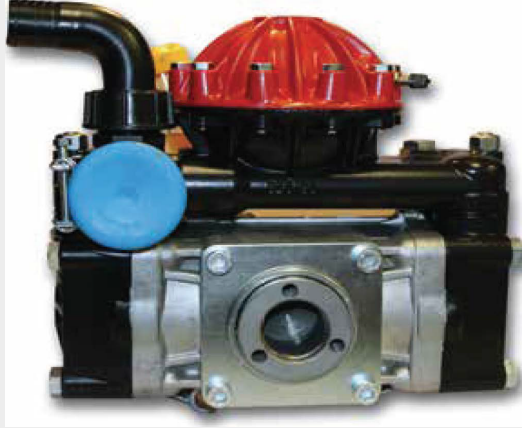




**ANNOVI
REVERBERI**®
The Power of Experience

AR 50

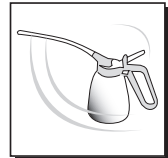
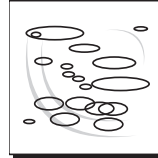
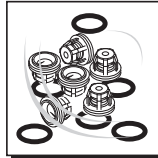
140° F - Max Water Temp
1-1/4" - Suction
1/2" NPT - Outlet



INSTRUCTION MANUAL

MODEL	MAX GPM	MAX L/MIN	MAX PSI	MAX BAR	HP POWER	WEIGHT LBS.
AR50-SP	14.8	65.8	580	40	5.2	39.3
AR50-SP/A1	14.8	65.8	580	40	5.2	39.3
AR50-GR1-GCI	14.8	65.8	580	40	5.2	50.0

GCI - Pump with a mounted control unit.



DIAPHRAGM KITS

MODEL	DESCRIPTION
AR43293	BlueFlex
AR43291	Desmopan
AR43290	Buna

VALVE KITS

MODEL	DESCRIPTION
AR1920	Valves

O-RING KITS

MODEL	DESCRIPTION
AR1919	O-Rings

OIL

MODEL	DESCRIPTION
AR64532D	Oil
AR64532D-C	Case (6)Oil

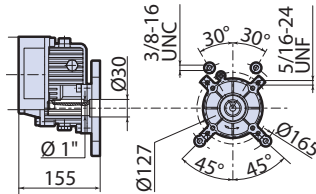


Drive Options

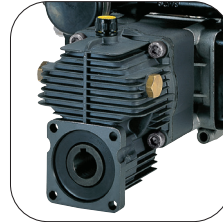
Gearbox Kit AR1639: 1" 8-18 HP Gas Engines



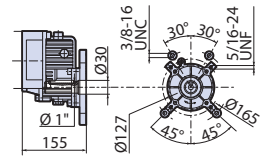
Gearbox for four stroke engines with SAE J609a flange



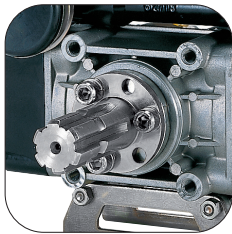
Gearbox Kit AR1636: 3/4" for 5-6HP Gas Engine



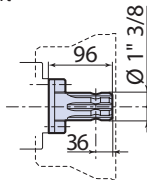
Gearbox for four stroke engines with SAE J609a flange



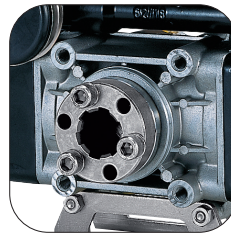
Shaft Kit AR43393: 1 3/8" 6 Splined Shaft



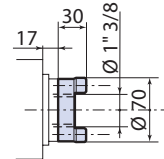
1 3/8" universal shaft



Shaft Kit AR43394: 1 3/8" 6 Spline Female



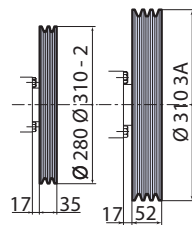
1 3/8" female



Pulley Kits



Pulley



Kit Appl. P AR1504 11" 2A

Kit Appl. P AR1495 12.2" 2A

Kit Appl. P AR1520 12.2" 3A

Hydraulic Motor Flange Kit



AR43397

For models AR30, AR50, AR303, AR403, AR503 (SP Models Only)

Fits SAE 2-bolt A Flange Motors with 1" Shaft

Shaft Kit: 1" Male Solid Keyed Shaft



AR43387 - for model AR30
AR43388 - for model AR50
AR43390 - for model AR503, AR303, AR403

Kit includes a male 1" keyed shaft adapter, mounting bracket and necessary hardware.

Shaft Kit 1 3/8" Female PTO Kit AR1704



For model AR30, AR50



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.

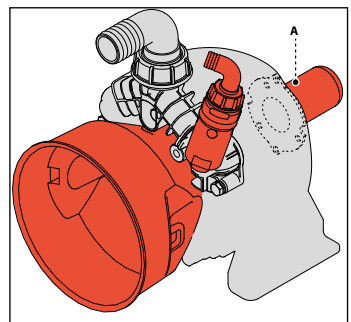
The drawing shows the position of the safety devices mounted on the machine.

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.

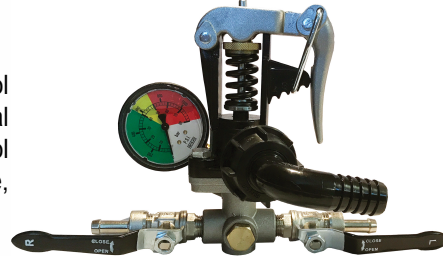




Control Unit GI40 & GIC40

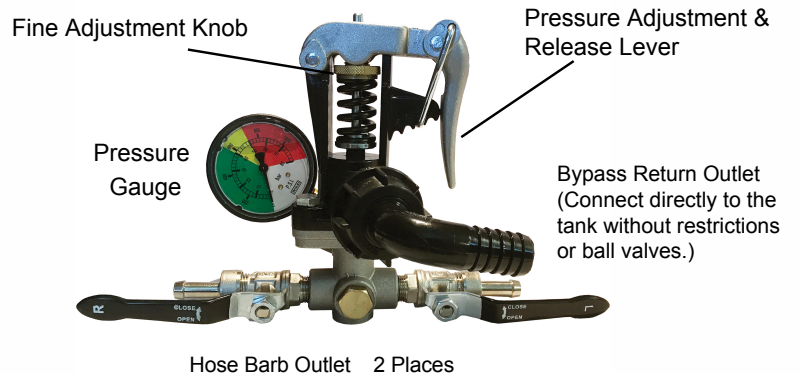
GI40 and GIC40 Control Units:

Control units are available for easy flow and pressure control of your sprayer system. These units include a manual dump valve and adjustable pressure relief valve to control pressure, a liquid-filled pressure gauge to monitor pressure, and shut-off valves to control flow.



Control Unit Operation

- On pumps AR30 and AR40, adjust the pressure by clamping the relief valve adjustment lever down.
- With the bale hook in the number one position, the pressure is about 100 psi; number two is about 250 psi; number three is about 450 psi; number four is about 550 psi.
- These pressures can be adjusted by using the fine adjustment knob located on top of the relief valve spring. The fine adjustment knob can be rotated when the relief valve lever is in the up position.
- On pumps AR30 and AR40, the pressure is released by lifting up the relief valve adjustment lever with the bale hook on the number 1 position.





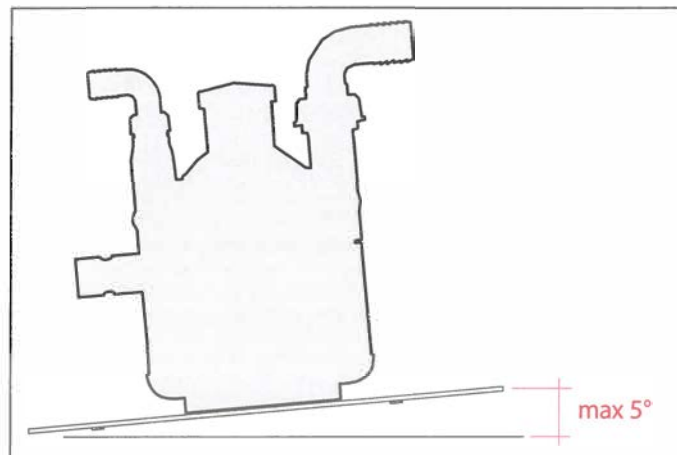
Installation

- 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 - 7 Hg. 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.

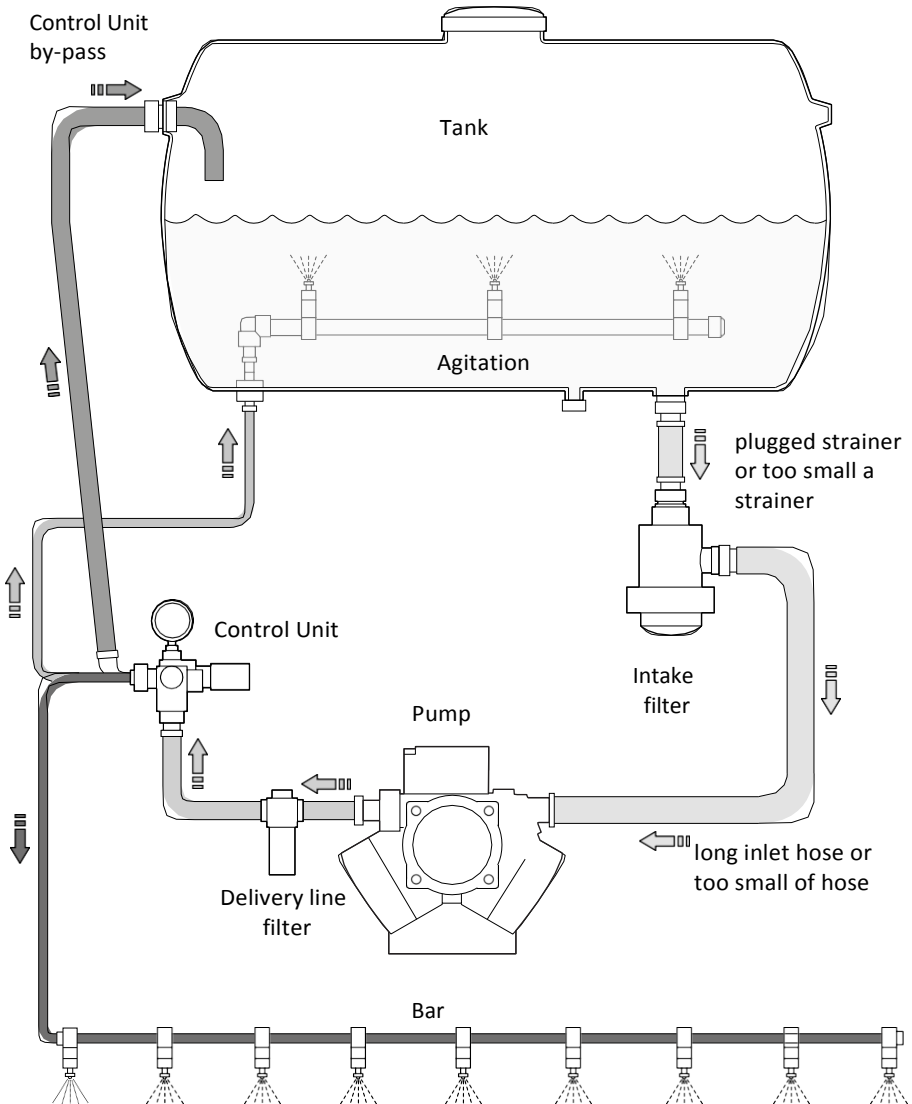
The illustration shows the maximum permitted pump installation angle beyond which proper lubrication of the crank mechanism is not ensured.



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

Installation diagram (guideline)

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

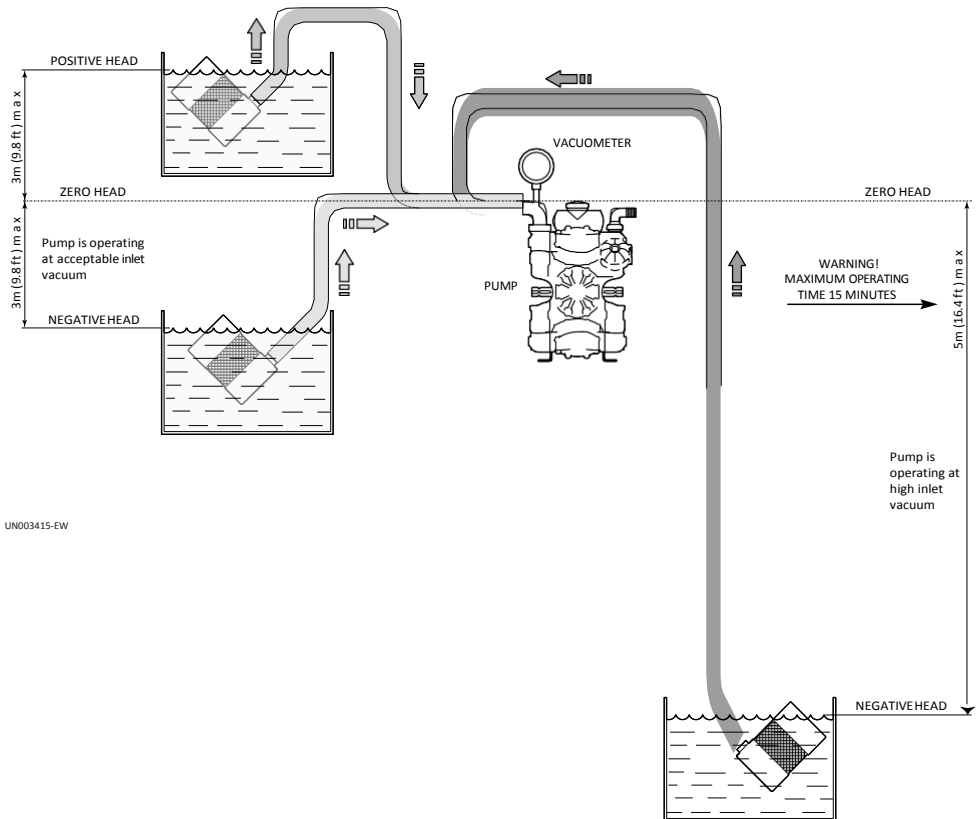


General guidelines on water supply connection

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 3 m.



UN003415-EW

For continuous duty, the pump should not draw in liquids by vacuum from containers with the liquid level more than 3 m 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 5 m below the pump intake fitting, for periods of no more than 15 minutes.

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.



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 low pressure with the adjustment lever released.

Starting and stopping the pump

To start the pump, proceed as described below.

1. When starting the pump, keep the control unit lever 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 lever into the pressure regulation position desired.
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 releasing the control unit lever.
2. Stop the pump.



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.



Table of lubricants

The pump is delivered complete with high-performance 30 weight, non-detergent oil suitable for the intended ambient conditions (see "Environmental operating limits").

Inspecting the pump mounting

Check that the pump's fixing screws have not become loose.

If necessary, tighten them with the driving torque stated in the installation design.

Inspecting the connections and pipes

- Inspect the connections for leaks.

Leaks can normally be dealt with by tightening the connections properly.

If leaks from the intake pipeline connections are noticed, the seals must be repaired.

- Inspect the hoses.

If the pipes show signs of aging, breakage, swelling, rubbing, etc., they must be replaced.

Inspecting the Filter

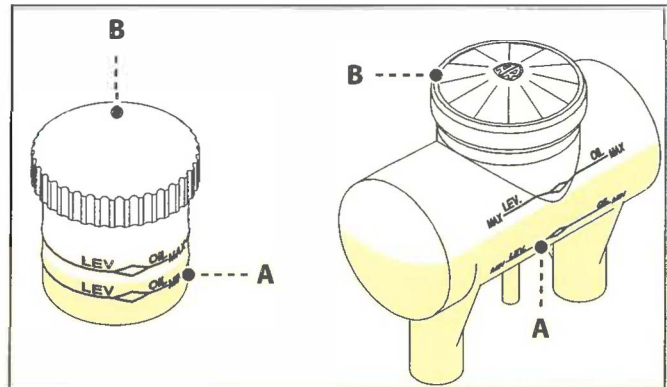
- Inspect the filter cartridge.

If the cartridge is fouled, wash it thoroughly to remove the dirt.

If the cartridge is torn or cracked, it must be replaced.

Checking the oil level

- Check the oil with the pump level, ensuring that it has been running for at least 5 minutes in normal working conditions.
- If the oil level is not between the MIN and MAX marks on the tank, add or remove oil to restore this level and check, still with the pump running, that the oil level does not vary so much that it leaks from or is no longer visible in the tank.
- If necessary, top up with oil with A/R Premium Diaphragm Pump oil.
- Check the oil level regularly, as it may vary significantly with the operating conditions.

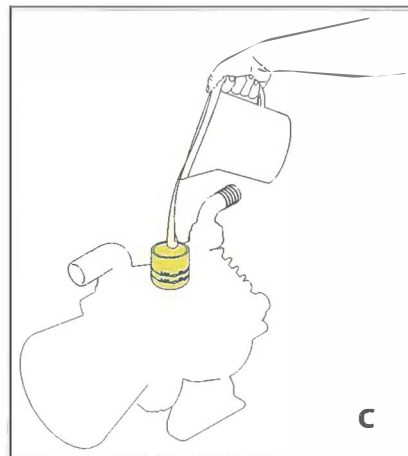


To top up with oil proceed as described below.

- 1) Unscrew the cap (B) and pour in oil (C).
- 2) Screw the cap (B) back into place.



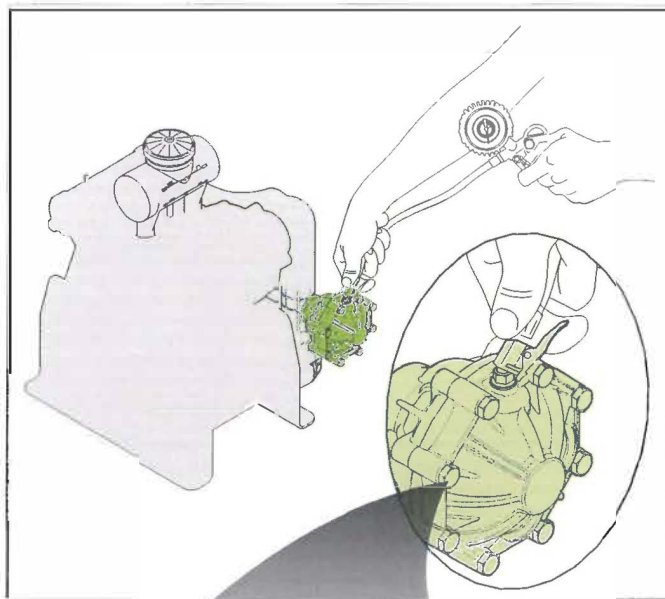
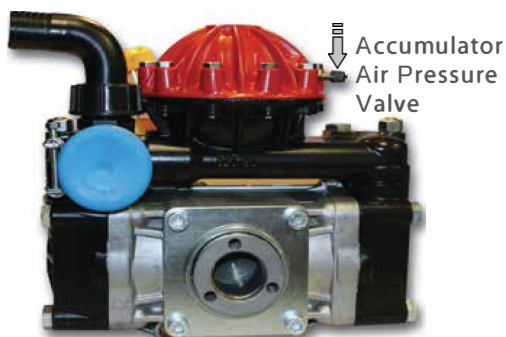
A/R Pump Oil
P/N AR64532D
Specifically Formulated for
A/R Diaphragm Pumps

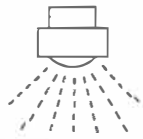
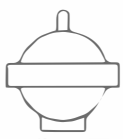




Checking the inflation pressure

If the pump has a pressure accumulator, check its level of inflation, with the pump shutoff using an air chuck fitted with a pressure gauge. The accumulator is inflated by the manufacturer for use of the pump at its maximum pressure. For adaptation of the accumulator pressure to the working pressure, refer to the table below.



			
bar	psi	bar	psi
1-3	15-44	1	15
3-12	44-174	1-3	15-44
12-20	174-290	3-5	44-73
20-50	290-725	5-7	73-102



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 internal circuit by pumping clean water. After this, open the intake circuit to the air and leave the pump in operation until the internal circuit 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 liquid circuit 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, AR64511. 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.

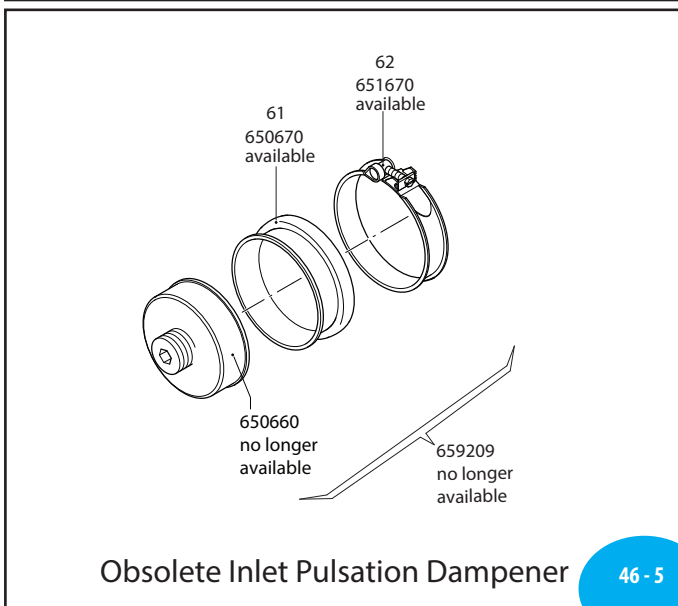
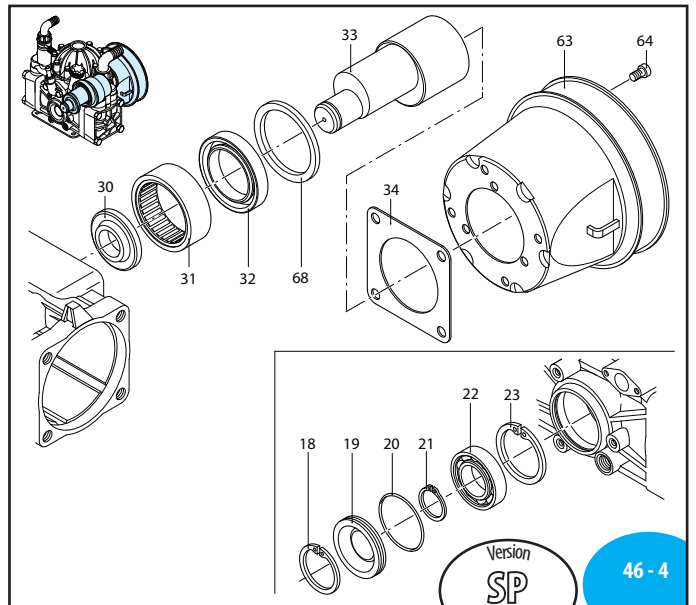
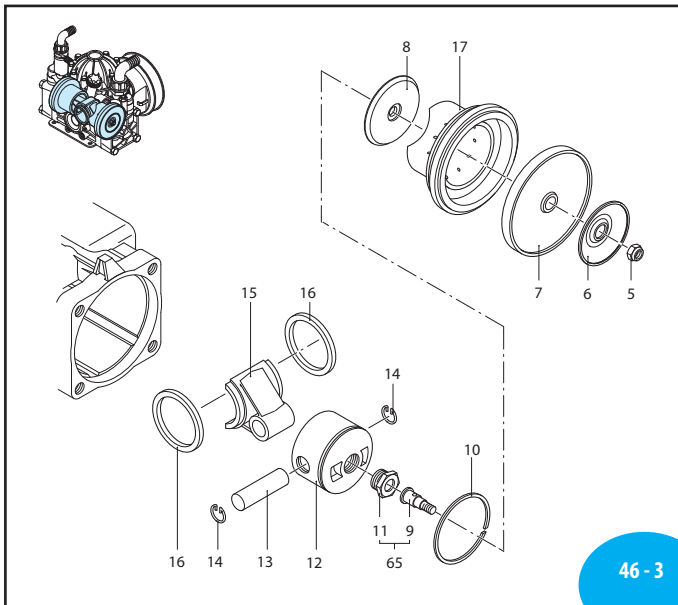
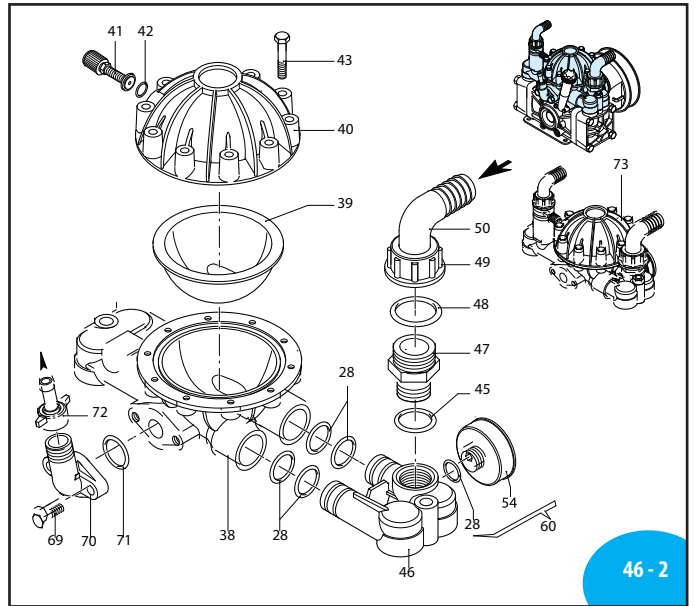
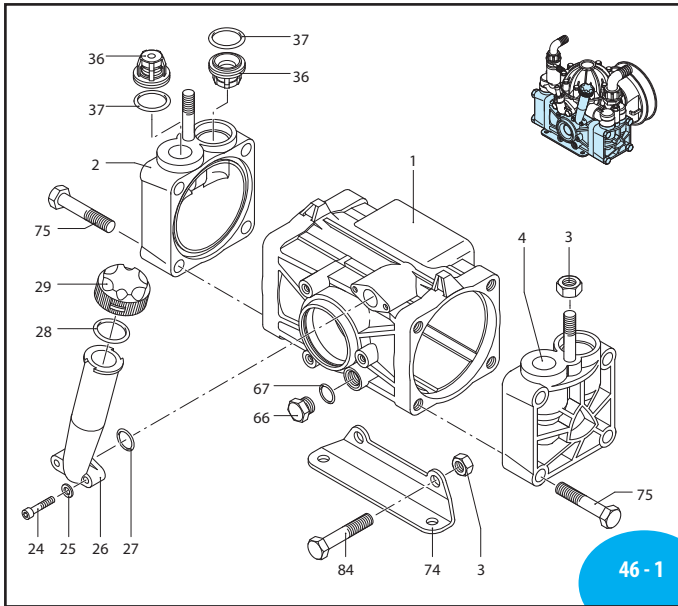


TROUBLESHOOTING

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

AR 50



AR 50

	SP	SP/A1	GR3/4-GCI	GR1-GCI
AR50	31736	31737	33132	31739

Pos	Code	Description	Qty	Note
1	650011	Pump body	1	
2	650102	Head	1	
3	320130	Nut M12	4	T445*
4	650101	Head	1	
5	160311	Nut M8	2	SS T180*
6	650390	Retaining washer	2	
	650081	Diaphragm	2	Viton
	650082	Diaphragm	2	NBR
	650085	Diaphragm	2	Desmopan
	650080	Diaphragm	2	BlueFlex™
8	650090	Retaining washer	2	
9	650320	Hub pin	2	
10	650190	Piston ring	2	
11	650061	Bushing	2	
12	650121	Piston Ø 63	2	
13	650071	Pin	2	
14	160691	Ring circlip Ø1 18	4	
15	650142	Connecting-rod	2	
16	650130	Ring connecting rod	2	
17	650111	Sleeve	2	
18	200390	Ring circlip Ø1 62	1	
19	650040	Cover	1	
20	650920	O-ring Ø 53.65x2.62	1	
21	650480	Ring circlip Øe 30	1	
22	230330	Bearing	1	
23	161050	Ring circlip Ø1 72	1	
24	850850	Bolt TCEI M6x30	2	T90*
25	550331	Washer	2	
26	650030	Oil sight glass	1	
27	180101	O-ring Ø 17.5x2	2	
28	550040	O-ring Ø 26.62x2.62	5	
29	550050	Plug	1	
30	650160	Spacer	1	
31	650200	Bearing	1	
32	1400150	Ring seal	1	
33	650170	Shaft marked S	1	
34	1400140	Flange	1	
35	961340	Washer	1	
36	659050	Valve	4	
37	320030	O-ring Ø 31.5x4.5	4	
38	650180	Semi air chamber lower	1	
	659204	Semi air chamber	1	See ●
39	650520	Diaphragm pulsation dampener	1	NBR
	650523	Diaphragm pulsation dampener	1	BlueFlex™
40	650230	Semi air chamber upper	1	Red
41	180020	Air valve	1	
42	650542	Gasket	1	
43	621780	Bolt TE M8x40	10	T180*
45	390290	O-ring Ø 29x3	1	

Pos	Code	Description	Qty	Note
46	650150	Manifold	1	
47	450120	Fitting 1" G - 1" 1/4 G M-M	1	
48	390290	O-ring Ø 29x3	1	
49	580060	Ring nut 1" 1/4 G	1	
50	580040	Elbow 1 1/4"	1	
51	650250	Key	1	For 650171
	650171	Shaft marked T	1	ø 25 mm
	650178	Shaft marked U	1	ø 25.4 mm
	650179	Shaft marked V	1	ø 30 mm
54	659213	Inlet pulsation dampener	1	
56	650300	Coupling	1	For 650171
57	680350	Bolt TCEI M8x35	1	T180*
58	650490	Ring seal	1	
59	650041	Cover	1	
60	46730	Inlet pulsation dampener assembly	1	
61	650670	Diaphragm	1	NBR
	650671	Diaphragm	1	BlueFlex™
62	651670	Clamp	1	
63	1500350	Shield	2	
64	820670	Bolt TCEI M10x16	4	T90*
65	659080	Bushing complete	2	
66	880530	Plug 3/8" G	1	T180*
67	740290	O-ring Ø 14x1.78	1	
68	1400110	Ring	1	
69	540290	Bolt TCEI M8x25	2	T180*
70	450145	Flange	1	
71	550350	O-ring Ø 23.81X2.62	1	
72	110130	Ring nut 1/2"	1	
73	43518	Accumulator Assy	1	BlueFlex™
	1523	Accumulator Assy	1	NBR
74	320392	Base	2	
75	750060	Bolt TE M12x65	8	T445*
81	380241	Washer	3	
82	1200521	Spacer	3	
83	680350	Bolt TCEI M8x35	3	T90*
84	750060	Bolt TE M12x65	2	T265*
86	330170	Plug Lower Air Chamber	1	Not shown
87	180101	O-Ring for lower air chamber plug	1	Not shown

● With plug and o-ring for version without safety valve.

* Torque: in-lbs +/- 10%

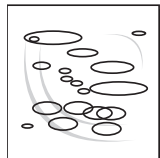
Medium pressure



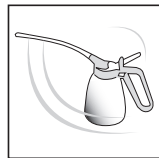
AR 43290 Buna diaphragms	
Pos.	Qty
7	2
37	4
39	1



AR 1920 Valves	
Pos.	Qty
36	4
37	4



AR 1919 O-Rings	
Pos.	Qty
20	1
27	2
28	5
37	4
42	1
45	1
67	1
71	1

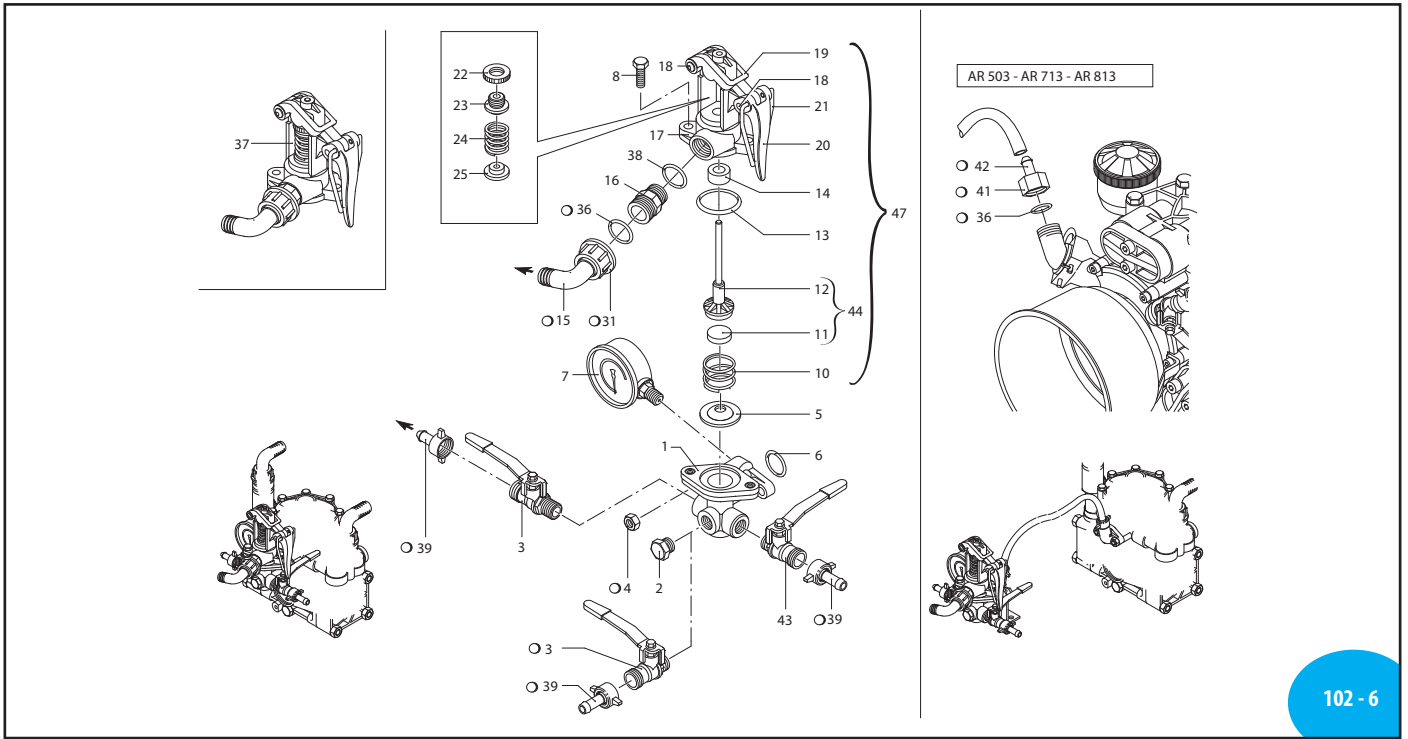


Suggested oil	
Type	Oz
AR64532D	32

Crankcase Oil
Capacity 36 oz

A.R. NORTH AMERICA

GI 40 / GIC40



102 - 6

Pos	Code	Description	Qty	Note
1	620220	Relief valve body	1	
2	130171	Plug 3/8" G	1	T180*
3	130491	Ball valve 3/8" G - 1/2" G M-MDX	2	
4	390270	Nut M8	2	T180*
5	450110	Seat	1	
6	550350	O-ring Ø 23.81X2.62	2	
7	550545	Pressure gauge	1	0-1150 PSI
8	180370	Bolt TE M8x25	2	T180*
10	320420	Spring	1	
11	110121	Seat	1	Desmopan
	110120	Seat	1	Buna
	110122	Seat	1	Viton
	450112	Seat	1	Ceramic GIC40
12	320433	Stem	1	
13	320511	O-ring Ø 37.8x4	1	
14	390140	Gasket	1	
	390141	Gasket	1	Viton
15	550380	Elbow 3/4"	1	o GIC40
	550460	Elbow 3/4"	1	GI40
16	550440	Fitting 1/2" G - 3/4 G M-M	1	
17	320410	Body valve	1	
18	320480	Hub pin	2	
19	320460	Fork	1	
20	320470	Lever	1	
21	320490	Support	1	
22	320450	Retaining washer	1	
23	320440	Ring nut	1	
24	110190	Spring	1	
25	230120	Retaining washer	1	
28	320406	Bracket	1	o
30	450145	Flange	1	o
31	550880	Ring nut 1" G	1	o
	550450	Ring Nut 3/4"	1	GI40
32	110131	Ring nut / HB 1/2" x 3/8"	1	o
32	110130	Ring nut / HB 1/2" x 1/2"	1	o Optional
33	160660	Bolt TE M8x35	2	o T90*
36	880830	O-ring Ø 15.54x2.62	2	GI40
	550350	O-Ring	1	o GIC40
37	1923	Valve kit adjustment	1	
38	180101	O-ring Ø 17.5x2	1	
39	110131	Ring nut 1/2"	3	o
41	1040790	Ring nut 3/4" G	1	o

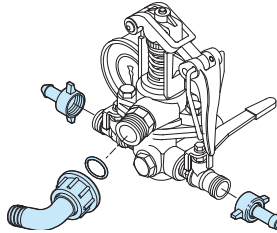
Pos	Code	Description	Qty	Note
42	1150580	Hose barb Ø 13	1	o
43	130492	Ball valve 3/8" G - 1/2" G M-M SX	1	
44	329202	Seat Guide assembly	1	GIC40
46	800720	Reducer Bushing 3/4" x 1"	1	Not Shown
47	1923	Upper Body assembly	1	GI40
o Not part of GI 40				
* Torque: in-lbs +/- 10%				

AR 1757 Viton valve seats (GI40)		AR 1925 Desmopan valve seats (GI40)		AR 46016 Ceramic valve seats (GIC40)	
Pos.	Qty	Pos.	Qty	Pos.	Qty
5	1	5	1	5	1
10	1	10	1	10	1
11	1	11	1	11	1
12	1	12	1	12	1
13	1	13	1	13	1
14	1	14	1	14	1

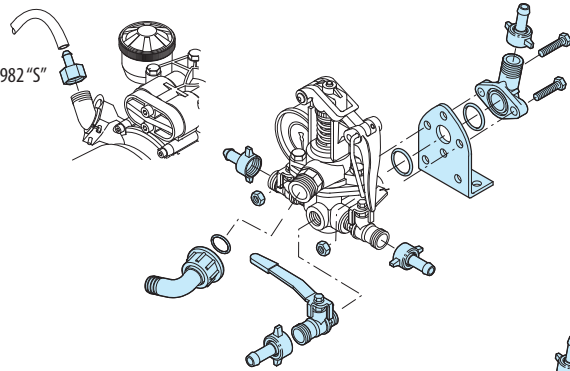
GI 40 / GIC 40

For GI 40

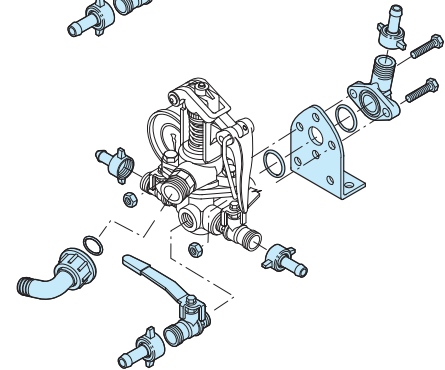
KIT 977 "I"



KIT 982 "S"



KIT 980 "S"



Build-in control unit and remote control

AR 977 "I" Build in control

Pos.	Qty	Pos.	Qty
15	1		
31	1		
36	1		
39	2		

For AR 30 - AR 50 - AR 303 - AR 403

AR 980 "S" Remote control

Pos.	Qty	Pos.	Qty
3	1		
4	2		
6	1		
15	1		
28	1		
30	1		
31	1		
32	1		
33	2		
36	1		
39	3		

For AR 30 - AR 50 - AR 303 - AR 403

AR 982 "S" Remote control

Pos.	Qty	Pos.	Qty
3	1	41	1
4	2	42	1
6	1		
15	1		
28	1		
30	1		
31	1		
32	1		
33	2		
36	2		
39	3		

For AR 503

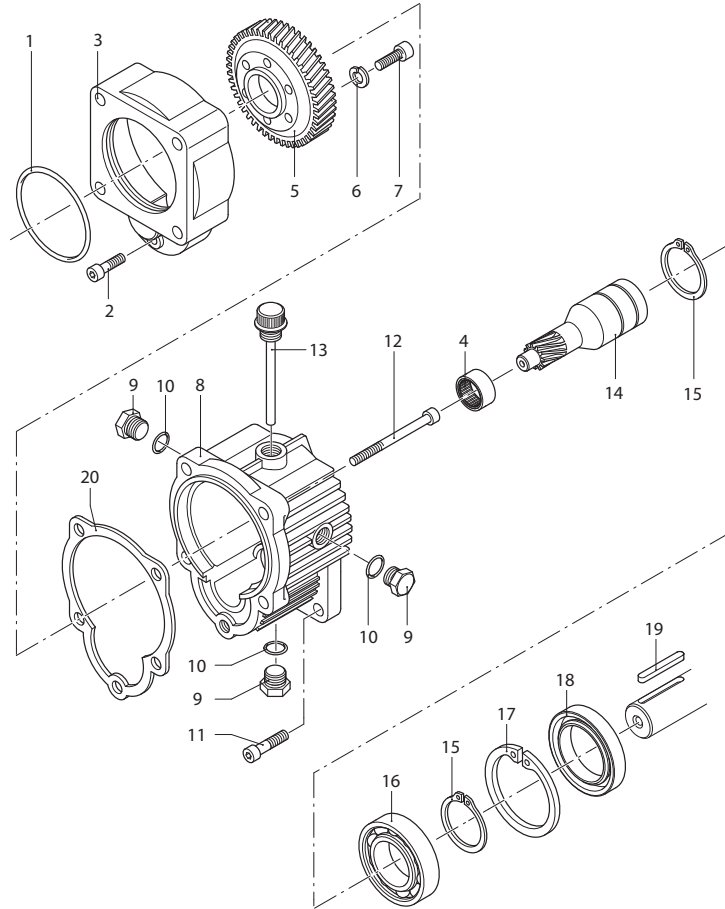
Control units

A.R. AR 1636 : Gear Reduction

Per - For: AR 30 - AR 303 - AR 403

Use of engine :
 B&S Vanguard 6.5
 Kohler SH265 - CH270
 Honda GX120 - GX160 - GP160 - GP200
 Subaru EX17 - EX21


Ø 3/4" Straight Keyed Shaft



90 - 1

Gear boxes

Pos	Cod.	Description	Q.ty	Note	
1	620561	O-ring	Ø 78x2,5	1	⊗
2	180030	Bolt	TCEI M8x20	1	T220*
3	621000	Adapter Flange		1	
4	620990	Bearing		1	
5	651620	Gear	Z=64	1	
6	200231	Washer		3	
7	620470	Bolt	TCEI M10x20	3	T150*
8	620960	Body		1	⊗
9	1980740	Plug	3/8" G brass	3	Brass T180*
10	740290	O-ring	Ø 14x1,78	3	
11	651000	Bolt	5/16"x24UNFx1"	4	Geomet T220*
12	621010	Bolt	TCEI M10x75	4	⊗ T220*
13	1140370	Plug		1	
14	621660	Pinion	Z=11	1	
15	320240	Ring	circlip Øe 40	2	
16	961780	Bearing		1	
17	961790	Ring	circlip Øi 68	1	
18	961800	Oil seal		1	⊗
19	881090	Key		1	
20	620950	Gasket		1	⊗



Suggested Oil

Type

90 W Gear Lube

For gas engine with 3/4" shaft, flange SAE J609a

*Torque: in-lbs +/- 10%

A.R. NORTH AMERICA

AR 1639 : Gear Reduction

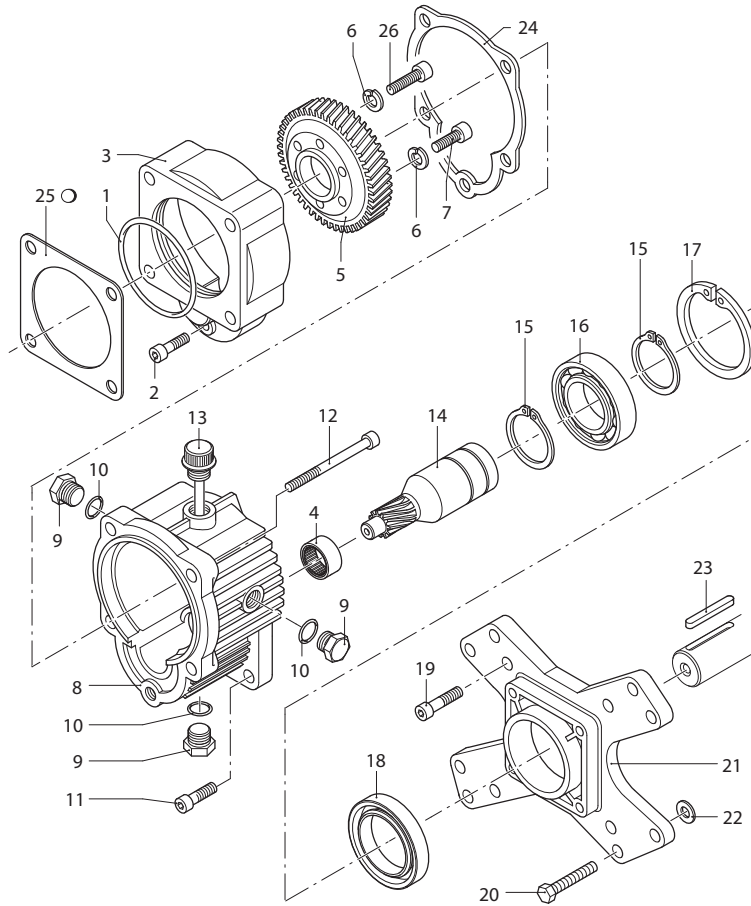
Use on engines:

AR50- AR503:
B&S Vanguard 10
Kohler CH270
Honda GX270
Subaru EX27

AR713 - AR813:
B&S Vanguard 13
Kohler CH440
Honda GX340 - GX 390
Subaru EX40


AR1064:
B&S Vanguard 18
Honda GX630
Subaru EH65

Ø 1" Straight Keyed Shaft



91 - 1

Pos	Cod.	Description	Q.ty	Note
1	620561	O-ring	Ø 78x2,5	1 <input checked="" type="checkbox"/>
2	180030	Bolt	TCEI M8x20	1 T220*
3	621000	Adapter Flange		1
4	620990	Bearing		1
5	651620	Gear	Z=64	1
6	200231	Washer		6
7	620470	Bolt	TCEI M10x20	3 T180*
8	620960	Body		1 <input checked="" type="checkbox"/>
9	1980740	Plug	3/8" G	3 Brass T180*
10	740290	O-ring	Ø 14x1,78	3
11	881940	Bolt	TCEI M8x25	4 T220*
12	621010	Bolt	TCEI M10x75	4 <input checked="" type="checkbox"/> T220*
13	1140370	Plug		1
14	651610	Pinion	Z=11	1
15	320240	Ring	circlip Øe 40	2
16	961780	Bearing		1
17	961790	Ring	circlip Øi 68	1
18	961800	Oil seal		1 <input checked="" type="checkbox"/>
19	651000	Bolt	5/16"x24UNFx1"	4 Geomet T220*
20	961900	Bolt	3/8"	4 See <input type="checkbox"/> T220*
21	1320940	Flange		1
22	961770	Spacer		4 See <input type="checkbox"/>
23	650990	Key		1
24	620950	Gasket		1 <input checked="" type="checkbox"/>
25	650270	Gasket		1 For AR 50 <input checked="" type="checkbox"/>
26	160671	Bolt	TCEI M10x25	3 T180*



Suggested Oil

Type

90 W Gear Lube

For gas engine with 1" shaft, flange SAE J609a
 Not part of reduction gear box - Italian engines only

*Torque: in-lbs +/- 10%

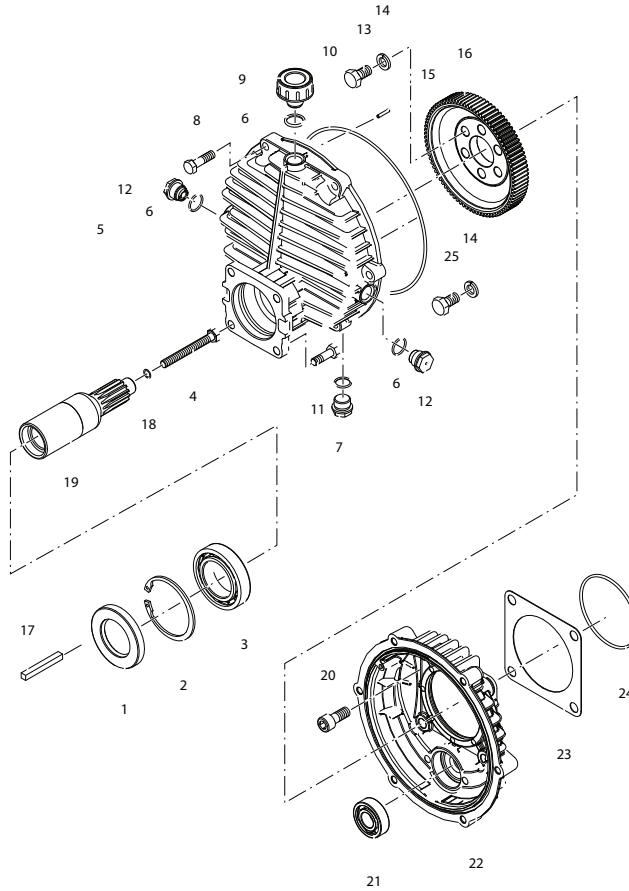
A.R. NORTH AMERICA

AR 1666 : Gear Reduction

Per - For: AR 30 - AR 303 - AR 403

Use of engine :
 B&S Vanguard 6.5
 Kohler SH 265
 Kohler SH 270
 Honda GX 120
 Honda GX 160
 Honda GP 160
 Honda GP 200
 Axo AMG 120
 Axo AMG 121
 Axo AMG 200
 Axo AMG 201
 Axo AMG 210
 Robin EX 17
 Rato EHR 160
 Rato EHR 210

Ø 3/4" Straight Keyed Shaft



94 - 1

Pos	Cod.	Description	Q.ty	Note
1	540331	Seal	1	
2	200390	Snap ring	Øi 62	1
3	621130	Bearing		1
4	2960050	Bolt	5/16" 24 UNF 2B	1 T177*
5	2960020	Body		1
6	740290	O-ring	Ø 14x1.78	4
7	1980740	Plug	3/8" G brass	1
8	390450	Bolt	M8x30	6 T177*
9	2960070	Plug		1
10	2960060	O-ring	Ø 177.47x2.62	1
11	1382050	Bolt	5/16" 24 UNF 1"	4 T221"
12	1980290	Sight glass	3/8" G	2
13	620340	Bolt	M10x20	3 T217*
14	200231	Washer		6
15	2960080	Pin		1
16	2960030	Gear	Z=85	1
17	881090	Key		1
18	600180	O-ring	Ø 7.66x1.78	1
19	2960040	Pinion	Z=14 (3/4")	1
20	160671	Bolt	M10x25	4 T221"
21	1220260	Bearing		1
22	2960010	Cover		1
23	650270	Gasket		1
24	620561	O-ring	Ø 78x2.5	1 a
25	160670	Bolt	M10x25	3 T217*



Suggested Oil

Type

90 W Gear Lube

For gas engine with 3/4" P.T.O. shaft, flange SAE J609a

*Torque: in-lbs +/- 10%

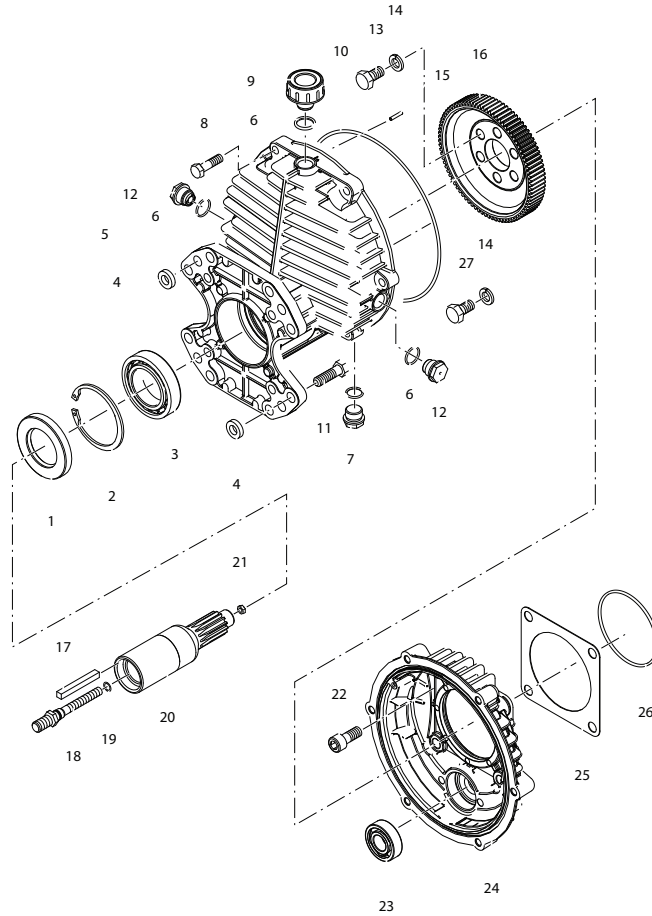
A.R. NORTH AMERICA AR 33261 : Gear Reduction

Per - For: AR 50 - AR503 - AR713 - AR813 - AR1064

Use of engine :

- B&S Vanguard 10
- B&S Vanguard 18
- Kohler SH 265
- Kohler SH 270
- Kohler SH 440
- Honda GX 270
- Honda GX 340
- Honda GX 390
- Honda GX 630
- Axo AMG 390
- Axo AMG 420
- Robin EX 27
- Robin EX 40
- Rato EHR 270
- Rato EHR 420

Ø 1" Straight Keyed Shaft



97 - 1

Pos	Cod.	Description	Q.ty	Note
1	961800	Seal	1	
2	961790	Ring	1	
3	961780	Bearing	1	
4	961770	Spacer	4	
5	2960090	Body	1	
6	740290	O-ring	4	
7	1980740	Plug	1	
8	390450	Bolt	6	T177*
9	2960070	Plug	1	
10	2960060	O-ring	1	
11	961900	Bolt	4	
	1382050	Bolt	4	
12	1980290	Sight glass	2	
13	620340	Bolt	3	T221*
14	200231	Washer	6	
15	2960080	Pin	2	
16	2960030	Gear	1	Z=85
17	650990	Key	1	
18	2960110	Hub pin	1	M8-7/16-20 UNF
	2960130	Hub pin	1	M8-7/16-24 UNF
	2960140	Hub pin	1	M8-M8
19	1121160	O-ring	3	Ø 6.86x1.78
20	2960100	Pinion	1	Z=14 (1")
21	1660210	Nut	1	M8 T177*
22	160671	Bolt	4	M10x25 T221*
23	1220260	Bearing	1	
24	2960010	Cover	1	
25	650270	Gasket	1	
26	620561	O-ring	1	Ø 78x2.5 a
27	160670	Bolt	3	M10x24 T221*

Suggested Oil

Type
90 W Gear Lube

For gas engine with Ø1" P.T.O. shaft, flange SAE J609a

*Torque: in/lbs +/- 10%

Gear boxes