 304	3	SS T180* AR45bp
22	3120020	Head	3	
25	1880450	Ring circlip Ø1 14	6	
26	3120070	Piston Ø 54	3	
27	380300	Pin	3	
28	3120180	Connecting-rod	3	
29	1460490	Ring circlip Ø1 47	2	
30	380230	Bearing	1	
31	1300120	Ring connecting rod	2	
32	3120500	Shaft marked DD	1	AR45bp/LFP C
33	3120160	Ring seal	1	
34	961790	Ring circlip Ø1 68	1	
35	3240290	Shield	1	
36	320620	Washer	4	AR45bp
37	820670	Bolt TCEI M10x16	4	T90* AR45bp
38	3120380	Manifold	1	
	3120330	Manifold for GS25 Controller	1	Not Shown
39	3120051	Manifold	1	

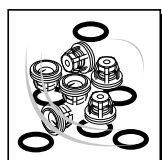
Pos	Code	Description	Qty	Note
40	740290	O-ring Ø 14x1.78	1	
41	3120690	Plug	1	T15*
42	1140450	O-ring Ø 20.24x2.62	1	AR45bp
	1140451	O-ring Ø 20.24x2.62	1	Viton AR45LFP
44	3120440	Ring nut 1" G	1	
45	3120460	Elbow 1"	1	
61	620342	Bolt TE M10x20	4	SS T265* AR45LFP
	620340	Bolt TE M10x20	4	T265* AR45bp
62	3120140	Base	2	
63	880530	Plug 3/8" G	1	T180*
64	3120010	Pump body	1	
65	3120240	Oil sight glass	1	T180*
66	650920	O-ring Ø 53.65x2.62	1	
67	1040320	Plug red	1	
68	961780	Bearing	1	
69	720030	O-ring Ø 22.22x2.62	1	
70	3120271	Bolt TE M8x65	24	SS T90* AR45LFP
	3120270	Bolt TE M8x65	24	T90* AR45bp
71	3120640	Ring seal	1	
72	2840891	O-ring Ø 14x2	1	Viton AR45LFP
	2840890	O-ring Ø 14x2	1	AR45bp
73	3120170	Shaft marked DL	1	AR45bp/LFP SP
74	3120760	Washer	3	SS
75	2280950	Key	1	(d)
76	3129013	Complete Discharge manifold	1	AR45bp-SP
77	3129015	Complete inlet manifold	1	AR45bp
78	3129000	Piston ConRod assembly	3	Not shown

(a) Bolt with Loctite 242 thread lock STRONG
(d) Supplied in applications kit.

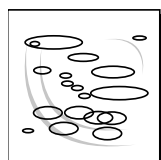
* Torque: in-lbs +/- 10%



AR 43239 BlueFlex diaphragms	
AR 43236 NBR diaphragms	
AR 43238 Viton diaphragms	
AR 43237 Desmopan diaphragms	
Pos.	Qty
8	6
17	3



AR 42524 Valves AR45bp	
AR 42816 Valves AR45LFP	
Pos.	Qty
8	6
9	6



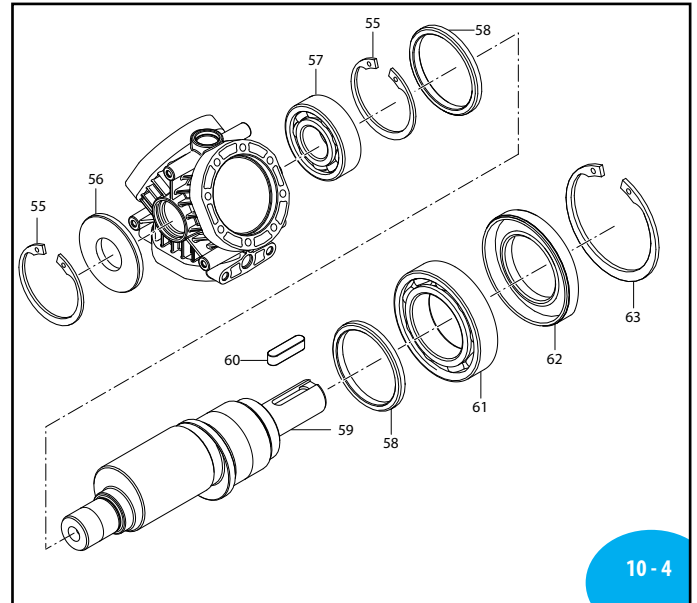
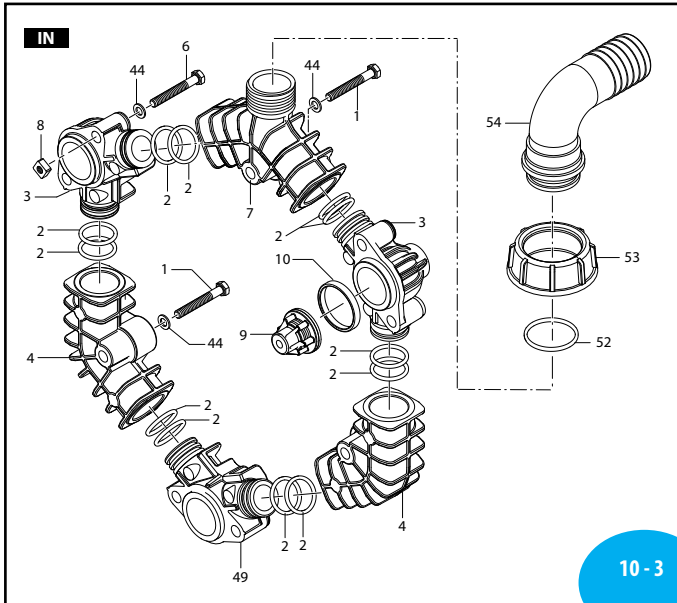
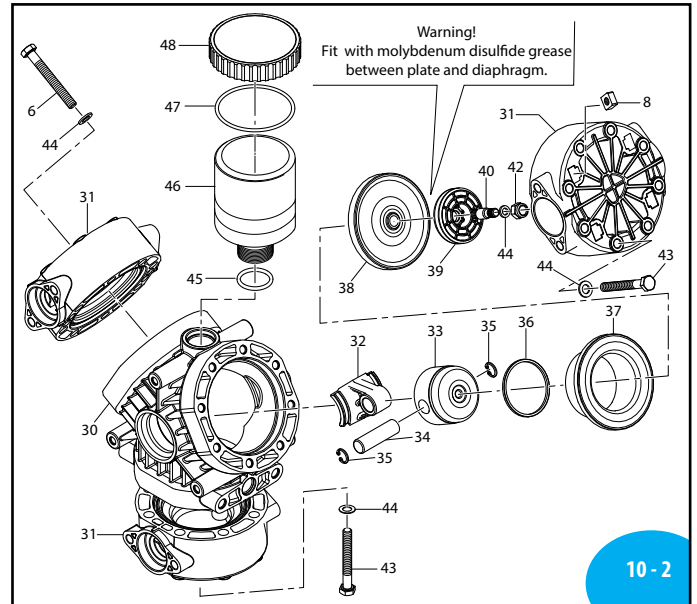
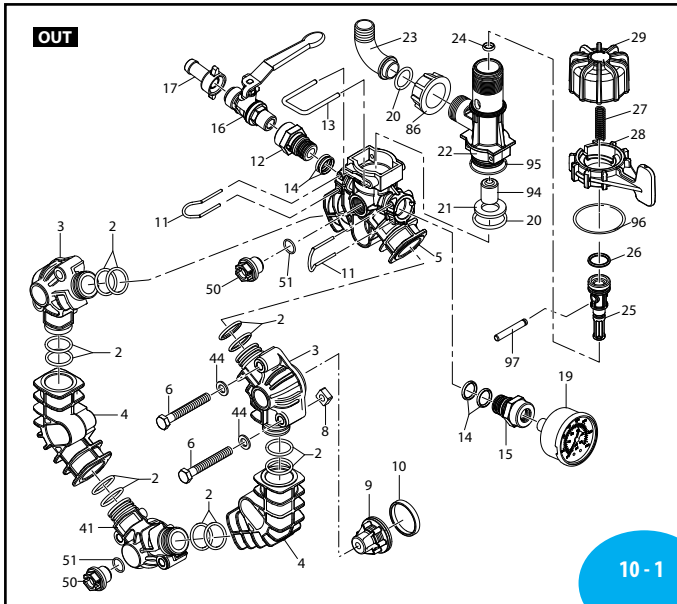
AR 42525 O-Rings AR45bp	
AR 43081 O-Rings AR45LFP	
Pos.	Qty
2	24
14	1
40	1
42	1
66	1
69	1
72	1



Suggested Oil	
Type	Oz
AR64532D	32
Crankcase Oil Capacity 13 oz	
 Pump and manufacturer identification.	

A.R. NORTH AMERICA

AR45LFP GR - GCI

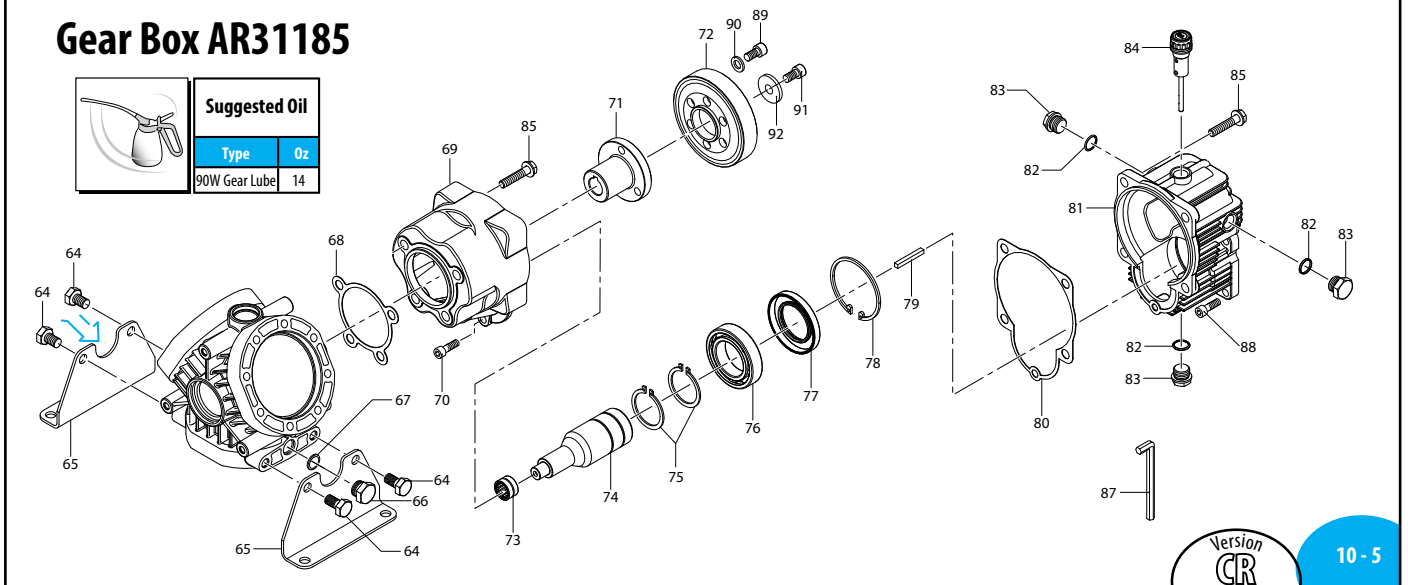


Gear Box AR31185



Suggested Oil

Type	Oz
90W Gear Lube	14



AR 45LFP GR - GCI

GR-GCI
AR45LFP 31878

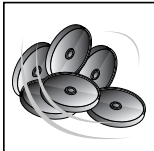
Low pressure

Pos	Code	Description	Qty	Note
1	621782	Bolt M8x40	6	SS T90*
2	720031	O-Ring Ø 22.22x2.62	24	Viton
3	3120050	Manifold	2	
4	3120060	Manifold	4	
5	3120330	Manifold	1	
6	3120250	Bolt M8x60	12	SS T90*
7	3120410	Manifold	1	
8	3120510	Nut M8	12	SS
9	3129051	Valve	6	
10	3120680	Gasket green	6	Viton
11	392580	Fork	2	
12	3120421	Fitting 3/8" G F	1	
13	3120320	Fork	1	
14	640071	O-Ring Ø 13.95x2.62	4	Viton
15	3120420	Fitting 1/4" G M-F	1	
16	130491	Valve 3/8" G - 1/2" GM-MDX	1	
17	110130	Ring nut 1/2" G	1	
19	3240470	Pressure gauge Ø 50	1	1 - 50 bar
20	880831	O-Ring Ø 15.54x2.62	2	Viton
21	3120311	Seat	1	Ceramic
22	3120280	Body regulator	1	
23	550460	Elbow Ø 18	1	
24	1123661	O-Ring Ø 7.59x2.62	1	Viton
25	3120290	Piston Upper	1	
26	480441	O-Ring Ø 17.13x2.62	1	Viton
27	3120370	Spring	1	
28	1880210	Ring nut	1	
29	1880220	Knob	1	
30	3120010	Pump body	1	
31	3120020	Head	3	
32	3120180	Connecting-rod	3	
33	3120070	Piston Ø 54	3	
34	380300	Pin	3	
35	1880450	Snap Ring Øi 14	6	
36	3120130	Piston ring	3	
37	3120090	Sleeve	3	
38	3120080	Diaphragm Øe 90	3	NBR
	3120081	Diaphragm Øe 90	3	Viton
	3120082	Diaphragm Øe 90	3	BlueFlex
	3120085	Diaphragm Øe 90	3	Desmopan
39	3120120	Retaining washer	3	
40	3120101	Hub pin AISI 316L	3	T220* (a)
41	3120051	Manifold	1	
42	3120110	Nut M8 AISI 304	3	T180*
43	3120270	Bolt M8x65	24	SS T90*
44	3120760	Washer	45	SS
45	720030	O-Ring Ø 22.22x2.62	1	
46	3120240	Sight glass	1	T180*
47	650920	O-Ring Ø 53.65x2.62	1	
48	1040320	Plug red	1	
49	3120050	Manifold	3	

Pos	Code	Description	Qty	Note
50	3120690	Plug 3/8" G	2	T15*
51	2840891	O-Ring Ø 14x2	2	Viton
52	1880460	O-Ring Ø 29x3	1	Viton
53	750670	Ring nut 1-1/2" G	1	
54	751200	Elbow Ø 32	1	
55	1460490	Snap Ring Øi 47	2	
56	3120640	Ring	1	
57	380230	Bearing	1	
58	1300120	Ring piston rod	2	
59	3120170	Shaft marked DL	1	
60	2280950	Key	1	
61	961780	Bearing	1	
62	3120160	Ring	1	
63	961790	Ring Øi 68	1	
64	620342	Bolt M10x20	4	SS T265*
65	3120140	Base	2	
66	880530	Plug 3/8" G	1	T180*
67	740290	O-Ring Ø 14x1.78	1	
68	3120360	Gasket	1	
69	3120340	Flange	1	
70	180030	Bolt M8x20	1	T220*
71	3120350	Shaft	1	
72	651620	Gear Z=64	1	
73	620990	Bearing	1	
74	621660	Pinion Z=11	1	
75	320240	Snap Ring Øe 40	2	
76	961780	Bearing	1	
77	961800	Ring	1	
78	961790	Snap Ring Øi 68	1	
79	881090	Key	1	
80	620950	Gasket	1	
81	620960	Box	1	
82	740290	O-Ring Ø 14x1.78	3	
83	1980740	Plug 3/8" G brass	3	T180*
84	1140370	Plug	1	
85	540300	Bolt M10x30	8	T220*
86	550450	Ring nut 3/4" G	1	
87	1380630	Allen Wrench	1	
88	651000	Bolt 5/16" 24 UNF 1"	4	Geomet T220*
89	620470	Bolt M10x20	3	T180*
90	200231	Washer	3	
91	880280	Bolt M6x18	1	T90*
92	780230	Washer	1	
94	3120301	Piston Lower	1	Ceramic
95	880311	O-Ring Ø 26.65x2.62	1	Viton
96	961241	O-Ring Ø 31.47x1.78	1	Viton
97	1880240	Pin	1	
98	43883	Complete discharge manifold	1	AR45LFP-GCI Not shown
99	43821	Controller assembly	1	AR45LFP-GCI Not shown

(a) Bolt with Loctite 242 thread lock STRONG

* Torque: in-lbs +/- 10%



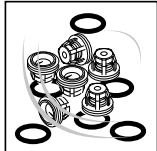
AR 43239
BlueFlex diaphragms

AR 43236
NBR diaphragms

AR 43238
Viton diaphragms

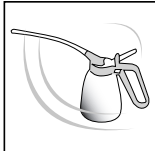
AR 43237
Desmopan diaphragms

Pos.	Qty
10	6
38	3



AR 42816
Valves
AR45LFP

Pos.	Qty
9	6
10	6



Suggested Oil

Type	Oz
AR64532D	32

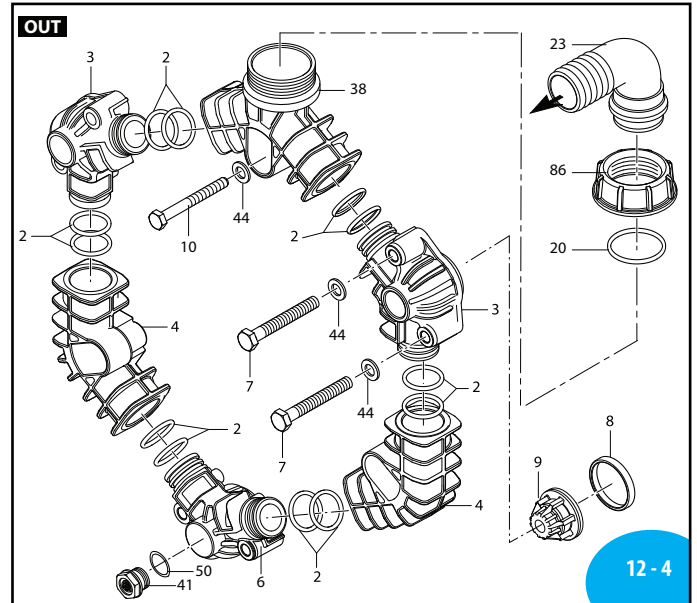
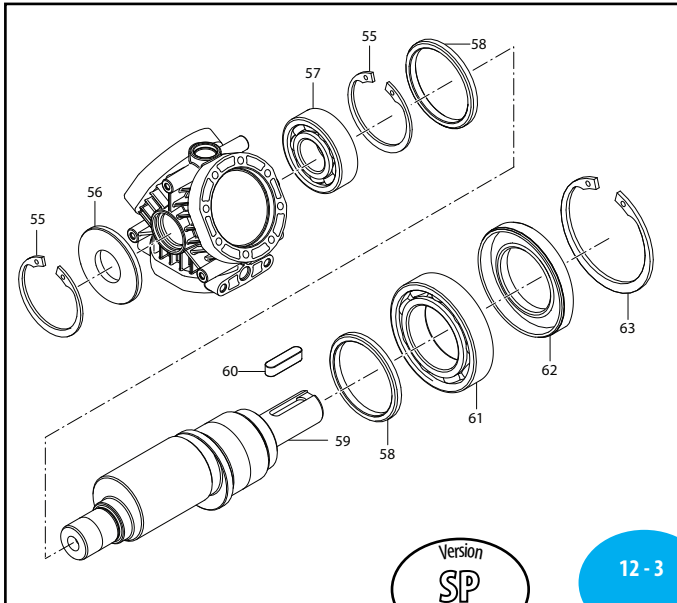
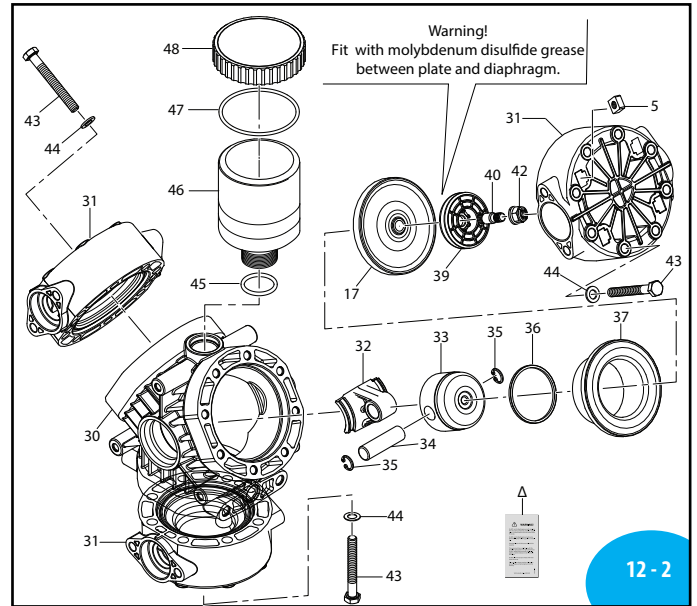
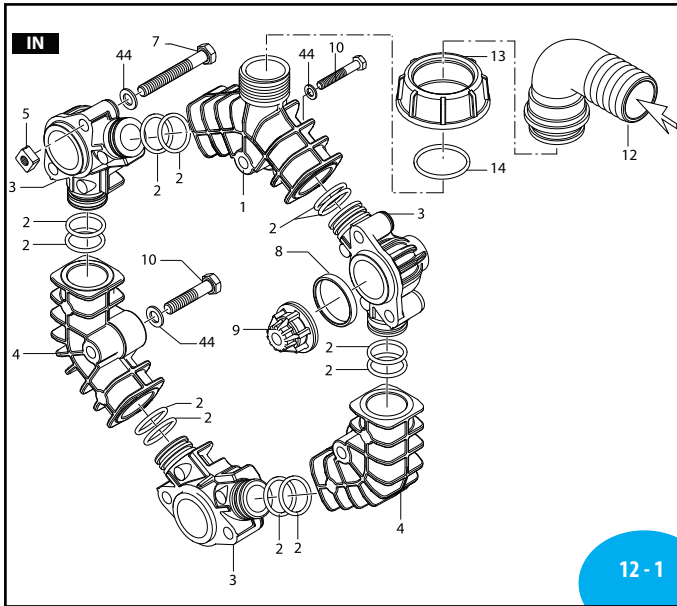
Crankcase Oil
Capacity 13 oz



Pump and
manufacturer
identification.

A.R. NORTH AMERICA

AR45LFP GR

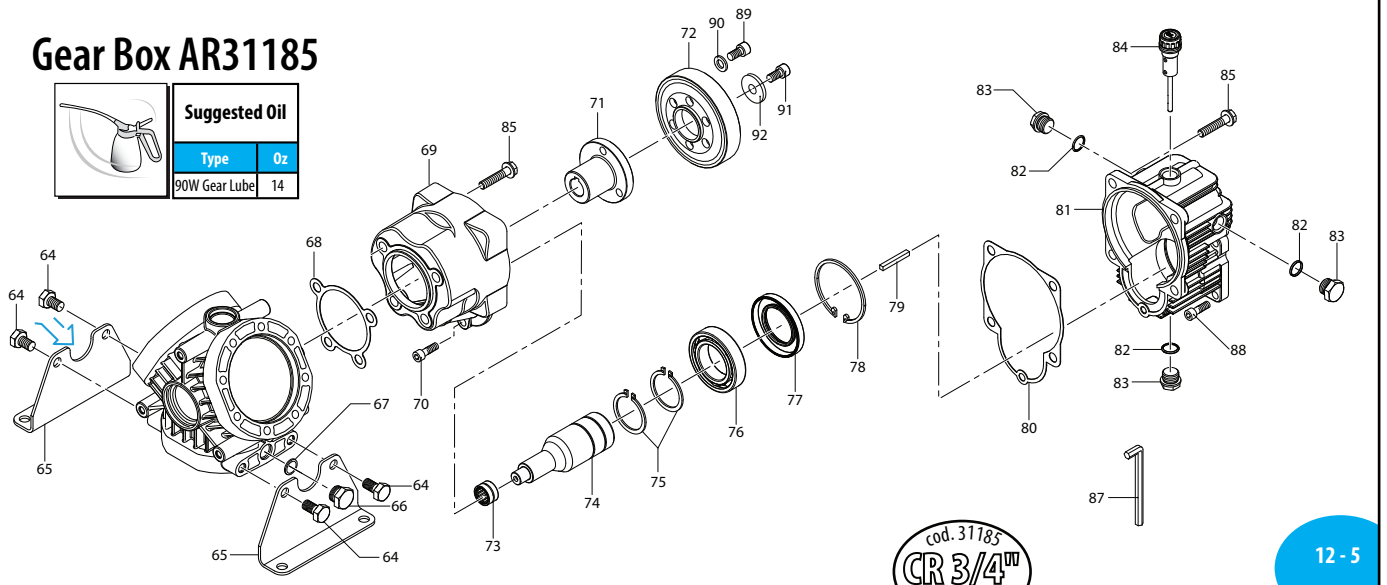


Gear Box AR31185



Suggested Oil

Type	Oz
90W Gear Lube	14



AR 45LFP GR

	GR
AR45LFP	33410

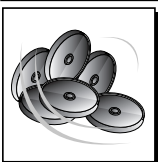
Low pressure

Pos	Code	Description	Qty	Note
1	3120410	Manifold	1	
2	720031	O-ring Ø 22.22x2.62	24	Viton
3	3120050	Manifold	5	
4	3120060	Manifold	4	
5	3120510	Nut M8	12	SS
6	3120051	Manifold	1	
7	3120250	Bolt M8x60	12	SS T88*
8	3120680	Gasket	6	Viton
9	3129051	Valve	6	
10	621782	Bolt M8x40	6	SS T88*
12	751200	Elbow Ø 32	1	
13	750670	Ring nut 1-1/2" G	1	
14	1880460	O-ring Ø 29x3	1	Viton
17	3120082	Diaphragm Øe 90	3	BlueFlex™
20	1140451	O-ring Ø 20.24x2.62	1	Viton
23	3120460	Elbow Ø 25	1	
30	3120010	Pump body	1	
31	3120020	Head	3	
32	3120180	Connecting-rod	3	
33	3120070	Piston Ø 54	3	
34	380300	Pin	3	
35	1880450	Snap ring Øi 14	6	
36	3120130	Piston ring	3	
37	3120090	Sleeve	3	
38	3120380	Manifold	1	
39	3120120	Retaining washer	3	
40	3120101	Hub pin AISI 316L	3	T221* (a)
41	3120690	Plug 3/8" G	1	T44*
42	3120790	Nut M8 AISI 316L	3	T177*
43	3120270	Bolt M8x65	24	SS T88*
44	3120760	Washer	42	SS
45	720030	O-ring Ø 22.22x2.62	1	
46	3120240	Sight glass	1	T177*
47	650920	O-ring Ø 53.65x2.62	1	
48	1040324	Plug red	1	
50	2840891	O-ring Ø 14x2	1	Viton
55	1460490	Snap ring Øi 47	2	
56	3120640	Ring	1	
57	380230	Bearing	1	
58	1300120	Ring	2	
59	1320170	Shaft marked DL	1	
60	2280950	Key	1	
61	961780	Bearing	1	
62	3120160	Ring	1	
63	961790	Snap ring Øi 68	1	
64	620342	Bolt M10x20	4	SS T265*
65	3120140	Base	2	
66	880530	Plug 3/8" G	1	T177*
67	740290	O-ring Ø 14x1.78	1	
68	3120360	Gasket	1	
69	6120340	Flange	1	

Pos	Code	Description	Qty	Note
70	180030	Bolt M8x20	1	T221*
71	3120350	Shaft	1	
72	651620	Gear Z=64	1	
73	620990	Bearing	1	
74	621660	Pinion Z=11	1	
75	620240	Snap ring Øe 40	2	
76	961780	Bearing	1	
77	961800	Ring	1	
78	961790	Snap ring Øi 68	1	
79	881090	Key	1	
80	620950	Gasket	1	
81	620960	Body	1	
82	740290	O-ring Ø 14x1.78	3	
83	1980740	Plug 3/8" G Brass	3	
84	1140370	Plug	1	
85	540300	Bolt M10x30	8	T221*
86	3120440	Ring nut 1" G	1	
84	1380630	Key	1	
88	651000	Bolt 5/16" 24 UNF 1*	4	T221*
89	620470	Bolt M10x20	3	T177*
90	200231	Washer	3	
91	880280	Bolt M6x18	1	
92	780230	Washer	1	
77	961800	Ring	1	
78	961790	Snap Ring Øi 68	1	
79	881090	Key	1	
80	620950	Gasket	1	
81	620960	Box	1	
82	740290	O-Ring Ø 14x1.78	3	
83	1980740	Plug 3/8" G brass	3	T180*
84	1140370	Plug	1	
85	540300	Bolt M10x30	8	T220*
86	550450	Ring nut 3/4" G	1	
87	1380630	Allen Wrench	1	
88	651000	Bolt 5/16" 24 UNF 1*	4	Geomet T220*
89	620470	Bolt M10x20	3	T180*
90	200231	Washer	3	
91	880280	Bolt M6x18	1	T90*
92	780230	Washer	1	

(a) Bolt with Loctite 242 thread lock STRONG

* Torque: in-lbs +/- 10%



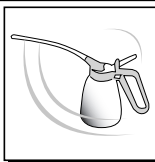
AR 43239
BlueFlex diaphragms

Pos.	Qty
10	6
38	3



AR 42816
Valves

Pos.	Qty
9	6
10	6



Suggested Oil

Type	Oz
AR64532D	32

Crankcase Oil
Capacity 13 oz



Pump and
manufacturer
identification.