



Fire-fighting



MPVE Range

USER MANUAL

MPVE 120 PETROL

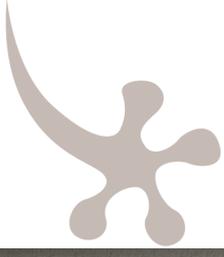


Version 5
21/11/16



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Performances

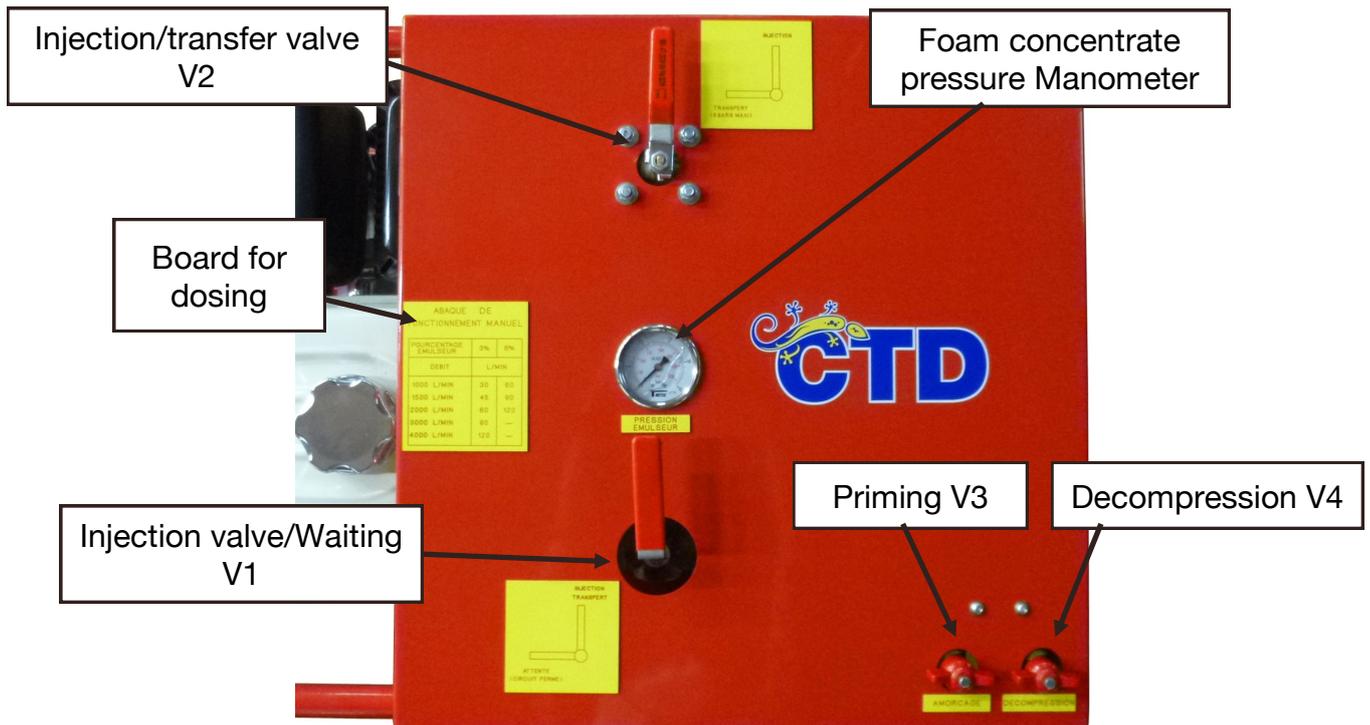
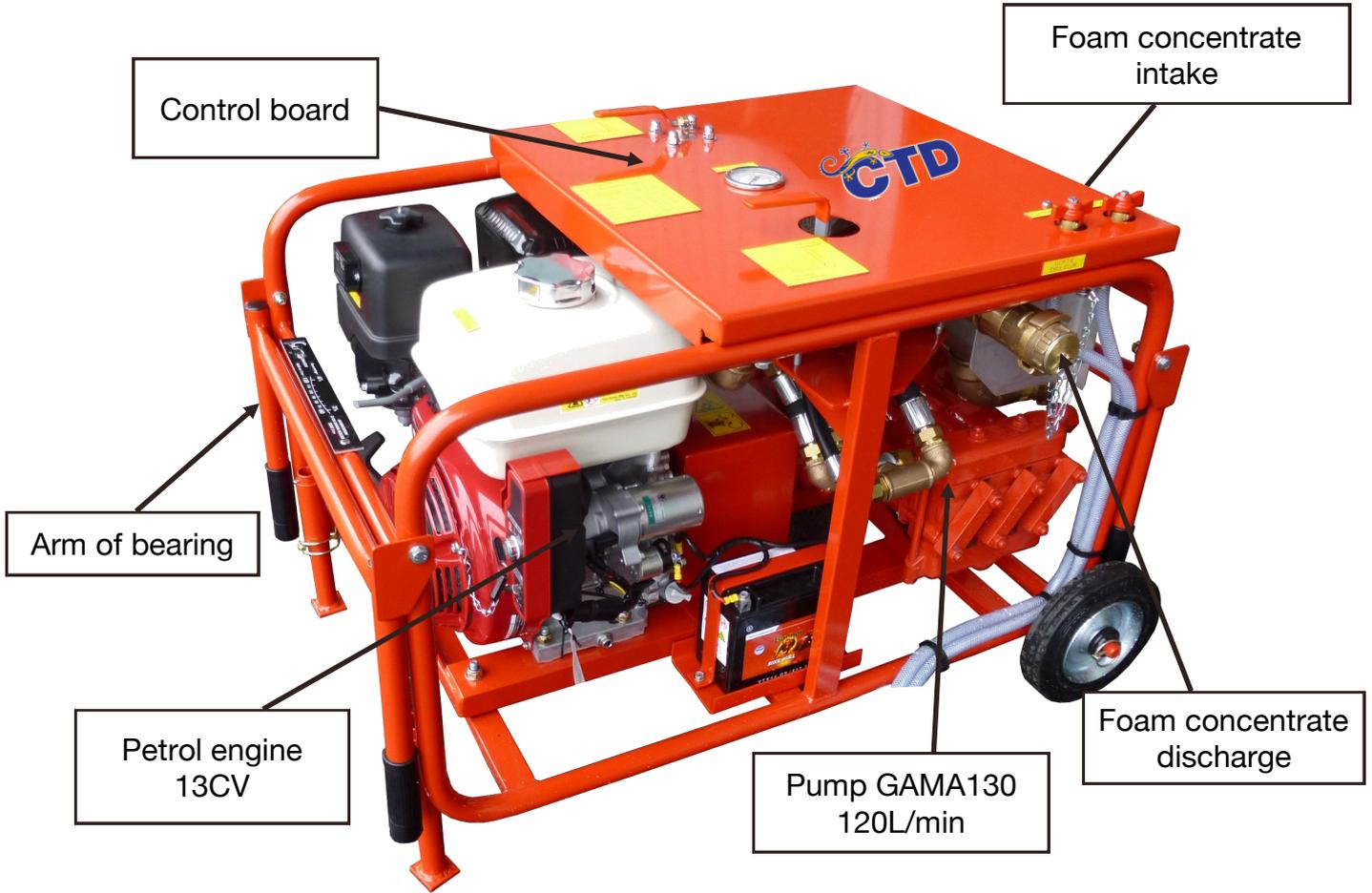
- Discharge pressure of the motor pump MPVE 120 - 17 bar
- Injection in two lines Ø110 mm until 12 bar
- Injection in line Ø45 mm until a distance of 120m from the injectors
- Pressure loss in the line Ø110 mm due to the injection lower than 0.1 bar
- Supply of a foam monitor 1000 L/min at 6%
- Supply of a foam monitor 1500 L/min at 6%
- Supply of a foam monitor 2000 L/min at 6%
- Supply of a foam monitor 2000 L/min at 3%
- Supply of a foam monitor 3000 L/min at 3%
- Supply of a foam monitor 4000 L/min at 3%

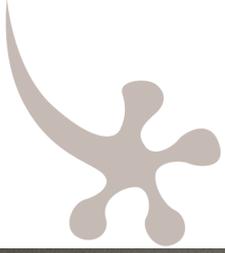
PRESENTATION

OF THE MPVE 120



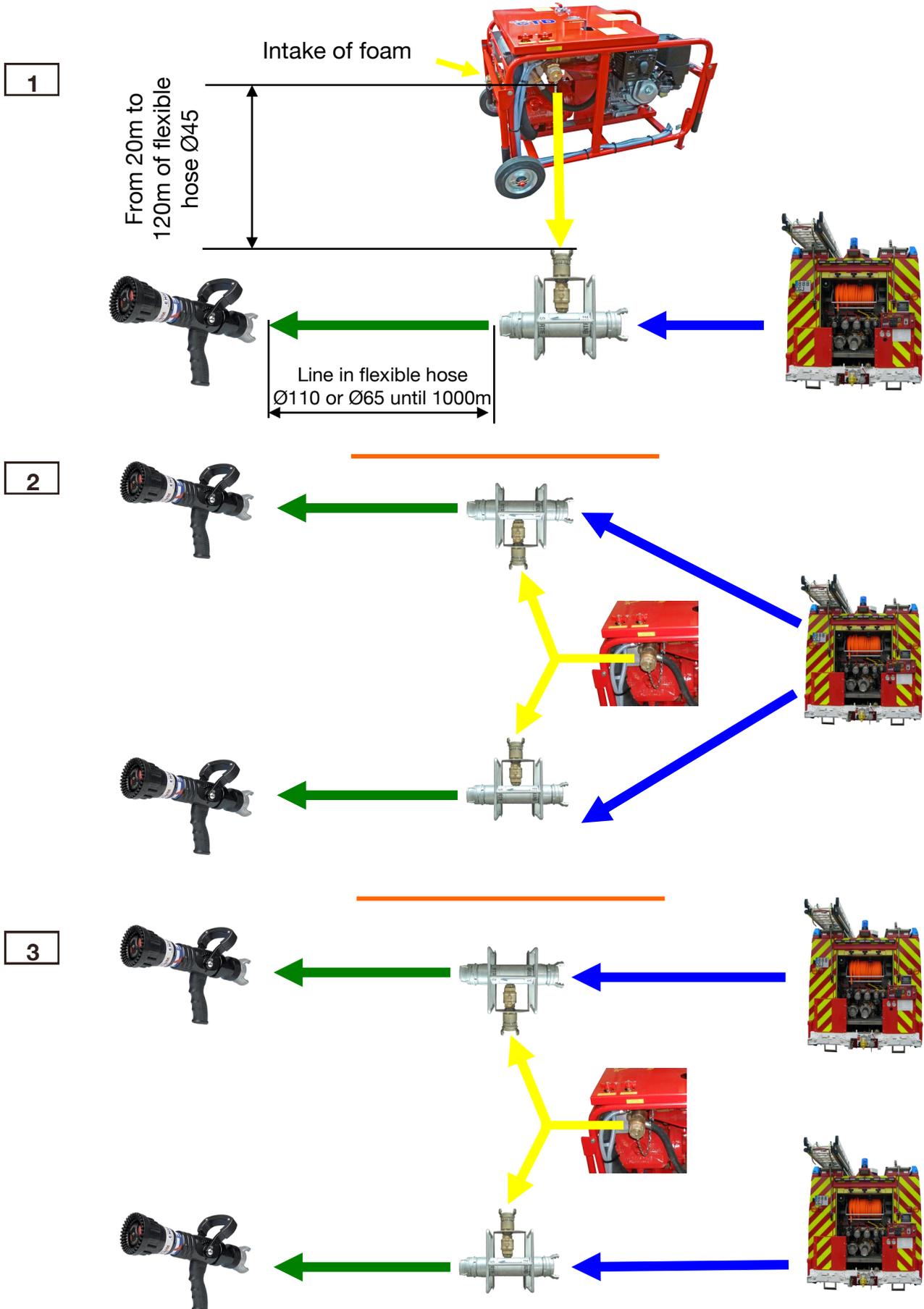
Presentation of the MPVE 120





Instructions for the injection

POSSIBLE DIAGRAM OF USE :



GENERAL

DIAGRAM



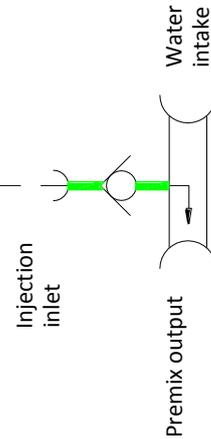
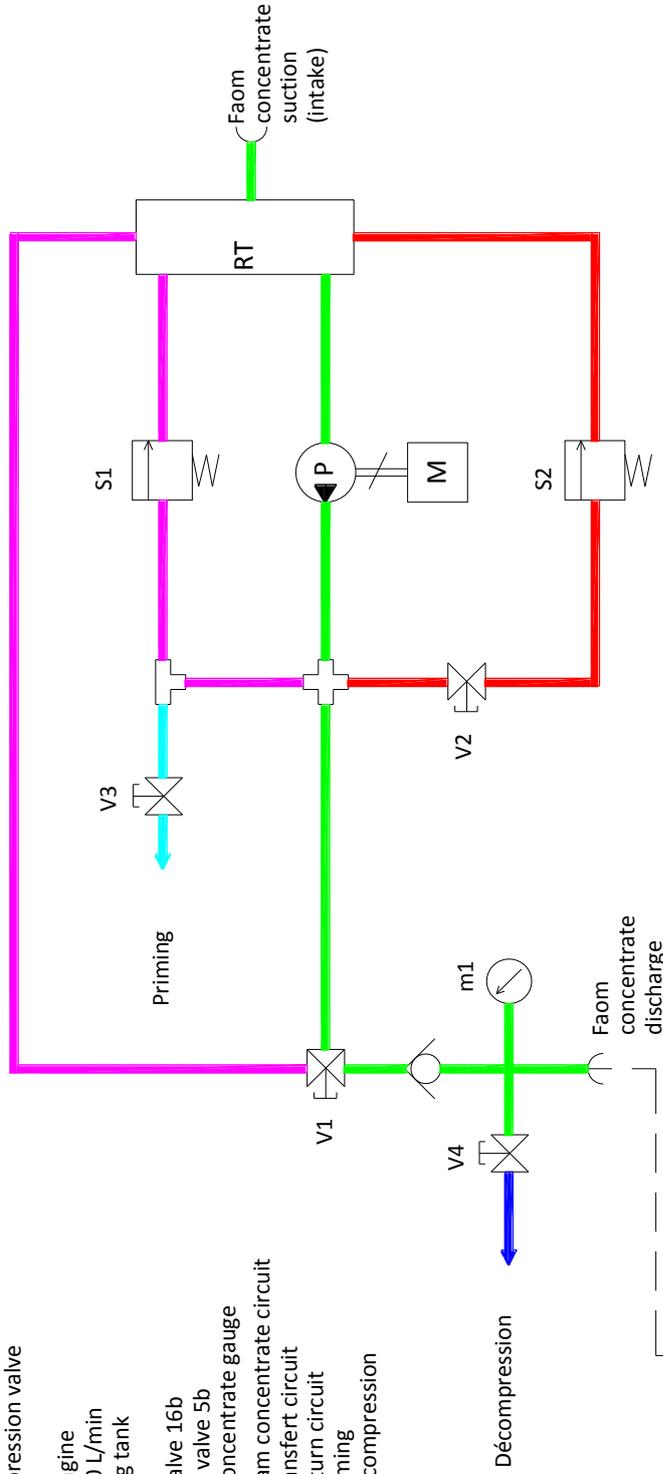
Hydraulic diagram

- V1 : Valve 3 ways injection/return
- V2 : Injection/transfer valve
- V3 : Priming valve
- V4 : Decompression valve

- M : Petrol engine
- P : Pump 120 L/min
- RT : Recycling tank

- S1 : Safety valve 16b
- S2 : Transfer valve 5b
- m1 : Foam concentrate gauge

- Foam concentrate circuit
- Transfer circuit
- Return circuit
- Priming
- Decompression



 Parc d'entreprises Visions 01090 - GUERENS Tel: 04 74 06 47 00 info@ctd-pulverisation.com	N°identification :	
	Ensemble : PETROL-MPVE-120	
Matière : MATIERE		Ech.: 1:1
Date : 19/10/15		Par : CDU
Désignation : HYDRAULIC-DIAGRAM		

OPERATING

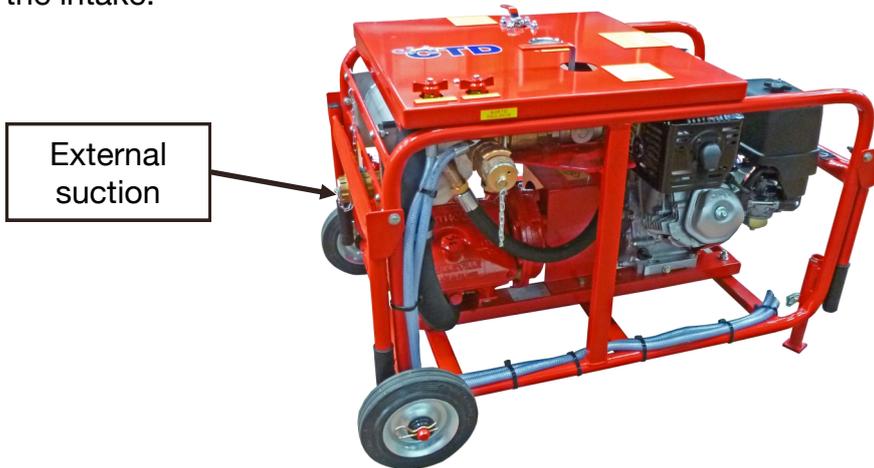
PROCEDURE



Operating procedure

1- PREPARATION OF THE INSTALLATION :

- Supply the MPVE with foam concentrate : connect a half-rigid suction hose DN40 on the intake.



- Connect the flexible discharge hose DN40 to the injector (see “ Instructions for injection” p.4)
- Supply the hose with a known waterflow.
- Valves position :
 - Valve **V1** on the “**WAITING**” position.
 - Valve **V2** on the “**INJECTION**” position.
 - Valve **V3** closed.
 - Valve **V4** closed.



- Start the engine and accelerate to the maximum.

ABAQUE DE FONCTIONNEMENT MANUEL

POURCENTAGE EMULSEUR	3%	6%
DEBIT	L/MIN	
1000 L/MIN	—	60
1500 L/MIN	—	90
2000 L/MIN	60	120
3000 L/MIN	90	—
4000 L/MIN	120	—



Respect the values listed to apply the desired dosage

Operating procedure

2- START OF INJECTION :

- Put the valve **V1** on the « **WAITING** » position.
- Open the priming valve **V3**.

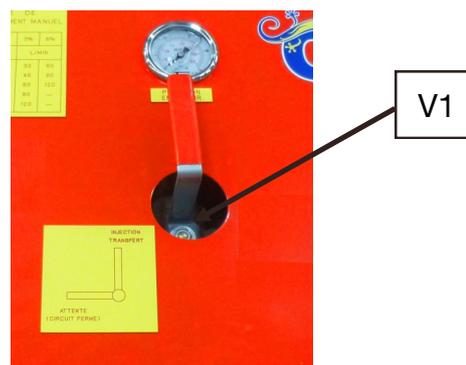


- When the liquid flows, close the valve **V3**.
- The pressure of foam concentrate increases and the injection is made in the line.
- Adjust the concentration by following the chart below.

Monitor used Flow en L/min	Concentration of the foam concentrate	Position of the accelerator
1000	6%	60
1500	6%	90
2000	6%	120
2000	3%	60
3000	3%	90
4000	3%	120

3- WAITING POSITION :

- Put the valve **V1** on the « **WAITING** » position.



Operating procedure

- Put the engine at idle.



- The foam concentrate is run in a closed circuit.

4- STOP :

- Flush the circuit with tap water.
- Put the valve **V1** on the « **WAITING** » position.
- Decompress the injection ligne by opening the purge valve **V4**.



- Disconnect the discharge pipes.
- Stop the engine.

5- TRANSFER :

5.1- Use :

The transfer could be use for :

- The filling of the tank.
- The transfer of product from a reserve (container, drums, etc ...) to another reserve (cell foam tank for example).
- Direct supplying of another foa mixing system.

Operating procedure

5.2– Implementation :

- Put the valve **V2** on the « **TRANSFER** » position.



- The procedure is then the same as for injection.

NOTA :

- The outlet is free from 60 to 120 L/min depending on engine speed (pressure maximum 5 bar).
- This device avoids the risk of bursting hoses during the transfer operation.

6– FLUSHING :

- Supply the MPVE with water.
- Start the engine.
- Open all the discharge.
- Manipulate valves for flushing all piping.
- Stop the engine when clear water comes out of the hose or the monitor.

7– FROST PROTECTION :

- Flush the MPVE.
- Start the system without water supply.
- When there is no more fluid that comes out at the discharge outlet, stop the engine.

8– WARNING :

PUMP JOINTS ARE IN LEATHER MATERIAL: THE SYSTEM MUST RUN AT LEAST ONCE A MONTH IN ORDER TO KEEP THE PUMP JOINTS WETTED BY WATER, OTHERWISE THEY DRY, SO CREATING LEAKS.

- Simplified procedure to moisten the pump : (engine OFF)
 - Connect a water pipe on the external suction. (warning : maximum 5 bar)
 - Put the valve **V1** on « **WAITING** ».
 - Put the valve **V2** on « **INJECTION** »
 - Switch the priming valve **V3**.
 - Let the water run during 5 minutes.
 - Stop the water.
 - Return the valves to their initial positions.
- NEVER RUN THE PUMP WITHOUT WATER SUPPLY.

ANNEXES

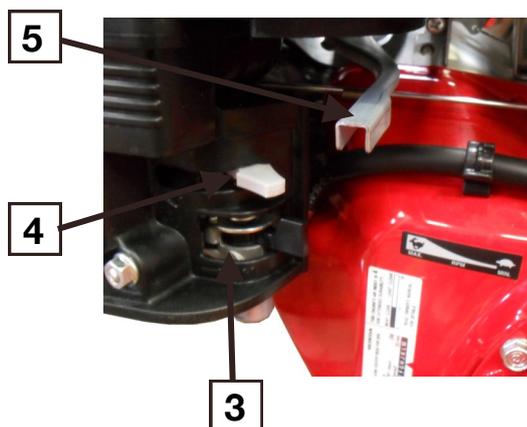
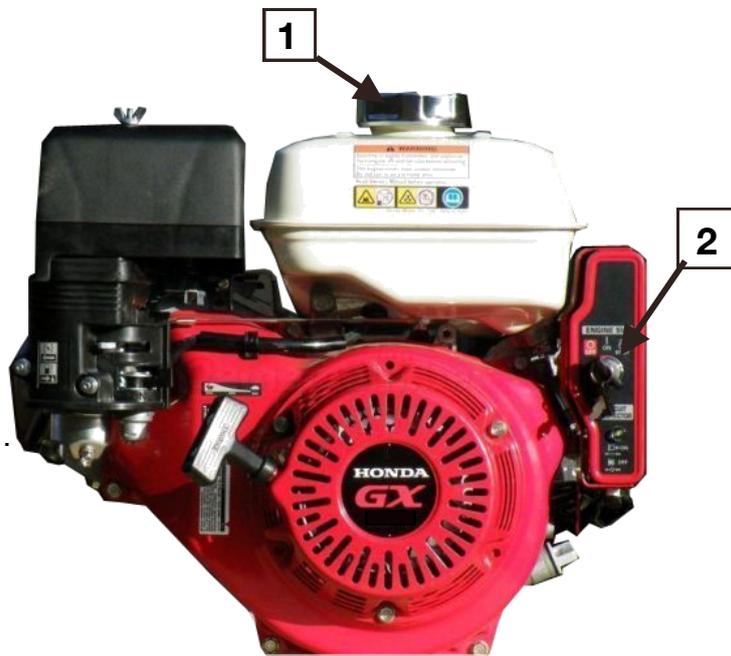


Engine GX 340 QXE

STARTING THE ENGINE :

Put gasoline in the tank [1]
 Turn engine ON [2]
 Open petrol arrival [3] , turn on the starter [4]
 And set the speed to maximum [5] .

Start the engine following the procedure
 electric starter [6]
 Once the engine is hot, remove the starter [4] .



ENGINE CHARACTERISTICS :

Model GX 340	
Engine type	Air cooled 4-stroke OHV petrol engine, 25° inclined cylinder, horizontal shaft
Bore x stroke	82 x 64 mm
Displacement	337 cm ³
Compression ratio	8.0 : 1
Net power	7.1 kW (9.5 HP) / 3 600 rpm
Cont. rated power	5.4 kW (7.2 HP) / 3 000 rpm 5.8 kW (7.8 HP) / 3 600 rpm
Max. net torque	22.1 Nm / 2.25 kgfm / 2 500 rpm
Ignition system	Transistorised
Starting system	Recoil (electric start optional)
Fuel tank capacity	6.1 l
Fuel cons. at rated power	3.0 L/hr - 3 600 rpm
Engine oil capacity	1.1 l
Dimensions (L x W x H)	405 x 450 x 447 mm
Dry weight	31 kg

ELECTRIC STARTER (applicable types):

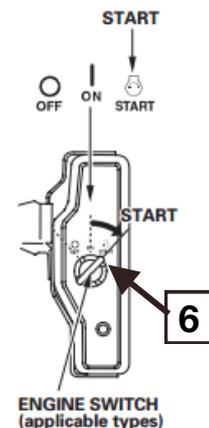
Turn the key to the START position, and hold it there until the engine starts.

If the engine fails to start within 5 seconds, release the key, and wait at least 10 seconds before operating the starter again.

NOTICE

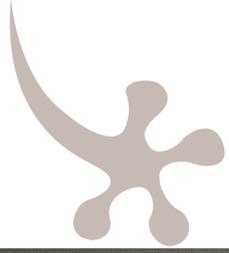
Using the electric starter for more than 5 seconds at a time will overheat the starter motor and can damage it.

When the engine starts, release the key, allowing it to return to the ON position.



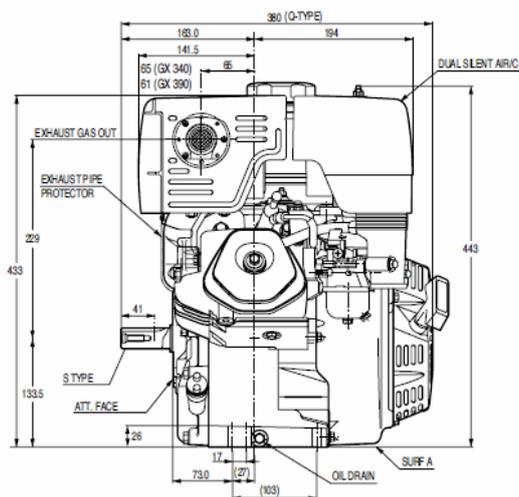
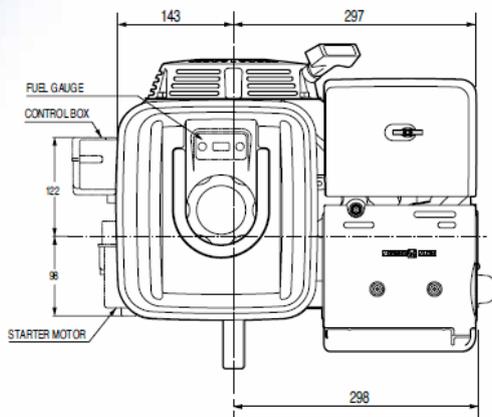
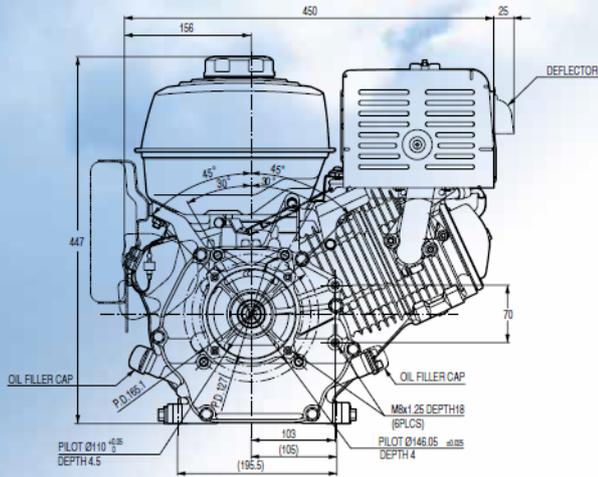
6. If the choke lever or choke rod (applicable types) has been moved to the CLOSED position to start the engine, gradually move it to the OPEN position as the engine warms up.

AUTONOMY : 1h45 at 3600 rpm
 with full of petrol (6.1L)

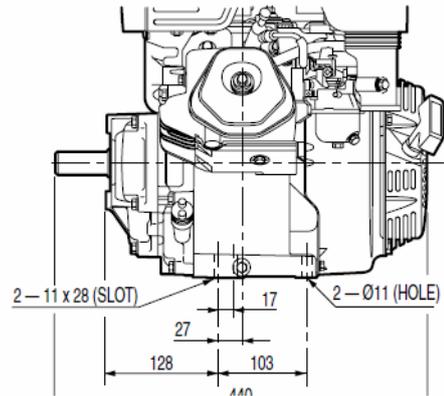


Engine GX 340 QXE

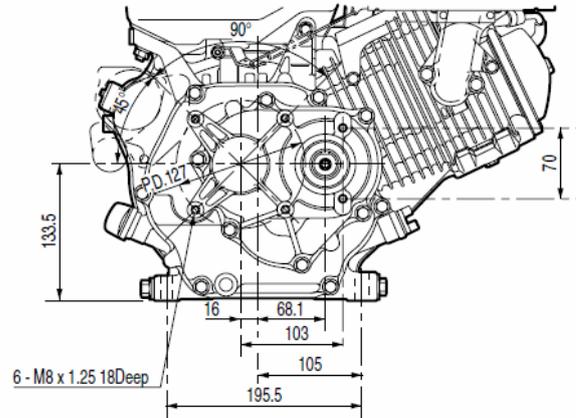
GX 340



REDUCTION TYPES



1/2 REDUCTION



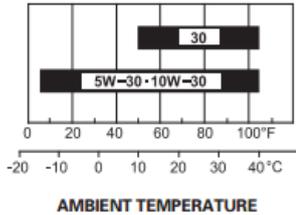
Maintenance GX 340 QXE

ENGINE OIL

Oil is a major factor affecting performance and service life. Use 4-stroke automotive detergent oil.

Recommended Oil

Use 4-stroke motor oil that meets or exceeds the requirements for API service classification SJ or later (or equivalent). Always check the API service label on the oil container to be sure it includes the letters SJ or later (or equivalent).

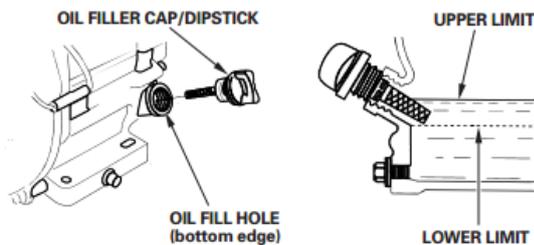


SAE 10W-30 is recommended for general use. Other viscosities shown in the chart may be used when the average temperature in your area is within the indicated range.

Oil Level Check

Check the engine oil level with the engine stopped and in a level position.

1. Remove the oil filler cap/dipstick and wipe it clean.
2. Insert the oil filler cap/dipstick into the oil filler neck as shown, but do not screw it in, then remove it to check the oil level.
3. If the oil level is near or below the lower limit mark on the dipstick, fill with the recommended oil (see page 8) to the upper limit mark (bottom edge of the oil fill hole). Do not overfill.
4. Reinstall the oil filler cap/dipstick.



NOTICE

Running the engine with a low oil level can cause engine damage. This type of damage is not covered by the Distributor's Limited Warranty.

AIR CLEANER

A dirty air cleaner will restrict air flow to the carburetor, reducing engine performance. If you operate the engine in very dusty areas, clean the air filter more often than specified in the MAINTENANCE SCHEDULE.

NOTICE

Operating the engine without an air filter, or with a damaged air filter, will allow dirt to enter the engine, causing rapid engine wear. This type of damage is not covered by the Distributor's Limited Warranty.

Inspection

Remove the air cleaner cover and inspect the filter elements. Clean or replace dirty filter elements. Always replace damaged filter elements. If equipped with an oil-bath air cleaner, also check the oil level.

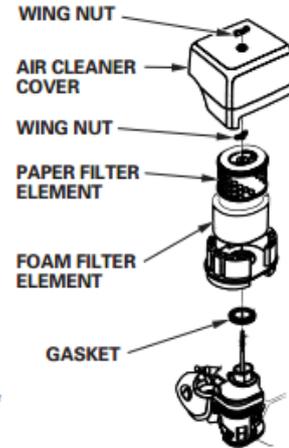
Refer to pages 10 – 11 for instructions that apply to the air cleaner and filter for your engine type.

Cleaning

Dual-Filter-Element Types

1. Remove the wing nut from the air cleaner cover, and remove the cover.
2. Remove the wing nut from the air filter, and remove the filter.
3. Remove the foam filter from the paper filter.
4. Inspect both air filter elements, and replace them if they are damaged. Always replace the paper air filter element at the scheduled interval (see page 7).

STANDARD DUAL-FILTER-ELEMENT TYPE



The recommended spark plug has the correct heat range for normal engine operating temperatures.

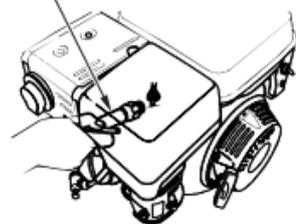
NOTICE

An incorrect spark plug can cause engine damage.

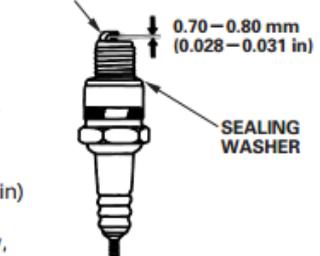
For good performance, the spark plug must be properly gapped and free of deposits.

1. Disconnect the spark plug cap, and remove any dirt from around the spark plug area.
2. Remove the spark plug with a 13/16-inch spark plug wrench.
3. Inspect the spark plug. Replace it if damaged or badly fouled, if the sealing washer is in poor condition, or if the electrode is worn.
4. Measure the spark plug electrode gap with a wire-type feeler gauge. Correct the gap, if necessary, by carefully bending the side electrode. The gap should be: 0.70–0.80 mm (0.028–0.031 in)
5. Install the spark plug carefully, by hand, to avoid cross-threading.

SPARK PLUG WRENCH



SIDE ELECTRODE

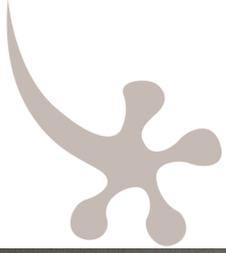


6. After the spark plug is seated, tighten with a 13/16-inch spark plug wrench to compress the sealing washer.
7. When installing a new spark plug, tighten 1/2 turn after the spark plug seats to compress the washer.
8. When reinstalling the original spark plug, tighten 1/8 – 1/4 turn after the spark plug seats to compress the washer.

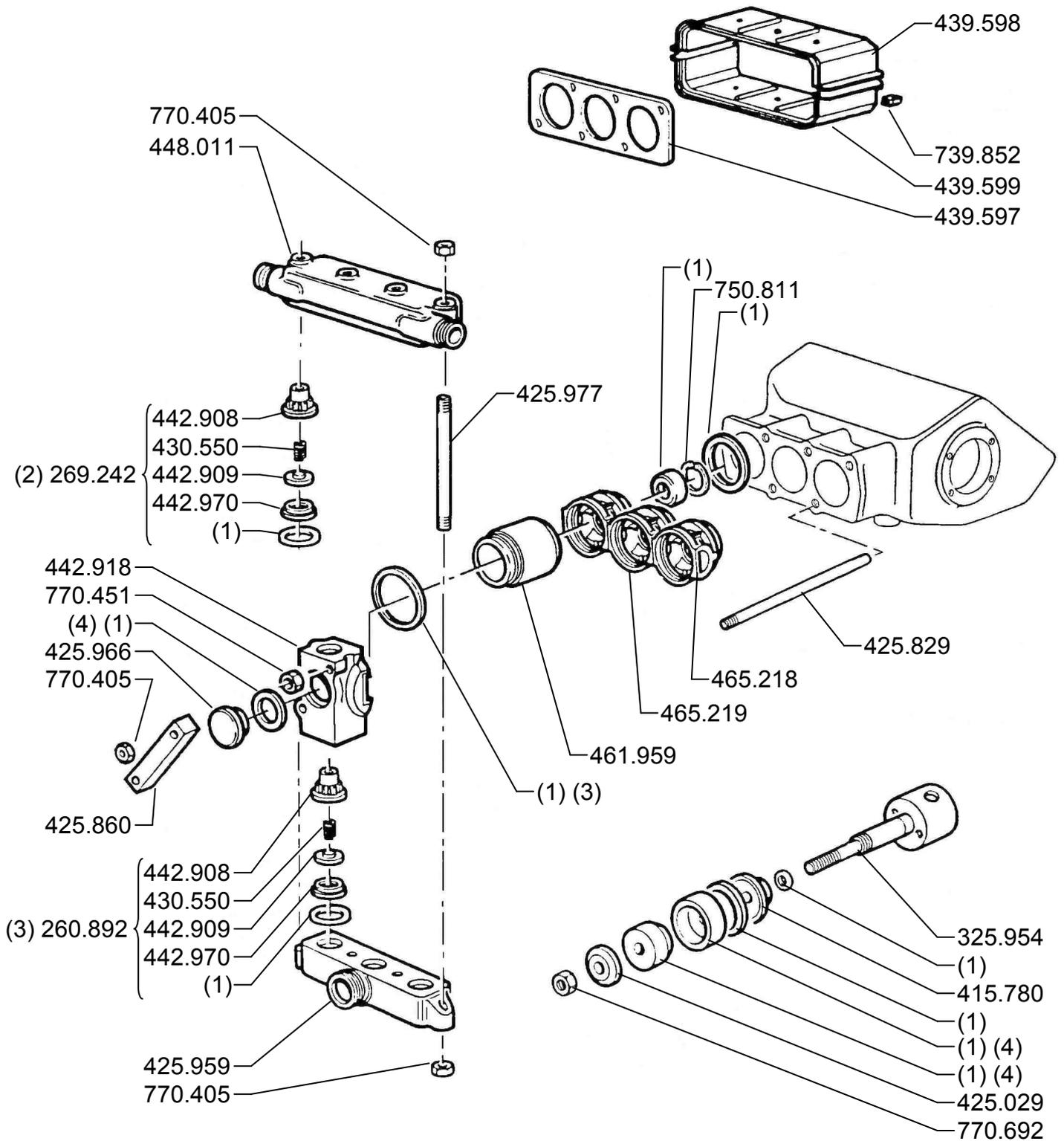
NOTICE

A loose spark plug can overheat and damage the engine. Overtightening the spark plug can damage the threads in the cylinder head.

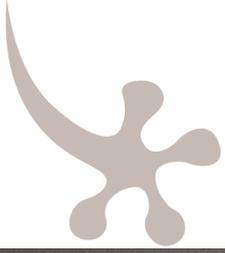
9. Attach the spark plug cap to the spark plug.



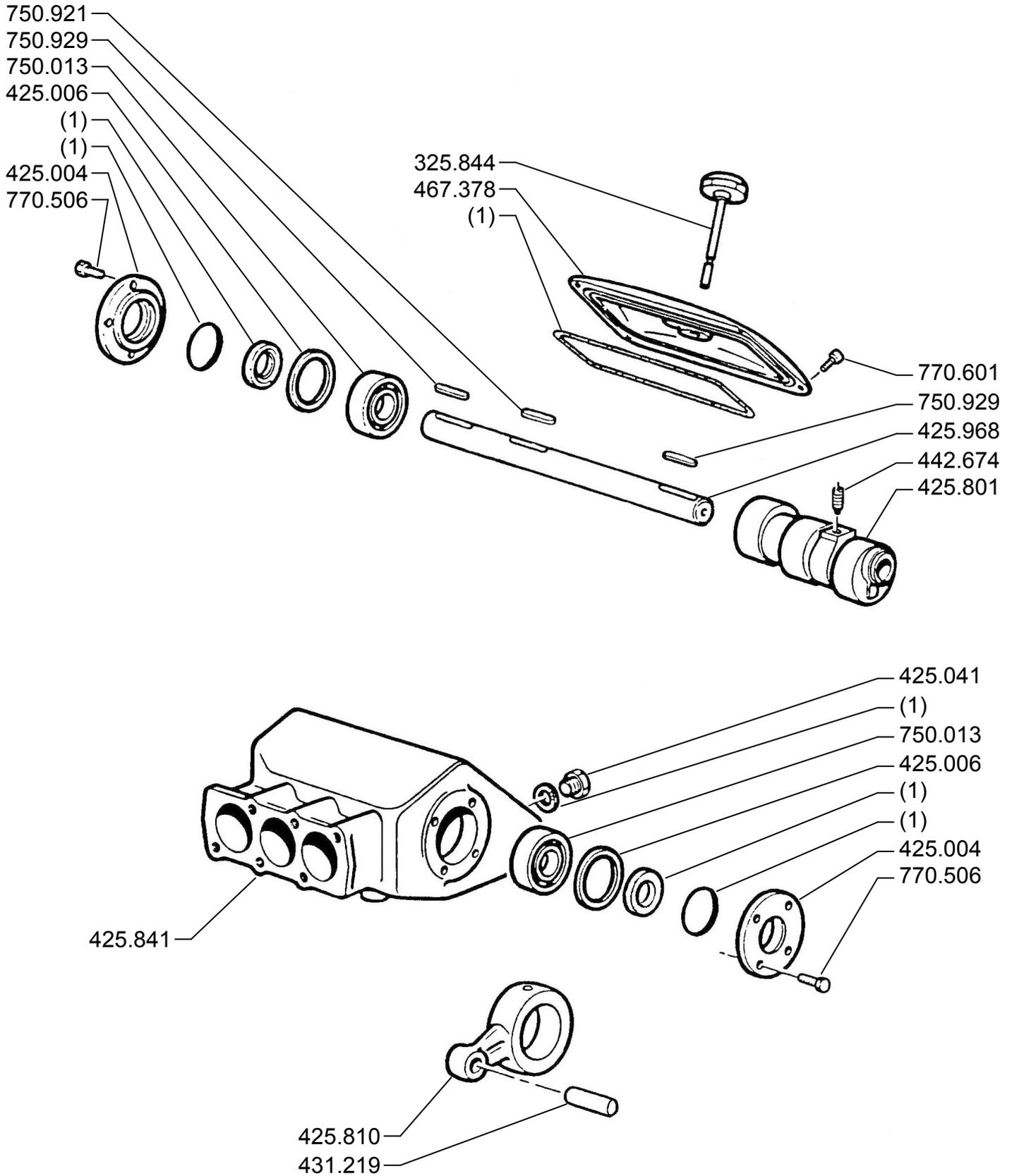
Pump GAMA 130



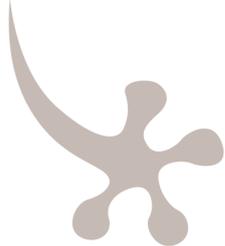
- (1) Parts being in the small pochet of breakdown service Ref : 215.785
- (2) Set of 3 valves of discharge Réf : 269.242
- (3) Set of 2 suction valves Réf : 260.892
- (4) Set of 3 pistons leathers with ring and joint Réf: 215.784



Pump GAMA 130



(1) : Small pocket of repair Ref : 215.785



Maintenance Pump GAMA 50-80-130

To control every 50 operating hours :

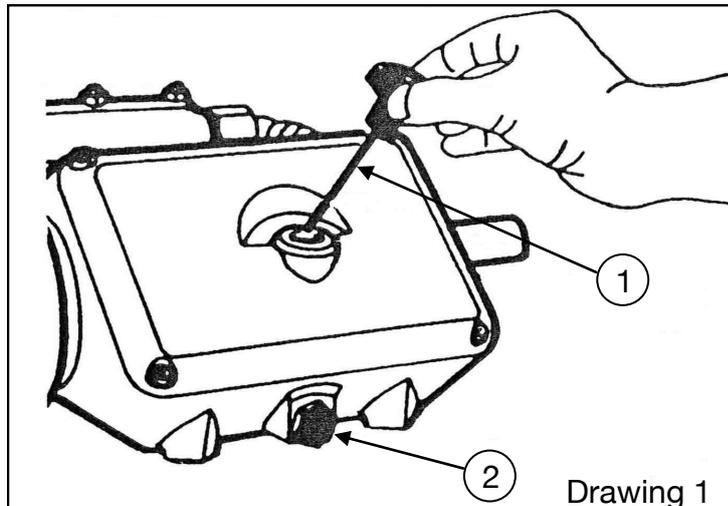
Oil levels :

- Engine (to refer to the technical booklet of this one)
- GAMA pump (figure 1)

To check the oil level gauge. The right level is when the oil is on the notch (1). Total draining is carried out by unscrewing the stopper (2).

To use SAE30 oil or BERTHOUD special oil ref.769.286 (can of 2 liters).

Quantity : 1.40 liters.



Drawing 1

- Gear (figure 2)

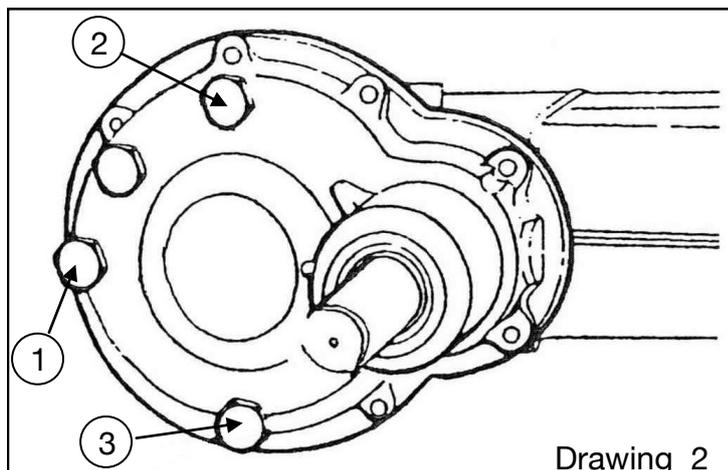
To unscrew the stopper to check the oil level gauge (1).

To complete the oil level through the hole (2).

Total draining is carried out by unscrewing the stopper (3).

To use SAE30 oil or BERTHOUD special oil ref.769.286 (can of 2 liters).

Quantity : 0.25 liters.



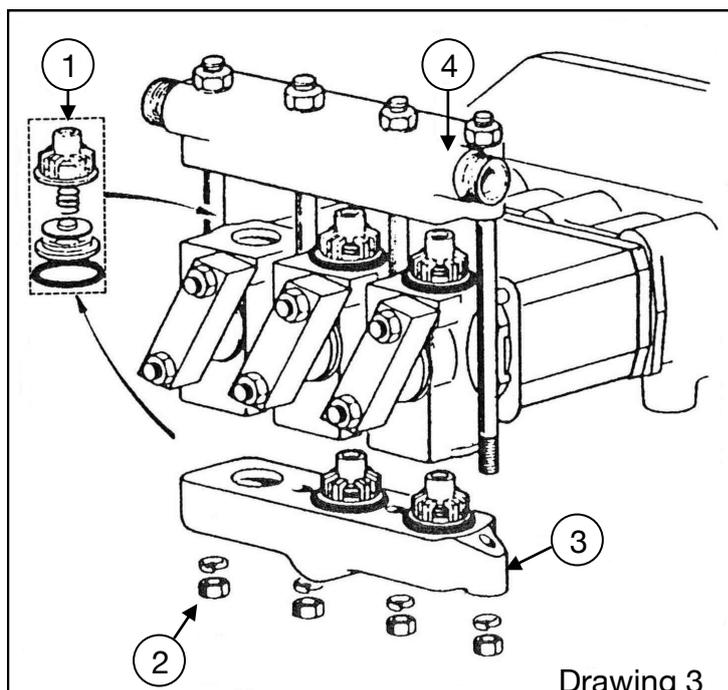
Drawing 2

Every 200 operating hours or once a year :

- To drain and replace the oil of the pump and the gear (drawings 1 et 2).

- To check the state of 6 sets of valve (item.1, drawing 3) :

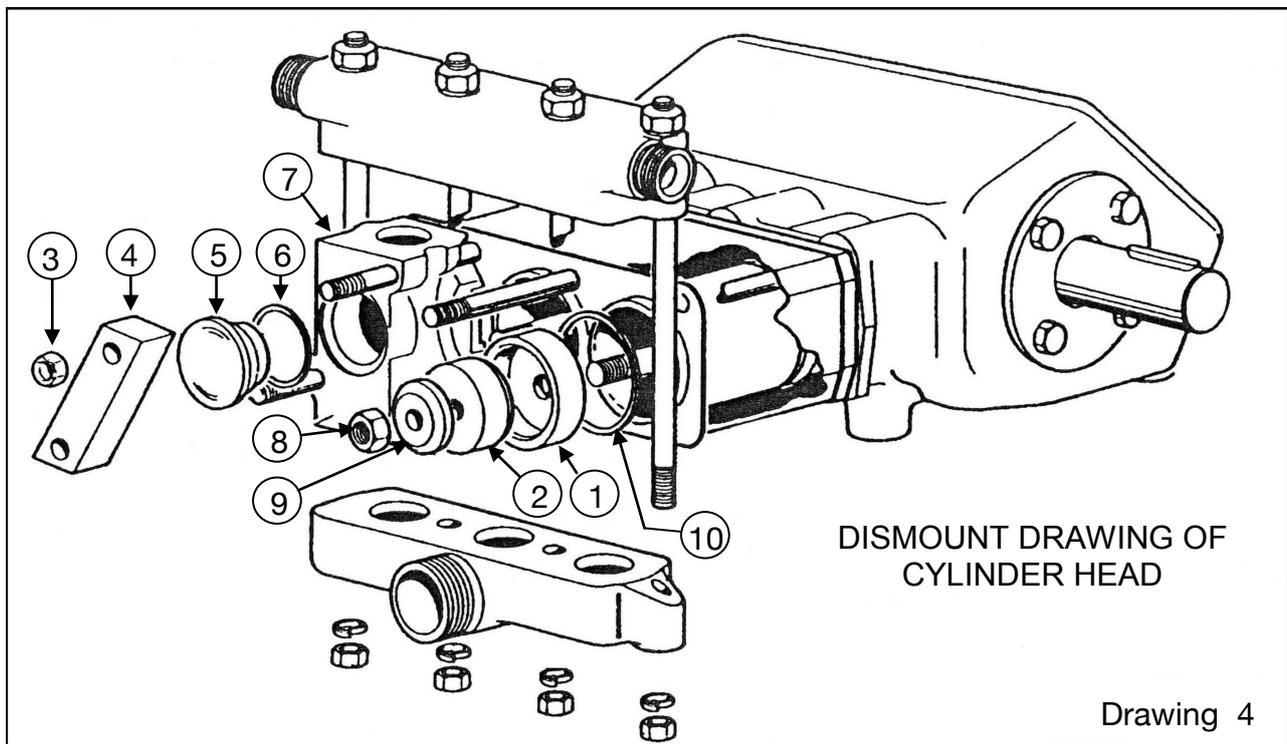
- To unscrew the 4 nuts (2).
- To remove the aspiration's collector (3).
- To remove the pression's collector (4) and its 4 tirans.
- To dismount the 6 sets of valve (1), to clean with the gasoline, and to oil slightly before the reassembly.
- To reassembly the unit.



Drawing 3



Maintenance Pump GAMA 50-80-130



Every 50 operating hours :

- To tighten the cups of pistons (1) by compressing the rings of extension (6) with the Nylstop nuts (8).

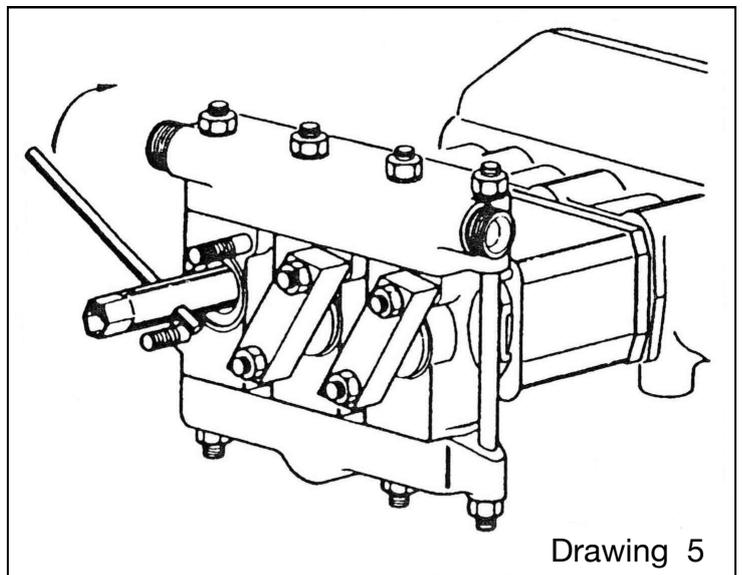
For that :

- To unscrew the 6 nuts (3) (drawing 5).
- To remove the 3 bars (4).
- To remove the 3 stoppers and seals (5).
- To tighten moderately with the special tool (drawing 5) or with a tube wrench of 19 millimetres.

Every 200 operating hours or once a year :

- To check the wear of the cups of piston (1) and them rings (2) (drawing 4) :

- To unscrew the 6 nuts (3).
- To remove the 3 bars (4).
- To remove the 3 stoppers and seals (5) and (6) as well as the 3 cylinder heads (7).
- To unscrew the nuts (8).
- To remove the 3 discs (9), the 3 cuts (1) and the rings of expansion (2).
- To change the defective parts if it's necessary.
- To reassemble the unit after changing the 3 nylon seals (10) between cylinders head and cylinders.

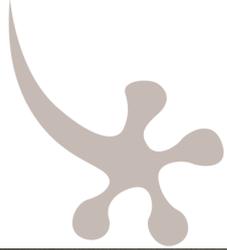


FOOT NOTE :

If you don't use the pump during few weeks, you could see some liquid get out of the pump. But this thing must stop after a few minute. If it persists, to tighten the cups of piston.

PROTECTION AGAINST FREEZING :

To turn the pump 2 or 3 minutes to vacuum and purge.



Spare parts

DESIGNATION	QUANTITY	REFERENCE
Engine GX 330	1	GX340QXE
Pump GAMA 130	1	217281
Hub TL 1610 Ø30	1	Z410150
Hub TL 1610 Ø25.4	1	Z410148
Coupling plate HRC 110	2	Z410130
Elastic element HRC 100/110	1	Z410135
Elastic studs	4	Z410001
Safety valve 1" 8 - 20 bar	1	MGP262634
Safety valve 1" 0 - 8 bar	1	MGP2626341
Hourmeter	1	SOP175222
Manometer Ø63 0-25 bar	1	SF1623008
Battery 12AH 12V	1	Z200164
Black handle Ø25	4	Z012501
Round plastic endpiece Ø25	4	MH054025
Wheel Ø200	2	Z022009



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