

Low capacity pumps



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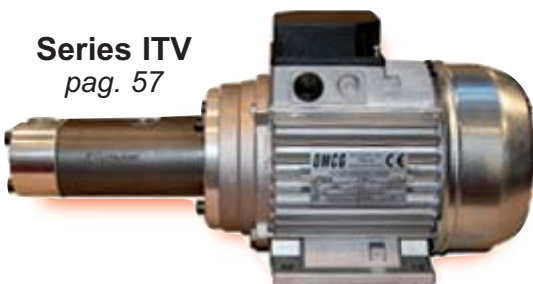
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Butterfly gas valves

LIGHT OIL BURNER PUMP



Series GB/KB



CHARACTERISTICS

Applications:

- Light oil(GB) or kerosene(KB).
- One pipe or two pipe system.
- Single stage.
- Cartridge filter.
- One in-line solenoid valve recommended.
- Capacity from 25 l/h to 83 l/h.

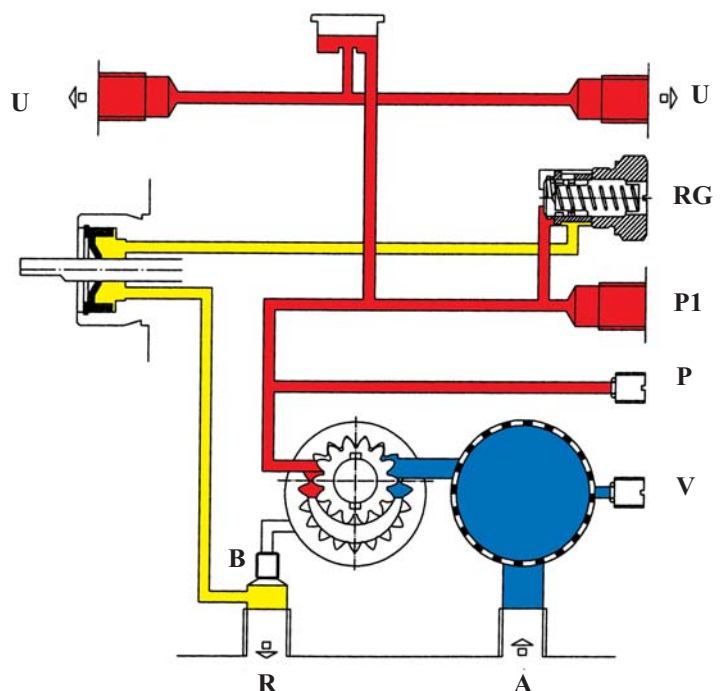
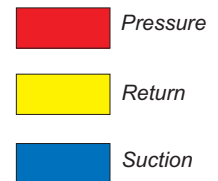
FUNCTION

The suction vacuum generated by the gears sucks up the fuel through the suction line “A”; it crosses the filter and it is sent under pressure to the pressure adjustment screw “RG”.

The fuel is sent to the nozzle at the pressure value set by “RG”, only the exceeding fuel is sent on the return line “R”.

In the one-pipe system the by-pass screw “B” is removed and the return “R” is plugged; the whole fuel is sucked up by the gears without crossing another time through the filter. During the operation it is possible to measure the suction vacuum by the vacuum gauge port “V” and the pressure by the pressure gauge port “P”; it is also available on the pump an auxiliary delivery port “P1”.

When the burner stops, instantly the pressure comes down and the spring of the pressure adjustment screw “RG” moves the piston which stops the oil flow to the line and allows to the fluid to go through the return line “R”.



CONVERSION 2 PIPES - 1 PIPE SYSTEM

For the conversion proceed as follow:

- Remove the by-pass screw, located inside the return port “R”.
- Lock the return port with a steel plug G 1/4 and washer.

ATTENTION:

In two-pipe system oil pump is self-priming, the bleeding is obtained through the return line.

In one-pipe system the return line is closed by plug, the bleeding must be obtained through the nozzle or opening the pressure gauge port “P”, to accelerate the way out of the air.

GB TECHNICAL DATA

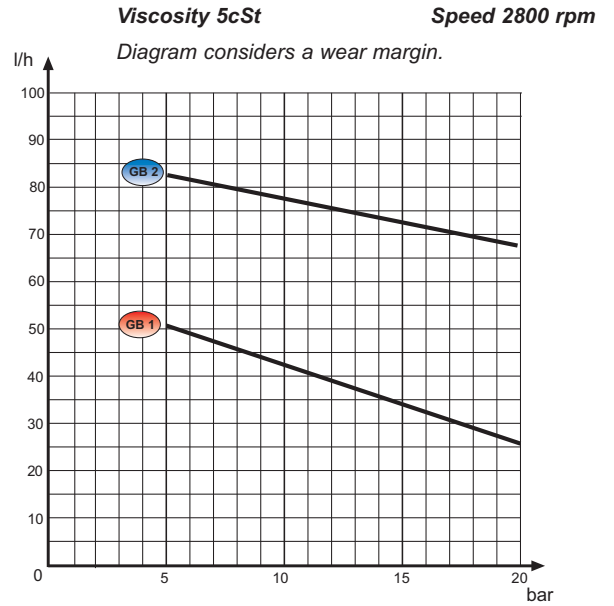
HYDRAULIC DATA

Factory settings	10 bar
Pressure range	5 - 20 bar
Viscosity range	2 - 12 cSt
Oil temperature	0 - 60°C
Inlet pressure	1,5 bar max
Return pressure	1,5 bar max
Suction height	0,45 bar max
Speed	2800 - 3480 rpm
Starting torque	0,10 Nm
Capacity	see graphs
Power consumption	see graphs

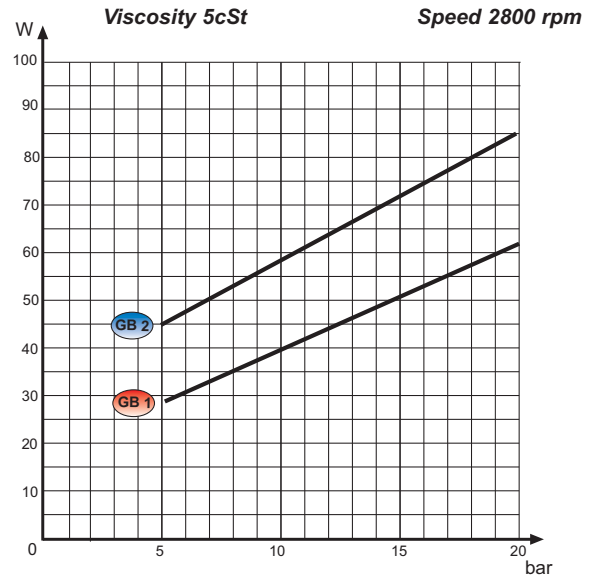
GENERAL DATA

Mounting	Hub \varnothing 32 mm according to EN 225	
Connections	Nozzle outlet	G 1/8
	Pressure gauge port	G 1/8
	Vacuum gauge port	G 1/8
	Suction	G 1/4
	Return	G 1/4
Nozzle outlet	Left and Right	
Filter	Open area	9 cm ²
	Mesh	200 μ m
Weight	1,0 kg	

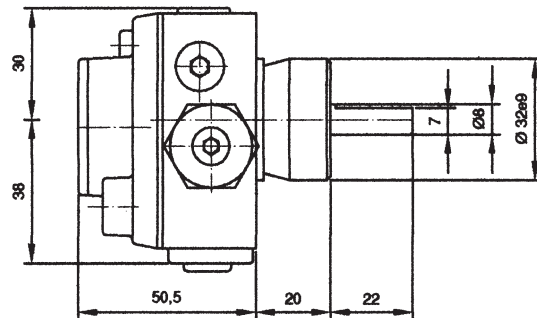
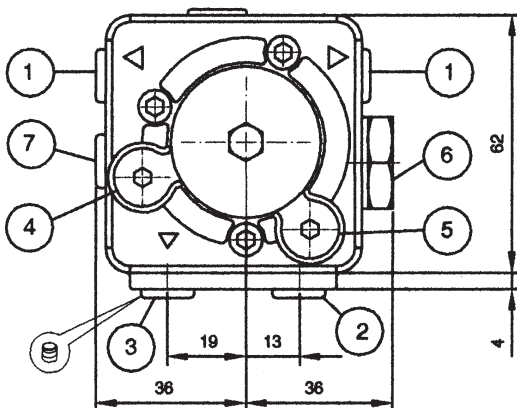
PRESSURE - CAPACITY DIAGRAM



POWER CONSUMPTION - PRESSURE DIAGRAM



DIMENSIONS OF THE PUMP



Legend:

- | | |
|-------------------------------|-----------------------------------|
| 1 - Nozzle outlet G 1/8 | 5 - Vacuum gauge port G 1/8 |
| 2 - Suction G 1/4 | 6 - Pressure adjustment screw |
| 3 - Return G 1/4 | 7 - Auxiliary delivery port G 1/8 |
| 4 - Pressure gauge port G 1/8 | |

KB TECHNICAL DATA

HYDRAULIC DATA

Factory settings	7 bar
Pressure range	4 - 14 bar
Viscosity range	1 - 12 cSt
Oil temperature	0 - 30°C
Inlet pressure	1,5 bar max
Return pressure	1,5 bar max
Suction height	0,45 bar max
Speed	2800 - 3480 rpm
Starting torque	0,10 Nm
Capacity	see graphs
Power consumption	see graphs

GENERAL DATA

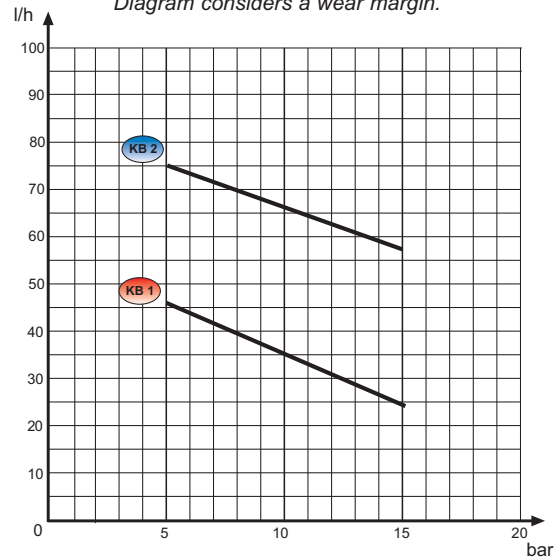
Mounting	Hub \varnothing 32 mm according to EN 225	
Connections	Nozzle outlet	G 1/8
	Pressure gauge port	G 1/8
	Vacuum gauge port	G 1/8
	Suction	G 1/4
	Return	G 1/4
Nozzle outlet	Left and Right	
Filter	Open aria	9 cm ²
	Mesh	200 μ m
Weight	1,0 kg	

PRESSURE - CAPACITY DIAGRAM

Viscosity 2cSt

Speed 2800 rpm

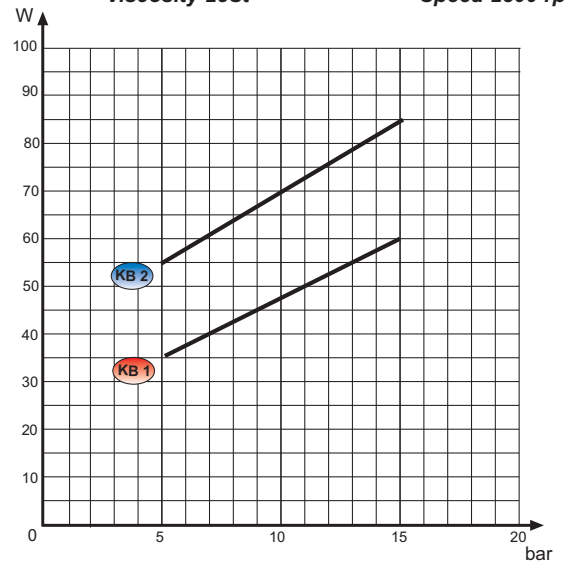
Diagram considers a wear margin.



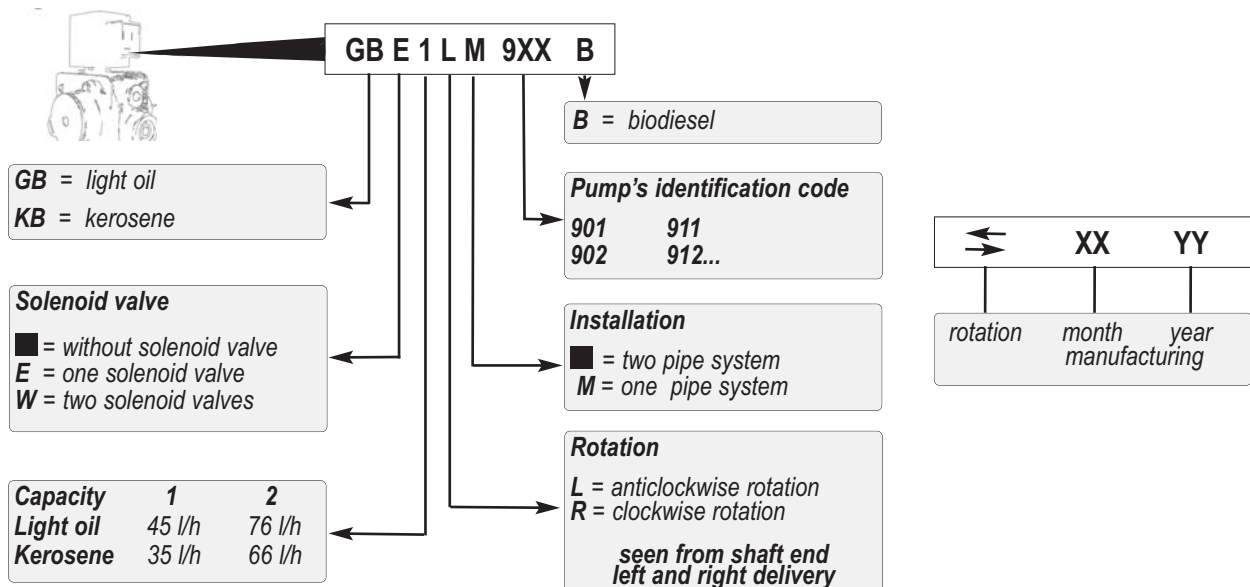
POWER CONSUMPTION - PRESSURE DIAGRAM

Viscosity 2cSt

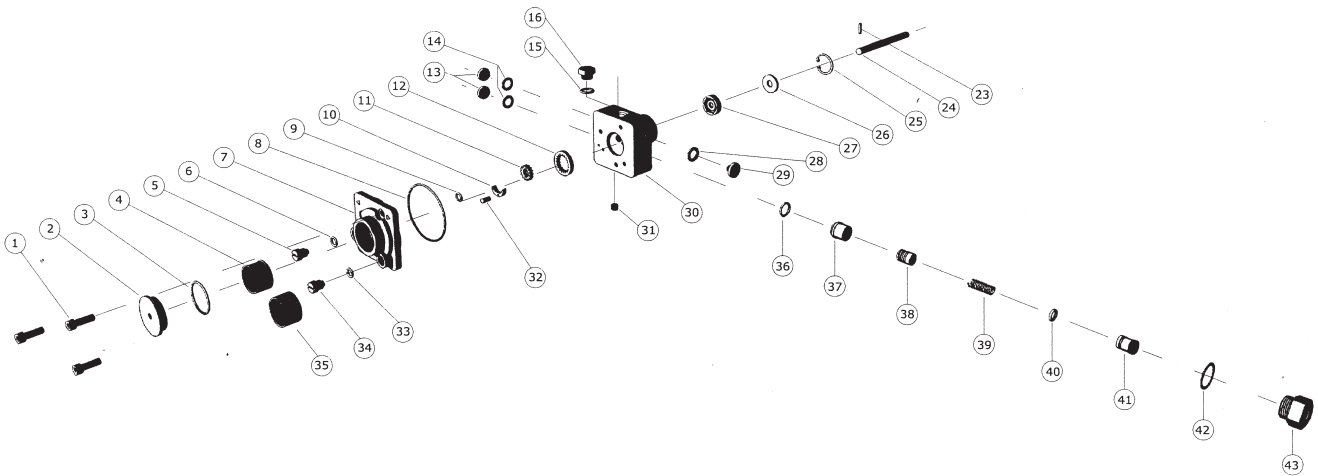
Speed 2800 rpm



IDENTIFICATION OF THE PUMP



COMPONENTS OF THE PUMP

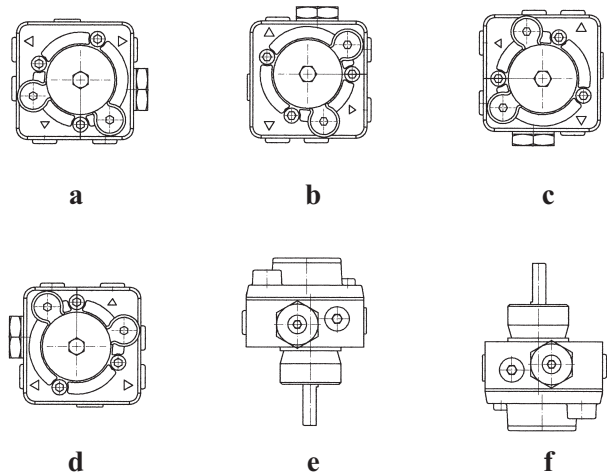


INSTALLATION OF THE PUMP

- The pump can be installed in all indicated positions.
- Make sure that the characteristics of the pump are compatible with those of the motor or of the boiler.
- Control the rotation of pump-motor.

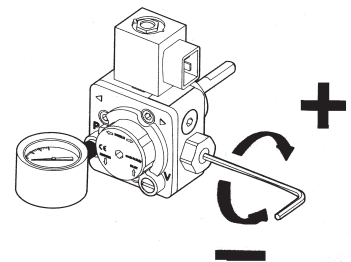


The coupling pump-motor must be realized using 3 head screws without; otherwise you can have significant reductions of pump life.



REGULATION OF THE PUMP PRESSURE

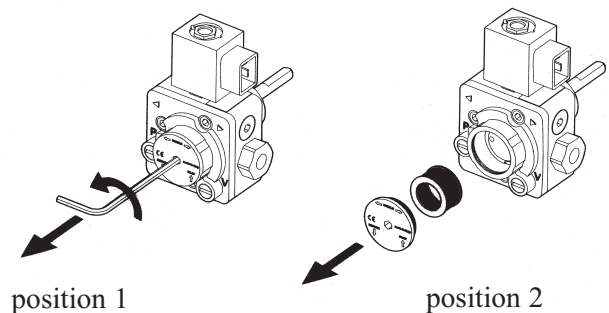
- Apply the manometer on the pressure gauge port (P).
- Rotate with the allen key of 4 mm changing the pressure which has to be:
 - Pressure max: 20 bar (light oil) - 14 bar (kerosene)
 - Pressure min: 5 bar (light oil) - 4 bar (kerosene)



CLEANING OF THE FILTER

- Remove the cover as indicated in the position 1.
- Extract the filter and clean it with the clean oil fuel. (position 2).

ATTENTION: This operations have to be made periodically by the technical personnel.



The repairs which require the substitution of pieces, must be realized by the manufacturer.

Series GBE/KBE



CHARACTERISTICS

Applications:

- Light oil(GBE) or kerosene(KBE).
- One pipe or two pipe system.
- Single stage.
- Cartridge filter.
- Solenoid valve, normally closed, with cut-off function.
- Capacity from 25 l/h to 83 l/h.

FUNCTION

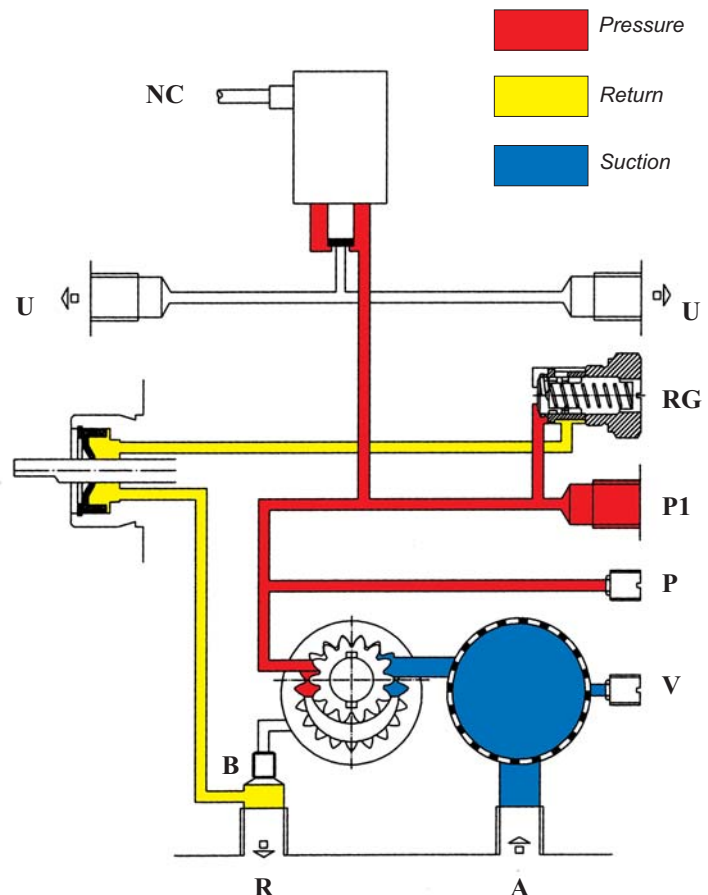
The suction vacuum generated by the gears sucks up the fuel through the suction line “A”; it crosses the filter and is sent under pressure to the pressure adjustment screw “RG”.

During the prepurge cycle the “NC” solenoid valve prevent the exit of the fuel from the nozzle outlet “U”.

When the voltage is applied to the “NC” solenoid valve, the fuel is sent to the nozzle at the pressure value set by pressure adjustment screw “RG”, only the exceeding fuel is sent on the return line “R”. In the one-pipe system the by-pass screw “B” is removed and the return line “R” is plugged; the whole fuel is sucked up by the gears without crossing another time through the filter.

During the operation it is possible to measure the suction vacuum by the vacuum gauge port “V” and the pressure by the pressure gauge port “P”; it is also available on the pump an auxiliary delivery port “P1”.

When the burner stops the voltage to the “NC” solenoid valve is cut-off and immediately the oil flows to the return line “R”.



CONVERSION 2 PIPES - 1 PIPE SYSTEM

For the conversion proceed as follow:

- Remove the by-pass screw, located inside the return port “R”.
- Lock the return port with a steel plug G 1/4 and washer.

ATTENTION:

In two-pipe system oil pump is self-priming, the bleeding is obtained through the return line.

In one-pipe system the return line is closed by plug, the bleeding must be obtained through the nozzle or opening the pressure gauge port “P”, to accelerate the way out of the air.

GBE TECHNICAL DATA

HYDRAULIC DATA

Factory settings	10 bar
Pressure range	5 - 20 bar
Viscosity range	2 - 12 cSt
Oil temperature	0 - 60°C
Inlet pressure	1,5 bar max
Return pressure	1,5 bar max
Suction height	0,45 bar max
Speed	2800 - 3480 rpm
Starting torque	0,10 Nm
Capacity	see graphs
Power consumption	see graphs

GENERAL DATA

Mounting	Hub \varnothing 32 mm according to EN 225	
Connections	Nozzle outlet	G 1/8
	Pressure gauge port	G 1/8
	Vacuum gauge port	G 1/8
	Suction	G 1/4
	Return	G 1/4
Nozzle outlet	Left and Right	
Filter	Open aria	9 cm ²
	Mesh	200 μ m
Weight	1,1 kg	

SOLENOID VALVE DATA

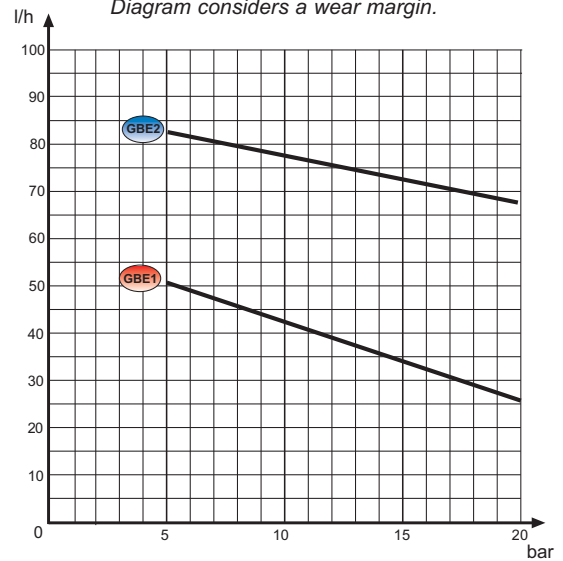
Pressure max	20 bar
Voltages	220-240V, 110V, 24V; 50/60Hz
Absorption	9 W
Ambient temperature	0-70°C

PRESSURE - CAPACITY DIAGRAM

Viscosity 5cSt

Speed 2800 rpm

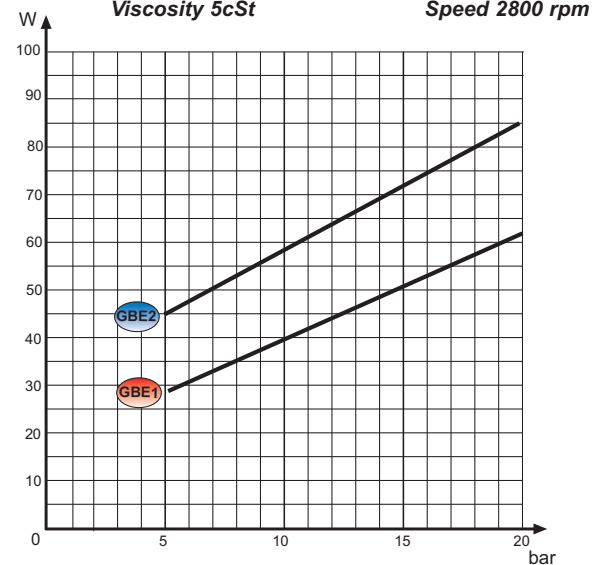
Diagram considers a wear margin.



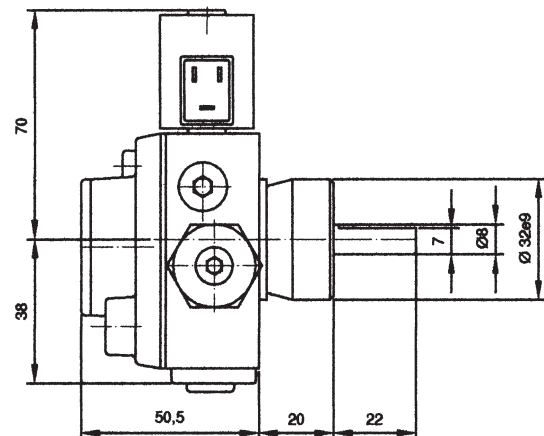
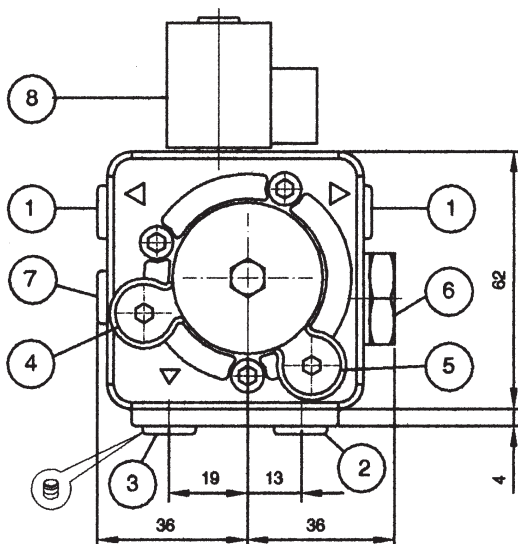
POWER CONSUMPTION - PRESSURE DIAGRAM

Viscosity 5cSt

Speed 2800 rpm



DIMENSIONS OF THE PUMP



Legend:

- | | |
|-------------------------------|-----------------------------------|
| 1 - Nozzle outlet G 1/8 | 5 - Vacuum gauge port G 1/8 |
| 2 - Suction G 1/4 | 6 - Pressure adjustment screw |
| 3 - Return G 1/4 | 7 - Auxiliary delivery port G 1/8 |
| 4 - Pressure gauge port G 1/8 | 8 - Solenoid valve N.C. |

KBE TECHNICAL DATA

HYDRAULIC DATA

Factory settings	7 bar
Pressure range	4 - 14 bar
Viscosity range	1 - 12 cSt
Oil temperature	0 - 30°C
Inlet pressure	1,5 bar max
Return pressure	1,5 bar max
Suction height	0,45 bar max
Speed	2800 - 3480 rpm
Starting torque	0,10 Nm
Capacity	see graphs
Power consumption	see graphs

GENERAL DATA

Mounting	Hub \varnothing 32 mm according to EN 225	
Connections	Nozzle outlet	G 1/8
	Pressure gauge port	G 1/8
	Vacuum gauge port	G 1/8
	Suction	G 1/4
	Return	G 1/4
Nozzle outlet	Left and Right	
Filter	Open aria	9 cm ²
	Mesh	200 μ m
Weight	1,1 kg	

SOLENOID VALVE DATA

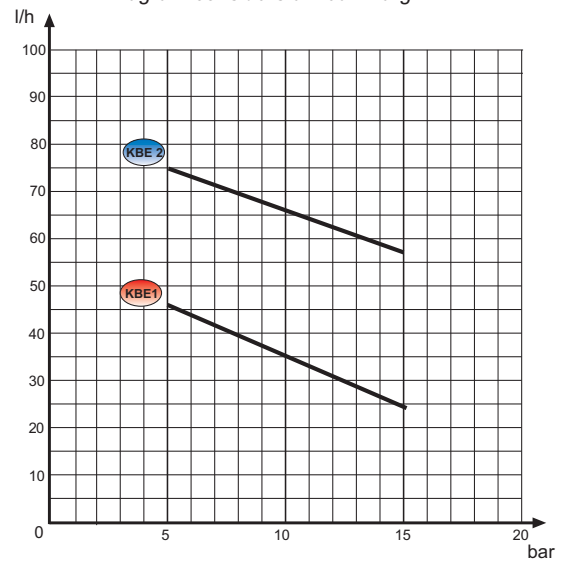
Pressure max	20 bar
Voltages	220-240V, 110V, 24V; 50/60Hz
Absorption	9 W
Ambient temperature	0-70°C

PRESSURE - CAPACITY DIAGRAM

Viscosity 2cSt

Speed 2800 rpm

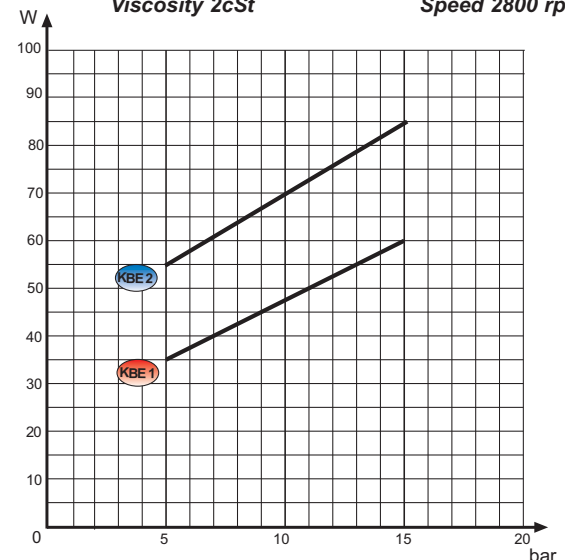
Diagram considers a wear margin.



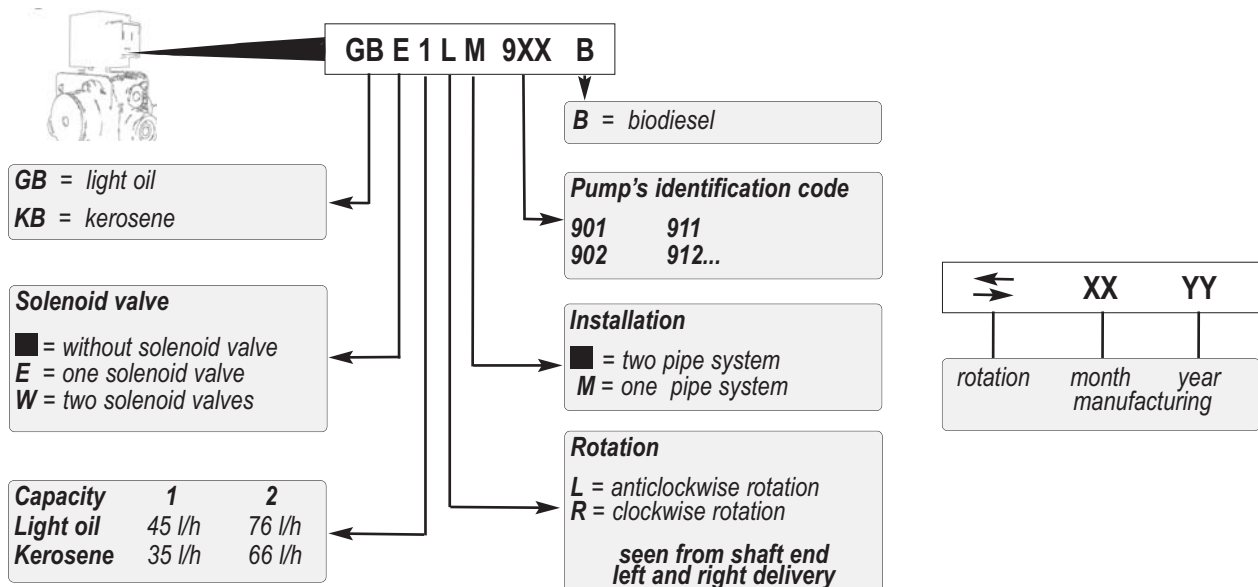
POWER CONSUMPTION - PRESSURE DIAGRAM

Viscosity 2cSt

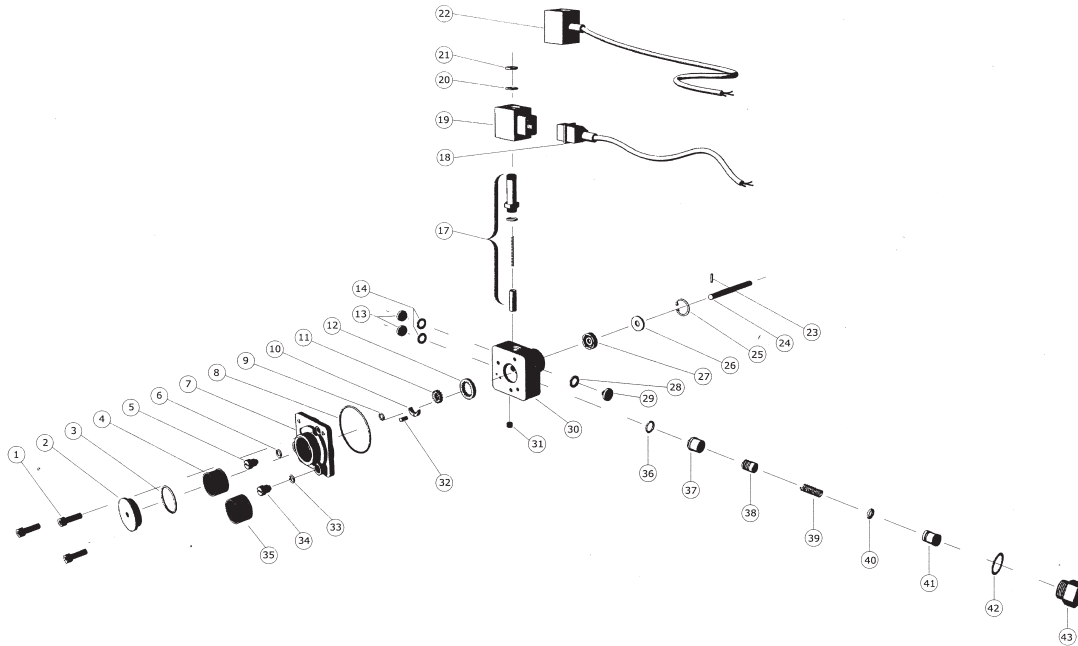
Speed 2800 rpm



IDENTIFICATION OF THE PUMP



COMPONENTS OF THE PUMP

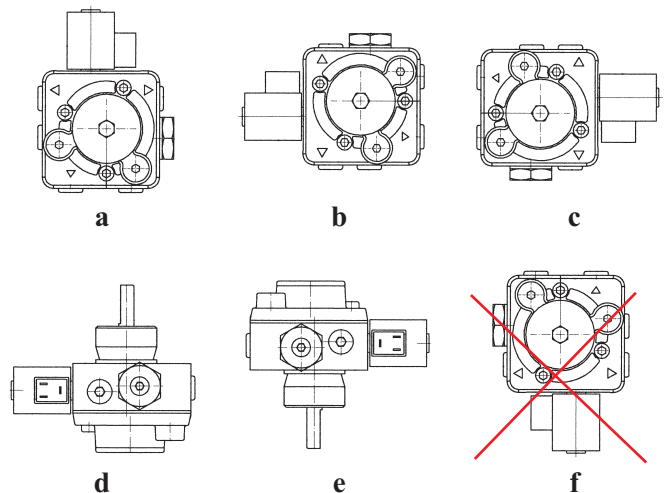


INSTALLATION OF THE PUMP

• The pump can be installed in the indicated positions: it is suggested position **a**.

It has to be absolutely avoid the position **f**.

- Make sure that the characteristics of the pump are compatible with those of the motor or of the boiler.
- Control the rotation of pump-motor.



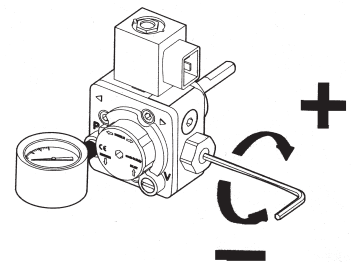
The coupling pump-motor must be realized using 3 head screws without; otherwise you can have significant reductions of pump life.

REGULATION OF THE PUMP PRESSURE

- Apply the manometer on the pressure gauge port (P).
- Rotate with the allen key of 4 mm changing the pressure which has to be:

Pressure max: 20 bar (light oil) - 14 bar (kerosene)

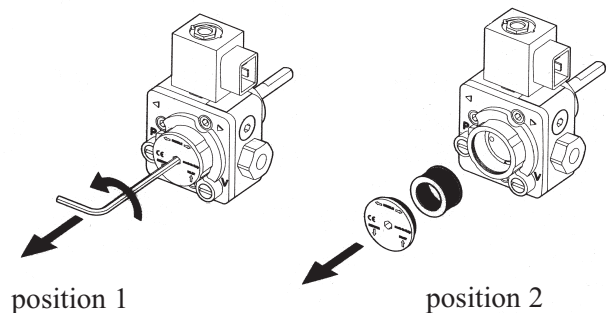
Pressure min: 5 bar (light oil) - 4 bar (kerosene)



CLEANING OF THE FILTER

- Remove the cover as indicated in the position 1.
- Extract the filter and clean it with the clen oil fuel. (position 2).

ATTENTION: This operations have to be made periodically by the technical personnel.



The repairs which require the substitution of pieces, must be realized by the manufacturer.

Series GBE-LE



CHARACTERISTICS

Applications:

- Light oil.
- Two pipe system.
- Single stage.
- Cartridge filter.
- Solenoid valve, normally closed, with cut-off function.
- Capacity from 20 l/h to 75 l/h.
- Low emission on burner start and stop.

FUNCTION

The special model GBE-LE is engineered to be mounted in domestic low capacity burner and working with a no-drip nozzle and a preheater mounted in the burner enabling a reduction of start-stop emissions.

The suction vacuum generated by the gears sucks up the fuel through the suction line “A”; it crosses the filter and it is sent under pressure to the pressure adjustment screw “RG”.

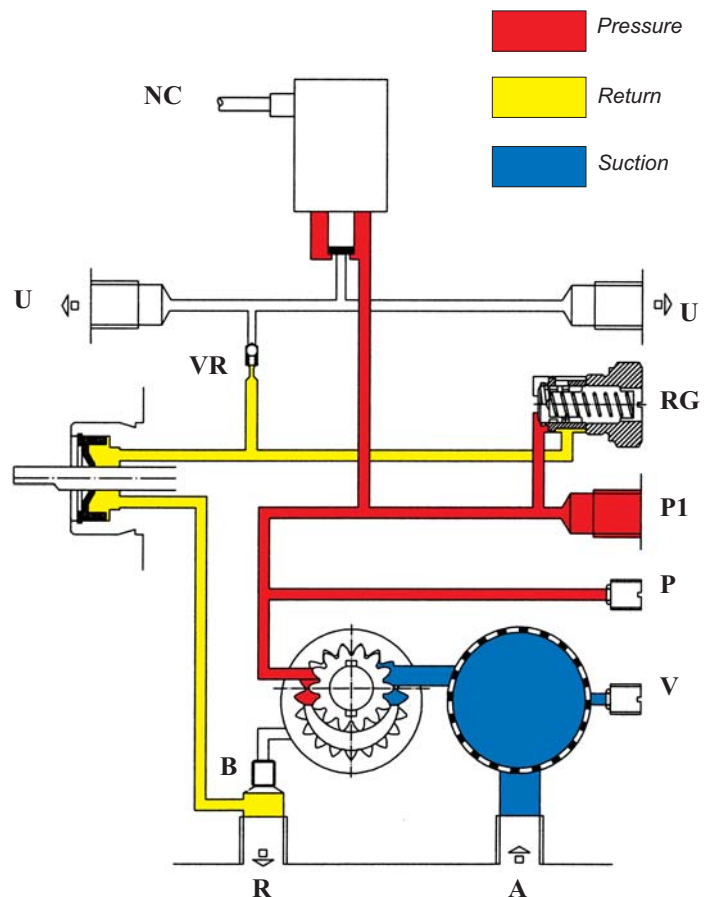
During the prepurge cycle the “NC” solenoid valve prevent the exit of the fuel from the nozzle outlet “U” the total amount of processed fuel is sent on the return line “R” set by pressure adjustment screw “RG”.

When the voltage is applied to the “NC” solenoid valve, the fuel is sent to the nozzle at the pressure value set by pressure adjustment screw “RG”, only the exceeding fuel is sent on the return line “R”.

During the operation it is possible to measure the suction vacuum by the vacuum gauge port “V” and the pressure by the pressure gauge port “P”; it is also available on the pump an auxiliary delivery port “P1”.

The expansion of the oil due to the presence of a pre-heater is prevented by the presence of the relief valve “VR” which discharge it on the return line. The relief valve opens at lower pressure than the nozzle opening.

When the burner stops the voltage to the “NC” solenoid valve is cut-off and immediately the oil flows to the return line “R”.



GBE-LE TECHNICAL DATA

HYDRAULIC DATA

Factory settings	10 bar
Pressure range	5 - 16 bar
Viscosity range	2 - 12 cSt
Oil temperature	0 - 60°C
Inlet pressure	1,5 bar max
Return pressure	1,5 bar max
Suction height	0,45 bar max
Speed	2800 - 3480 rpm
Starting torque	0,10 Nm
Capacity	see graphs
Power consumption	see graphs

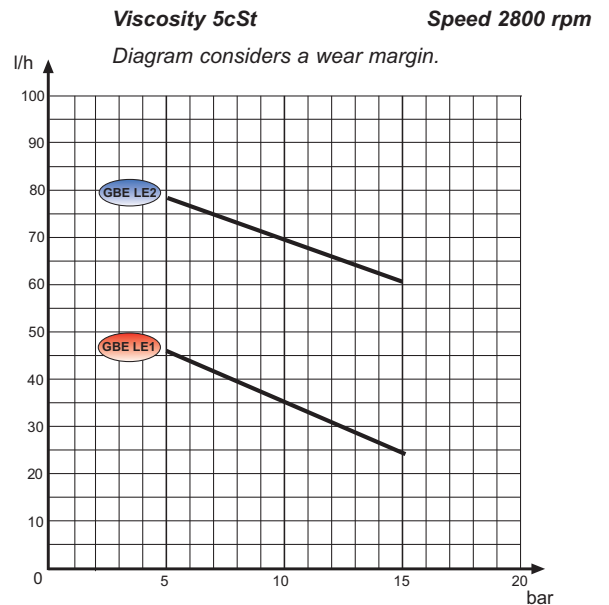
GENERAL DATA

Mounting	Hub \varnothing 32 mm according to EN 225	
Connections	Nozzle outlet	G 1/8
	Pressure gauge port	G 1/8
	Vacuum gauge port	G 1/8
	Suction	G 1/4
	Return	G 1/4
Nozzle outlet	Left and Right	
Filter	Open aria	9 cm ²
	Mesh	200 μ m
Weight	1,1 kg	

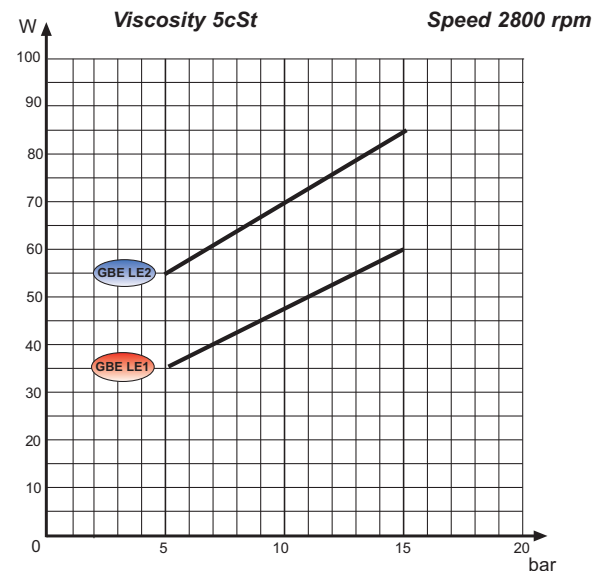
SOLENOID VALVE DATA

Pressure max	20 bar
Voltages	220-240V, 110V, 24V; 50/60Hz
Absorption	9 W
Ambient temperature	0-70°C

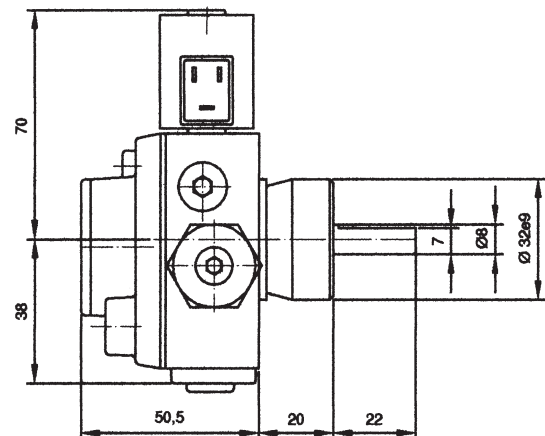
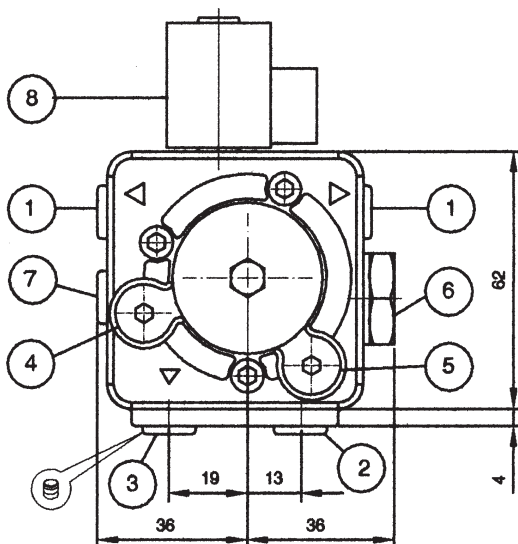
PRESSURE - CAPACITY DIAGRAM



POWER CONSUMPTION - PRESSURE DIAGRAM



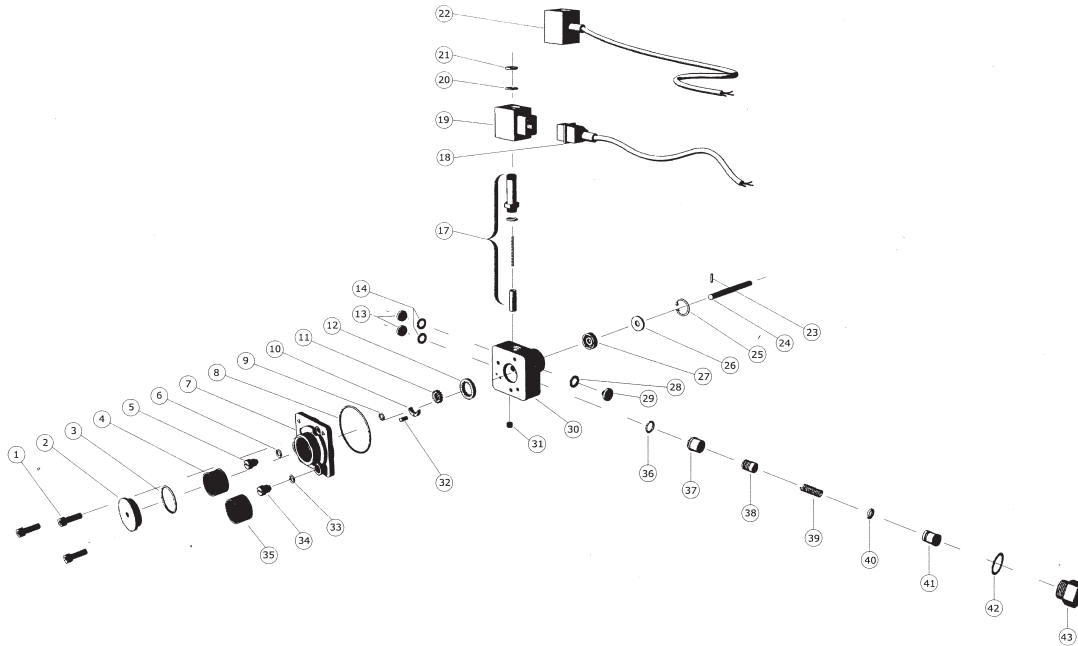
DIMENSIONS OF THE PUMP



Legend:

- | | |
|-------------------------------|-----------------------------------|
| 1 - Nozzle outlet G 1/8 | 5 - Vacuum gauge port G 1/8 |
| 2 - Suction G 1/4 | 6 - Pressure adjustment screw |
| 3 - Return G 1/4 | 7 - Auxiliary delivery port G 1/8 |
| 4 - Pressure gauge port G 1/8 | 8 - Solenoid valve N.C. |

COMPONENTS OF THE PUMP

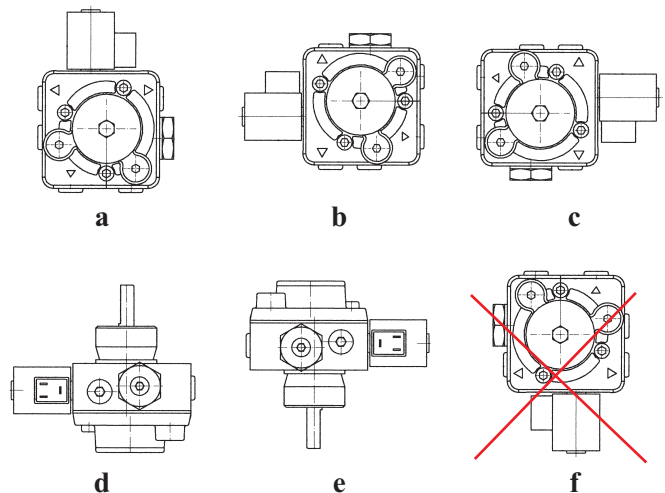


INSTALLATION OF THE PUMP

• The pump can be installed in the indicated positions: it is suggested position **a**.

It has to be absolutely avoid the position **f**.

- Make sure that the characteristics of the pump are compatible with those of the motor or of the boiler.
- Control the rotation of pump-motor.



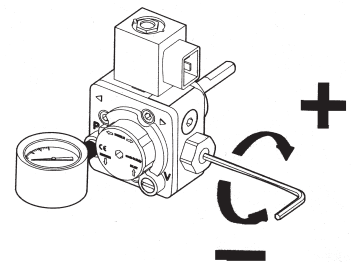
The coupling pump-motor must be realized using 3 head screws without; otherwise you can have significant reductions of pump life.

REGULATION OF THE PUMP PRESSURE

- Apply the manometer on the pressure gauge port (P).
- Rotate with the allen key of 4 mm changing the pressure which has to be:

Pressure max: 16 bar

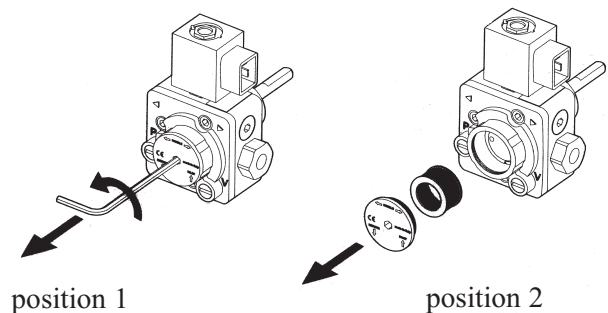
Pressure min: 5 bar



CLEANING OF THE FILTER

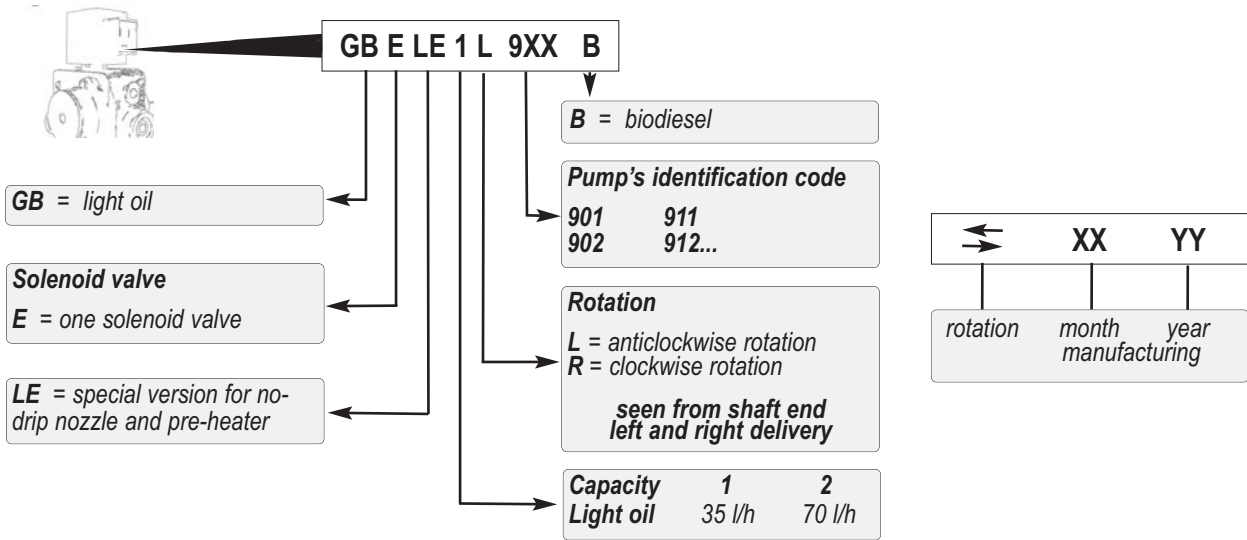
- Remove the cover as indicated in the position 1.
- Extract the filter and clean it with the clen oil fuel. (position 2).

ATTENTION: This operations have to be made periodically by the technical personnel.



The repairs which require the substitution of pieces, must be realized by the manufacturer.

IDENTIFICATION OF THE PUMP



Series GBW/KBW



CHARACTERISTICS

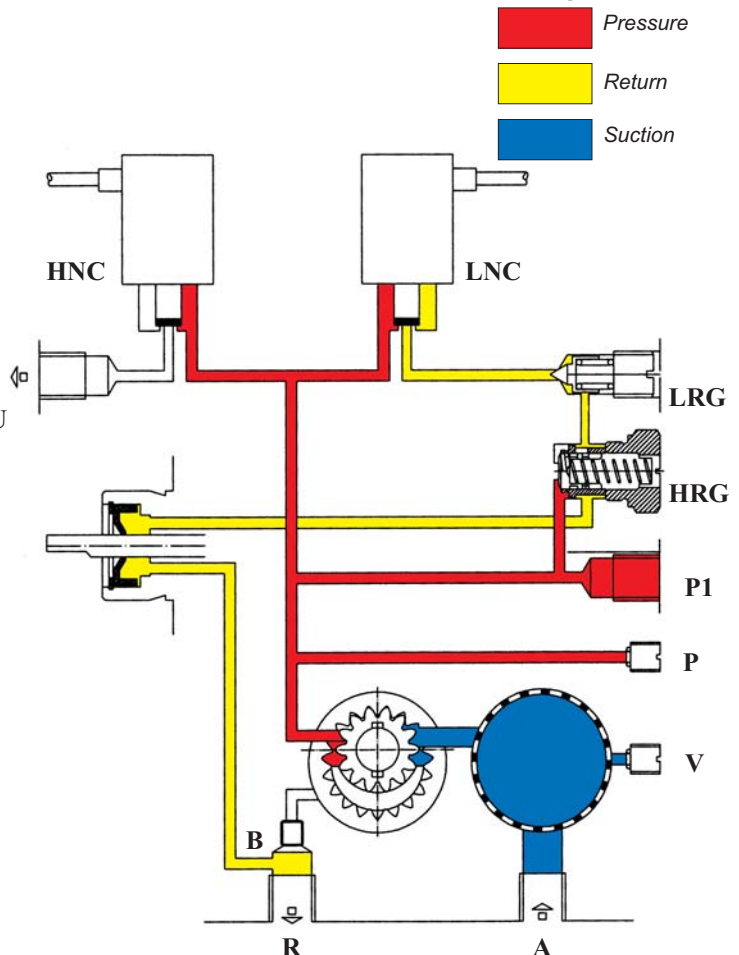
Applications:

- Light oil(GBW) and kerosene(KBW).
- One pipe or two pipe system.
- Solenoid valves with function at 2 stages of pressure.
- Self-priming.
- Solenoid valve with cut-off function.
- Capacity from 25 l/h to 83 l/h.

FUNCTION

The suction vacuum generated by the gears sucks up the fuel through the suction line “A”; it crosses the filter and it is sent, at the pressure set by the high pressure adjustment screw “HRG” to low and high pressure solenoid valve “LNC” and “HNC”. Part of the oil returns into the tank at the pressure value set by high pressure adjustment screw “HRG” or by the low pressure adjustment screw “LRG”, when solenoid valve “LNC” is energized. When high pressure solenoid valve “HNC” is energized, the oil flows towards the nozzle at a reduced pressure, because simultaneously also low pressure solenoid valve is excited “LNC”. Afterwards the solenoid valve “LNC” is de-energized, it is obtained the maximum pressure to the nozzle, operating on the pressure adjustment screw “HRG”.

In two pipe systems the exceeding oil flows into the tank through the return line; in one pipe system it goes back to the suction line of the gears, after removing the by-pass screw and closed the return connection with a specific plug “R”. When the burner stops, instantly the solenoid valves “LNC” and “HNC” are de-energized and as consequence the flow is cut and the oil is forwarded to the recycle pipe.



CONVERSION 2 PIPES - 1 PIPE SYSTEM

For the conversion proceed as follow:

- Remove the by-pass screw, located inside the return port “R”.
- Lock the return port with a steel plug G 1/4 and washer.

ATTENTION:

In two-pipe system oil pump is self-priming, the bleeding is obtained through the return line.

In one-pipe system the return line is closed by plug, the bleeding must be obtained through the nozzle or opening the pressure gauge port “P”, to accelerate the way out of the air.

GBW TECHNICAL DATA

HYDRAULIC DATA

Factory settings	10 bar
Low pressure range	5 - 10 bar
High pressure range	10 - 20 bar
Viscosity range	2 - 12 cSt
Oil temperature	0 - 60°C
Inlet pressure	1,5 bar max
Return pressure	1,5 bar max
Suction height	0,45 bar max
Speed	2800 - 3480 rpm
Starting torque	0,10 Nm
Capacity	see graphs
Power consumption	see graphs

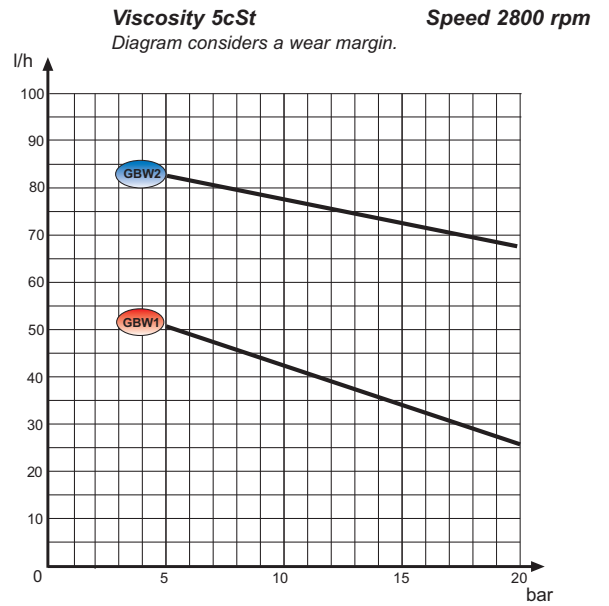
GENERAL DATA

Mounting	Hub \varnothing 32 mm according to EN 225	
Connections	Nozzle outlet	G 1/8
	Pressure gauge port	G 1/8
	Vacuum gauge port	G 1/8
	Suction	G 1/4
	Return	G 1/4
Nozzle outlet	Left and Right	
Filter	Open aria	9 cm ²
	Mesh	200 μ m
Weight	1,3 kg	

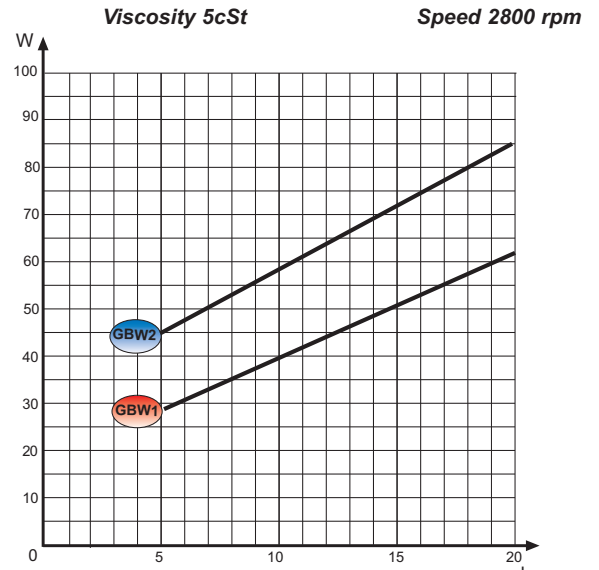
SOLENOID VALVE DATA

Pressure max	20 bar
Voltages	220-240V, 110V, 24V; 50/60Hz
Absorption	9 W
Ambient temperature	0-70°C

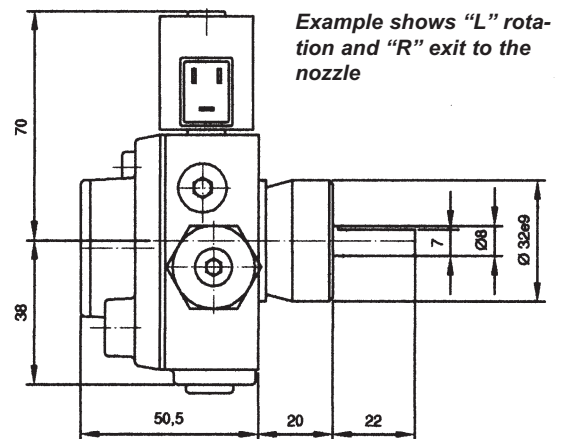
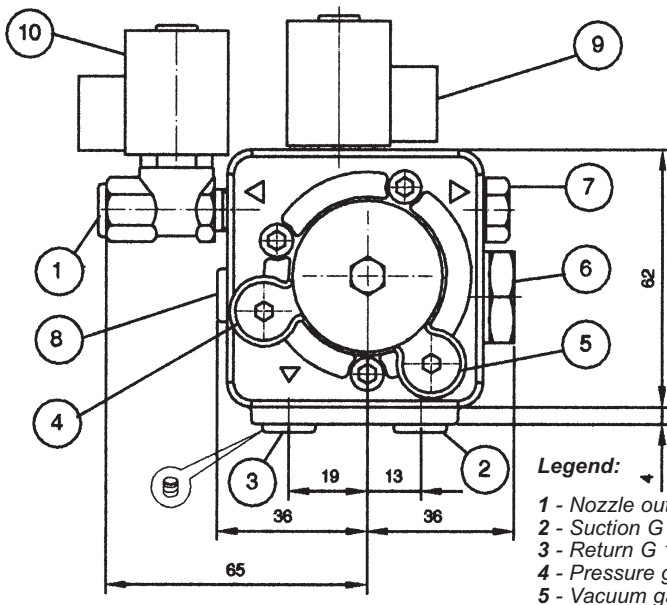
PRESSURE - CAPACITY DIAGRAM



POWER CONSUMPTION - PRESSURE DIAGRAM



DIMENSIONS OF THE PUMP



KBW TECHNICAL DATA

HYDRAULIC DATA

Factory settings	7 bar
Low pressure range	4 - 9 bar
High pressure range	9 - 14 bar
Viscosity range	1 - 12 cSt
Oil temperature	0 - 30°C
Inlet pressure	1,5 bar max
Return pressure	1,5 bar max
Suction height	0,45 bar max
Speed	2800 - 3480 rpm
Starting torque	0,10 Nm
Capacity	see graphs
Power consumption	see graphs

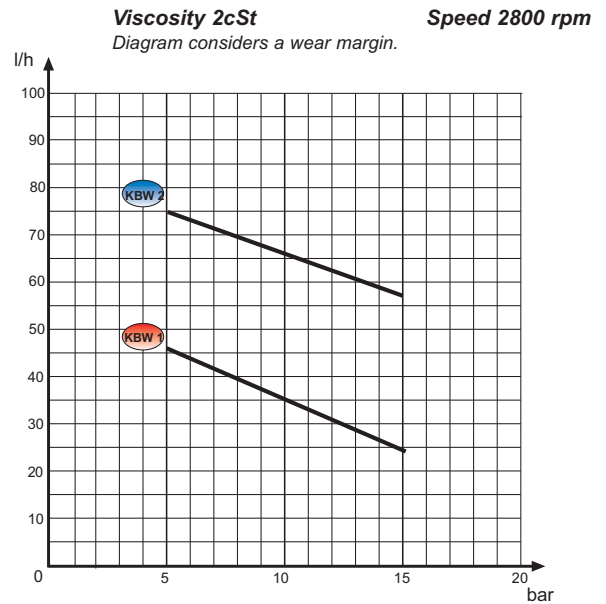
GENERAL DATA

Mounting	Hub \varnothing 32 mm according to EN 225	
Connections	Nozzle outlet	G 1/8
	Pressure gauge port	G 1/8
	Vacuum gauge port	G 1/8
	Suction	G 1/4
	Return	G 1/4
Nozzle outlet	Left and Right	
Filter	Open aria	9 cm ²
	Mesh	200 μ m
Weight	1,3 kg	

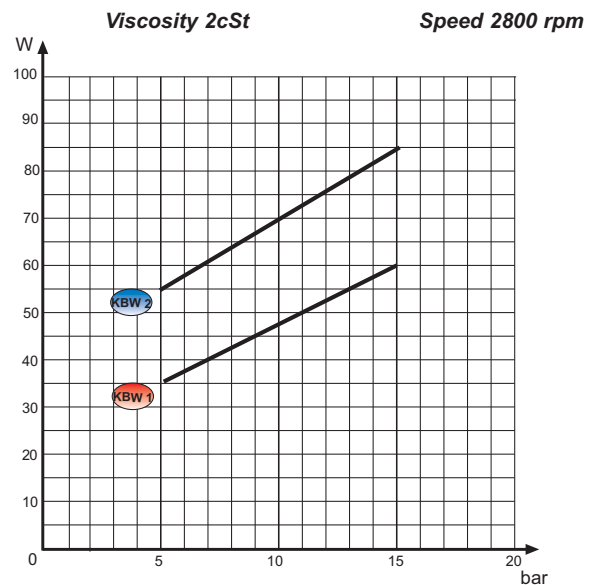
SOLENOID VALVE DATA

Pressure max	20 bar
Voltages	220-240V, 110V, 24V; 50/60Hz
Absorption	9 W
Ambient temperature	0-70°C

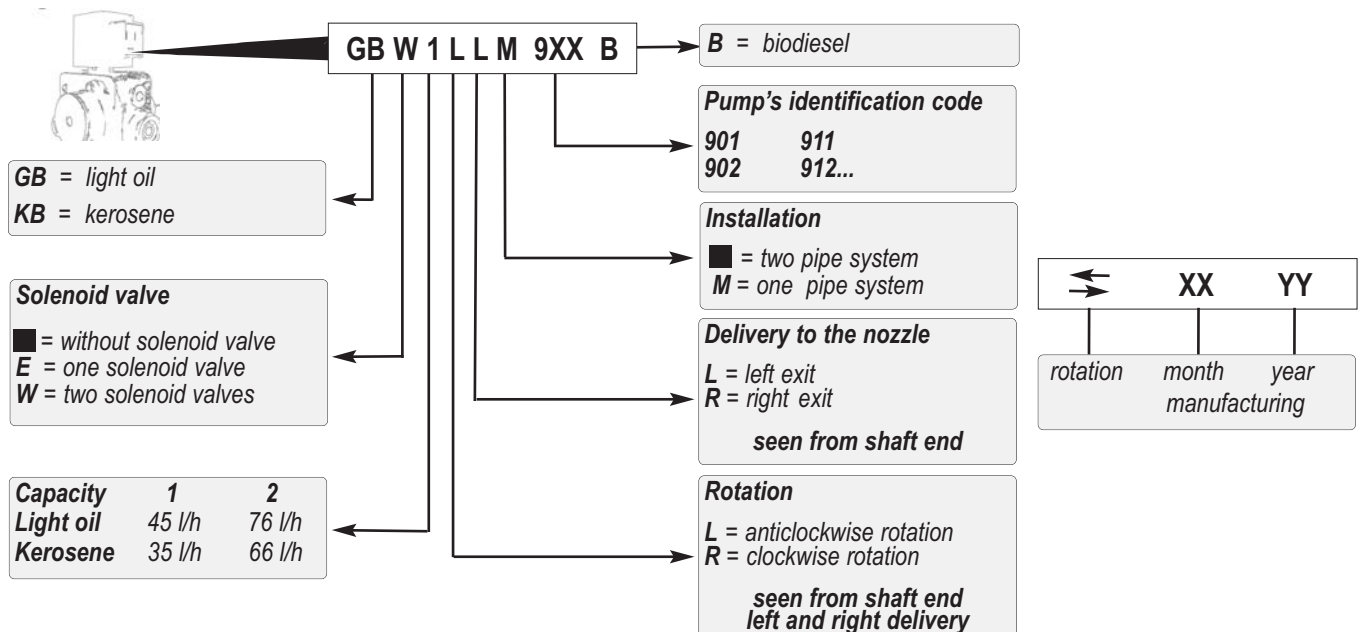
PRESSURE - CAPACITY DIAGRAM



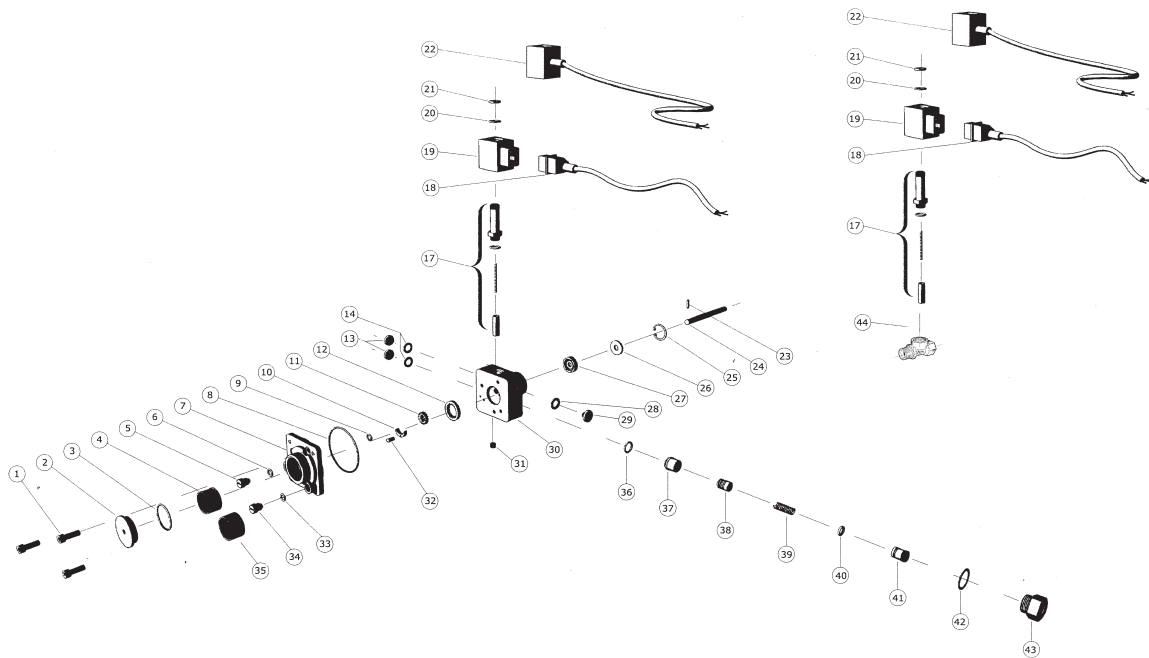
POWER CONSUMPTION - PRESSURE DIAGRAM



IDENTIFICATION OF THE PUMP



COMPONENTS OF THE PUMP

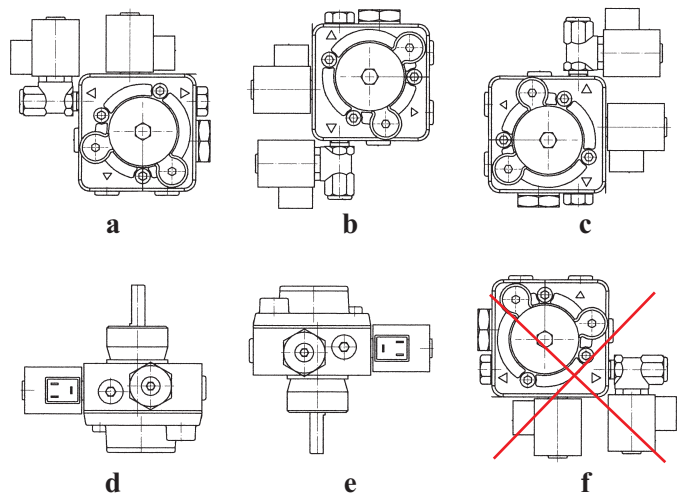


INSTALLATION OF THE PUMP

• The pump can be installed in the indicated positions: it is suggested position **a**.

It has to be absolutely avoid the position **f**.

- Make sure that the characteristics of the pump are compatible with those of the motor or of the boiler.
- Control the rotation of pump-motor.



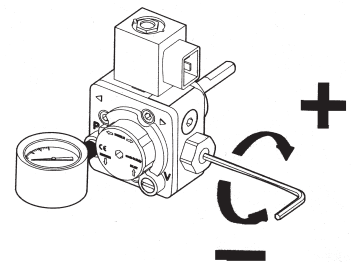
The coupling pump-motor must be realized using 3 head screws without; otherwise you can have significant reductions of pump life.

REGULATION OF THE PUMP PRESSURE

- Apply the manometer on the pressure gauge port (P).
- Rotate with the allen key of 4 mm changing the pressure which has to be:

Pressure max: 20 bar (light oil) - 14 bar (kerosene)

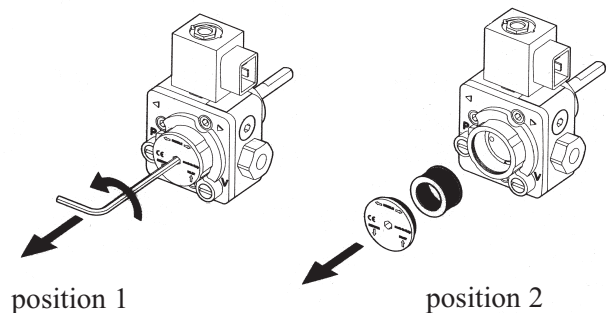
Pressure min: 5 bar (light oil) - 4 bar (kerosene)



CLEANING OF THE FILTER

- Remove the cover as indicated in the position 1.
- Extract the filter and clean it with the clen oil fuel. (position 2).

ATTENTION: This operations have to be made periodically by the technical personnel.



The repairs which require the substitution of pieces, must be realized by the manufacturer.

LIGHT OIL BURNER PUMP



Series P/K Type 3



CHARACTERISTICS

Applications:

- Light oil(P) and kerosene(K).
- One pipe and two pipe system.
- Self-priming.
- Manometer and vacuummeter connections.
- Capacity from 115 l/h to 132 l/h.

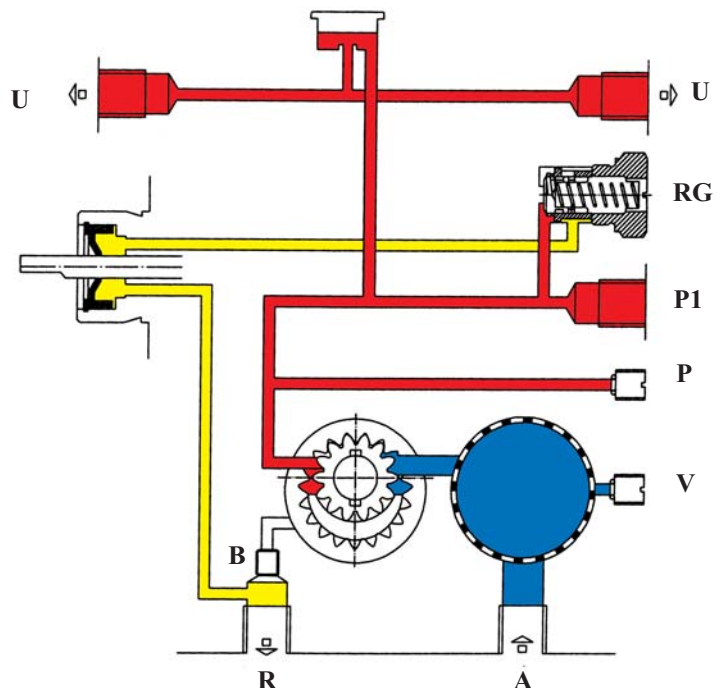
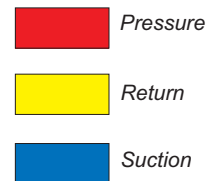
FUNCTION

The suction vacuum generated by the gears sucks up the fuel through the suction line “A”; it crosses the filter and it is sent under pressure to the pressure adjustment screw “RG”.

The fuel is sent to the nozzle at the pressure value set by “RG”, only the exceeding fuel is sent on the return line “R”.

In the one-pipe system the by-pass screw “B” is removed and the return “R” is plugged; the whole fuel is sucked up by the gears without crossing another time through the filter. During the operation it is possible to measure the suction vacuum by the vacuum gauge port “V” and the pressure by the pressure gauge port “P”; it is also available on the pump an auxiliary delivery port “P1”.

When the burner stops, instantly the pressure comes down and the spring of the pressure adjustment screw “RG” moves the piston which stops the oil flow to the line and allows to the fluid to go through the return line “R”.



CONVERSION 2 PIPES - 1 PIPE SYSTEM

For the conversion proceed as follow:

- Remove the by-pass screw, located inside the return port “R”.
- Lock the return port with a steel plug G 1/4 and washer

ATTENTION:

In two-pipe system oil pump is self-priming, the bleeding is obtained through the return line.

In one-pipe system the return line is closed by plug, the bleeding must be obtained through the nozzle or opening the pressure gauge port “P”, to accelerate the way out of the air.

P3 TECHNICAL DATA

HYDRAULIC DATA

Factory settings	10 bar
Pressure range	5 - 18 bar
Viscosity range	2 - 12 cSt
Oil temperature	0 - 60°C
Inlet pressure	1,5 bar max
Return pressure	1,5 bar max
Suction height	0,45 bar max
Speed	2800 - 3480 rpm
Starting torque	0,10 Nm
Capacity	see graphs
Power consumption	see graphs

GENERAL DATA

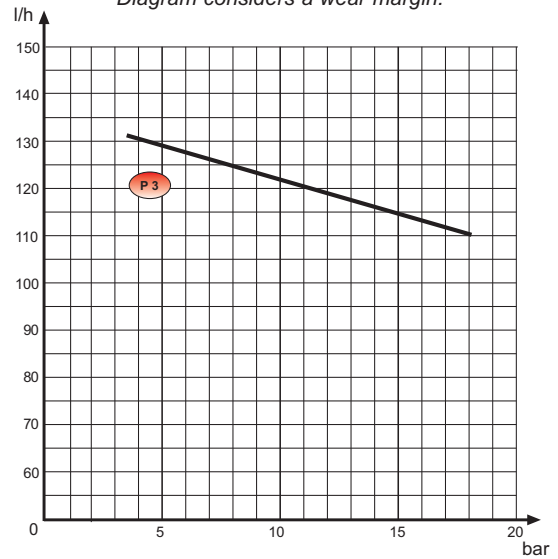
Mounting	Hub \varnothing 32 mm according to EN 225	
Connections	Nozzle outlet	G 1/8
	Pressure gauge port	G 1/8
	Vacuum gauge port	G 1/8
	Suction	G 1/4
	Return	G 1/4
Nozzle outlet	Left and Right	
Filter	Open area	11 cm ²
	Mesh	200 μ m
Weight	1,0 kg	

PRESSURE - CAPACITY DIAGRAM

Viscosity 5cSt

Speed 2800 rpm

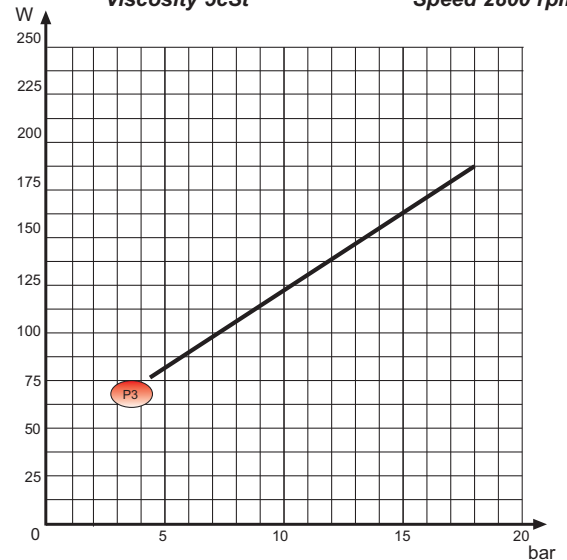
Diagram considers a wear margin.



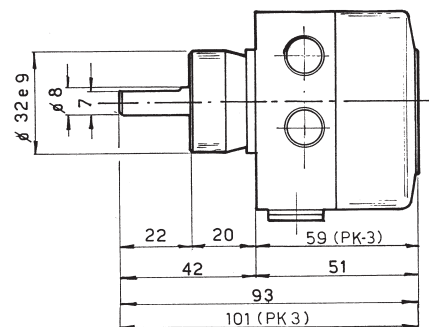
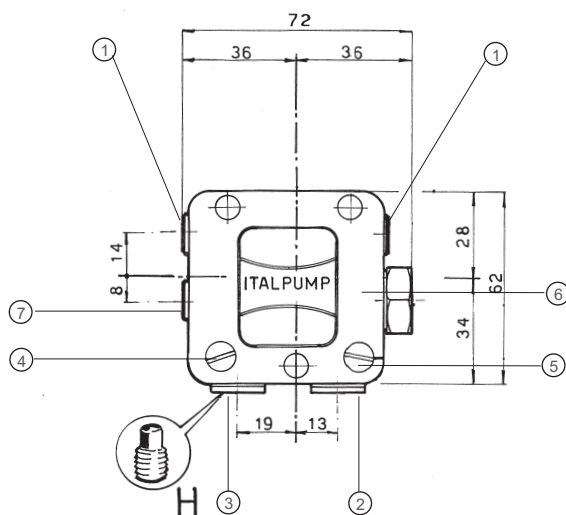
POWER CONSUMPTION - PRESSURE DIAGRAM

Viscosity 5cSt

Speed 2800 rpm



DIMENSIONS OF THE PUMP



Legend:

- | | |
|-------------------------------|-----------------------------------|
| 1 - Nozzle outlet G 1/8 | 5 - Vacuum gauge port G 1/8 |
| 2 - Suction G 1/4 | 6 - Pressure adjustment screw |
| 3 - Return G 1/4 | 7 - Auxiliary delivery port G 1/8 |
| 4 - Pressure gauge port G 1/8 | |

K3 TECHNICAL DATA

HYDRAULIC DATA

Factory settings	7 bar
Pressure range	4 - 14 bar
Viscosity range	2 - 12 cSt
Oil temperature	0 - 30°C
Inlet pressure	1,5 bar max
Return pressure	1,5 bar max
Suction height	0,45 bar max
Speed	2800 - 3480 rpm
Starting torque	0,10 Nm
Capacity	see graphs
Power consumption	see graphs

GENERAL DATA

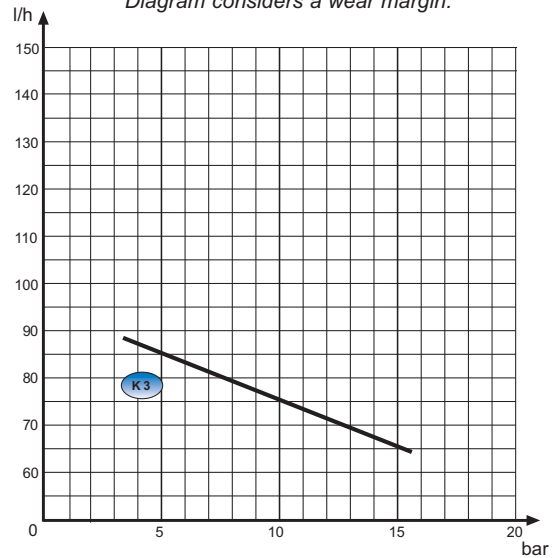
Mounting	Hub \varnothing 32 mm according to EN 225	
Connections	Nozzle outlet	G 1/8
	Pressure gauge port	G 1/8
	Vacuum gauge port	G 1/8
	Suction	G 1/4
	Return	G 1/4
Nozzle outlet	Left and Right	
Filter	Open area	11 cm ²
	Mesh	200 μ m
Weight	1,0 kg	

PRESSURE - CAPACITY DIAGRAM

Viscosity 2cSt

Speed 2800 rpm

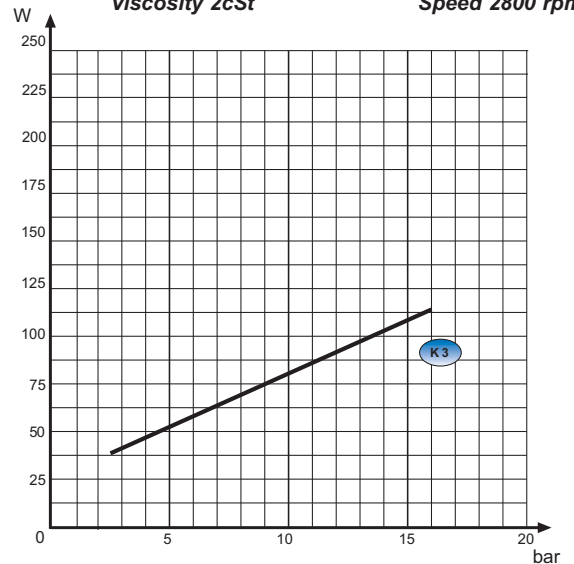
Diagram considers a wear margin.



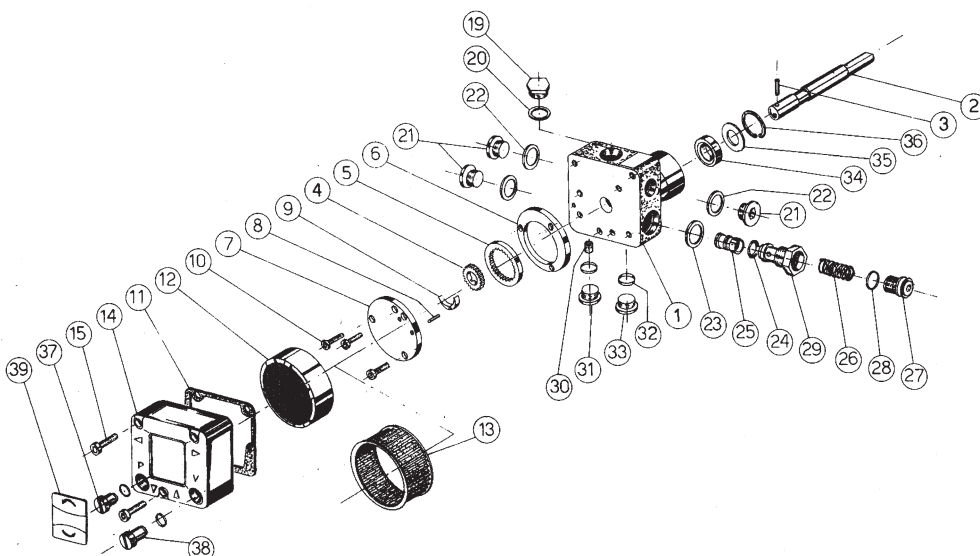
POWER CONSUMPTION - PRESSURE DIAGRAM

Viscosity 2cSt

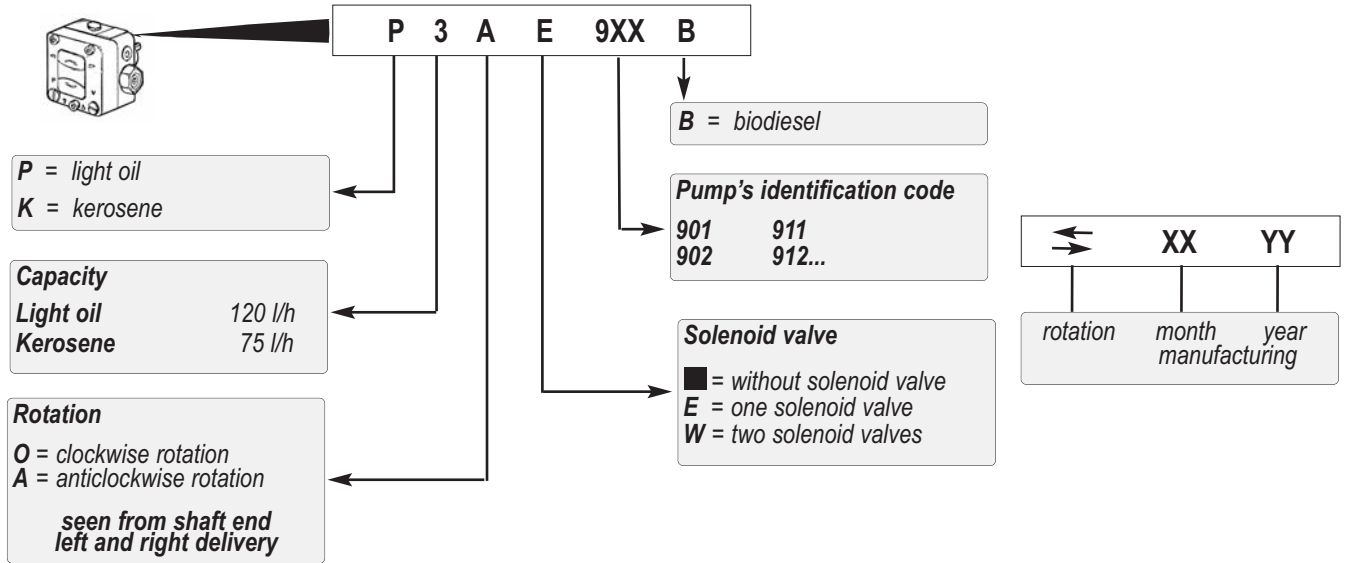
Speed 2800 rpm



COMPONENTS OF THE PUMP

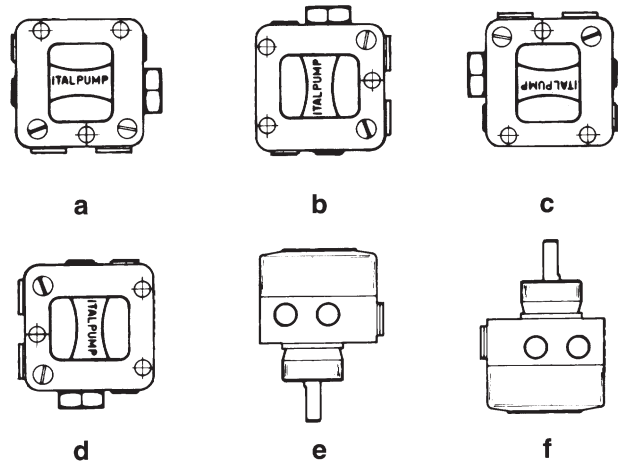


IDENTIFICATION OF THE PUMP



INSTALLATION OF THE PUMP

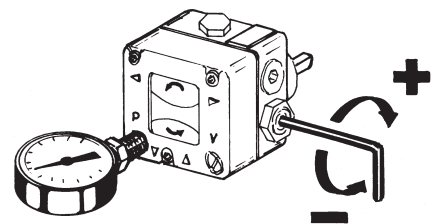
- The pump can be installed in all indicated positions.
- Make sure that the characteristics of the pump are compatible with those of the motor or of the boiler.
- Control the rotation of pump-motor.



The coupling pump-motor must be realized using 3 head screws without; otherwise you can have significant reductions of pump life.

REGULATION OF THE PUMP PRESSURE

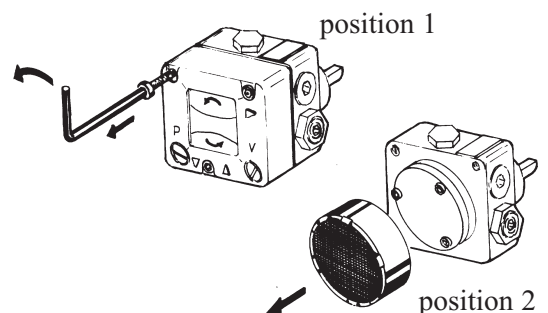
- Apply the manometer on the pressure gauge port (P).
- Rotate with the allen key of 4 mm changing the pressure which has to be:
 - Pressure max: 18 bar (light oil) - 14 bar (kerosene)
 - Pressure min: 5 bar (light oil) - 4 bar (kerosene)



CLEANING OF THE FILTER

- Remove the cover as indicated in the position 1.
- Extract the filter and clean it with the clean oil fuel. (position 2).

ATTENTION: This operations have to be made periodically by the technical personnel.



The repairs which require the substitution of pieces, must be realized by the manufacturer.

Series PE/KE Type 3



CHARACTERISTICS

Applications:

- Light oil(PE) and kerosene(KE).
- One pipe and two pipe system.
- Self-priming.
- Manometer and vacuummeter connections.
- Capacity from 115 l/h to 132 l/h.

FUNCTION

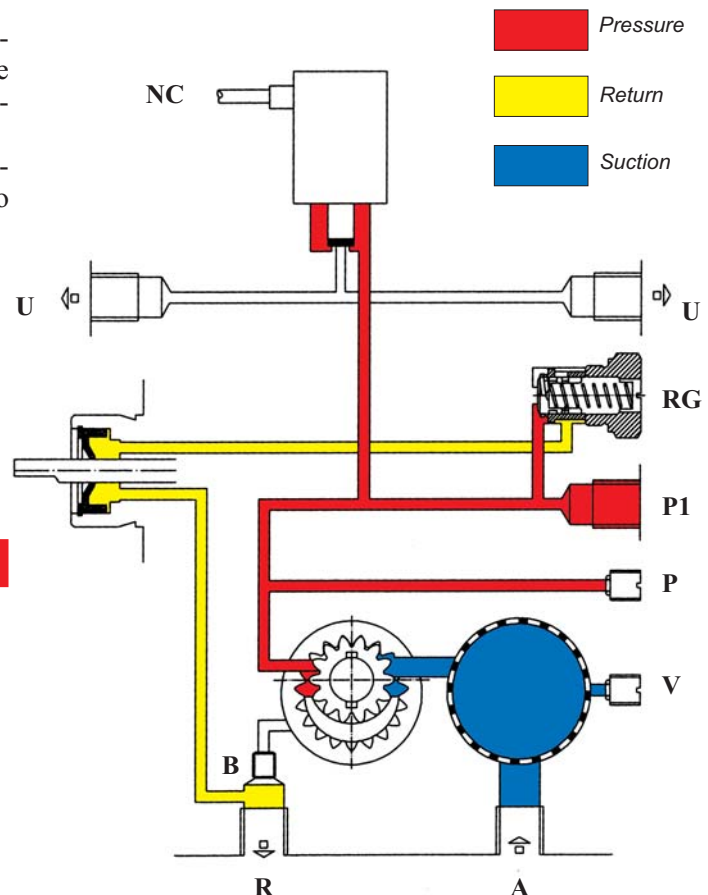
The suction vacuum generated by the gears sucks up the fuel through the suction line “A”; it crosses the filter and it is sent under pressure to the pressure adjustment screw “RG”.

During the prepurge cycle the “NC” solenoid valve prevent the exit of the fuel from the nozzle outlet “U”.

When the voltage is applied to the “NC” solenoid valve, the fuel is sent to the nozzle at the pressure value set by pressure adjustment screw “RG”, only the exceeding fuel is sent on the return line “R”. In the one-pipe system the by-pass screw “B” is removed and the return line “R” is plugged; the whole fuel is sucked up by the gears without crossing another time through the filter.

During the operation it is possible to measure the suction vacuum by the vacuum gauge port “V” and the pressure by the pressure gauge port “P”; it is also available on the pump an auxiliary delivery port “P1”.

When the burner stops the voltage to the “NC” solenoid valve is cut-off and immediately the oil flows to the return line “R”.



CONVERSION 2 PIPES - 1 PIPE SYSTEM

For the conversion proceed as follow:

- Remove the by-pass screw, located inside the return port “R”.
- Lock the return port with a steel plug G 1/4 and washer.

ATTENTION:

In two-pipe system oil pump is self-priming, the bleeding is obtained through the return line.

In one-pipe system the return line is closed by plug, the bleeding must be obtained through the nozzle or opening the pressure gauge port “P”, to accelerate the way out of the air.

PE3 TECHNICAL DATA

HYDRAULIC DATA

Factory settings	10 bar
Pressure range	5 - 18 bar
Viscosity range	2 - 12 cSt
Oil temperature	0 - 60°C
Inlet pressure	1,5 bar max
Return pressure	1,5 bar max
Suction height	0,45 bar max
Speed	2800 - 3480 rpm
Starting torque	0,10 Nm
Capacity	see graphs
Power consumption	see graphs

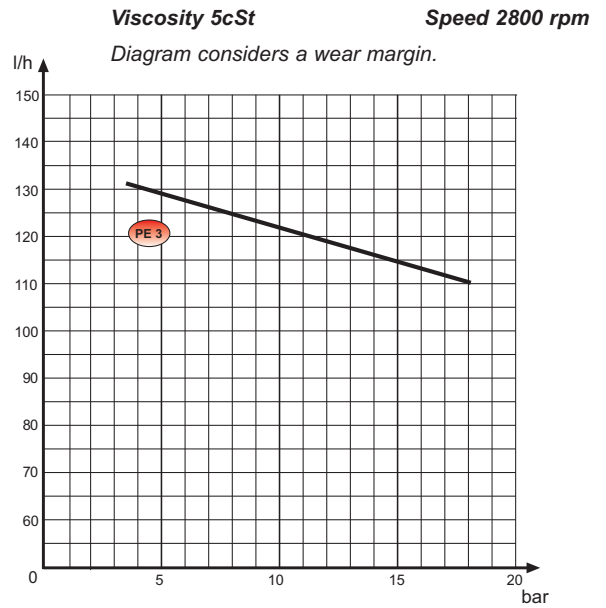
GENERAL DATA

Mounting	Hub \varnothing 32 mm according to EN 225	
Connections	Nozzle outlet	G 1/8
	Pressure gauge port	G 1/8
	Vacuum gauge port	G 1/8
	Suction	G 1/4
	Return	G 1/4
Nozzle outlet	Left and Right	
Filter	Open aria	11 cm ²
	Mesh	200 μ m
Weight	1,1 kg	

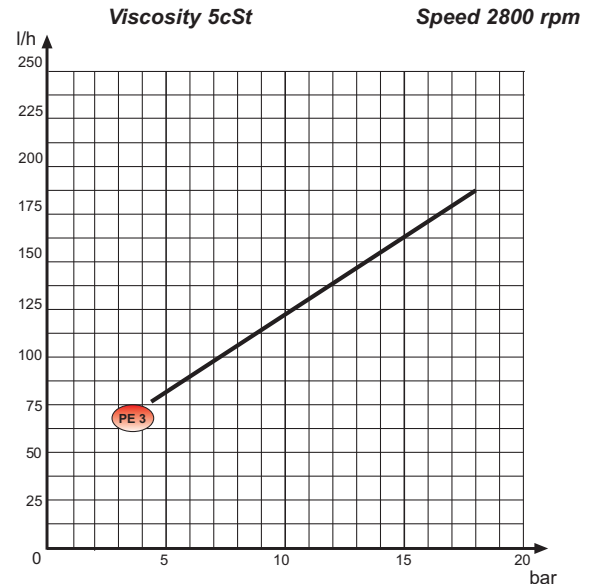
SOLENOID VALVE DATA

Pressure max	20 bar
Voltages	220-240V, 110V, 24V; 50/60Hz
Absorption	9 W
Ambient temperature	0-70°C

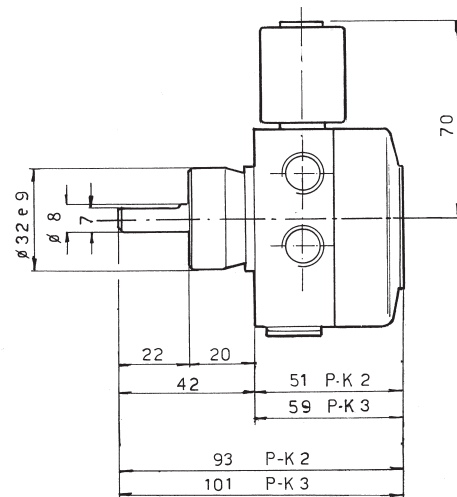
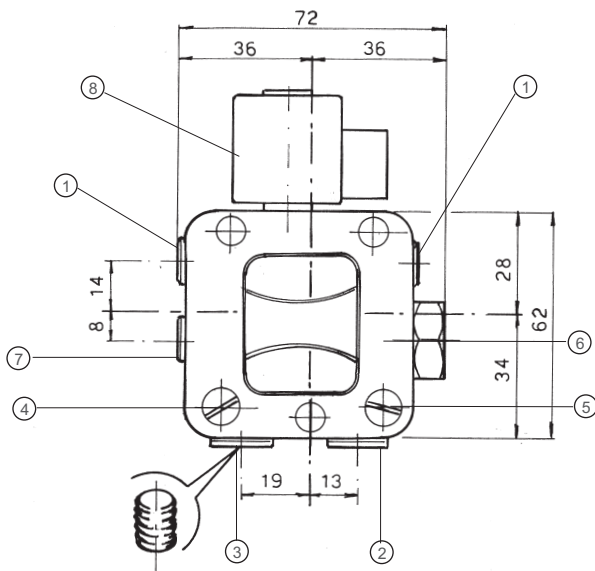
PRESSURE - CAPACITY DIAGRAM



POWER CONSUMPTION - PRESSURE DIAGRAM



DIMENSIONS OF THE PUMP



Legend:

- | | |
|-------------------------------|-----------------------------------|
| 1 - Nozzle outlet G 1/8 | 5 - Vacuum gauge port G 1/8 |
| 2 - Suction G 1/4 | 6 - Pressure adjustment screw |
| 3 - Return G 1/4 | 7 - Auxiliary delivery port G 1/8 |
| 4 - Pressure gauge port G 1/8 | 8 - Solenoid valve N.C. |

KE3 TECHNICAL DATA

HYDRAULIC DATA

Factory settings	7 bar
Pressure range	4 - 14 bar
Viscosity range	2 - 12 cSt
Oil temperature	0 - 30°C
Inlet pressure	1,5 bar max
Return pressure	1,5 bar max
Suction height	0,45 bar max
Speed	2800 - 3480 rpm
Starting torque	0,10 Nm
Capacity	see graphs
Power consumption	see graphs

GENERAL DATA

Mounting	Hub \varnothing 32 mm according to EN 225	
Connections	Nozzle outlet	G 1/8
	Pressure gauge port	G 1/8
	Vacuum gauge port	G 1/8
	Suction	G 1/4
	Return	G 1/4
Nozzle outlet	Left and Right	
Filter	Open aria	11 cm ²
	Mesh	200 μ m
Weight	1,1 kg	

SOLENOID VALVE DATA

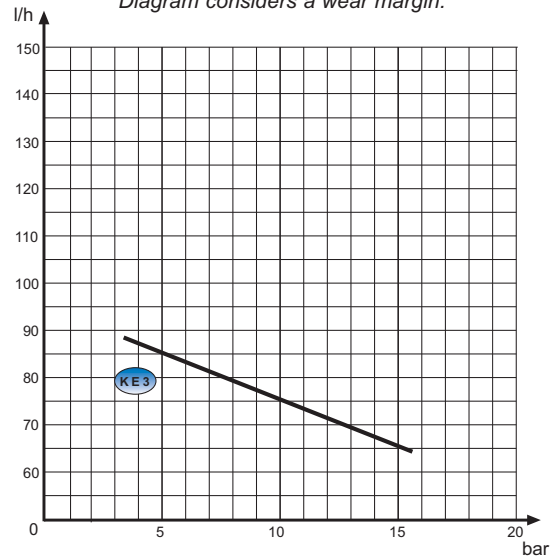
Pressure max	20 bar
Voltages	220-240V, 110V, 24V;
	50/60Hz
Absorption	9 W
Ambient temperature	0-70°C

PRESSURE - CAPACITY DIAGRAM

Viscosity 2cSt

Speed 2800 rpm

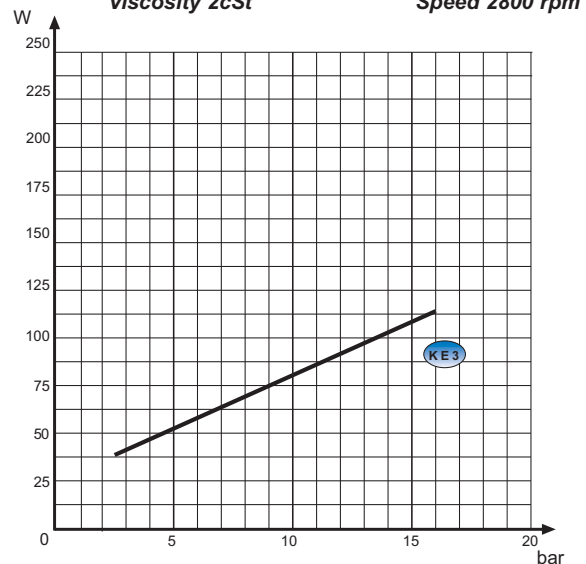
Diagram considers a wear margin.



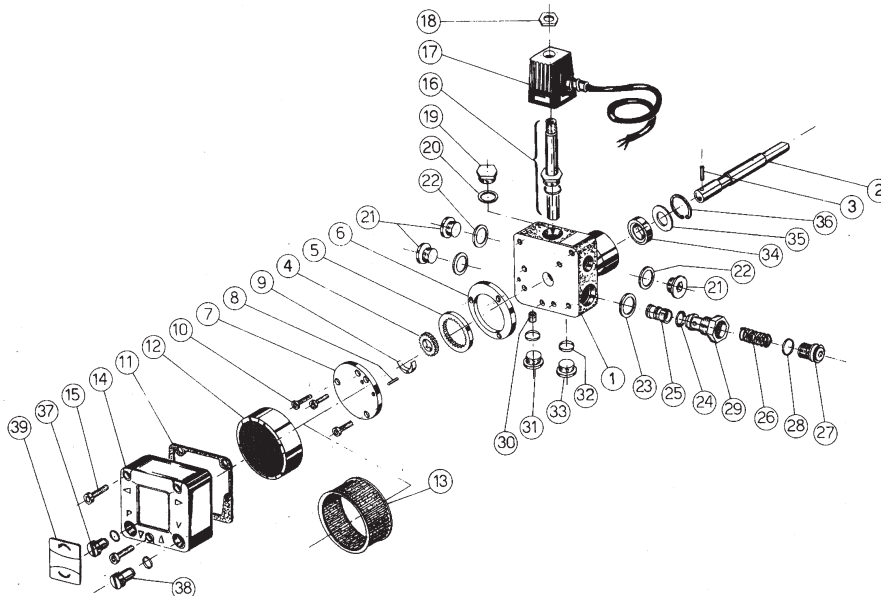
POWER CONSUMPTION - PRESSURE DIAGRAM

Viscosity 2cSt

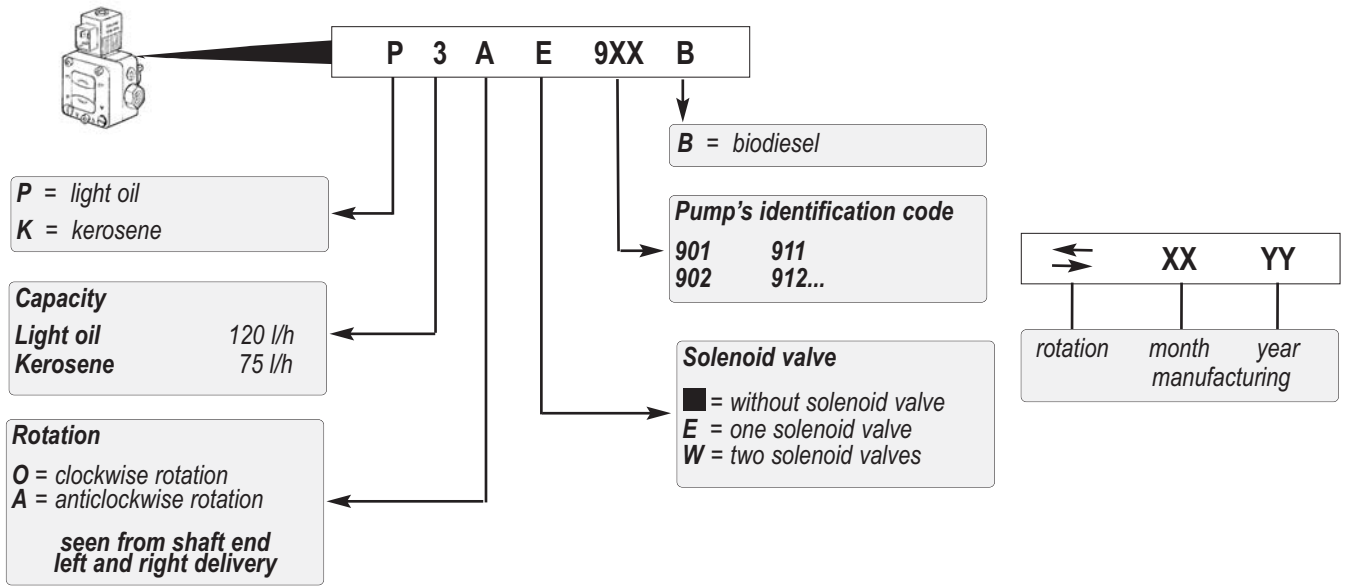
Speed 2800 rpm



COMPONENTS OF THE PUMP



IDENTIFICATION OF THE PUMP



INSTALLATION OF THE PUMP

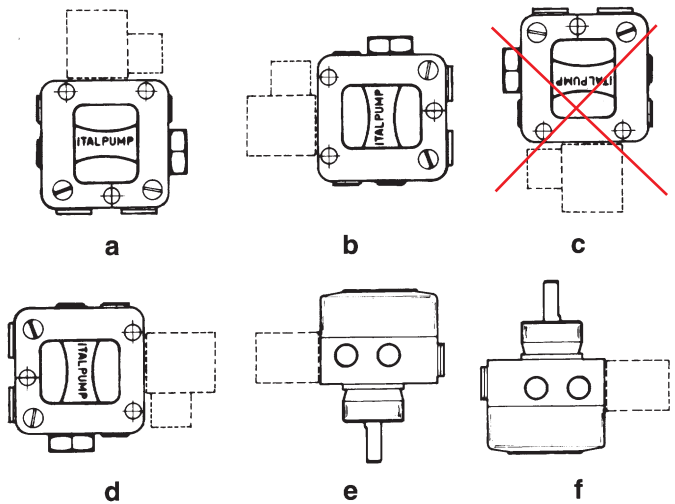
• The pump can be installed in the indicated positions; it is suggested position a.

It has to be absolutely avoid the position c.

- Make sure that the characteristics of the pump are compatible with those of the motor or of the boiler.
- Control the rotation of pump-motor.



The coupling pump-motor must be realized using 3 head screws without; otherwise you can have significant reductions of pump life.

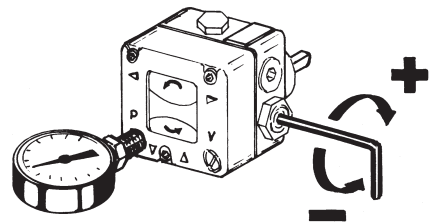


REGULATION OF THE PUMP PRESSURE

- Apply the manometer on the pressure gauge port (P).
- Rotate with the hexagonal key of 4 mm changing the pressure which has to be:

Pressure max: 18 bar (light oil) - 14 bar (kerosene)

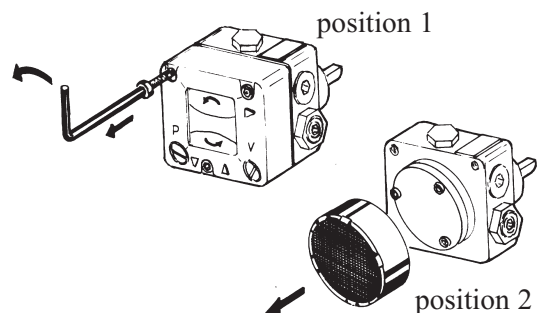
Pressure min: 5 bar (light oil) - 4 bar (kerosene)



CLEANING OF THE FILTER

- Remove the cover as indicated in the position 1.
- Extract the filter and clean it with the clean oil fuel. (position 2).

ATTENTION: This operations have to be made periodically by the technical personnel.



The repairs which require the substitution of pieces, must be realized by the manufacturer.

Series PN



CHARACTERISTICS

Applications:

- Heavy oil.
- One pipe and two pipe system.
- Self-priming.
- Manometer and vacuummeter connections.
- Capacity from 30 l/h to 140 l/h.

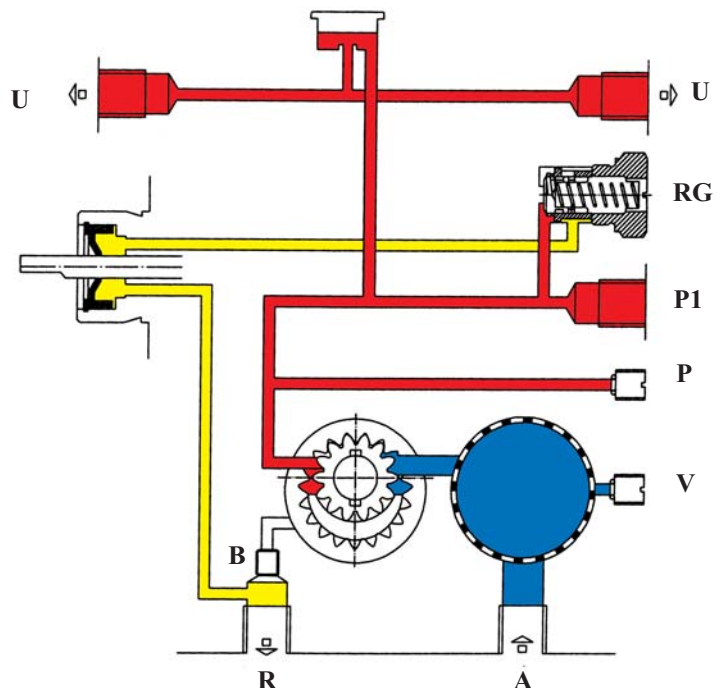
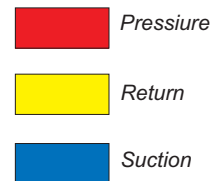
FUNCTION

The suction vacuum generated by the gears sucks up the fuel through the suction line “A”; it crosses the filter and it is sent under pressure to the pressure adjustment screw “RG”.

The fuel is sent to the nozzle at the pressure value set by “RG”, only the exceeding fuel is sent on the return line “R”.

In the one-pipe system the by-pass screw “B” is removed and the return “R” is plugged; the whole fuel is sucked up by the gears without crossing another time through the filter. During the operation it is possible to measure the suction vacuum by the vacuum gauge port “V” and the pressure by the pressure gauge port “P”; it is also available on the pump an auxiliary delivery port “P1”.

When the burner stops, instantly the pressure comes down and the spring of the pressure adjustment screw “RG” moves the piston which stops the oil flow to the line and allows to the fluid to go through the return line “R”.



CONVERSION 2 PIPES - 1 PIPE SYSTEM

For the conversion proceed as follow:

- Remove the by-pass screw, located inside the return port “R”.
- Lock the return port with a steel plug G 1/4 and washer

ATTENTION:

In two-pipe system oil pump is self-priming, the bleeding is obtained through the return line.

In one-pipe system the return line is closed by plug, the bleeding must be obtained through the nozzle or opening the pressure gauge port “P”, to accelerate the way out of the air.

PN TECHNICAL DATA

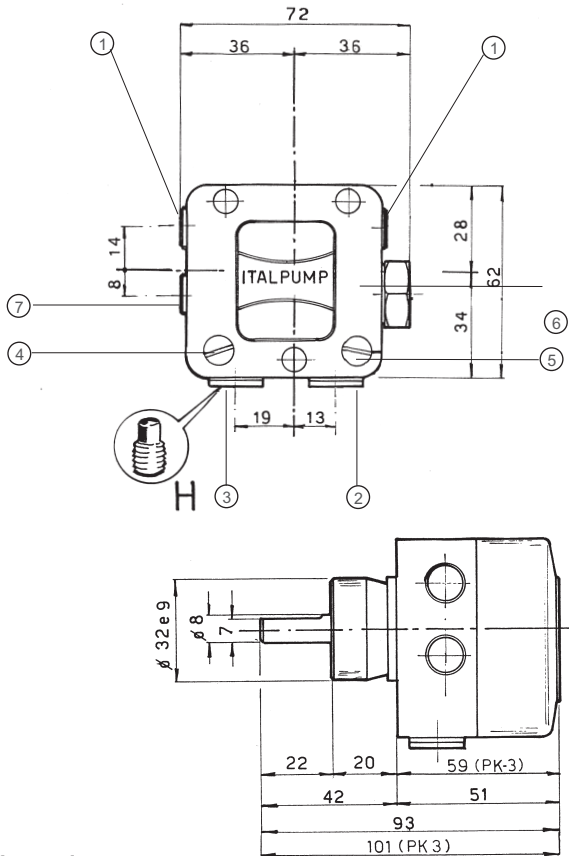
HYDRAULIC DATA

Factory settings	15 bar
Pressure range	10 - 28 bar
Viscosity range	2 - 200 cSt
Oil temperature	0 - 120°C
Inlet pressure	1,5 bar max
Return pressure	1,5 bar max
Suction height	0,45 bar max
Speed	2800 - 3480 rpm
Starting torque	0,10 Nm
Capacity	see graphs
Power consumption	see graphs

GENERAL DATA

Mounting	Hub \varnothing 32 mm according to EN 225	
Connections	Nozzle outlet	G 1/8
	Pressure gauge port	G 1/8
	Vacuum gauge port	G 1/8
	Suction	G 1/4
	Return	G 1/4
Nozzle outlet	Left and Right	
Filter	Open aria	11 cm ²
	Mesh	400 μ m
Weight	1,0 kg	

DIMENSIONS OF THE PUMP



Legend:

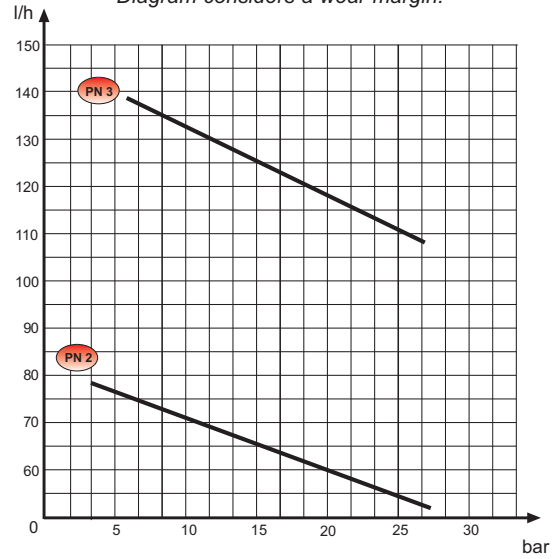
- | | |
|-------------------------------|-----------------------------------|
| 1 - Nozzle outlet G 1/8 | 5 - Vacuum gauge port G 1/8 |
| 2 - Suction G 1/4 | 6 - Pressure adjustment screw |
| 3 - Return G 1/4 | 7 - Auxiliary delivery port G 1/8 |
| 4 - Pressure gauge port G 1/8 | |

PRESSURE - CAPACITY DIAGRAM

Viscosity 5cSt

Speed 2800 rpm

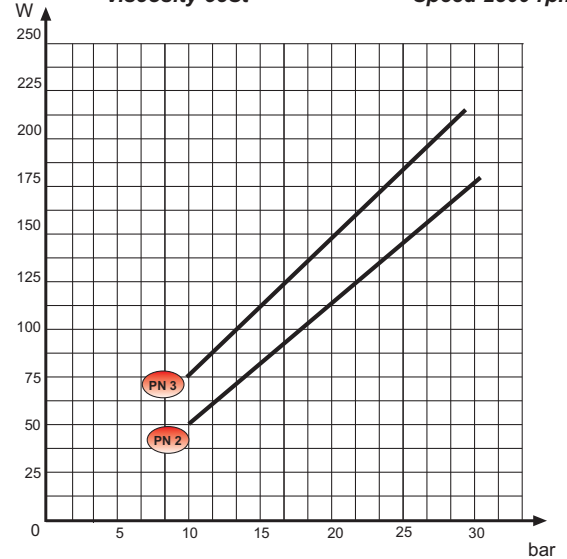
Diagram considers a wear margin.



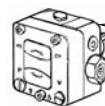
POWER CONSUMPTION - PRESSURE DIAGRAM

Viscosity 5cSt

Speed 2800 rpm



IDENTIFICATION OF THE PUMP



PN 3 A 9XX

Capacity heavy oil

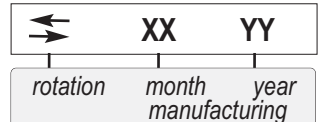
2 = 65 l/h 3 = 125 l/h

Rotation

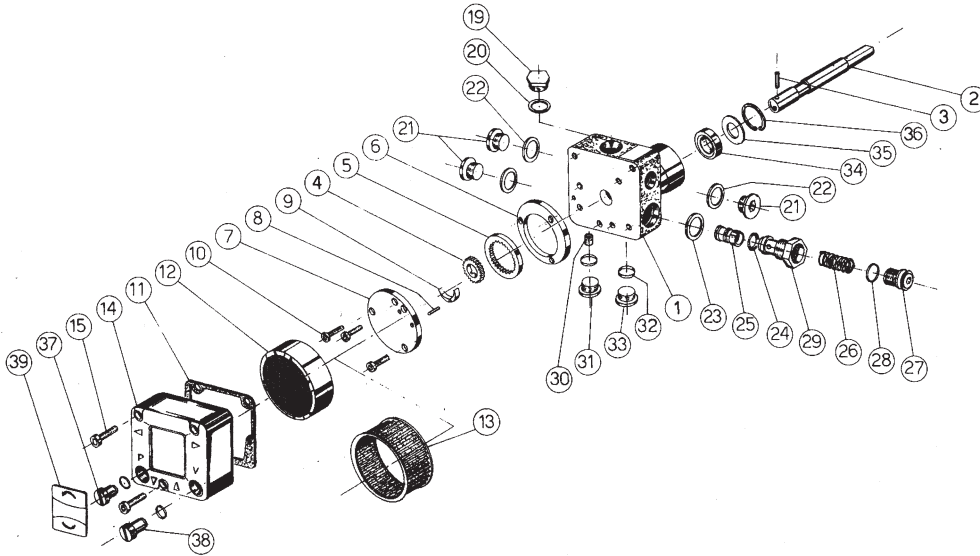
O = clockwise rotation
A = anticlockwise rotation
seen from shaft end
left and right delivery

Pump's identification code

901; 902; 911; 912; ...



COMPONENTS OF THE PUMP

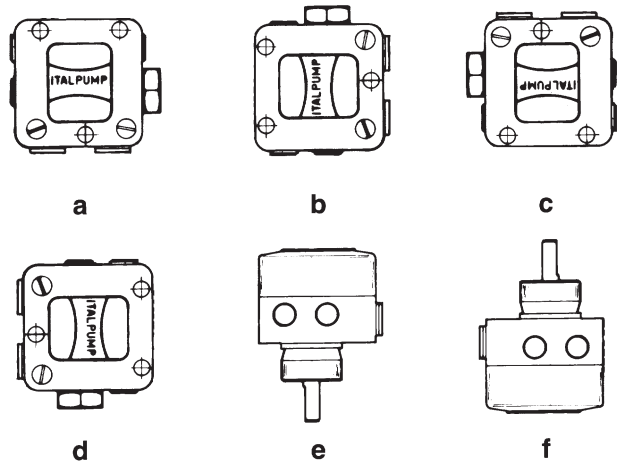


INSTALLATION OF THE PUMP

- The pump can be installed in all indicated positions.
- Make sure that the characteristics of the pump are compatible with those of the motor or of the boiler.
- Control the rotation of pump-motor.

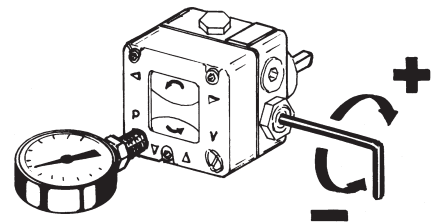


The coupling pump-motor must be realized using 3 head screws without; otherwise you can have significant reductions of pump life.



REGULATION OF THE PUMP PRESSURE

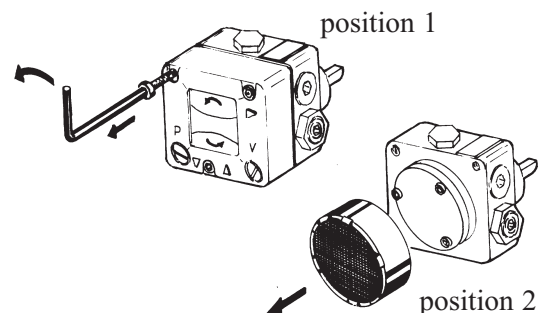
- Apply the manometer on the pressure gauge port (P).
- Rotate with the allen key of 4 mm changing the pressure which has to be:
 - Pressure max: 28 bar
 - Pressure min: 10 bar



CLEANING OF THE FILTER

- Remove the cover as indicated in the position 1.
- Extract the filter and clean it with the clean oil fuel. (position 2).

ATTENTION: This operations have to be made periodically by the technical personnel.



The repairs which require the substitution of pieces, must be realized by the manufacturer.

Series AG



CHARACTERISTICS

Applications:

- Light oil.
- One pipe or two pipe systems.
- Self-priming.
- Hub \varnothing 32 mm or hub \varnothing 54 mm with flange.
- Capacity from 50 l/h to 280 l/h.

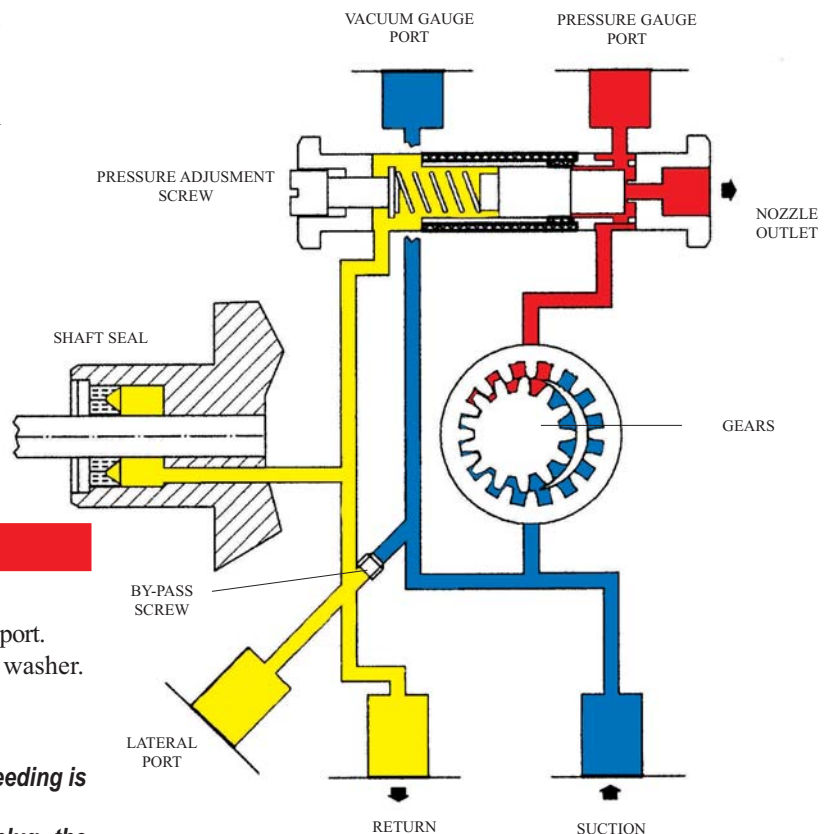
FUNCTION

The suction vacuum generated by the gears sucks up the fuel through the suction connection; it crosses the filter and the fuel is sent under pressure to the pressure adjustment screw.

The hydraulic valve opens when oil pressure gets over spring strength settled by pressure adjustment screw and the oil reaches nozzle line.

In two pipe systems the exceeding oil flows into the tank through the return line; in one pipe system, after the removing the by-pass screw, it goes back to the gears.

When burner stops, the oil pressure immediately comes down and the spring strength moves the piston which stop the fluid flow to the line and at the same time allows the forwarding of the light oil to the return line.



CONVERSION 2 PIPES - 1 PIPE SYSTEM

For the conversion proceed as follow:

- Remove the by-pass screw, located inside the lateral port.
- Lock the return port with a steel plug G 1/4 and washer.

ATTENTION:

In two-pipe system oil pump is self-priming, the bleeding is obtained through the return line.

In one-pipe system the return line is closed by plug, the bleeding must be obtained through the nozzle or opening the pressure gauge port, to accelerate the way out of the air.

TECHNICAL DATA

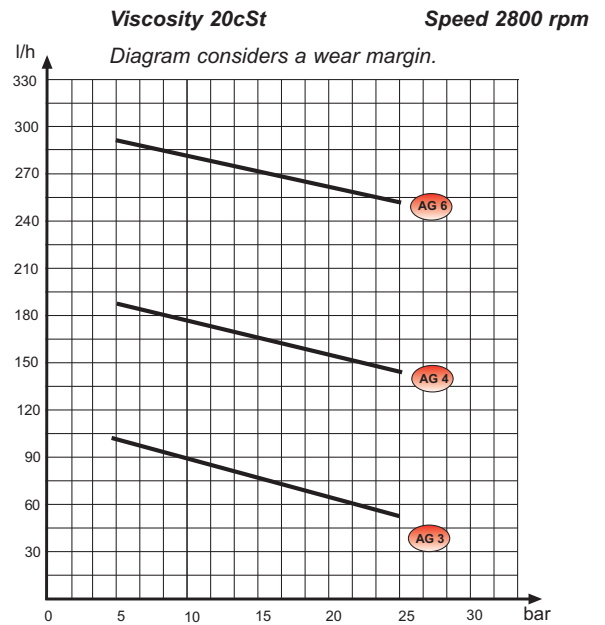
HYDRAULIC DATA

Factory settings	12 bar
Pressure range	4 - 25 bar
Viscosity range	2,8 - 75 cSt
Oil temperature	70°C max
Inlet pressure	2 bar max
Recycle pressure	2 bar max
Suction vacuum	0,45 bar max
Speed	2800 - 3480 rpm
Starting torque	0,30 Nm
Capacity	see graphs
Power consumption	see graphs

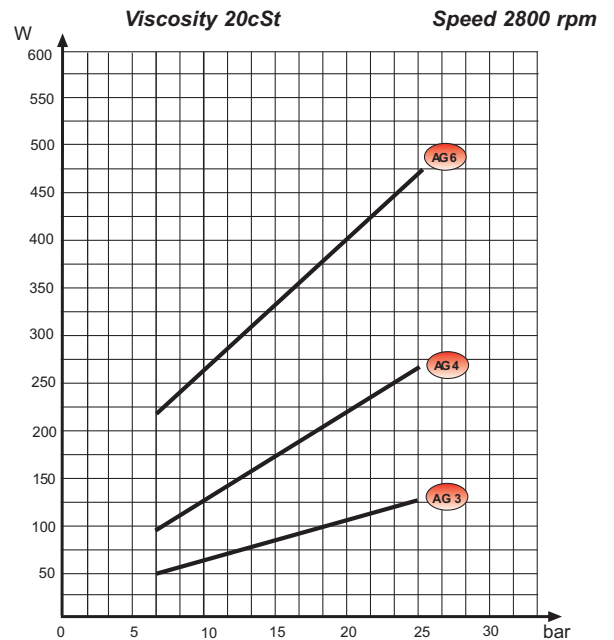
GENERAL DATA

Mounting	Hub \varnothing 32 mm or Flange \varnothing 54 mm according to EN 225	
Connections	Nozzle outlet	G 1/8
	Pressure gauge port	G 1/8
	Vacuum gauge port	G 1/8
	Suction	G 1/4
	Return	G 1/4
Strainer	Open area	142 cm ²
	Mesh	100 μ m
Weight	2,0 kg	

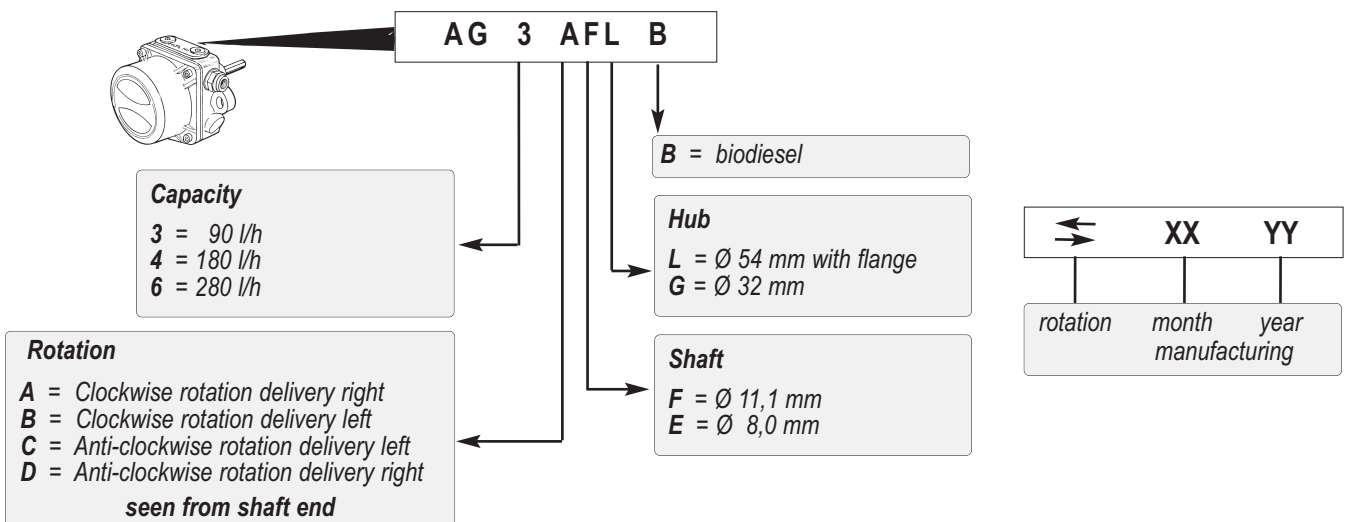
PRESSURE - CAPACITY DIAGRAM



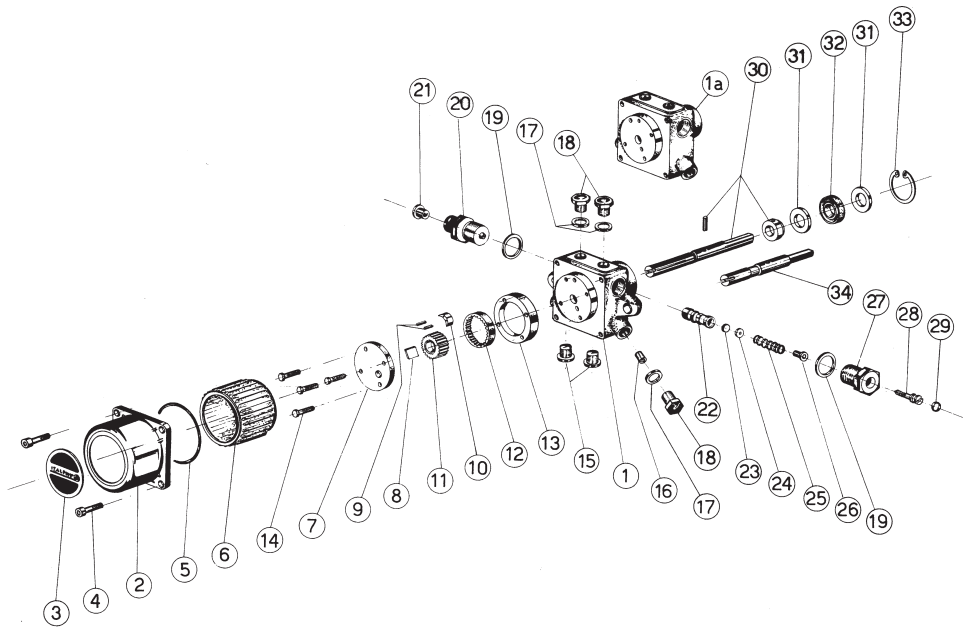
POWER CONSUMPTION - PRESSURE DIAGRAM



IDENTIFICATION OF THE PUMP

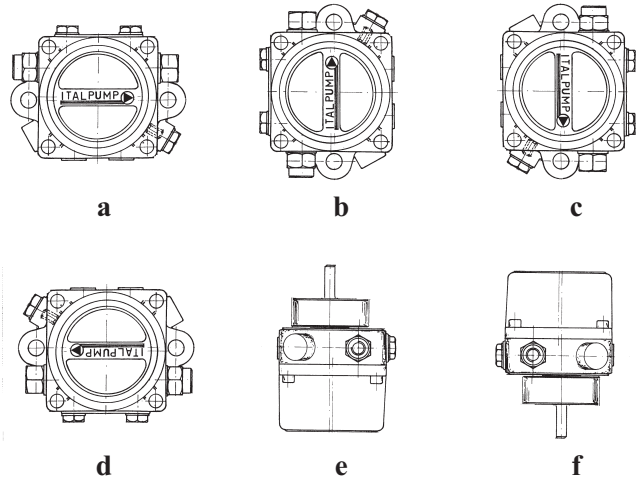


COMPONENTS OF THE PUMP



INSTALLATION OF THE PUMP

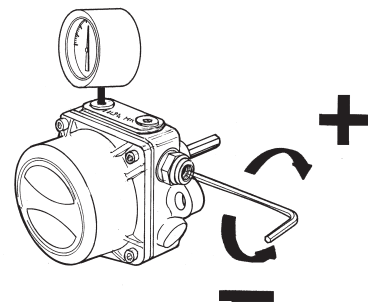
- The pump can be installed in all indicated positions.
- Make sure that the characteristics of the pump are compatible with those of the motor or of the boiler.
- Control the rotation of pump-motor.



In the hub mounting version the coupling pump-motor must be realized using 3 head screws without; otherwise you can have significant reductions of pump life.

REGULATION OF THE PUMP PRESSURE

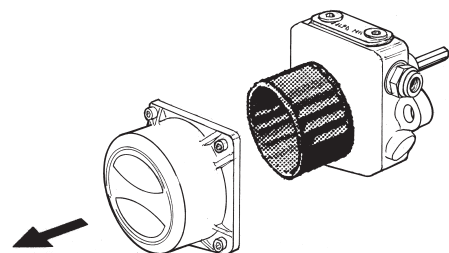
- Apply the manometer on the pressure gauge port.
- Rotate with the slotted screwdriver changing the pressure which has to be:
 - Pressure max: 25 bar
 - Pressure min: 4 bar



CLEANING OF THE FILTER

- Remove the cover as indicated in the figure.
- Extract the filter and clean it with the clean oil fuel.

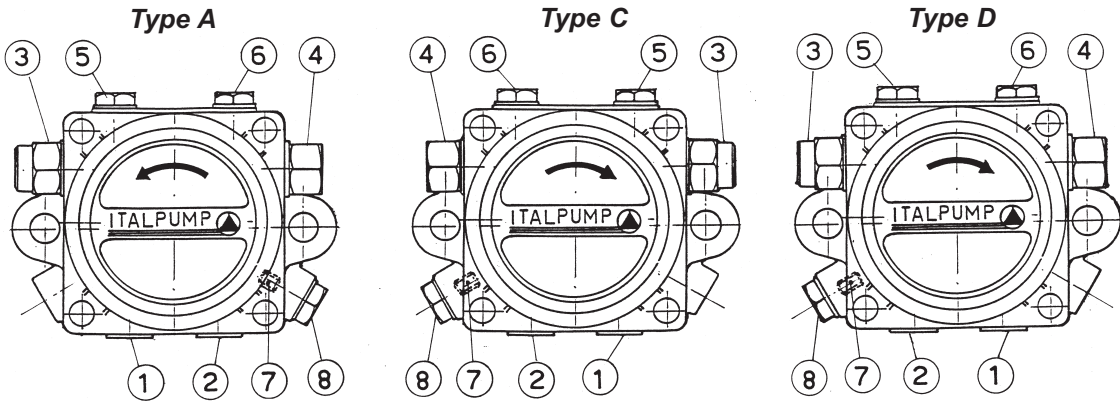
ATTENTION: This operations have to be made periodically by the technical personnel.



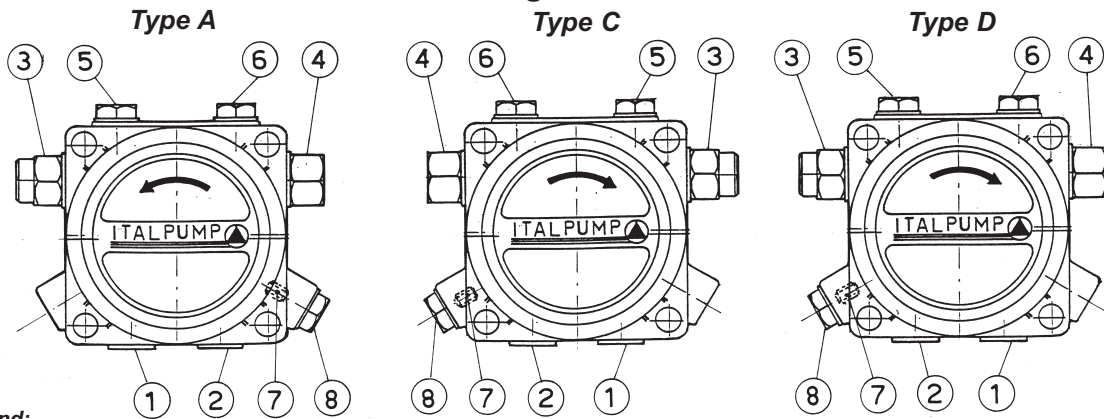
The repairs which require the substitution of pieces, must be realized by the manufacturer.

VERSIONS OF THE PUMP

Flange mounting connection \varnothing 54 mm



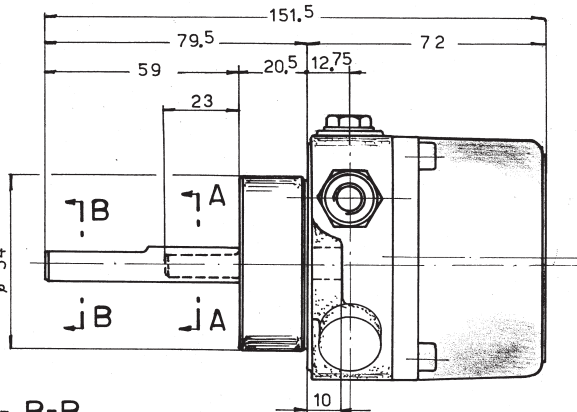
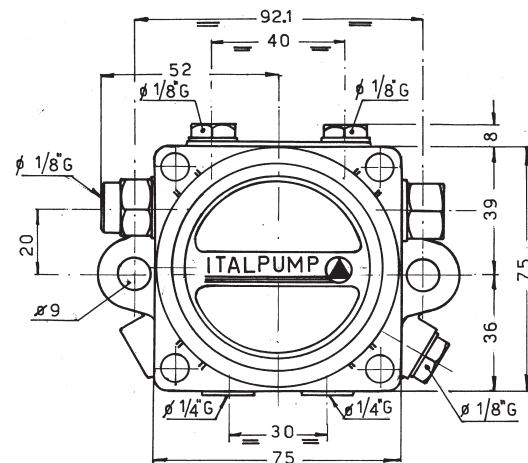
Hub mounting connection \varnothing 32 mm



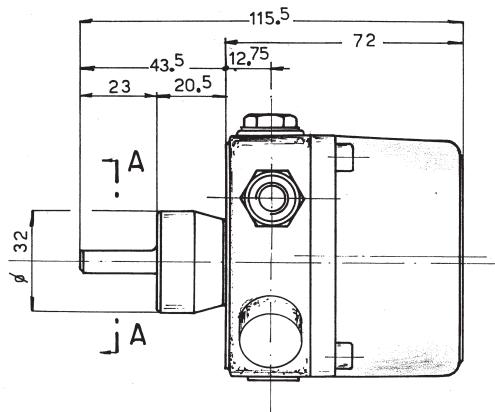
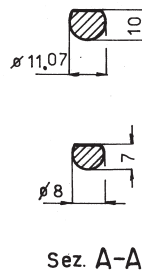
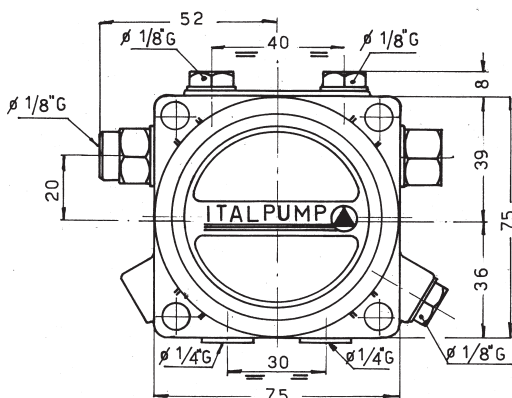
Legend:

- | | | | |
|-------------|-------------------------------|-------------------------|-------------------|
| 1 - Suction | 3 - Nozzle outlet | 5 - Pressure gauge port | 7 - By-pass screw |
| 2 - Return | 4 - Pressure adjustment screw | 6 - Vacuum gauge port | 8 - Lateral port |

DIMENSIONS OF THE PUMP



Pump type A,
hub \varnothing 54 mm with flange



Pump type A,
hub \varnothing 32 mm

Series AN



CHARACTERISTICS

Applications:

- Heavy oil and light oil.
- One pipe and two pipe systems.
- Self-priming.
- Hub \varnothing 32 mm or hub \varnothing 54 mm with flange.
- Capacity from 65 l/h to 210 l/h.

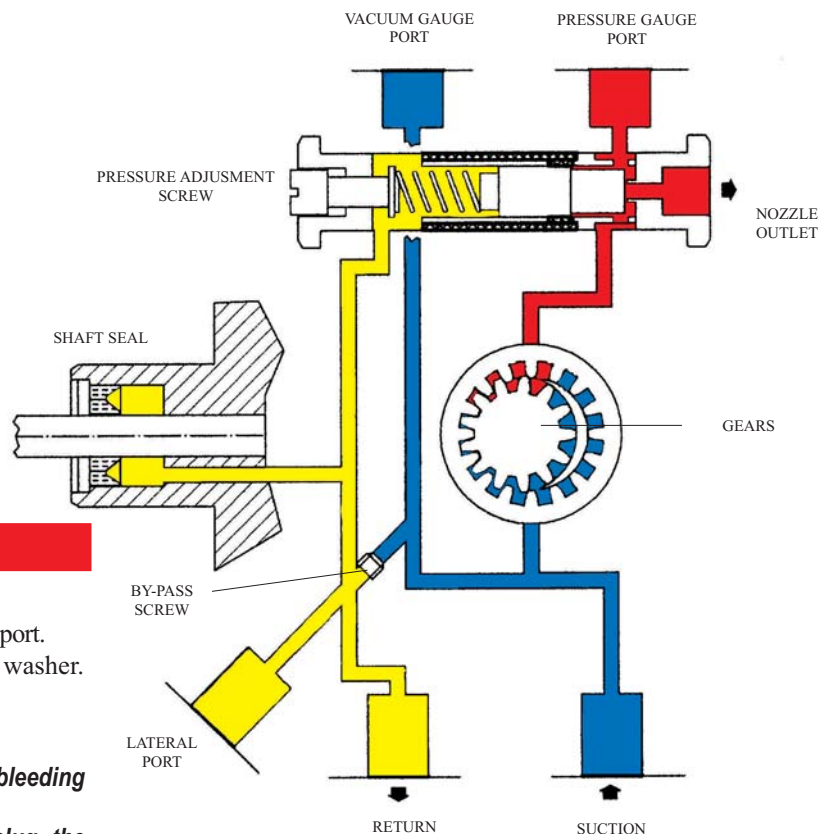
FUNCTION

The suction vacuum generated by the gears sucks up the fuel through the suction connection; it crosses the filter and the fuel is sent under pressure to the pressure adjustment screw.

The hydraulic valve opens when oil pressure gets over spring strength settled by pressure adjustment screw and the oil reaches nozzle line.

In two pipe systems the exceeding oil flows into the tank through the return line; in one pipe system, after the removing the by-pass screw, it goes back to the gears.

When burner stops, the oil pressure immediately comes down and the spring strength, move the piston which stop the fluid flow to the line and at the same time allows the forwarding of the light oil to the return line.



CONVERSION 2 PIPES - 1 PIPE SYSTEM

For the conversion proceed as follow:

- Remove the by-pass screw, located inside the lateral port.
- Lock the return port with a steel plug G 1/4 and washer.

ATTENTION:

In two-pipe system oil pump is self-priming, the bleeding is obtained through the return line.

In one-pipe system the return line is closed by plug, the bleeding must be obtained through the nozzle or opening the pressure gauge port, to accelerate the way out of the air.

TECHNICAL DATA

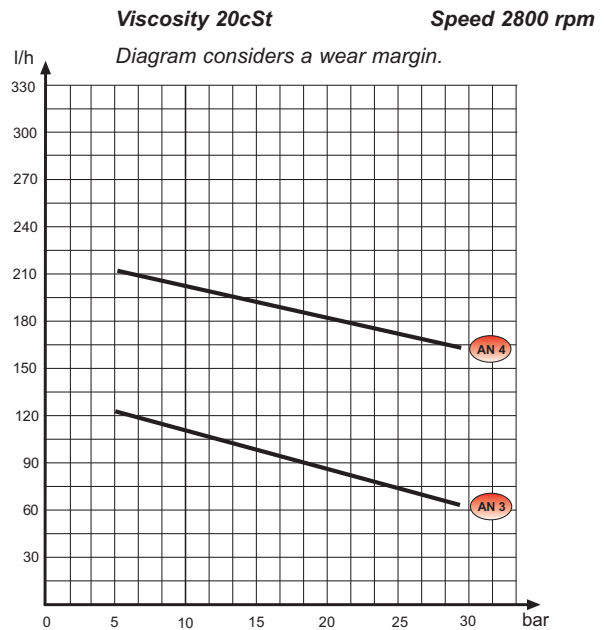
HYDRAULIC DATA

Factory settings	15 bar
Pressure range	7 - 28 bar
Viscosity range	2,8 - 200 cSt
Oil temperature	150°C max
Inlet pressure	2 bar max
Recycle pressure	2 bar max
Suction vacuum	0,45 bar max
Speed	2800 - 3480 rpm
Starting torque	0,30 Nm
Capacity	see graphs
Power consumption	see graphs

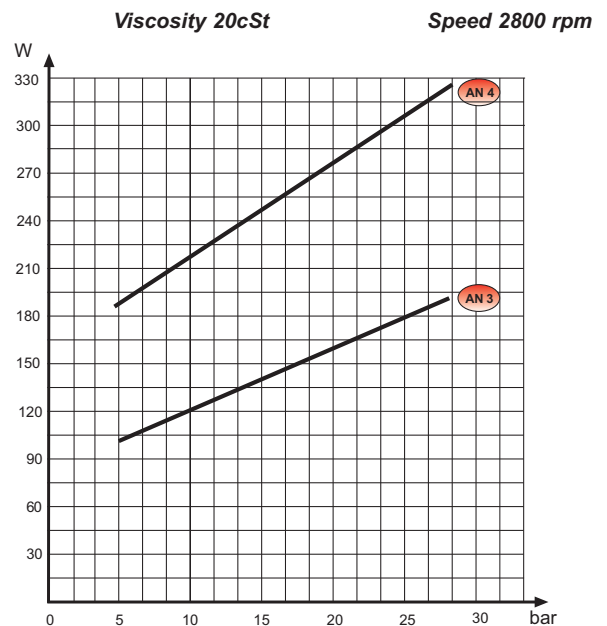
GENERAL DATA

Mounting	Hub \varnothing 32 mm according to EN 225	
Connections	Nozzle outlet	G 1/8
	Pressure gauge port	G 1/8
	Vacuum gauge port	G 1/8
	Suction	G 1/4
	Return	G 1/4
Strainer	Open area	142 cm ²
	Mesh	400 μ m
Weight	2,0 kg	

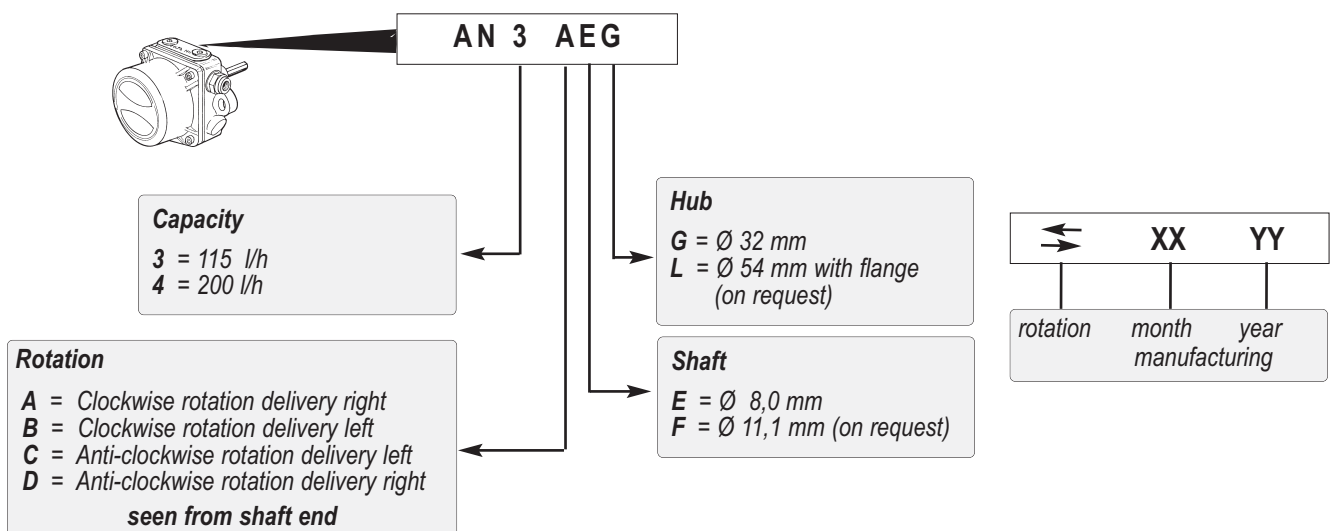
PRESSURE - CAPACITY DIAGRAM



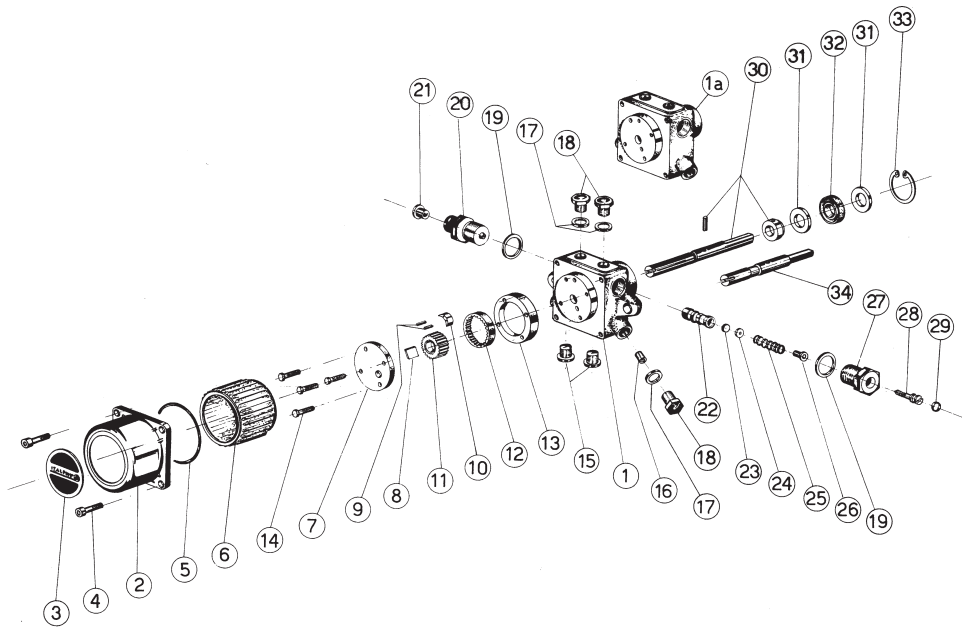
POWER CONSUMPTION - PRESSURE DIAGRAM



IDENTIFICATION OF THE PUMP

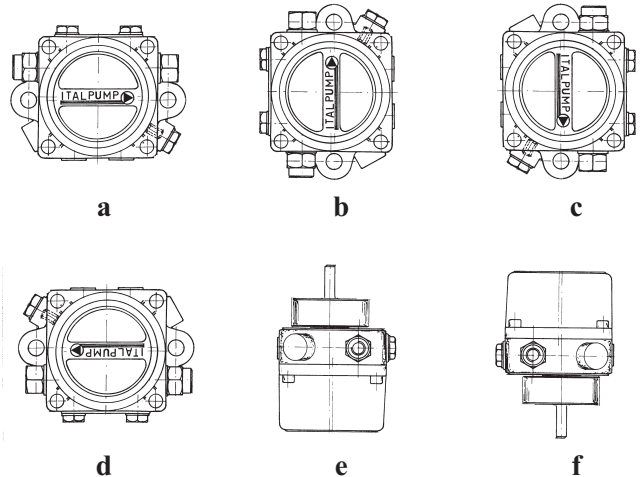


COMPONENTS OF THE PUMP



INSTALLATION OF THE PUMP

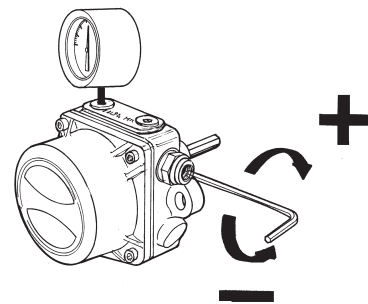
- The pump can be installed in all indicated positions.
- Make sure that the characteristics of the pump are compatible with those of the motor or of the boiler.
- Control the rotation of pump-motor.



In the hub mounting version the coupling pump-motor must be realized using 3 head screws without; otherwise you can have significant reductions of pump life.

REGULATION OF THE PUMP PRESSURE

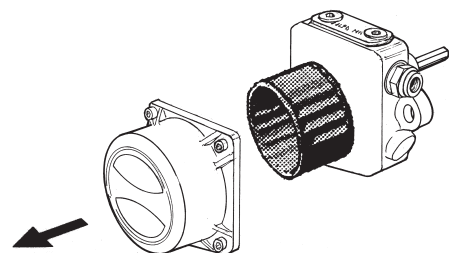
- Apply the manometer on the pressure gauge port.
- Rotate with the slotted screwdriver changing the pressure which has to be:
 Pressure max: 28 bar
 Pressure min: 7 bar



CLEANING OF THE FILTER

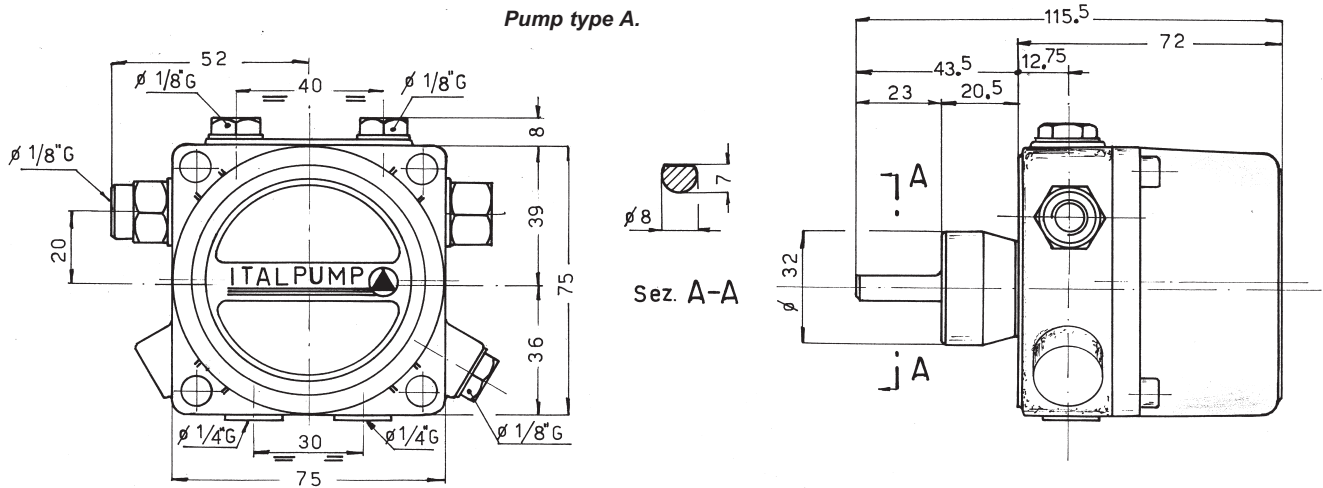
- Remove the cover as indicated in the figure.
- Extract the filter and clean it with the clean oil fuel.

ATTENTION: This operations have to be made periodically by the technical personnel.



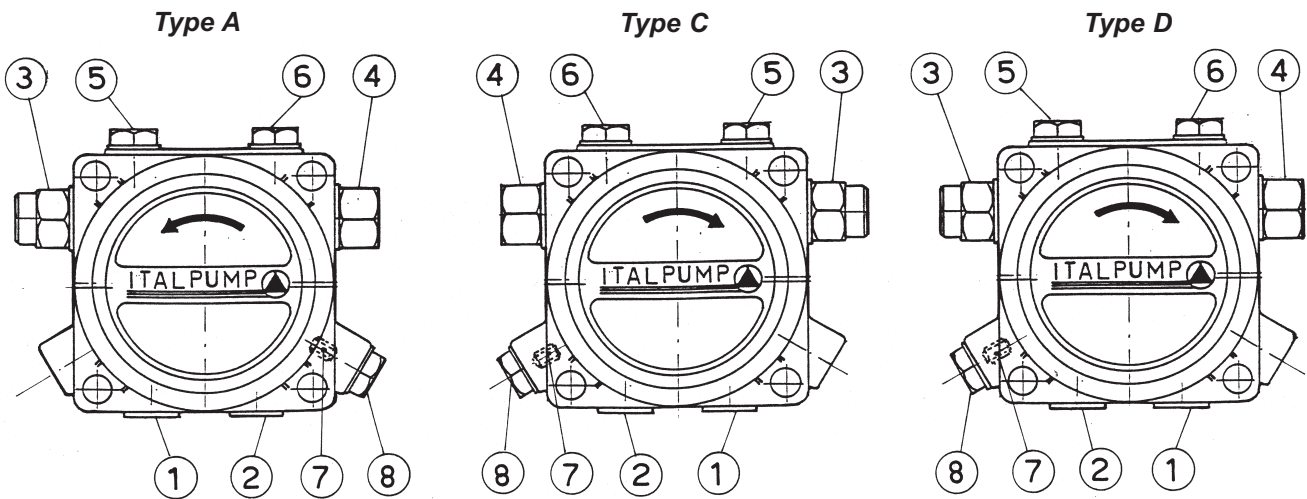
The repairs which require the substitution of pieces, must be realized by the manufacturer.

DIMENSIONS OF THE PUMP



VERSIONS OF THE PUMP

Hub mounting connection \varnothing 32 mm



Legend:

- | | |
|---|---|
| <ul style="list-style-type: none"> 1 - Suction 2 - Return 3 - Nozzle outlet 4 - Pressure adjustment screw | <ul style="list-style-type: none"> 5 - Pressure gauge port 6 - Vacuum gauge port 7 - By-pass screw 8 - Lateral port |
|---|---|

Series G



CHARACTERISTICS

Applications:

- Light oil.
- One pipe and two pipe systems.
- Self-priming.
- Manometer and vacuummeter connection.
- Capacity from 50 l/h to 380 l/h.

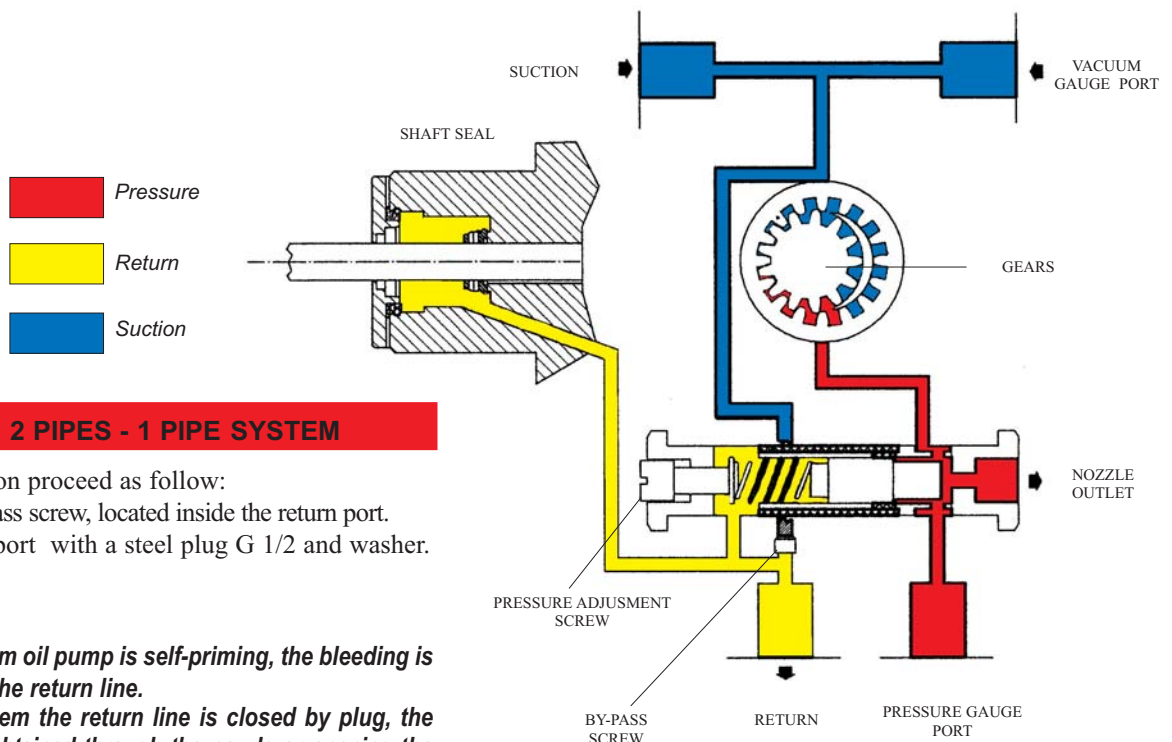
FUNCTION

The suction vacuum generated by the gears sucks up the fuel through the suction line; it crosses the filter and it is sent, under pressure, to the hydraulic valve which has cut-off function.

The hydraulic valve opens when oil pressure gets over spring strength settled by pressure adjustment screw and the oil reaches nozzle line.

In two pipe systems the exceeding oil flows into the tank through the return line; in one pipe system, after the removing the by-pass screw, it goes back to the gears.

When the burner stops, the oil pressure immediately comes down and the spring of the pressure adjustment screw, moves the piston which stops the fluid flow to the line and, at the same time, allows to the fluid to go through the return line.



CONVERSION 2 PIPES - 1 PIPE SYSTEM

For the conversion proceed as follow:

- Remove the by-pass screw, located inside the return port.
- Lock the return port with a steel plug G 1/2 and washer.

ATTENTION:

In two-pipe system oil pump is self-priming, the bleeding is obtained through the return line.

In one-pipe system the return line is closed by plug, the bleeding must be obtained through the nozzle or opening the pressure gauge port, to accelerate the way out of the air.

TECHNICAL DATA

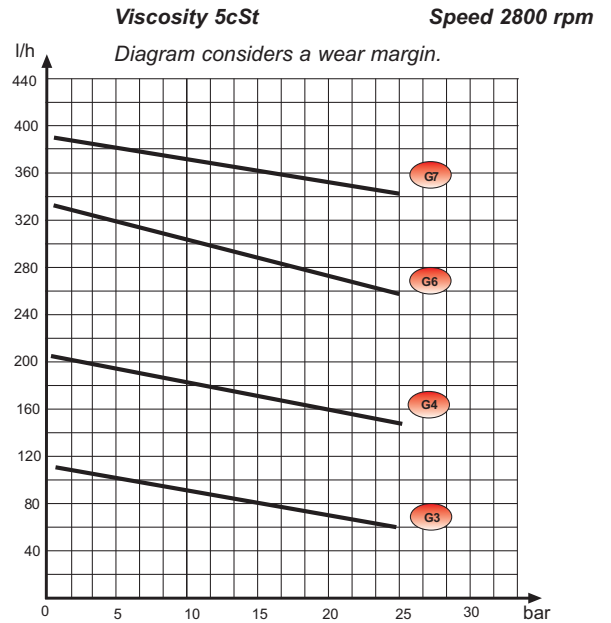
HYDRAULIC DATA

Factory settings	12 bar
Pressure range	7 - 25 bar
Viscosity range	2,8 - 70 cSt
Oil temperature	70°C max
Inlet pressure	4 bar max
Return pressure	4 bar max
Suction height	0,45 bar max
Speed	2800 - 3480 rpm
Starting torque	0,3 Nm
Capacity	see graphs
Power consumption	see graphs

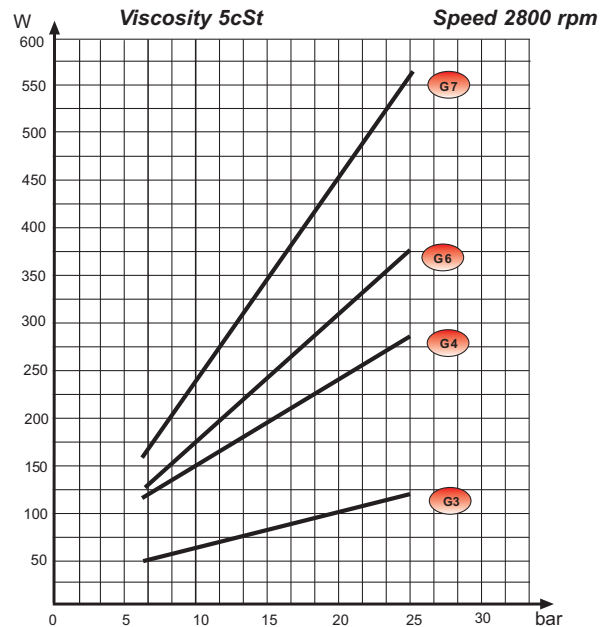
GENERAL DATA

Mounting	Flange \varnothing 54 mm according to EN 225
Connections	Nozzle outlet G 1/4 Pressure gauge port G 1/8 Vacuum gauge port G 1/2 Suction G 1/2 Return G 1/2
Strainer	Open aria 142 cm ² Mesh 100 μ m
Weight	4,0 kg

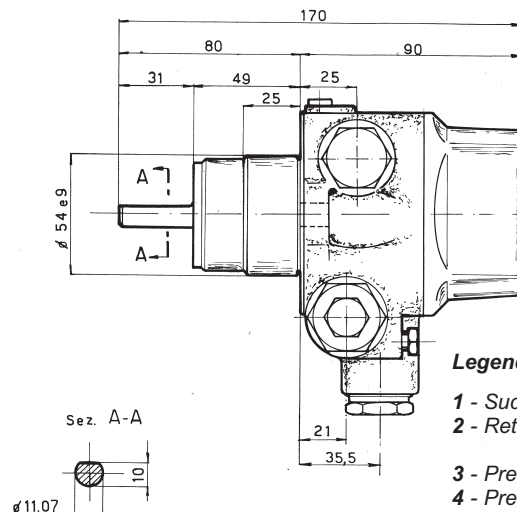
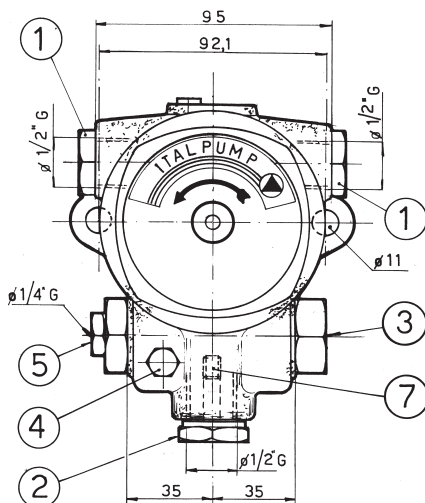
PRESSURE - CAPACITY DIAGRAM



POWER CONSUMPTION - PRESSURE DIAGRAM



DIMENSIONS OF THE PUMP

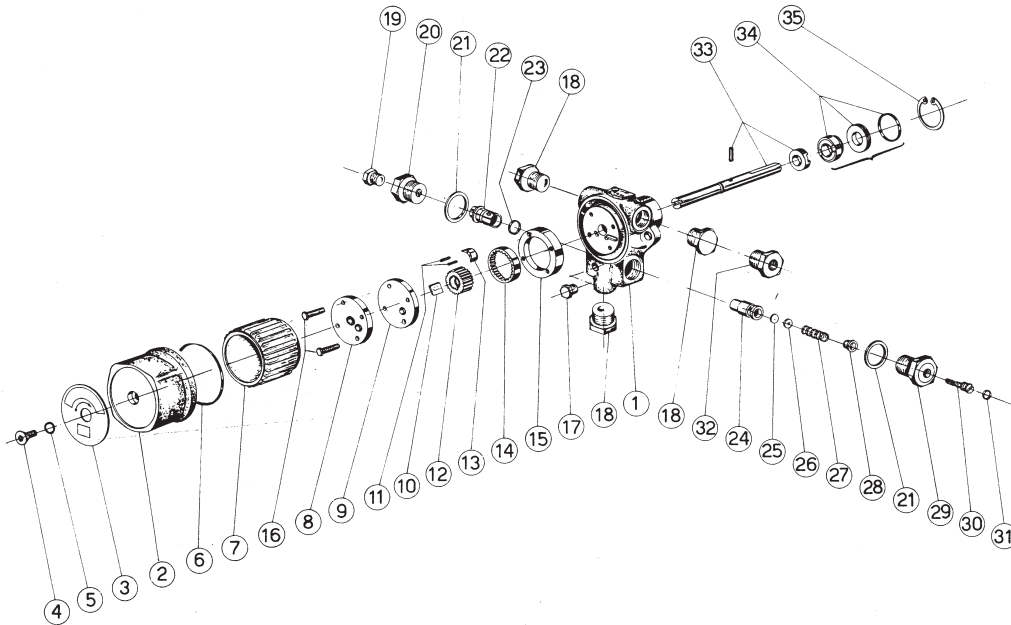


Pump type A.

Legend:

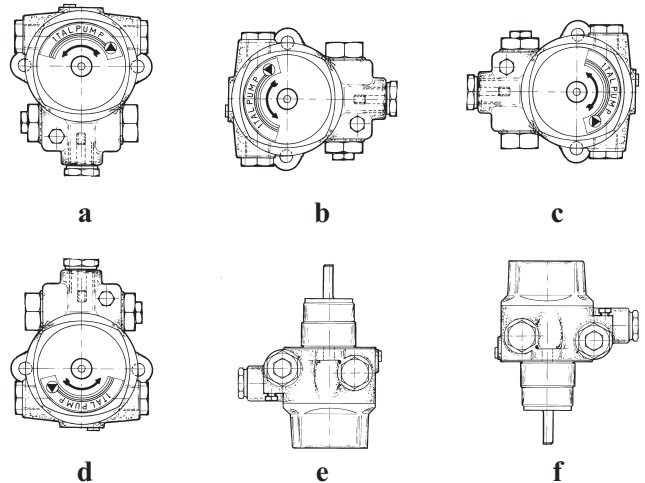
- 1 - Suction/Vacuum gauge port
- 2 - Return
- 3 - Pressure adjustment screw
- 4 - Pressure gauge port
- 5 - Nozzle outlet

COMPONENTS OF THE PUMP



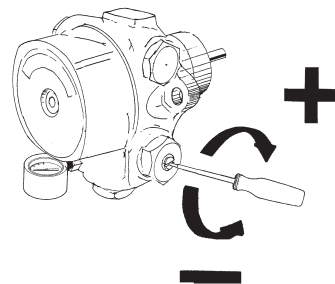
INSTALLATION OF THE PUMP

- The pump can be installed in all indicated positions.
- Make sure that the characteristics of the pump are compatible with those of the motor or of the boiler.
- Control the rotation of pump-motor.



REGULATION OF THE PUMP PRESSURE

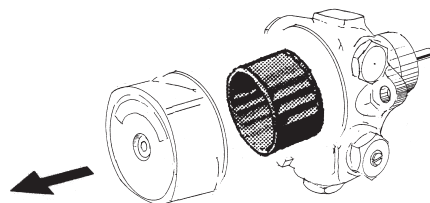
- Apply the manometer on the pressure gauge port.
- Rotate with the slotted screwdriver changing the pressure which has to be:
 - Pressure max: 25 bar
 - Pressure min: 7 bar



CLEANING OF THE FILTER

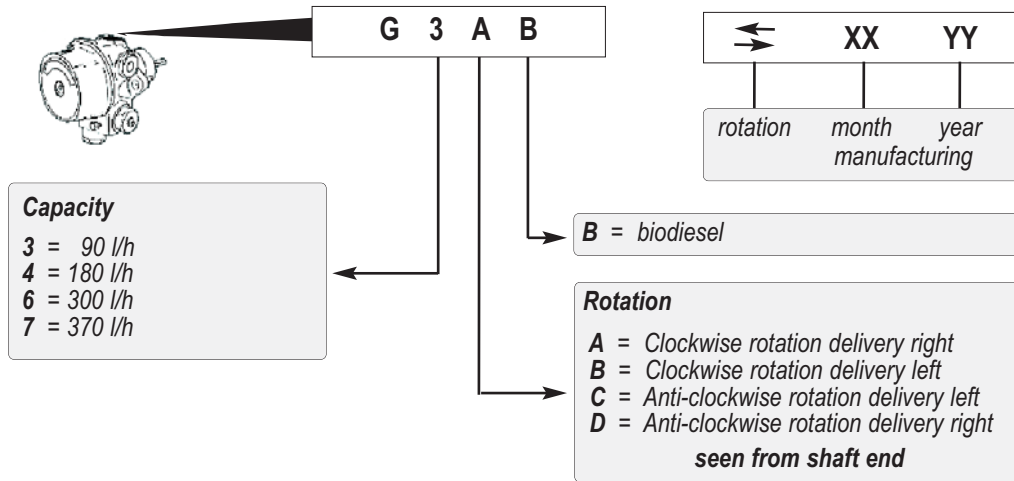
- Remove the cover as indicated in the figure.
- Extract the filter and clean it with the clean oil fuel.

ATTENTION: This operations have to be made periodically by the technical personnel.



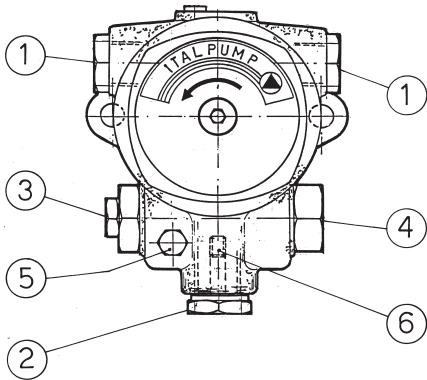
The repairs which require the substitution of pieces, must be realized by the manufacturer.

IDENTIFICATION OF THE PUMP

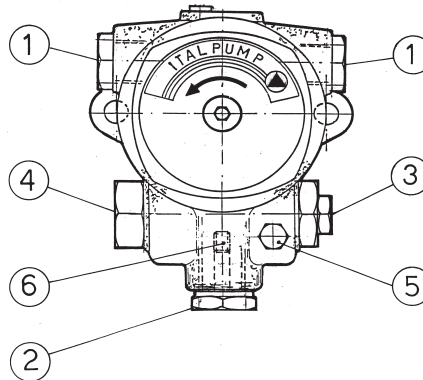


VERSIONS OF THE PUMP

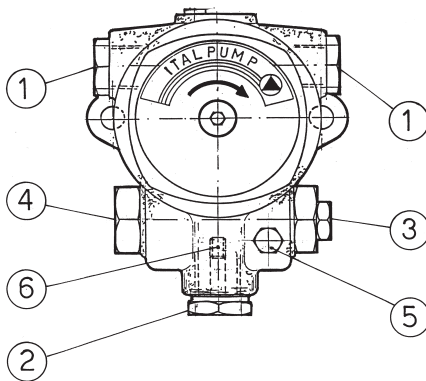
Type A



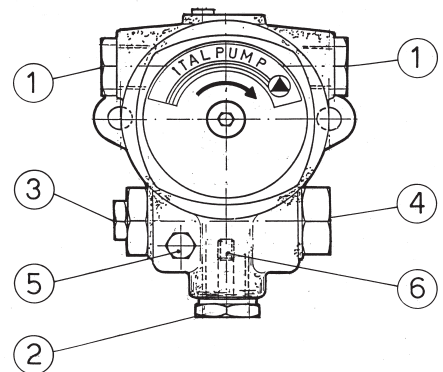
Type B



Type C



Type D



Legend:

- 1 - Suction/Vacuum gauge port
- 2 - Return
- 3 - Nozzle outlet
- 4 - Pressure adjustment screw
- 5 - Pressure gauge port

Series N-NR



CHARACTERISTICS

Applications:

- Heavy oil.
- One pipe and two pipe systems.
- Self-priming.
- Manometer and vacuummeter connection.
- Drilling for heating cartridge.
- Capacity from 80 l/h to 420 l/h.

FUNCTION

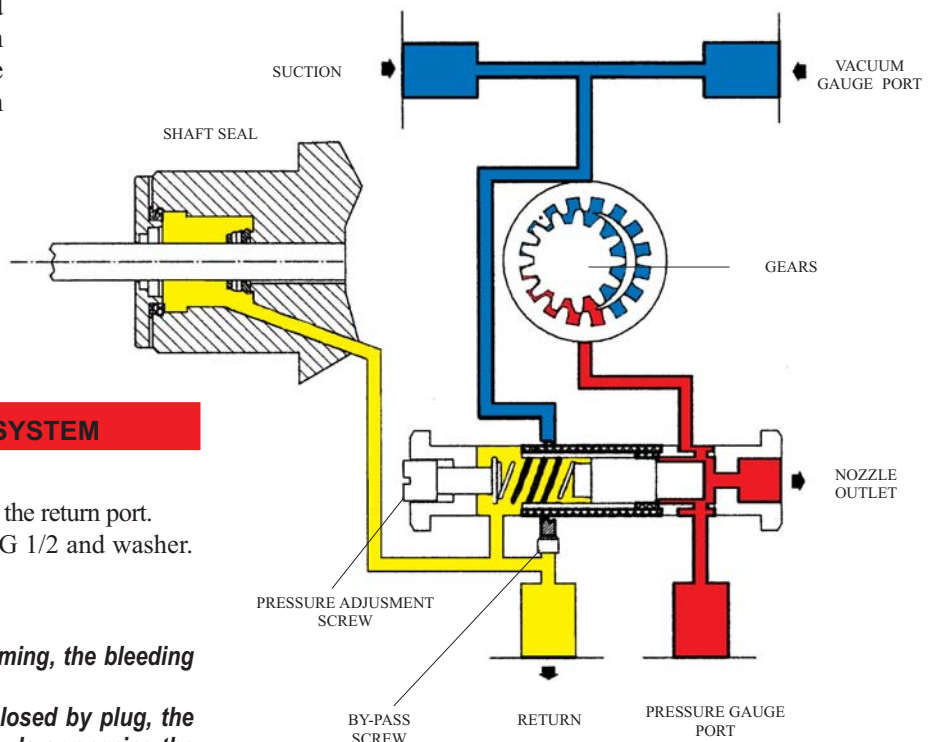
The suction vacuum generated by the gears sucks up the fuel through the suction line; it crosses the filter and it is sent, under pressure, to the hydraulic valve which has cut-off function.

The hydraulic valve opens when oil pressure gets over spring strength settled by pressure adjustment screw and the oil reaches nozzle line.

In two pipe systems the exceeding oil flows into the tank through the return line; in one pipe system, after the removing the by-pass screw, it goes back to the gears.

When the burner stops, the oil pressure immediately comes down and the spring of the pressure adjustment screw, moves the piston which stops the fluid flow to the line and, at the same time, allows to the fluid to go through the return line.

Series NR pump is manufactured with a cavity for the insertion of an heater cartridge to maintain fluid the oil without direct contact and viton components.



CONVERSION 2 PIPES - 1 PIPE SYSTEM

For the conversion proceed as follow:

- Remove the by-pass screw, located inside the return port.
- Lock the return port with a steel plug G 1/2 and washer.

ATTENTION:

In two-pipe system oil pump is self-priming, the bleeding is obtained through the return line.

In one-pipe system the return line is closed by plug, the bleeding must be obtained through the nozzle or opening the pressure gauge port, to accelerate the way out of the air.

TECHNICAL DATA

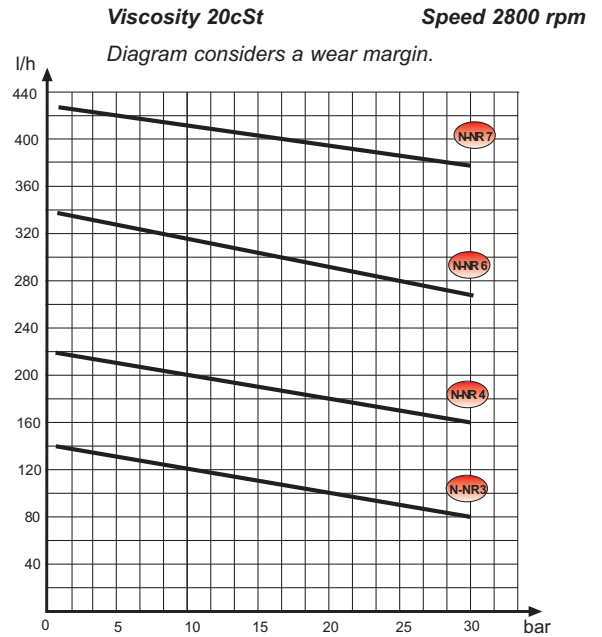
HYDRAULIC DATA

Factory settings	20 bar
Pressure range	7 - 28 bar
Viscosity range (series N)	2,8 - 200 cSt
Viscosity range (series NR)	2,8 - 450 cSt
Oil temperature (series N)	70°C max
Oil temperature (series NR)	120°C max
Inlet pressure	4 bar max
Return pressure	4 bar max
Suction height	0,45 bar max
Speed	2800 - 3480 rpm
Starting torque	0,35 Nm
Capacity	see graphs
Power consumption	see graphs

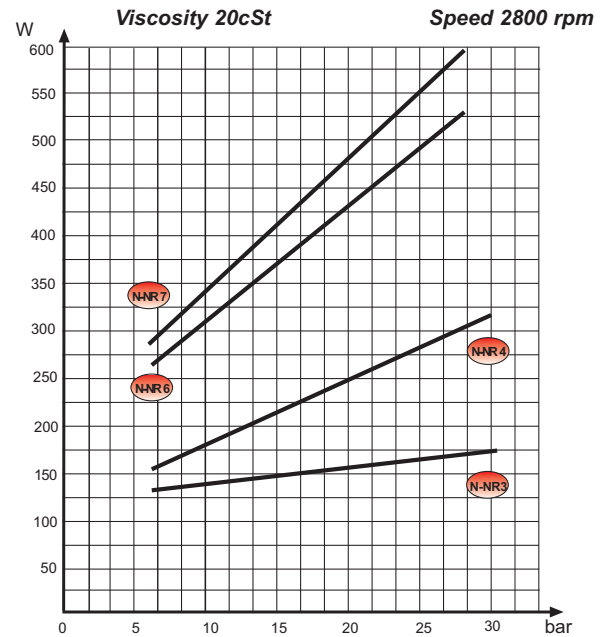
GENERAL DATA

Mounting	Flange \varnothing 54 mm according to EN 225										
Connections	<table border="0"> <tr> <td>Nozzle outlet</td> <td>G 1/4</td> </tr> <tr> <td>Pressure gauge port</td> <td>G 1/8</td> </tr> <tr> <td>Vacuum gauge port</td> <td>G 1/2</td> </tr> <tr> <td>Suction</td> <td>G 1/2</td> </tr> <tr> <td>Return</td> <td>G 1/2</td> </tr> </table>	Nozzle outlet	G 1/4	Pressure gauge port	G 1/8	Vacuum gauge port	G 1/2	Suction	G 1/2	Return	G 1/2
Nozzle outlet	G 1/4										
Pressure gauge port	G 1/8										
Vacuum gauge port	G 1/2										
Suction	G 1/2										
Return	G 1/2										
Strainer	<table border="0"> <tr> <td>Open aria</td> <td>142 cm²</td> </tr> <tr> <td>Mesh</td> <td>400 μm</td> </tr> </table>	Open aria	142 cm ²	Mesh	400 μ m						
Open aria	142 cm ²										
Mesh	400 μ m										
Weight	4,0 kg										
Heating cartridge	\varnothing 10 mm according to EN 50262										
Heating rating	50W 230V 50Hz										

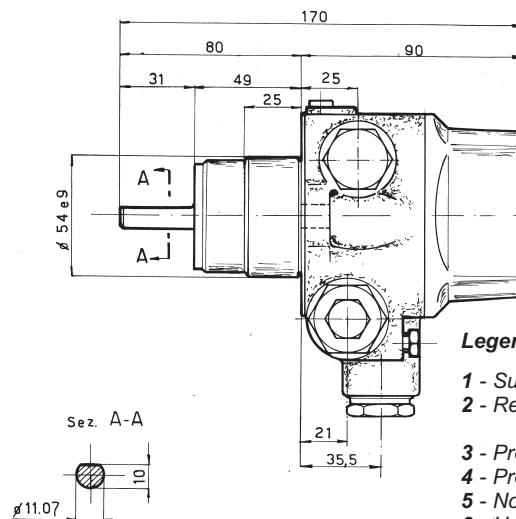
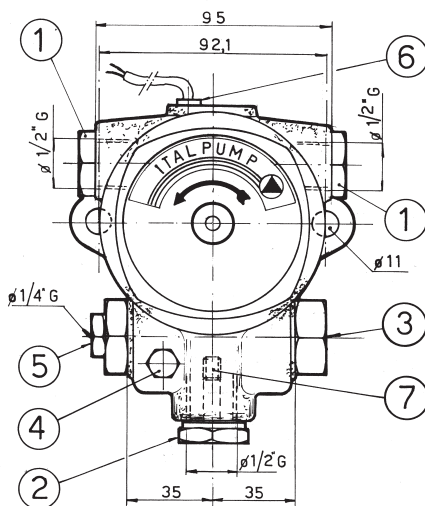
PRESSURE - CAPACITY DIAGRAM



POWER CONSUMPTION - PRESSURE DIAGRAM



DIMENSIONS OF THE PUMP

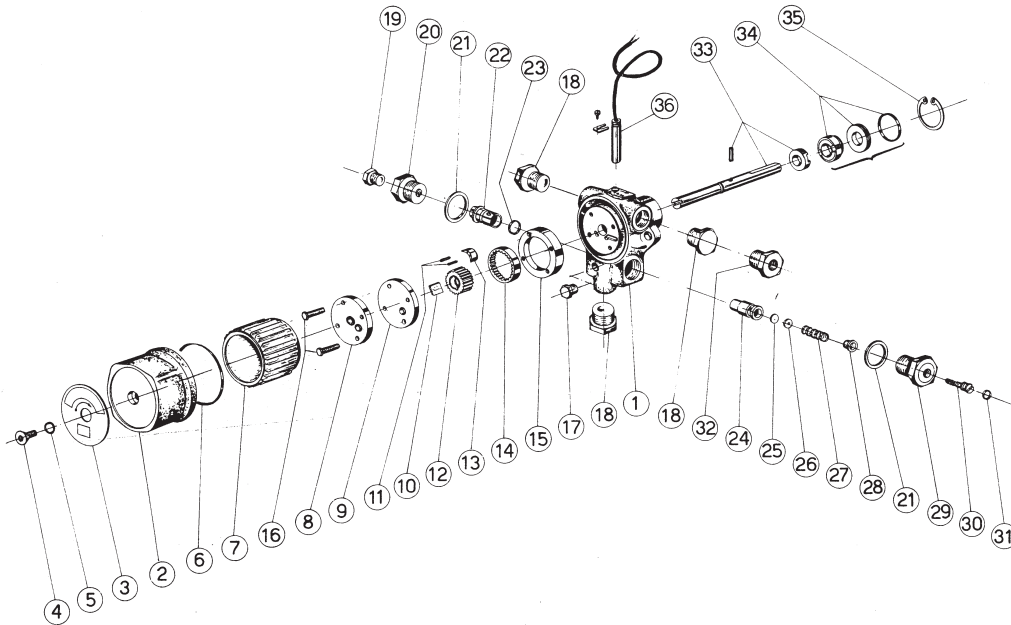


Pump type A.

Legend:

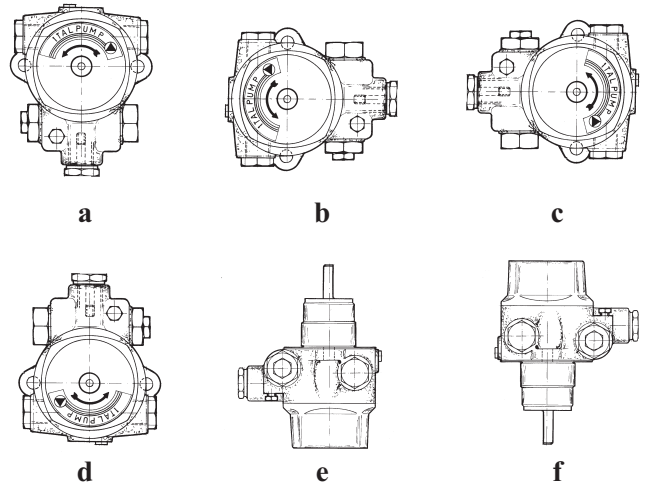
- 1 - Suction/Vacuum gauge port
- 2 - Return
- 3 - Pressure adjustment screw
- 4 - Pressure gauge port
- 5 - Nozzle outlet
- 6 - Heater (type NR)
- 7 - By-pass screw (two pipe system)

COMPONENTS OF THE PUMP



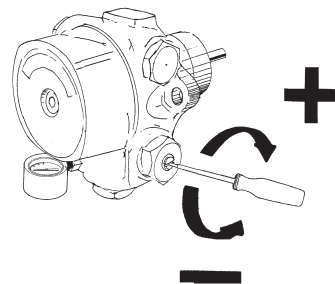
INSTALLATION OF THE PUMP

- The pump can be installed in all indicated positions.
- Make sure that the characteristics of the pump are compatible with those of the motor or of the boiler.
- Control the rotation of pump-motor.



REGULATION OF THE PUMP PRESSURE

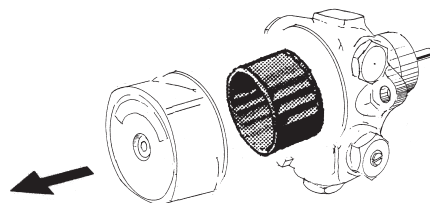
- Apply the manometer on the pressure gauge port.
- Rotate with the slotted screwdriver changing the pressure which has to be:
 - Pressure max: 28 bar
 - Pressure min: 7 bar



CLEANING OF THE FILTER

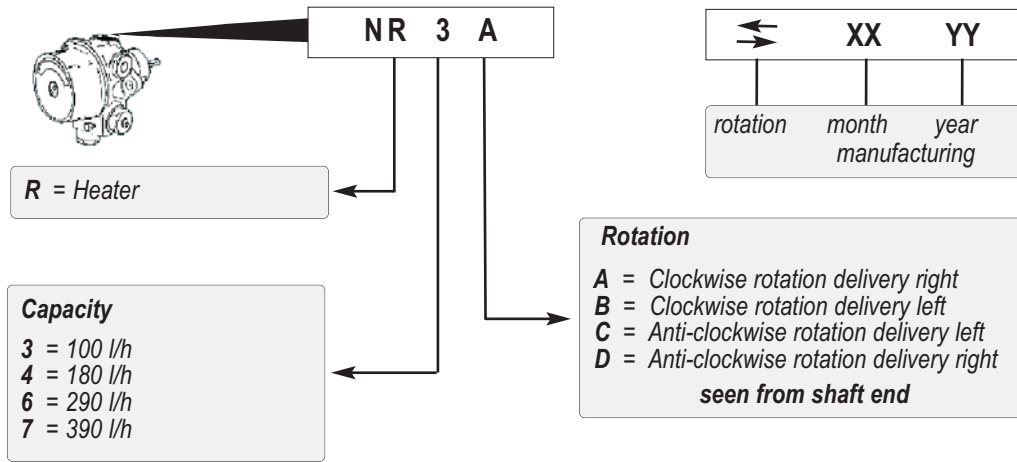
- Remove the cover as indicated in the figure.
- Extract the filter and clean it with the clean oil fuel.

ATTENTION: This operations have to be made periodically by the technical personnel.

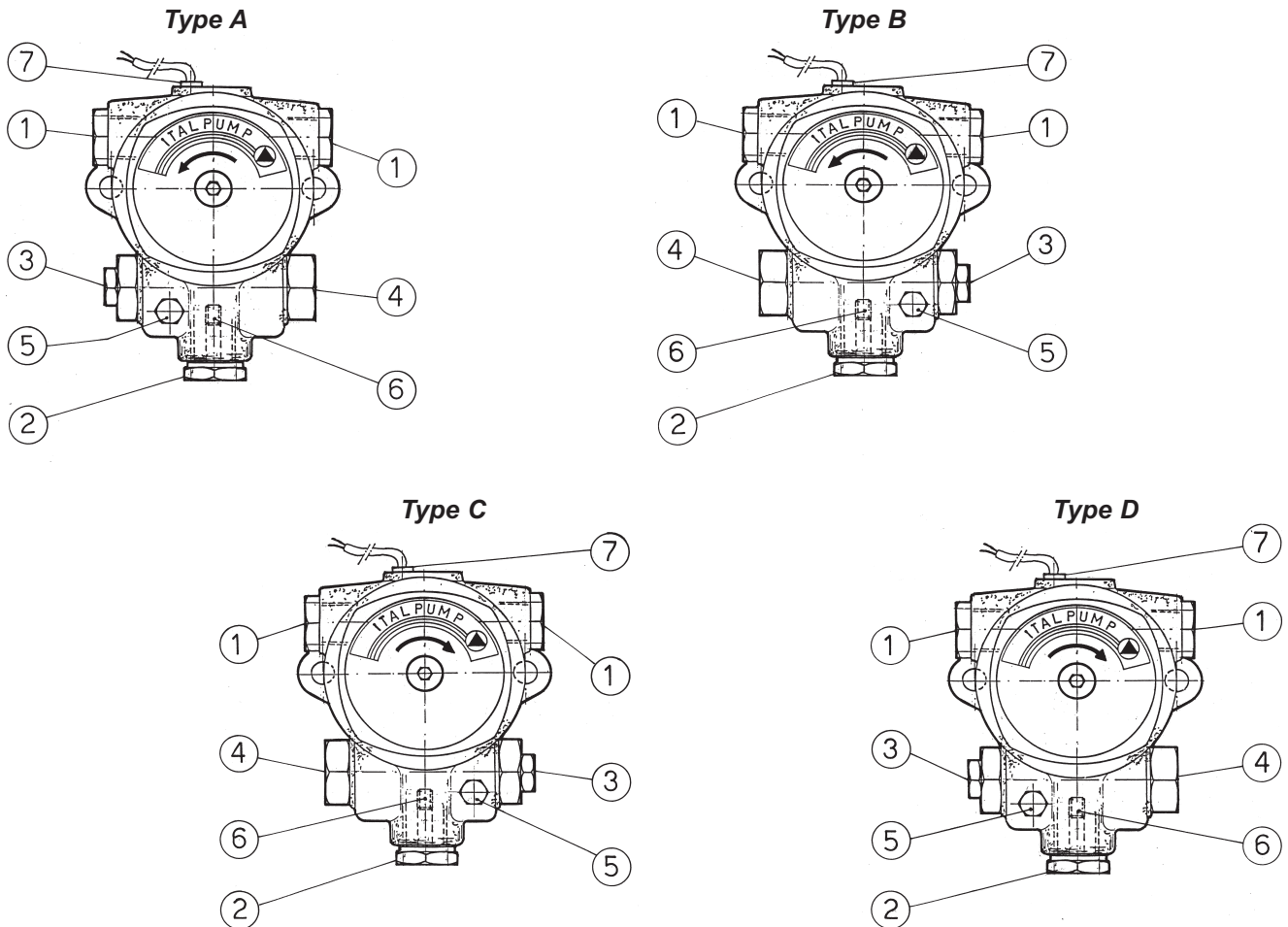


The repairs which require the substitution of pieces, must be realized by the manufacturer.

IDENTIFICATION OF THE PUMP



VERSIONS OF THE PUMP



Legend:

- 1 - Suction/Vacuum gauge port
- 2 - Return
- 3 - Nozzle outlet
- 4 - Pressure adjustment screw
- 5 - Pressure gauge port
- 6 - By-pass screw (two pipe system)
- 7 - Heater (type NR)

Series ITP



CHARACTERISTICS

Applications:

- Heavy oil and light oil.
- One pipe and two pipe system;
- Drilling for heating cartridge.
- Capacity from 350 l/h to 1380 l/h.

FUNCTION

Oil suction from the tank is generated by the rotation of the gear set. Sucked oil first reaches the gear set, by which it is compressed and sent to the hydraulic valve.

The hydraulic valve opens when oil pressure gets over spring strength settled by pressure adjustment screw and the oil reaches nozzle line.

In two pipe systems the exceeding oil flows into the tank through the return line; in one pipe system after removing the by-pass screw, it goes back to the gear.

On burner stop, the oil pressure immediately comes down and the spring strength, move the piston which stop the fluid flow to the line and at the same time allows the forwarding of the light oil to the return line.

The pump is manufactured with a drilling for the insertion of an heater cartridge to maintain fluid the oil without direct contact. It is very important to avoid damages, especially at the starting of the pump, that the viscosity of the oil is not too high. We suggest to keep on the cartridge during the pump operation.

BLEEDING:

In two-pipe system oil pump is self-priming, the bleeding is obtained through the return connection. In one pipe systems the return line is closed by the steel plug and washer, the bleeding must be obtained losing the pressure gauge port.

CONVERSION 2 PIPES - 1 PIPE SYSTEM

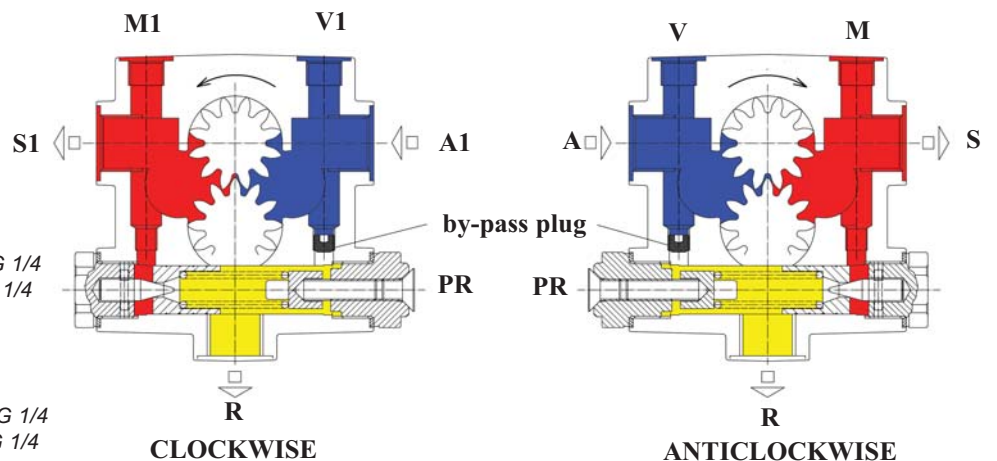
For the conversion proceed as follow:

- Remove the by-pass screw, located inside the return port.
- Lock the return port with a steel plug G 1/2 and washer.

R - Return G 1/2
PR - Pressure adjustment screw

ANTICLOCKWISE
A - Suction G 1/2
S - Nozzle outlet G 1/2
M - Pressure gauge port G 1/4
V - Vacuum gauge port G 1/4

CLOCKWISE
A1 - Suction G 1/2
S1 - Nozzle outlet G 1/2
M1 - Pressure gauge port G 1/4
V1 - Vacuum gauge port G 1/4



TECHNICAL DATA

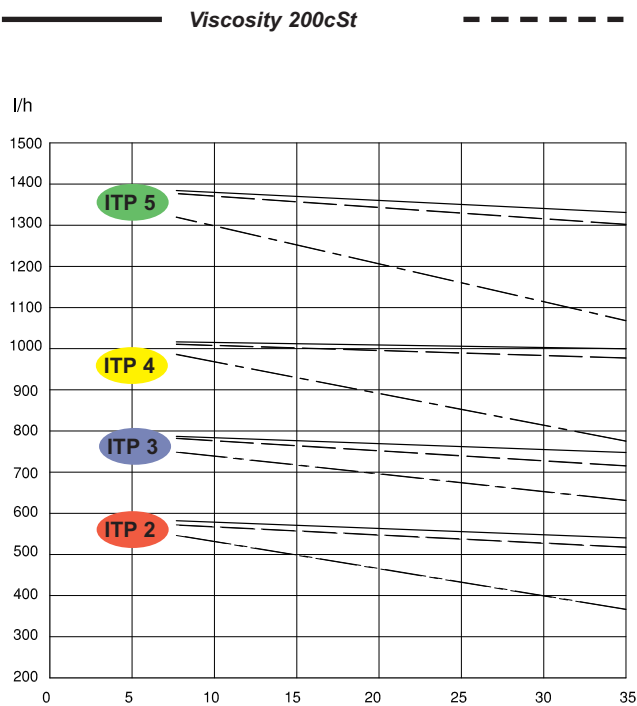
HYDRAULIC DATA

Factory settings	20 bar
Pressure range	8 - 35 bar
Viscosity range	5 - 450 cSt
Oil temperature	150°C max
Inlet pressure	4 bar max
Return pressure	4 bar max
Suction height	0,45 bar max
Speed	3600 rpm
Capacity	see graphs
Power consumption	see graphs

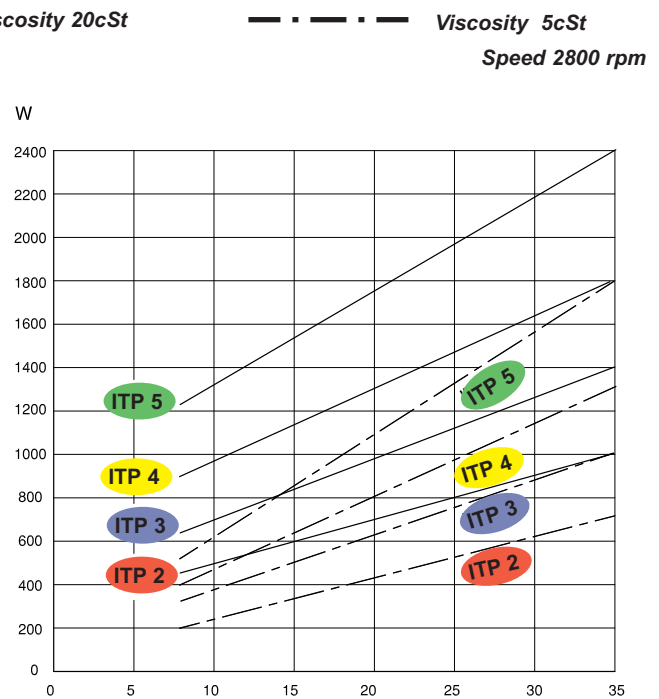
GENERAL DATA

Mounting	Flange \varnothing 54 mm according to EN 225	
	Shaft	\varnothing 12 mm
Connections	Nozzle outlet	G 1/2
	Pressure gauge port	G 1/4
	Vacuum gauge port	G 1/4
	Suction	G 1/2
	Return	G 1/2
Weight	ITZ 2	5,5 kg
	ITZ 3	5,7 kg
	ITZ 4	5,9 kg
	ITZ 5	6,1 kg
	Heating cartridge \varnothing 10 mm according to EN 50262	
Heating rating	110W 230V 50Hz	

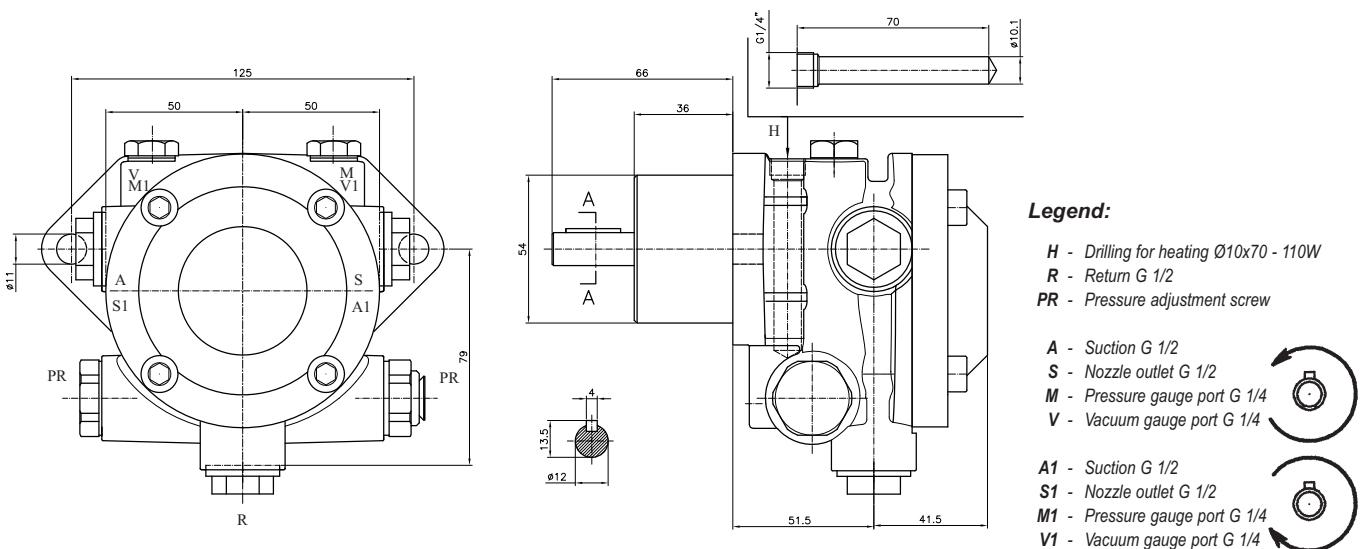
PRESSURE - CAPACITY DIAGRAM



POWER CONSUMPTION - PRESSURE DIAGRAM

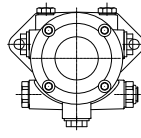


DIMENSIONS OF THE PUMP

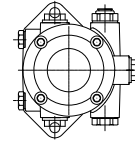


INSTALLATION OF THE PUMP

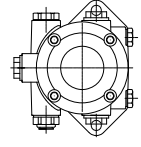
- The pump can be installed in all indicated positions.
- Make sure that the characteristics of the pump are compatible with those of the motor or of the boiler.
- Control the rotation of pump-motor.



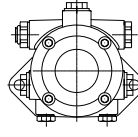
a



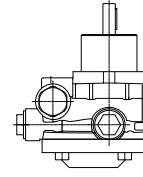
b



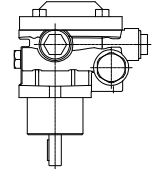
c



d



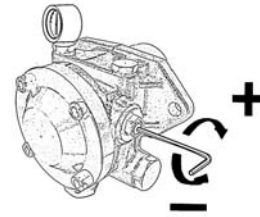
e



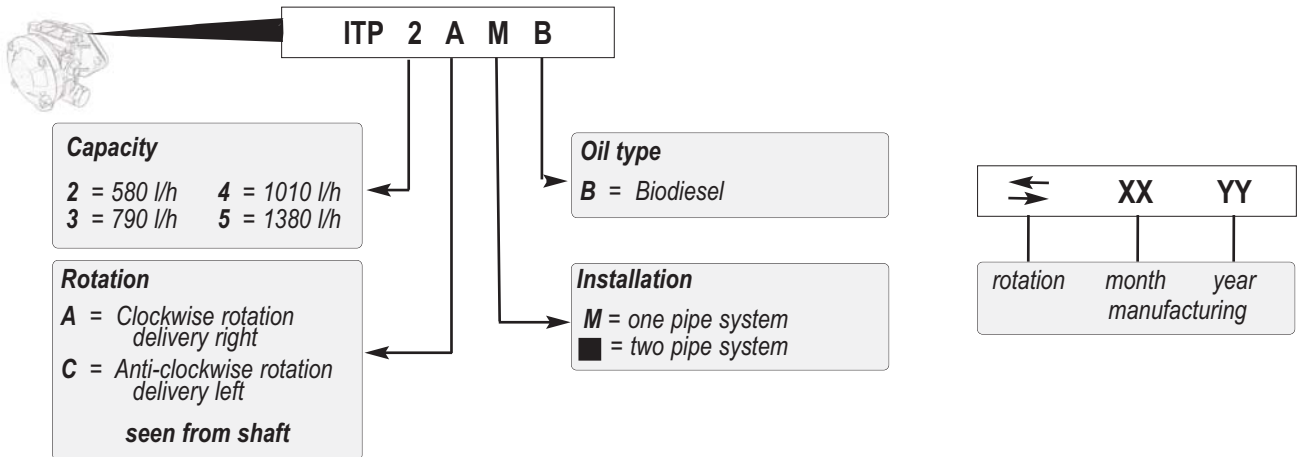
f

REGULATION OF THE PUMP PRESSURE

- Apply the manometer on the pressure gauge port (M).
- Rotate with the allen key of 5 mm changing the pressure which has to be:
 - Pressure max: 35 bar
 - Pressure min: 8 bar



IDENTIFICATION OF THE PUMP



MATCHING TABLES



SINGLE STAGE PUMP**All data at 2850 rpm, 10 bar, 5 cSt**

ITALPUMP	CAPACITY l/h	SUNTEC	CAPACITY l/h	REMARKS AND DIFFERENCES
GB1R-901	45	AN47A	40	no closing function (cut-off)
GB1R-901	45	AN47B	40	no closing function (cut-off)
GB1L-902	45	AN47C	40	no closing function (cut-off)
GB1L-902	45	AN47D	40	no closing function (cut-off)
GB2R-921	75	AN57A	57	no closing function (cut-off)
GB2R-921	75	AN57B	57	no closing function (cut-off)
GB2L-922	75	AN57C	57	no closing function (cut-off)
GB2L-922	75	AN57D	57	no closing function (cut-off)
GB2R-921	75	AN67A	82	no closing function (cut-off)
GB2R-921	75	AN67B	82	no closing function (cut-off)
GB2L-922	75	AN67C	82	no closing function (cut-off)
GB2L-922	75	AN67D	82	no closing function (cut-off)
P3O-941	125	AN77A	110	no closing function (cut-off)
P3O-941	125	AN77B	110	no closing function (cut-off)
P3A-942	125	AN77C	110	no closing function (cut-off)
P3A-942	125	AN77D	110	no closing function (cut-off)
P3O-941	125	AN97A	127	no closing function (cut-off)
P3O-941	125	AN97B	127	no closing function (cut-off)
P3A-942	125	AN97C	127	no closing function (cut-off)
P3A-942	125	AN97D	127	no closing function (cut-off)
GB1R-901	45	AE47A	42	
GB1R-901	45	AE47B	42	
GB1L-902	45	AE47C	42	
GB1L-902	45	AE47D	42	
GB2R-921	75	AE57A	60	
GB2R-921	75	AE57B	60	
GB2L-922	75	AE57C	60	
GB2L-922	75	AE57D	60	
GB2R-921	75	AE67A	85	
GB2R-921	75	AE67B	85	
GB2L-922	75	AE67C	85	
GB2L-922	75	AE67D	85	
P3O-941	125	AE77A	110	
P3O-941	125	AE77B	110	
P3A-942	125	AE77C	110	
P3A-942	125	AE77D	110	
P3O-941	125	AE97A	130	
P3O-941	125	AE97B	130	
P3A-942	125	AE97C	130	
P3A-942	125	AE97D	130	
GBE1R-911	45	AS47A	40	no closing function(cut-off); solenoid valve NC
GBE1R-911	45	AS47B	40	no closing function(cut-off); solenoid valve NC
GBE1L-912	45	AS47C	40	no closing function(cut-off); solenoid valve NC
GBE1L-912	45	AS47D	40	no closing function(cut-off); solenoid valve NC
GBE2R-931	75	AS57A	58	no closing function(cut-off); solenoid valve NC
GBE2R-931	75	AS57B	58	no closing function(cut-off); solenoid valve NC
GBE2L-932	75	AS57C	58	no closing function(cut-off); solenoid valve NC
GBE2L-932	75	AS57D	58	no closing function(cut-off); solenoid valve NC
P2OE-931	75	AS67A	82	no closing function(cut-off); solenoid valve NC
P2OE-931	75	AS67B	82	no closing function(cut-off); solenoid valve NC
P2AE-932	75	AS67C	82	no closing function(cut-off); solenoid valve NC
P2AE-932	75	AS67D	82	no closing function(cut-off); solenoid valve NC
GBE1R-911	45	AL35A	43	no closing function (cut-off)
GBE1R-911	45	AL35B	43	no closing function (cut-off)
GBE1L-912	45	AL35C	43	no closing function (cut-off)
GBE1L-912	45	AL35D	43	no closing function (cut-off)
GBE2R-931	75	AL55A	62	no closing function (cut-off)
GBE2R-931	75	AL55B	62	no closing function (cut-off)
GBE2L-932	75	AL55C	62	no closing function (cut-off)
GBE2L-932	75	AL55D	62	no closing function (cut-off)
GBE2R-931	75	AL65A	85	no closing function (cut-off)
GBE2R-931	75	AL65B	85	no closing function (cut-off)
GBE2L-932	75	AL65C	85	no closing function (cut-off)
GBE2L-932	75	AL65D	85	no closing function (cut-off)
P3OE-943	125	AL75A	110	no closing function (cut-off)
P3OE-943	125	AL75B	110	no closing function (cut-off)
P3AE-944	125	AL75C	110	no closing function (cut-off)
P3AE-944	125	AL75D	110	no closing function (cut-off)
P3OE-943	125	AL95A	130	no closing function (cut-off)
P3OE-943	125	AL95B	130	no closing function (cut-off)
P3AE-944	125	AL95C	130	no closing function (cut-off)
P3AE-944	125	AL95D	130	no closing function (cut-off)

Available aluminium flange code KITFLANGPK or KITFLANGGB, or ring adapter code 22002 from $\varnothing 32$ mm to $\varnothing 54$ mm.

DOUBLE STAGE PUMP**All data at 2850 rpm, 10 bar, 5 cSt**

ITALPUMP	CAPACITY l/h	SUNTEC	CAPACITY l/h	REMARKS AND DIFFERENCES
GBW1RR977	45	AP2 45A	48	two piston reg.; two solenoid valves NC
GBW1RL975	45	AP2 45B	48	two piston reg.; two solenoid valves NC
GBW1LL974	45	AP2 45C	48	two piston reg.; two solenoid valves NC
GBW1LR976	45	AP2 45D	48	two piston reg.; two solenoid valves NC
GBW2RR979	75	AP2 55A	64	two piston reg.; two solenoid valves NC
GBW2RL981	75	AP2 55B	64	two piston reg.; two solenoid valves NC
GBW2LL980	75	AP2 55C	64	two piston reg.; two solenoid valves NC
GBW2LR978	75	AP2 55D	64	two piston reg.; two solenoid valves NC
P3OWD983	125	AP2 65A	85	two piston reg.; two solenoid valves NC
P3OWS985	125	AP2 65B	85	two piston reg.; two solenoid valves NC
P3AWS984	125	AP2 65C	85	two piston reg.; two solenoid valves NC
P3AWD982	125	AP2 65D	85	two piston reg.; two solenoid valves NC
P3OWD983	125	AP2 75A	110	two piston reg.; two solenoid valves NC
P3OWS985	125	AP2 75B	110	two piston reg.; two solenoid valves NC
P3AWS984	125	AP2 75C	110	two piston reg.; two solenoid valves NC
P3AWD982	125	AP2 75D	110	two piston reg.; two solenoid valves NC
P3OWD983	125	AP2 95A	130	two piston reg.; two solenoid valves NC
P3OWS985	125	AP2 95B	130	two piston reg.; two solenoid valves NC
P3AWS984	125	AP2 95C	130	two piston reg.; two solenoid valves NC
P3AWD982	125	AP2 95D	130	two piston reg.; two solenoid valves NC
GBW1RR977	45	AT2 45A	48	solenoid valves NC
GBW1RL975	45	AT2 45B	48	solenoid valves NC
GBW1LL974	45	AT2 45C	48	solenoid valves NC
GBW1LR976	45	AT2 45D	48	solenoid valves NC
GBW2RR979	75	AT2 55A	64	solenoid valves NC
GBW2RL981	75	AT2 55B	64	solenoid valves NC
GBW2LL980	75	AT2 55C	64	solenoid valves NC
GBW2LR978	75	AT2 55D	64	solenoid valves NC
P3OWD983	125	AT2 65A	85	solenoid valves NC
P3OWS985	125	AT2 65B	85	solenoid valves NC
P3AWS984	125	AT2 65C	85	solenoid valves NC
P3AWD982	125	AT2 65D	85	solenoid valves NC
P3OWD983	125	AT2 75A	110	solenoid valves NC
P3OWS985	125	AT2 75B	110	solenoid valves NC
P3AWS984	125	AT2 75C	110	solenoid valves NC
P3AWD982	125	AT2 75D	110	solenoid valves NC
P3OWD983	125	AT2 95A	130	solenoid valves NC
P3OWS985	125	AT2 95B	130	solenoid valves NC
P3AWS984	125	AT2 95C	130	solenoid valves NC
P3AWD982	125	AT2 95D	130	solenoid valves NC

*Available aluminium flange code KITFLANGPK or KITFLANGGB, or ring adapter code 22002 from $\varnothing 32$ mm to $\varnothing 54$ mm.***LIGHT OIL****All data at 2850 rpm, 10 bar, 5 cSt**

ITALPUMP	CAPACITY l/h	SUNTEC	CAPACITY l/h	REMARKS AND DIFFERENCES
AG3A	90	AJ3A	60	old gear revision
AG3B	90	AJ3B	60	old gear revision
AG3C	90	AJ3C	60	old gear revision
AG3D	90	AJ3D	60	old gear revision
AG4A	180	AJ4A	175	revision 4P
AG4B	180	AJ4B	175	revision 4P
AG4C	180	AJ4C	175	revision 4P
AG4D	180	AJ4D	175	revision 4P
AG6A	280	AJ6A	268	revision 4P
AG6B	280	AJ6B	268	revision 4P
AG6C	280	AJ6C	268	revision 4P
AG6D	280	AJ6D	268	revision 4P
G3A	90	J3A	90	old gear revision
G3B	90	J3B	90	old gear revision
G3C	90	J3C	90	old gear revision
G3D	90	J3D	90	old gear revision
G4A	170	J4A	175	revision 5P
G4B	170	J4B	175	revision 5P
G4C	170	J4C	175	revision 5P
G4D	170	J4D	175	revision 5P
G6A	290	J6A	260	revision 5P
G6B	290	J6B	260	revision 5P
G6C	290	J6C	260	revision 5P
G6D	290	J6D	260	revision 5P
G7A	375	J7A	340	revision 5P
G7B	375	J7B	340	revision 5P
G7C	375	J7C	340	revision 5P
G7D	375	J7D	340	revision 5P
ITP2	530	TA2	490	
ITP3	730	TA3	720	
ITP4	960	TA4	950	
ITP5	1300	TA5	1300	

HEAVY OIL**All data at 2850 rpm, 20 bar, 20 cSt**

ITALPUMP	CAPACITY l/h	SUNTEC	CAPACITY l/h	REMARKS AND DIFFERENCES
AN3A	90	D45A	40	
AN3B	90	D45B	40	
AN3C	90	D45C	40	
AN3D	90	D45D	40	
AN3A	90	D47A	53	
AN3B	90	D47B	53	
AN3C	90	D47C	53	
AN3D	90	D47D	53	
AN3A	90	D55A	57	
AN3B	90	D55B	57	
AN3C	90	D55C	57	
AN3D	90	D55D	57	
AN3A	90	D57A	70	
AN3B	90	D57B	70	
AN3C	90	D57C	70	
AN3D	90	D57D	70	
AN4A	180	D67A	93	
AN4B	180	D67B	93	
AN4C	180	D67C	93	
AN4D	180	D67D	93	
N3A	80	E3A1001	75	old gear revision
N3B	80	E3B1001	75	old gear revision
N3C	80	E3C1001	75	old gear revision
N3D	80	E3D1001	75	old gear revision
N4A	182	E4A1001	180	revision 7P
N4B	182	E4B1001	180	revision 7P
N4C	182	E4C1001	180	revision 7P
N4D	182	E4D1001	180	revision 7P
N6A	270	E6A1001	270	revision 7P
N6B	270	E6B1001	270	revision 7P
N6C	270	E6C1001	270	revision 7P
N6D	270	E6D1001	270	revision 7P
N7A	390	E7A1001	360	revision 7P
N7B	390	E7B1001	360	revision 7P
N7C	390	E7C1001	360	revision 7P
N7D	390	E7D1001	360	revision 7P
NR3A	80	E3A1069	75	old gear revision
NR3B	80	E3B1069	75	old gear revision
NR3C	80	E3C1069	75	old gear revision
NR3D	80	E3D1069	75	old gear revision
NR4A	182	E4A1069	180	revision 7P
NR4B	182	E4B1069	180	revision 7P
NR4C	182	E4C1069	180	revision 7P
NR4D	182	E4D1069	180	revision 7P
NR6A	270	E6A1069	270	revision 7P
NR6B	270	E6B1069	270	revision 7P
NR6C	270	E6C1069	270	revision 7P
NR6D	270	E6D1069	270	revision 7P
NR7A	390	E7A1069	360	revision 7P
NR7B	390	E7B1069	360	revision 7P
NR7C	390	E7C1069	360	revision 7P
NR7D	390	E7D1069	360	revision 7P
ITP2	580	TA2	480	
ITP3	790	TA3	680	
ITP4	1010	TA4	1030	
ITP5	1380	TA5	1360	

SINGLE STAGE PUMP*All data at 2850 rpm, 10 bar, 5 cSt*

ITALPUMP	CAPACITY l/h	DANFOSS	CAPACITY l/h	REMARKS AND DIFFERENCES	
GB1R-901	45	BFP20R3-BFP20R5	BFP10R3R-BFP10R5R	24-42	piston reg. without closing function
GB1R-901	45	BFP20R3-BFP20R5	BFP10R3L-BFP10R5L	24-42	piston reg. without closing function
GB1L-902	45	BFP20L3-BFP20L5	BFP10L3R-BFP10L5R	24-42	piston reg. without closing function
GB1L-902	45	BFP20L3-BFP20L5	BFP10L3L-BFP10L5L	24-42	piston reg. without closing function
GB2R-921	75	BFP10R6R		60	piston reg. without closing function
GB2R-921	75	BFP10R6L		60	piston reg. without closing function
GB2L-922	75	BFP10L6R		60	piston reg. without closing function
GB2L-922	75	BFP10L6L		60	piston reg. without closing function
GB2R-921	75	BFP10R8R		80	piston reg. without closing function
GB2R-921	75	BFP10R8L		80	
GB2L-922	75	BFP10L8R		80	
GB2L-922	75	BFP10L8L		80	
P3O-941	125	BFP10R11R- BFP10R13R		110-130	
P3O-941	125	BFP10R11L- BFP10R13L		110-130	
P3A-942	125	BFP10L11R- BFP10L13R		110-130	
P3A-942	125	BFP10L11L- BFP10L13L		110-130	
GBE1R-911	45	BFP21R3-BFP21R5	BFP11R3R-BFP11R5R	24-42	piston reg. without closing function
GBE1R-911	45	BFP21R3-BFP21R5	BFP11R3L-BFP11R5L	24-42	piston reg. without closing function
GBE1L-912	45	BFP21L3-BFP21L5	BFP11L3R-BFP11L5R	24-42	piston reg. without closing function
GBE1L-912	45	BFP21L3-BFP21L5	BFP11L3L-BFP11L5L	24-42	piston reg. without closing function
GBE2R-931	75	BFP11R6R		60	piston reg. without closing function
GBE2R-931	75	BFP11R6L		60	piston reg. without closing function
GBE2L-932	75	BFP11L6R		60	piston reg. without closing function
GBE2L-932	75	BFP11L6L		60	piston reg. without closing function
GBE2R-931	75	BFP11R8R		80	
GBE2R-931	75	BFP11R8L		80	
GBE2L-932	75	BFP11L8R		80	
GBE2L-932	75	BFP11L8L		80	
P3OE-943	125	BFP11R11R- BFP11R13R		110-130	
P3OE-943	125	BFP11R11L- BFP11R13L		110-130	
P3AE-944	125	BFP11L11R- BFP11L13R		110-130	
P3AE-944	125	BFP11L11L- BFP11L13L		110-130	

*Available aluminium flange code KITFLANGPK or KITFLANGGB, or ring adapter code 22002 from ø32 mm to ø54 mm.***DOUBLE STAGE PUMP***All data at 2850 rpm, 10 bar, 5 cSt*

ITALPUMP	CAPACITY l/h	DANFOSS	CAPACITY l/h	REMARKS AND DIFFERENCES	
GBW1RR977	45	BFP51R5R		42	two pistons reg.; two solenoid valves NC
GBW1RL975	45	BFP51R5L		42	two pistons reg.; two solenoid valves NC
GBW1LL974	45	BFP51L5R		42	two pistons reg.; two solenoid valves NC
GBW1LR976	45	BFP51L5L		42	two pistons reg.; two solenoid valves NC
GBW2RR979	75	BFP51R6R		60	two pistons reg.; two solenoid valves NC
GBW2RL981	75	BFP51R6L		60	two pistons reg.; two solenoid valves NC
GBW2LL980	75	BFP51L6R		60	two pistons reg.; two solenoid valves NC
GBW2LR978	75	BFP51L6L		60	two pistons reg.; two solenoid valves NC
P3OWD983	125	BFP51R8R- BFP51R11R- BFP51R13R		80-110-130	two pistons reg.; two solenoid valves NC
P3OWS985	125	BFP51R8L- BFP51R11L- BFP51R13L		80-110-130	two pistons reg.; two solenoid valves NC
P3AWS984	125	BFP51L8R- BFP51L11R- BFP51L13R		80-110-130	two pistons reg.; two solenoid valves NC
P3AWD982	125	BFP51L8L- BFP51L11L- BFP51L13L		80-110-130	two pistons reg.; two solenoid valves NC
GBW1RR977	45	BFP52R5R		42	two solenoid valves NC
GBW1RL975	45	BFP52R5L		42	two solenoid valves NC
GBW1LL974	45	BFP52L5R		42	two solenoid valves NC
GBW1LR976	45	BFP52L5L		42	two solenoid valves NC
GBW2RR979	75	BFP52R6R		60	two solenoid valves NC
GBW2RL981	75	BFP52R6L		60	two solenoid valves NC
GBW2LL980	75	BFP52L6R		60	two solenoid valves NC
GBW2LR978	75	BFP52L6L		60	two solenoid valves NC
P3OWD983	125	BFP52R8R- BFP52R11R- BFP52R13R		80-110-130	two solenoid valves NC
P3OWS985	125	BFP52R8L- BFP52R11L- BFP52R13L		80-110-130	two solenoid valves NC
P3AWS984	125	BFP52L8R- BFP52L11R- BFP52L13R		80-110-130	two solenoid valves NC
P3AWD982	125	BFP52L8L- BFP52L11L- BFP52L13L		80-110-130	two solenoid valves NC

Available aluminium flange code KITFLANGPK or KITFLANGGB, or ring adapter code 22002 from ø32 mm to ø54 mm.

LIGHT OIL**All data at 2850 rpm, 10 bar, 5 cSt**

ITALPUMP	CAPACITY l/h	DANFOSS	CAPACITY l/h	REMARKS AND DIFFERENCES
AG3A	90	RSA28	51	not direct interchangeable: shaft, hub
AG3B	90	RSA28	51	not direct interchangeable: shaft, hub
AG3C	90	RSA28	51	not direct interchangeable: shaft, hub
AG3D	90	RSA28	51	not direct interchangeable: shaft, hub
AG4A	180	RSA40-RSA60	82-111	not direct interchangeable: shaft, hub
AG4B	180	RSA40-RSA60	82-111	not direct interchangeable: shaft, hub
AG4C	180	RSA40-RSA60	82-111	not direct interchangeable: shaft, hub
AG4D	180	RSA40-RSA60	82-111	not direct interchangeable: shaft, hub
AG6A	280	RSA95-RSB20	201-180	not direct interchangeable: shaft, hub
AG6B	280	RSA95-RSB20	201-180	not direct interchangeable: shaft, hub
AG6C	280	RSA95-RSB20	201-180	not direct interchangeable: shaft, hub
AG6D	280	RSA95-RSB20	201-180	not direct interchangeable: shaft, hub
G3A	70	RSA40	82	not direct interchangeable: shaft, hub
G3B	70	RSA40	82	not direct interchangeable: shaft, hub
G3C	70	RSA40	82	not direct interchangeable: shaft, hub
G3D	70	RSA40	82	not direct interchangeable: shaft, hub
G4A	170	RSA60	106	not direct interchangeable: shaft, hub
G4B	170	RSA60	106	not direct interchangeable: shaft, hub
G4C	170	RSA60	106	not direct interchangeable: shaft, hub
G4D	170	RSA60	106	not direct interchangeable: shaft, hub
G6A	290	RSA95-RSB20	201-180	not direct interchangeable-direct interchangeable
G6B	290	RSA95-RSB20	201-180	not direct interchangeable-direct interchangeable
G6C	290	RSA95-RSB20	201-180	not direct interchangeable-direct interchangeable
G6D	290	RSA95-RSB20	201-180	not direct interchangeable-direct interchangeable
G6A	290	RSB30-RSA125	290-250	not direct interchangeable-direct interchangeable
G6B	290	RSB30-RSA125	290-250	not direct interchangeable-direct interchangeable
G6C	290	RSB30-RSA125	290-250	not direct interchangeable-direct interchangeable
G6D	290	RSB30-RSA125	290-250	not direct interchangeable-direct interchangeable
G7A	375	RSB30-RSB40	290-380	direct interchangeable
G7B	375	RSB30-RSB40	290-380	direct interchangeable
G7C	375	RSB30-RSB40	290-380	direct interchangeable
G7D	375	RSB30-RSB40	290-380	direct interchangeable
ITP3	730	KSM50	480	
ITP4	960	KSM70	850	
ITP5	1300	KSM100	1070	

HEAVY OIL**All data at 2850 rpm, 20 bar, 20 cSt**

ITALPUMP	CAPACITY l/h	DANFOSS	CAPACITY l/h	REMARKS AND DIFFERENCES
AN4A	180	RSH32	85	
AN4B	180	RSH32	85	
AN4C	180	RSH32	85	
AN4D	180	RSH32	85	
N4A	182	RSF21	160	
N4B	182	RSF21	160	
N4C	182	RSF21	160	
N4D	182	RSF21	160	
N6A	270	RSF31	270	
N6B	270	RSF31	270	
N6C	270	RSF31	270	
N6D	270	RSF31	270	
N7A	370	RSF41	380	
N7B	370	RSF41	380	
N7C	370	RSF41	380	
N7D	370	RSF41	380	
NR4A	182	RSFH21	160	
NR4	182	RSFH21	160	
NR4C	182	RSFH21	160	
NR4D	182	RSFH21	160	
NR7A	270	RSFH31	270	
NR7B	270	RSFH31	270	
NR7C	270	RSFH31	270	
NR7D	270	RSFH31	270	
NR7A	370	RSFH41	380	
NR7B	370	RSFH41	380	
NR7C	370	RSFH41	380	
NR7D	370	RSFH41	380	
ITZ2	570	KSN25-70-120-160	40-110-130-150	
ITZ3	770	KSN300	260	
ITZ4	1000	KSN450	475	
ITZ5	1360	KSN600	570	

SINGLE STAGE PUMP**All data at 2850 rpm, 10 bar, 5 cSt**

ITALPUMP	CAPACITY l/h	DELTA	CAPACITY l/h	REMARKS AND DIFFERENCES
GB1R-901	45	VD1RR2-A1R2-VU1	30-32-28	
GB1R-901	45	VD1RL2-A1R2-VU1	30-32-28	
GB1L-902	45	VD1LR2-A1L2-VU1	30-32-28	
GB1L-902	45	VD1LL2-A1L2-VU1	30-32-28	
GB2R-921	75	VD2RR2 - VD3RR2 - A2R2	45-70-50	
GB2R-921	75	VD2RL2 - VD3RL2 - A2R2	45-70-50	
GB2L-922	75	VD2LR2 - VD3LR2 - A2L2	45-70-50	
GB2L-922	75	VD2LL2 - VD3LL2 - A2L2	45-70-50	
P3O-941	125	VD4RR2 - V5RR2	90-115	
P3O-941	125	VD4RL2 - V5RL2	90-115	
P3A-942	125	VD4LR2 - V5LR2	90-115	
P3A-942	125	VD4LL2 - V5LL2	90-115	
GBE1R-911	45	VM1RR2	30	
GBE1R-911	45	VM1RL2	30	
GBE1L-912	45	VM1LR2	30	
GBE1L-912	45	VM1LL2	30	
GBE2R-931	75	VM2RR2 - VM3RR2	45-70	
GBE2R-931	75	VM2RL2 - VM3RL2	45-70	
GBE2L-932	75	VM2LR2 - VM3LR2	45-70	
GBE2L-932	75	VM2LL2 - VM3LL2	45-70	
P3OE-943	125	VM4RR2	92	
P3OE-943	125	VM4RL2	92	
P3AE-944	125	VM4LR2	92	
P3AE-944	125	VM4LL2	92	

Available aluminium flange code KITFLANGPK or KITFLANGGB, or ring adapter code 22002 from $\varnothing 32$ mm to $\varnothing 54$ mm.**DOUBLE STAGE PUMP****All data at 2850 rpm, 10 bar, 5 cSt**

ITALPUMP	CAPACITY l/h	DELTA	CAPACITY l/h	REMARKS AND DIFFERENCES
GBW1RR977	45	VMK1RR2-VMK2RR2	25-45	
GBW1RL975	45	VMK1RL2-VMK2RL2	25-45	
GBW1LL974	45	VMK1LL2-VMK2LL2	25-45	
GBW1LR976	45	VMK1LR2-VMK2LR2	25-45	
GBW2RR979	75	VMK3RR2	66	
GBW2RL981	75	VMK3RL2	66	
GBW2LL980	75	VMK3LL2	66	
GBW2LR978	75	VMK3LR2	66	
P3OWD983	125	VMK4RR2	90	
P3OWS985	125	VMK4RL2	90	
P3AWS984	125	VMK4LL2	90	
P3AWD982	125	VMK4LR2	90	

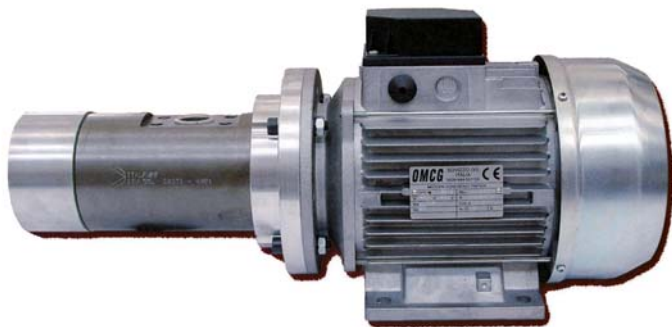
Available aluminium flange code KITFLANGPK or KITFLANGGB, or ring adapter code 22002 from $\varnothing 32$ mm to $\varnothing 54$ mm.**LIGHT OIL****All data at 2850 rpm, 10 bar, 5 cSt**

ITALPUMP	CAPACITY l/h	DELTA	CAPACITY l/h	REMARKS AND DIFFERENCES
G4A	170	S2R..G	100	
G4B	170	S2R..G	100	
G4C	170	S2L..G	100	
G4D	170	S2L..G	100	
G6A	290	S3R..G - S4R..G	160-200	
G6B	290	S3R..G - S4R..G	160-200	
G6C	290	S3L...G - S4L...G	160-200	
G6D	290	S3L...G - S4L...G	160-200	
G7A	375	S5R...G - S6R...G	245-310	
G7B	375	S5R...G - S6R...G	245-310	
G7C	375	S5L...G - S6L...G	245-310	
G7D	375	S5L...G - S6L...G	245-310	

HEAVY OIL**All data at 2850 rpm, 20 bar, 20 cSt**

ITALPUMP	CAPACITY l/h	DELTA	CAPACITY l/h	REMARKS AND DIFFERENCES
N4A	182	S2R...N	110	
N4B	182	S2R...N	110	
N4C	182	S2L...N	110	
N4D	182	S2L...N	110	
N6A	270	S3R...N - S4R...N	175-220	
N6B	270	S3R...N - S4R...N	175-220	
N6C	270	S3L...N - S4L...N	175-220	
N6D	270	S3L...N - S4L...N	175-220	
N7A	390	S5R...N - S6R...N	265-325	
N7B	390	S5R...N - S6R...N	265-325	
N7C	390	S5L...N - S6L...N	265-325	
N7D	390	S5L...N - S6L...N	265-325	

Series ITV



CHARACTERISTICS

Applications:

- Low pressure with 5-10 bar max.differential pressure.
- Max inlet pressure 2 bar.
- For fuel and lubricant without abrasive contents.
- High volumetric efficiency - hydraulically balanced.
- Very low noise (52 -53 dBA at 2800 rpm).
- Capacity from 480 l/h to 8250 l/h (light oil 2800 rpm).

FUNCTION

ITV pumps are positive displacement rotary pumps with axial flow design suitable for different kinds of fluids: for light oil and heavy oil bunker oil.

The pump sucks the oil from a tank, it passes through the inlet port and arrive at the 3 screws, which compressed it and send it to the outlet.

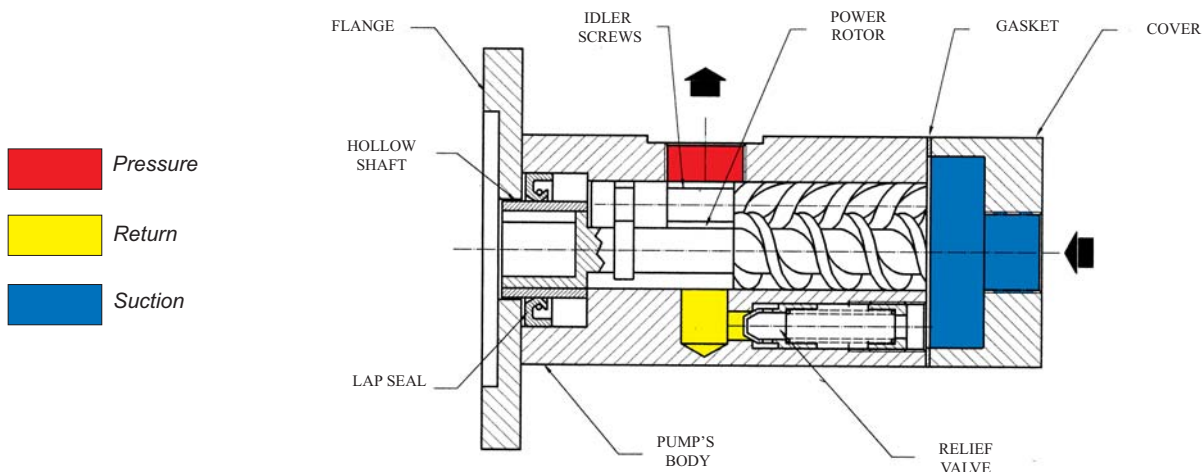
The pump is equipped with a pressure relief valve with internal return, which limit the differential pressure into the pump and protect the pump in case of block of the outlet line.

Standard version is 5 bar Relief valve. It is also available a special version RF2 with 10 bar set relief valve.

NOTE: For different fuels please consult ITALPUMP.



Setting of relief valve must be done only by ITALPUMP.
Please consider that higher pressure means higher motor absorption.



TECHNICAL DATA

HYDRAULIC DATA

Suction inlet	see tables
Delivery outlet	see tables
Relief valve settings	5 bar (standard) 10 bar RF2 (on request)
Suction vacuum	0,45 bar/max
Viscosity range	6 - 800 cSt (1,5°E - 100°E)
Fluid temperature range	-20°C/+140°C
Speed	1400 rpm Light Oil 2800 rpm Heavy Oil
Noise level	52 - 53 dBA at 2800 rpm
Motors	220-240V 380-400V Three-phase 50Hz (standard) Three-phase 60Hz (on request)
Materials	Pump's body - cast iron Rotors - steel Shaft seal - viton

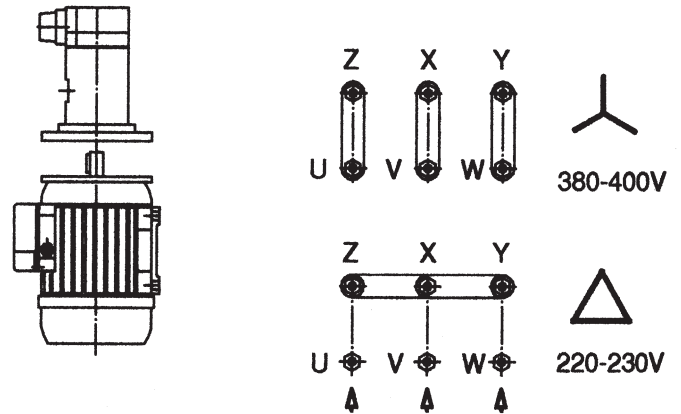
CONNECTION PUMP- MOTOR

- Put the motor in vertical position, refer to the drawing
- The pump has to entry free on the shaft of electric motor
- Don't force, if necessary remove and clean the key of the shaft
- After have fixed the four screws, check that the pump-motor applications turns free.

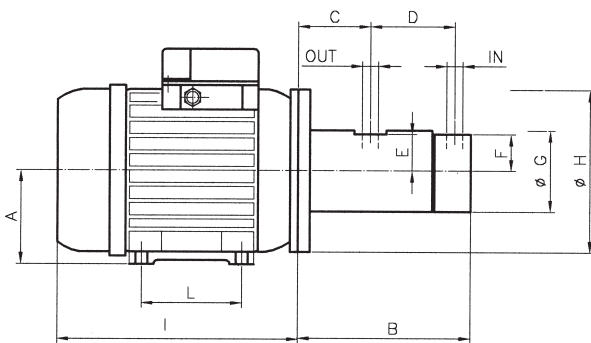


ROTATION

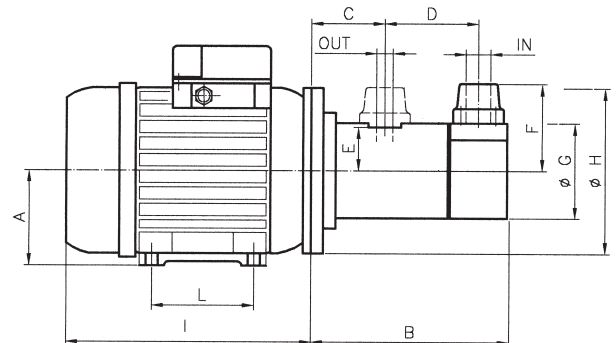
The pump is designed to operate with a clockwise rotation looking the shaft end.



DIMENSIONS OF THE PUMP



ITV 8 - 15 - 20 - 30

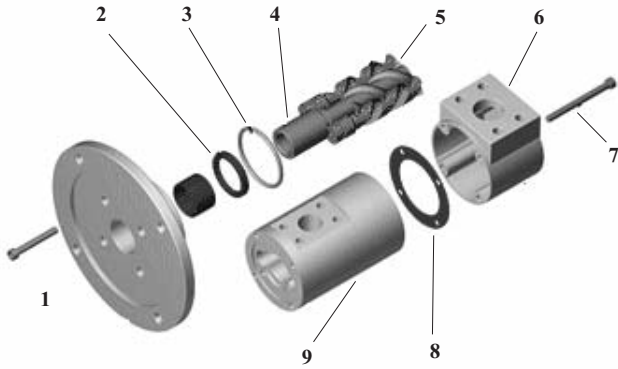


ITV 45 - 55 - 75 - 100 - 125

SERIES	HEAVY OIL		LIGHT OIL		IN	OUT	A	B	C	D	E	F	G	H	I	L
	1400 gpm CAPACITY l/h	MOTOR [W]	2800 gpm CAPACITY l/h	MOTOR [W]												
ITV 8	260	370	490	370	1/2"	1/2"	71	146	57	73	25	25	59	105	220	90
ITV 15	480	370	900	370	1/2"	1/2"	71	146	57	73	25	25	59	105	220	90
ITV 20	650	370	1200	550	1/2"	1/2"	71	146	57	73	25	25	59	105	220	90
ITV 30	970	370	1800	550	3/4"	1/2"	71	174	80	76	28	27	65	105	220	90
ITV 45	1450	750	2700	1500	1"1/4SAE	1"	80	243	86	123	40	95	96	143	242	100
ITV 55	1700	750	3200	1500	1"1/4SAE	1"	80	243	86	123	40	95	96	143	242	100
ITV 75	2400	750	4400	1500	1"1/4SAE	1"	80	243	86	123	40	95	96	143	242	100
ITV 100	3100	1500	5700	2200	1"1/2SAE	1"1/4SAE	90	294	104	150	87	105	110	155	290	125
ITV 150	4500	1500	8250	2200	1"1/2SAE	1"1/4SAE	90	294	104	150	87	105	110	155	290	125

Use the pump at 2800 rpm motor with viscosity lower then 12cSt (2°E).

COMPONENTS OF THE PUMP



Legend:

- 1 - Mounting flange
- 2 - Seals
- 3 - O-ring seals
- 4 - Main screw
- 5 - Idler screw
- 6 - Suction cover
- 7 - TCEI screws
- 8 - Plane gasket
- 9 - Body

IDENTIFICATION OF THE PUMP

ITV 45 RF2

Relief valve

■ = 5 bar set
RF2 = 10 bar set
 with RF2 motor type can be changed

Size

8 = 490 l/h	45 = 2700 l/h
15 = 900 l/h	55 = 3200 l/h
20 = 1200 l/h	75 = 4400 l/h
30 = 1800 l/h	100 = 5700 l/h
	150 = 8250 l/h

XX YY

week year
 manufacturing

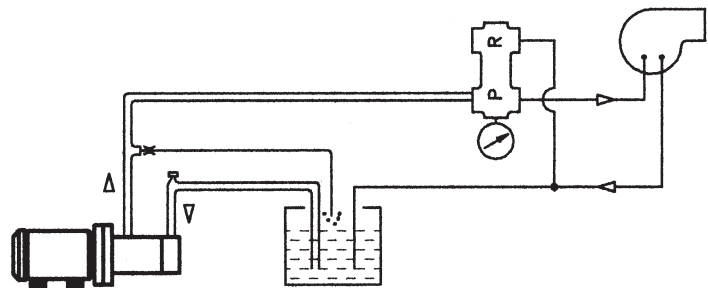
INSTALLATION NOTES



IMPORTANT

To make easier the priming please install the pump with the suction connection turned upward (see above application scheme).

Before connecting the suction and delivery pipes fill the pump with fuel. We suggest to use a lamellar filter in suction line with filtering value 300-400 mm.



Burners feeding with under pressure ring mains

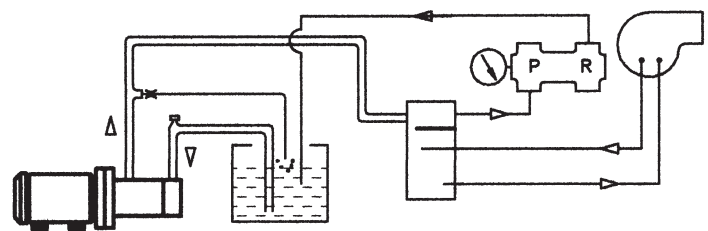
NOTES FOR CHOOSING THE CORRECT PUMP

Pump capacity must be:

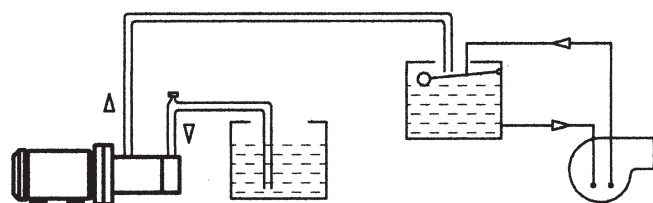
- In ring mains, at least double of the sum of the capacities of the pumps of burner(s)
- In plants with service tank, 1.5 times the maximum consumption of the installation.

In absence of sure data about burner pumps capacity you can consider as follow:

- With modulation burner the pump capacity is 2 - 2.5 times the maximum burner capacity.
- With multistage burner the pump capacity is 1.2 - 1.5 times maximum burner capacity.



Burners feeding with under pressure ring mains and degassing unit with preheated oil recovery



Burners feeding with secondary oil tank

SCREW PUMP



OIL BURNER PUMPS

Series ITVH

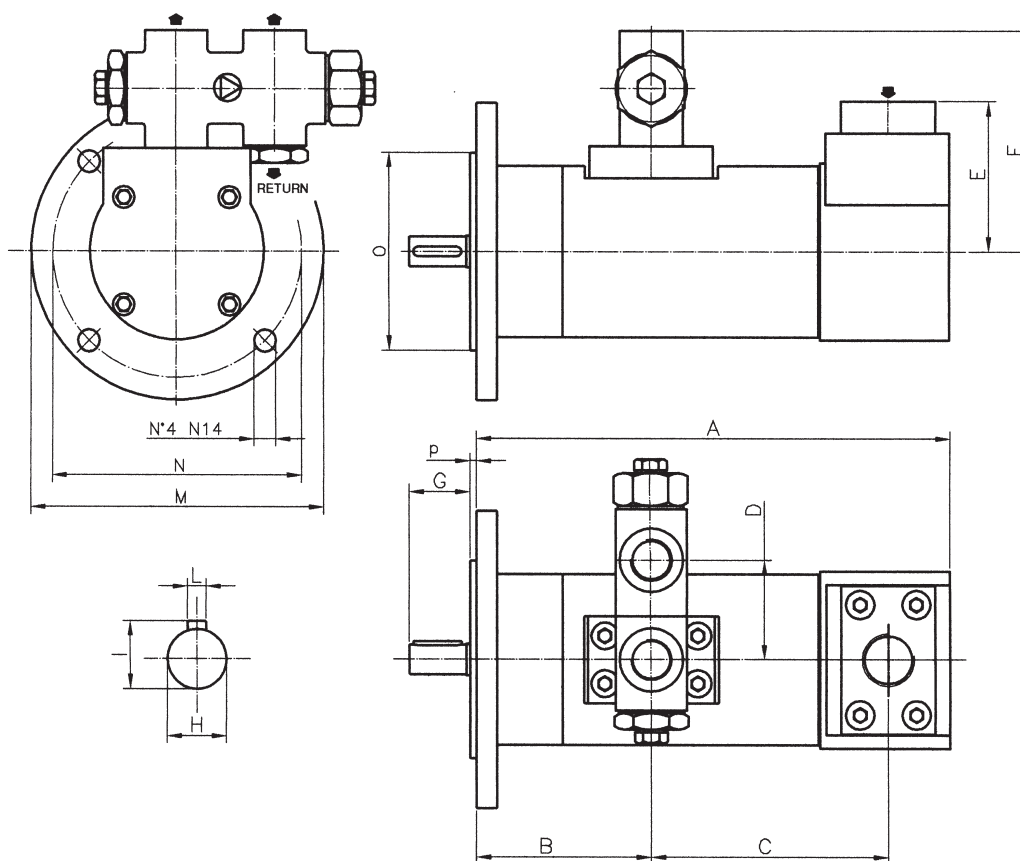
CHARACTERISTICS



Applications:

- High pressure 10 - 35 bar.
- Fuel and lubricant without abrasive contents.
- High volumetric efficiency.
- Hydraulically balanced.
- Very low noise (52-53 dBA at 1425 rpm).
- Pressure regulator valve included.
- Capacity from 2000 l/h to 5400 l/h (light oil 1425 rpm)

DIMENSIONS OF THE PUMP



TYPE	SUCTION	DELIVERY	RETURN	GAUGE PORT	A	B	C	D	E	F	G	H	I	L	M	N	O	P
ITVH 40	G 1	G 3/4	G 3/4	G 1/4	299	217	150	63	85	140	38.5	19	21.5	6	188	160	125	4
ITVH 41	G 1	G 3/4	G 3/4	G 1/4	389	307	224	63	85	140	38.5	19	21.5	6	188	160	125	4
ITVH 45	G 1 1/4	G 3/4	G 3/4	G 1/4	382	288	248	63	105	145	55	32	35	10	188	160	125	4
ITVH 46	G 1 1/4	G 3/4	G 3/4	G 1/4	382	288	248	63	105	145	55	32	35	10	188	160	125	4

TECHNICAL DATA

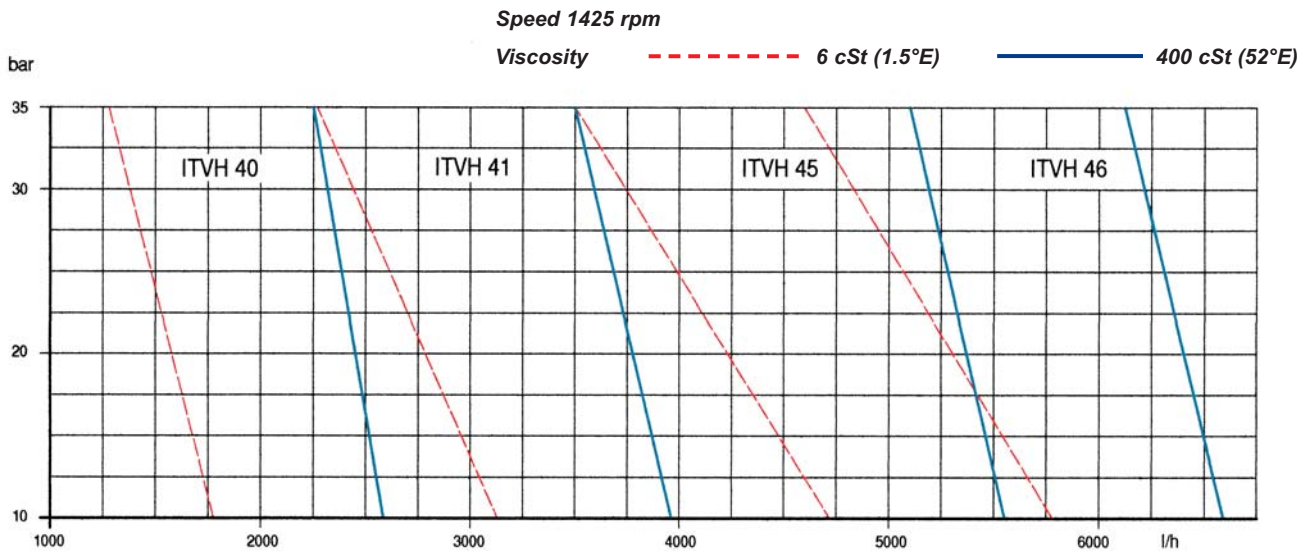
Suction inlet	G 1 / G 1 1/4
Delivery outlet	G 3/4
Suction vacuum	0,5 bar max
Inlet pressure	3 bar max
Viscosity range	6 - 600 cSt (1,5°E - 52°E)
Fuel temperature range	-20°C / +140°C
Speed	1425 rpm
Noise	52-53 dBA at 1425 rpm

TYPE	POLE	POWER [kW]	MOTOR FORM
ITVH 40	4	3	B3 - B5
ITVH 41	4	5.5	B3 - B5
ITVH 45	4	7.5	B3 - B5
ITVH 46	4	7.5	B3 - B5

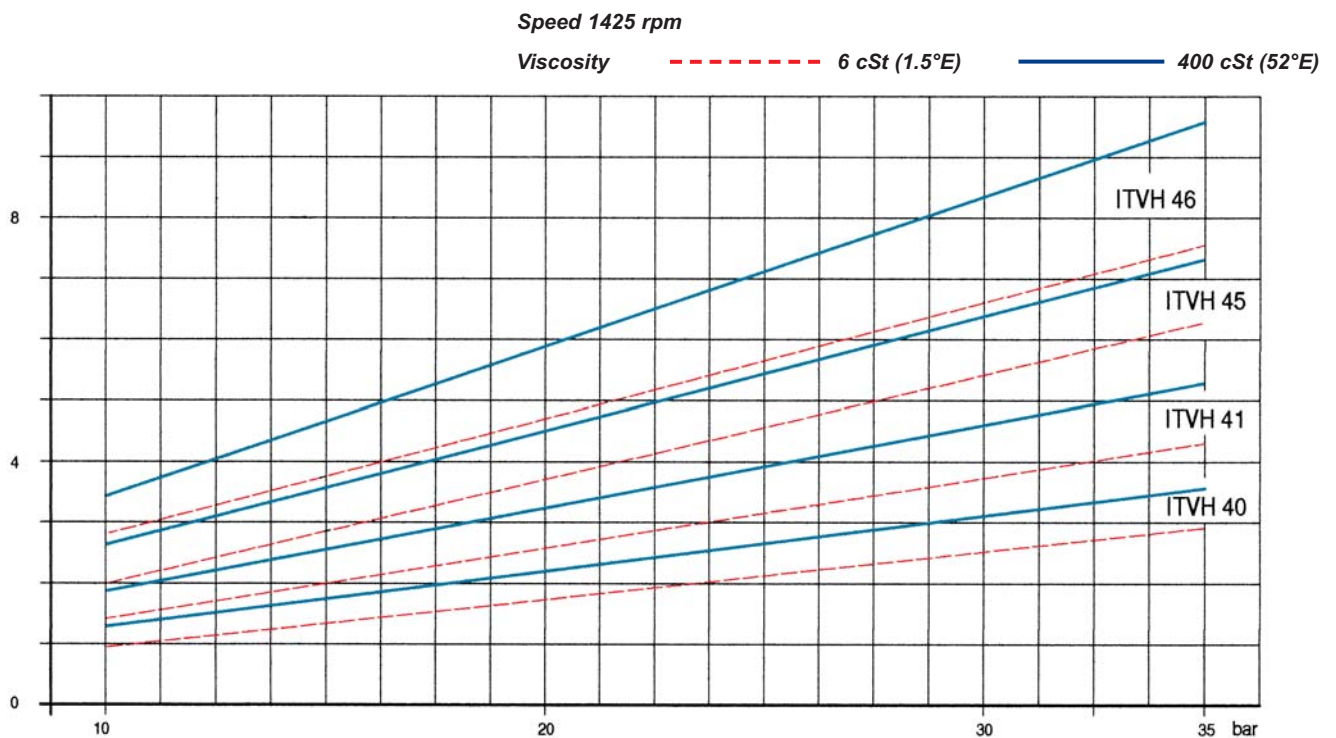
On request :

Pump complete with: Motor - Bell-housing - joint
Tension and frequency to be specified by the customer.

PRESSURE - CAPACITY DIAGRAM



POWER CONSUMPTION - PRESSURE DIAGRAM



Series ITR



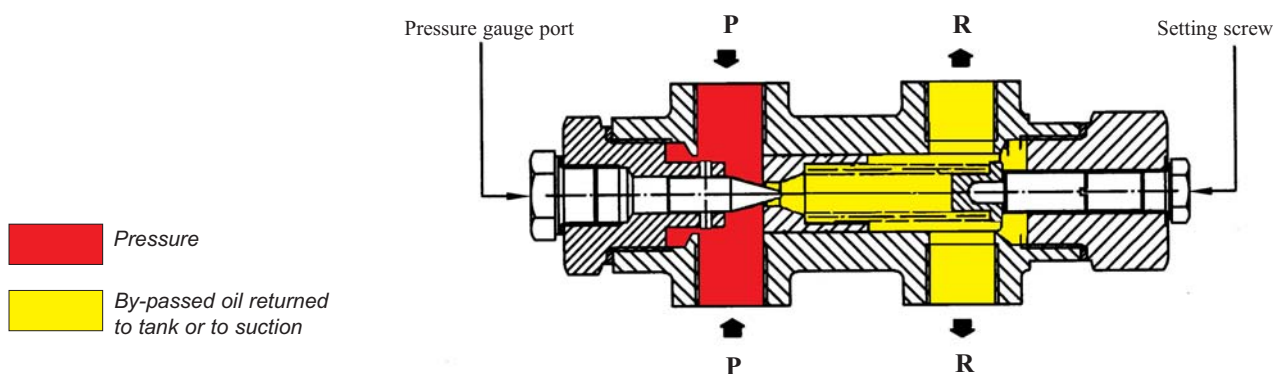
CHARACTERISTICS

Applications:

- Low pressure.
- Fuels or lubricant not corrosive.
- Maximum fluid temperature 250°C.
- Pressure adjustment by screw 1-5 bar.
- Increased pressure on request.

FUNCTION

ITR valve works as follow: the oil in the supply side "P" is under pressure and the piston sets constant the pressure leading the oil through the hole in piston to return side "R". The system pressure can be adjusted by the screw.

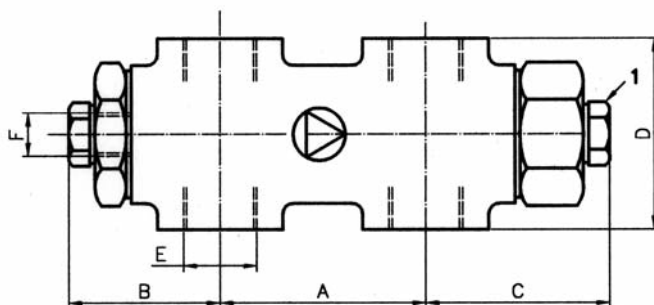


TECHNICAL DATA

ITR

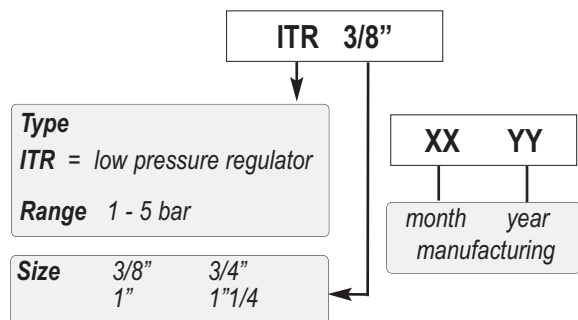
Viscosity range	2 - 800 cSt
Pressure range	1 - 5 bar
Weight	2 - 4 kg
Max. oil temperature	250°C
Max. flow rate	10000 l/h
Factory settings	min. pressure

DIMENSIONS



Pressure adjustment by screw placed under the plug 1.

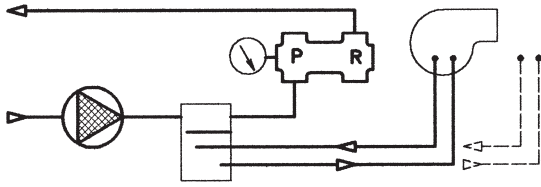
IDENTIFICATION



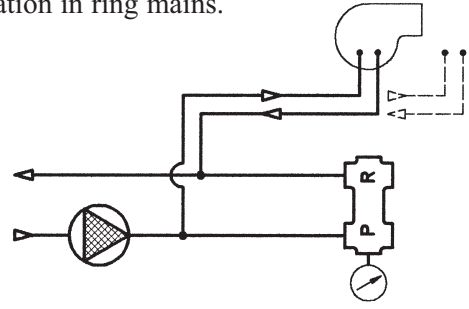
SERIES	CAPACITY l/h	DIMENSIONS					
		A	B	C	D	E	F
ITR 3/8"	600	55	46	55	52	G 3/8	G 1/4
ITR 3/4"	2.000	63	50	60	73	G 3/4	G 1/4
ITR 1"	6.000	80	48	58	86	G 1	G 1/4
ITR 1 1/4"	10.000	80	48	58	86	G 1 1/4	G 1/4

INSTALLATION NOTES

For pressure limitation or for pressure regulation in ring mains.



Burners feeding with under pressure ring main and degassing unit with preheated oil recovery.

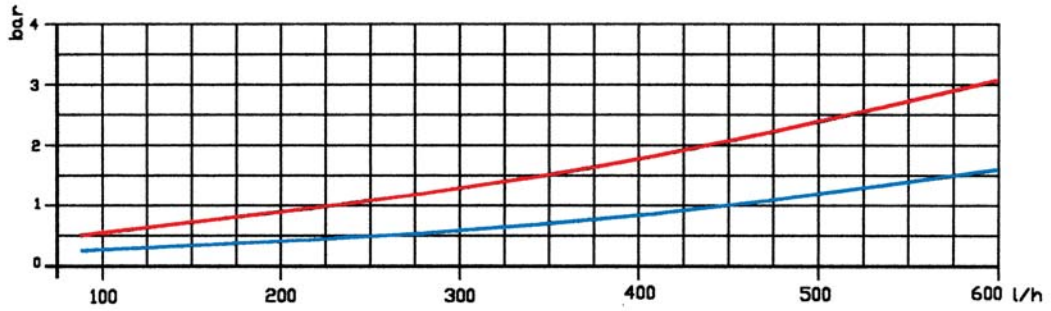


Feeding of burners with under pressure ring main.

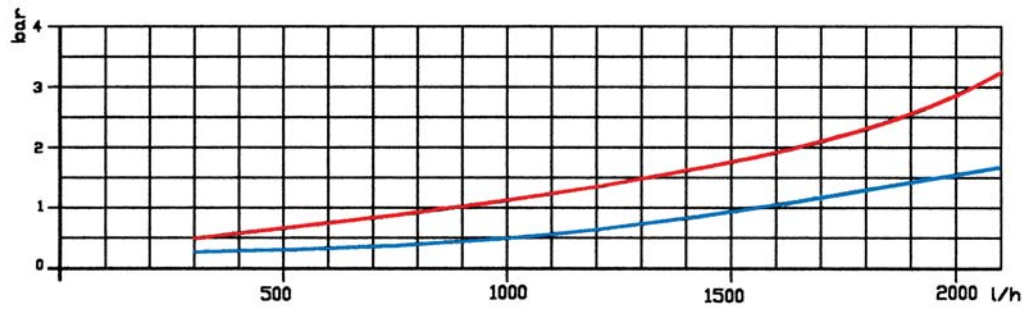
FLOW CHARACTERISTICS

— 20°E 152 cSt
— 1,5°E 6 cSt

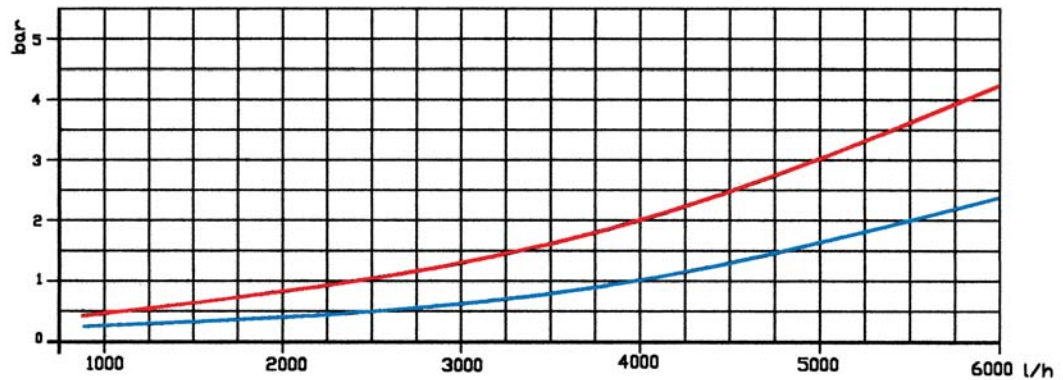
ITR 3/8"



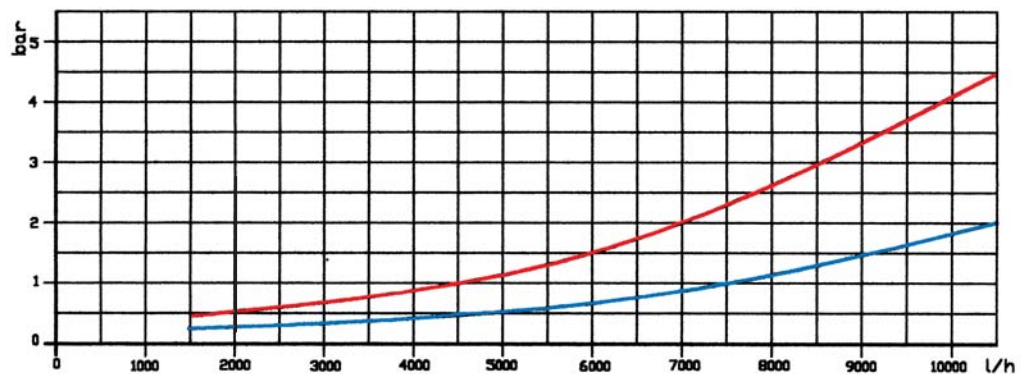
ITR 3/4"



ITR 1"



ITR 1"1/4"



Series ITRV



CHARACTERISTICS

Applications:

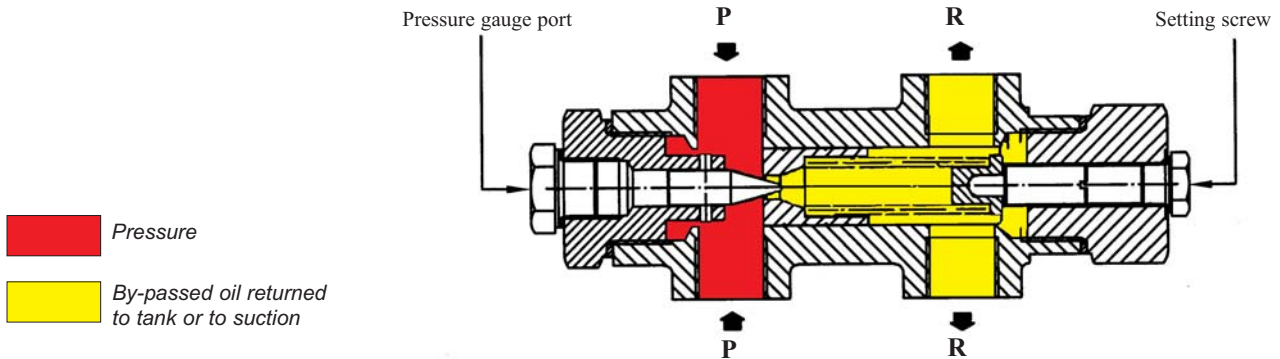
- Light and heavy oil.
- Pressure range 5-30 bar.
- Capacity up to 6000 l/h.

ITRV valves are designed to control pressure in oil plant.

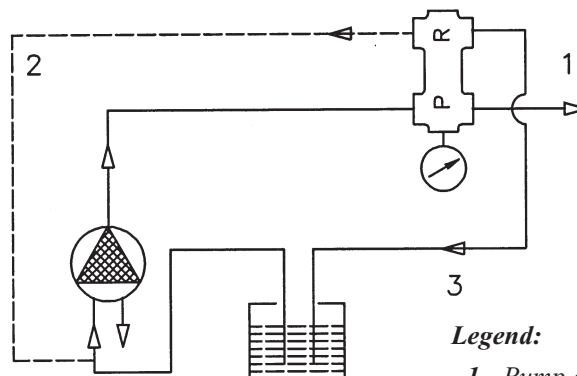
ITRV valves are available in two sizes with capacities up to 6000 l/h.

FUNCTION

ITRV valve works as follow: the oil in the supply side “P” is under pressure and the piston sets constant the pressure leading the oil through the hole in piston to return side “R”. The system pressure can be adjusted by the screw.



INSTALLATION NOTES



Legend:

- 1 - Pump delivery to regulator or nozzle
- 2 - Oil return to suction side
- 3 - Oil return to tank

TECHNICAL DATA

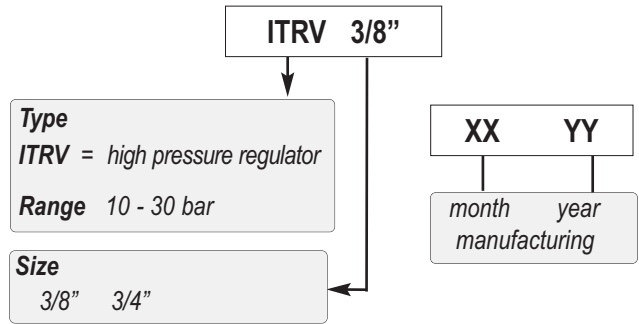
ITRV 3/8"

Viscosity range	2 - 800 cSt
Pressure range	5 - 30 bar
Weight	1,2 kg
Max oil temperature	250°C
Max flow rate	3000 l/h
Factory settings	min. pressure

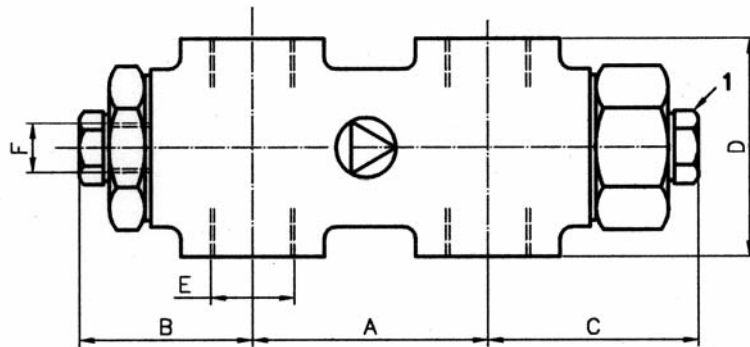
ITRV 3/4"

Viscosity range	2 - 800 cSt
Pressure range	5 - 30 bar
Weight	2,2 kg
Max oil temperature	250°C
Max flow rate	6000 l/h
Factory settings	min. pressure

IDENTIFICATION



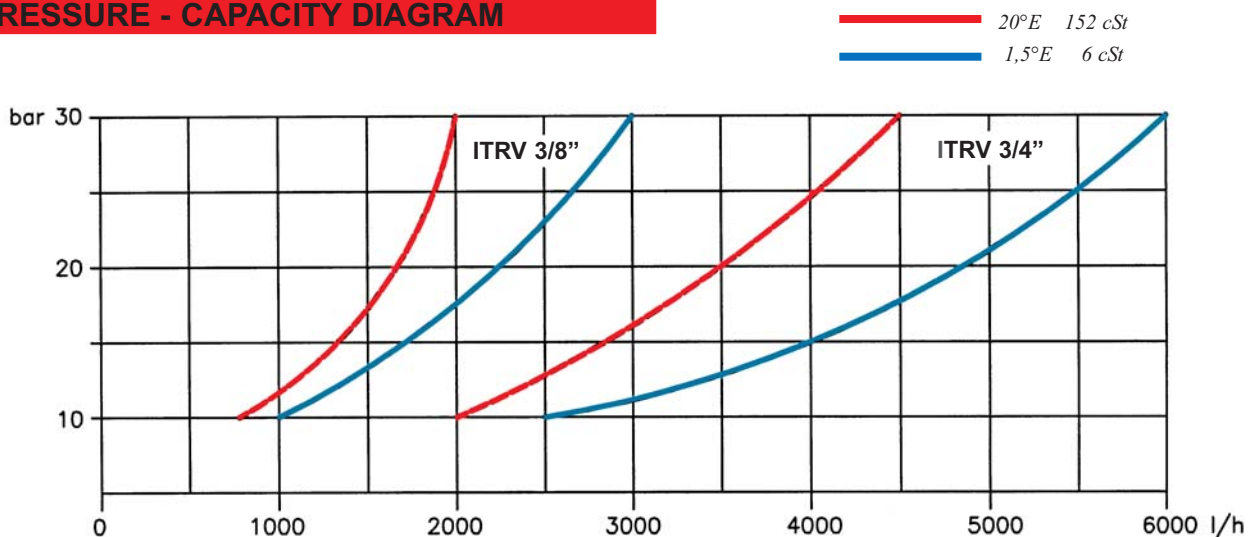
DIMENSIONS



Pressure adjustment by screw placed under the plug 1.

SERIES	MAX FLOW RATE l/h	DIMENSIONS					
		A	B	C	D	E	F
ITRV 3/8"	3000	55	46	55	52	G 3/8	G 1/4
ITRV 3/4"	6000	63	50	60	73	G 3/4	G 1/4

PRESSURE - CAPACITY DIAGRAM

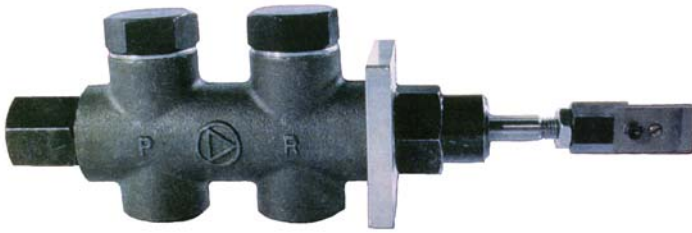


PRESSURE AND FLOW REGULATING VALVE



OIL BURNER PUMPS

Series ITRP



ITRP valve are designed to control pressure and flow on a modulating oil burner. The oil pressure varies proportionally to plunger movement.

CHARACTERISTICS

Applications:

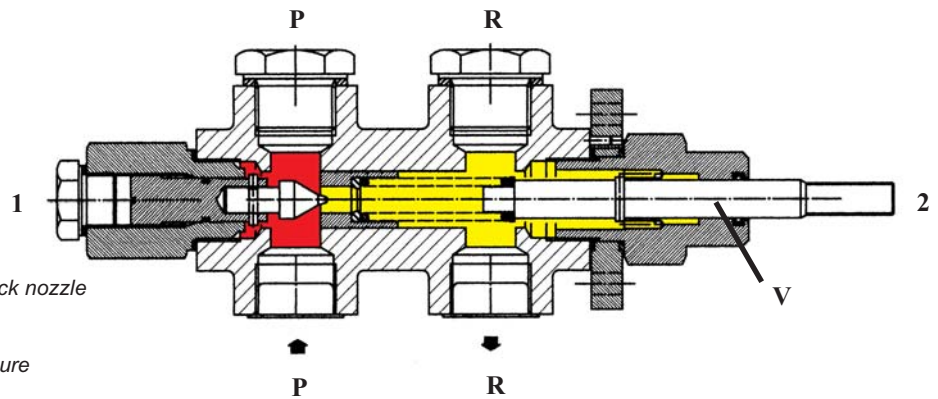
- Light and heavy oil
- Oil burners with spill-back nozzles.
- Adjustment 5-25 bar.
- Capacity up to 2500 l/h.

FUNCTION

ITRP valve works between two different pressure values. The minimum pressure value is set by the minimum output setting pressure screw under the plug 1; it is suggested a value around 6 bar because this is the minimum rate to have an acceptable pulverization. The maximum pressure value is set by the plunger stroke "V" and the modulation is obtained with the movement of the piston in-out.

The valve also control the flow in the following way: the higher pressure in the valve has, as consequences, the less flow through it and also the lower pressure in the valve is, the higher flow through it.

On the other side in the nozzle return line the higher pressure has like consequence the more oil pulverized in the nozzle.

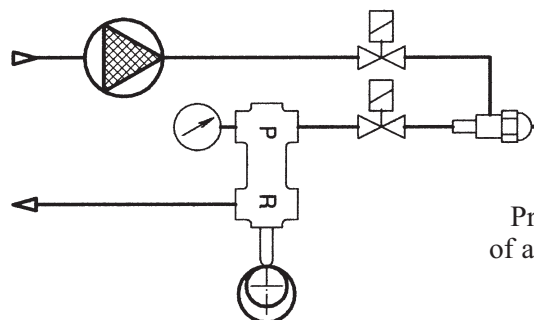


Legend:

- P* = Return pressure from spill-back nozzle
- R* = Return to tank
- V* = Plunger
- 1** = Minimum output setting pressure
- 2** = Modulation: 8-9 stroke

INSTALLATION NOTES

Spill-back nozzle



Pressure regulation on return line of a modulating oil burner

TECHNICAL DATA

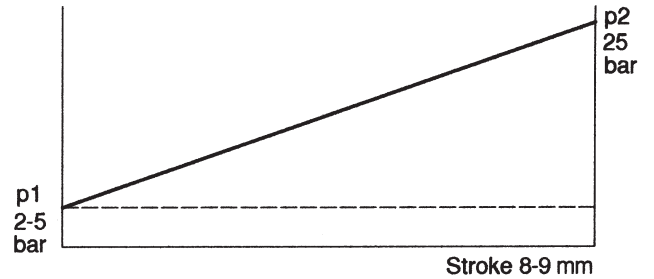
ITRP 3/8"

Viscosity range	2 - 800 cSt
Pressure range	5 - 25 bar
Weight	1,5 kg
Max oil temperature	150°C
Max flow rate	1000 l/h
Factory settings	min. pressure

ITRP 3/4"

Viscosity range	2 - 800 cSt
Pressure range	5 - 25 bar
Weight	2,3 kg
Max oil temperature	150°C
Max flow rate	2500 l/h
Factory settings	min. pressure

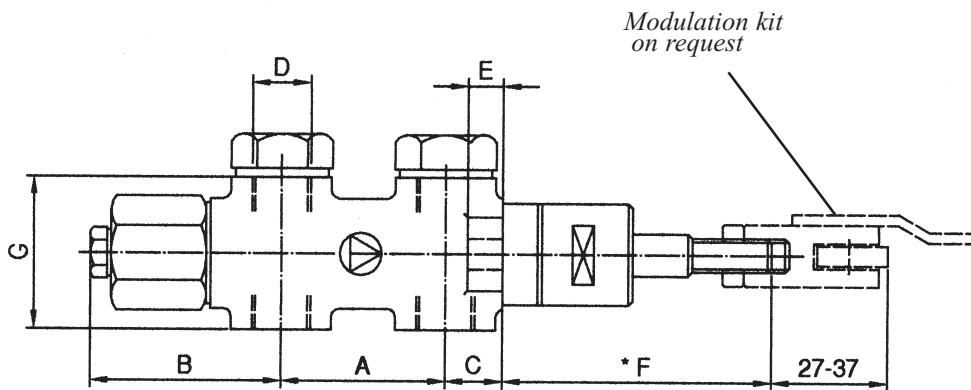
PRESSURE - STROKE DIAGRAM



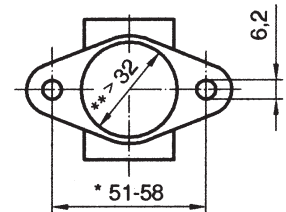
SERIES	PRESSURE	STROKE
ITRP	p1 2-5 bar	p2 25 bar 8 - 9 mm

The oil pressure varies proportionally to plunger movement.

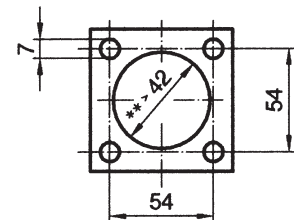
DIMENSIONS



BRACKET



ITRP 3/8"



ITRP 3/4"

BRACKET

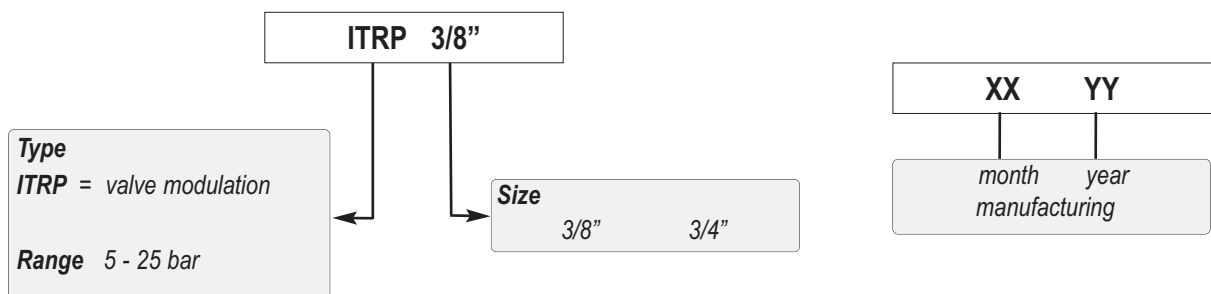
* On request 51 mm or 58 mm

** Prearranged hole

SERIES	MAX FLOW RATE l/h	DIMENSIONS						
		A	B	C	D	E	F*	G
ITRP 3/8"	1.000	55	71	16	G 3/8	10	82	52
ITRP 3/4"	2.500	63	76	43	G 3/4	10	72	83

* F = depending on regulation

IDENTIFICATION



Series ITRE



CHARACTERISTICS

Applications:

- For electronic cam.
- Low starting torque less than 2 Nm.
- Possibility to modify the open area of the application changing the disk.
- Linear relation capacity-pressure.
- Possibility to link together one actuator with oil regulator and butterfly gas valve (for mixed burner).

FUNCTION

The regulator can be used in two different configurations: SPILLBACK and METERING. Inside the regulator is installed a disk-plate with progressive opening, the rotation of the regulator shaft varies the quantity of oil which passes through it.

The internal disk-plate is divided in two different calibrated open areas which allow to obtain the desired capacity range. Opening the regulator and rotating the disk plate of 180° it is possible to change the requested capacity range.

The regulator is provided in the following configuration: ITRE 1 with disk plate 1 and open area 1 or ITRE 2 with disk 2 and open area 3. The disk-plates are interchangeable and can be rotated or substituted even after the installation.

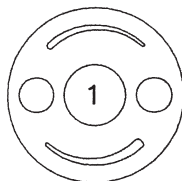
On request: it is possible to manufacture special disks with customized open areas.

(1) open area 11,2 mm²

(3) open area 22 mm²

DISK

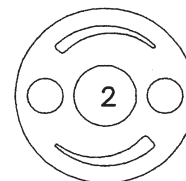
ITRE 1



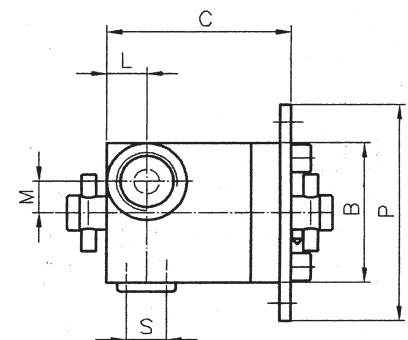
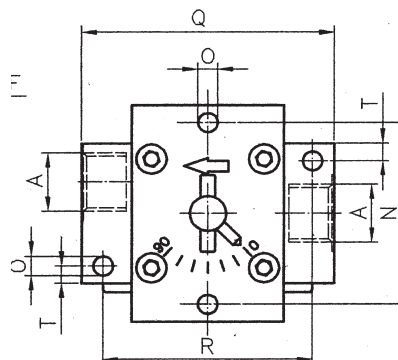
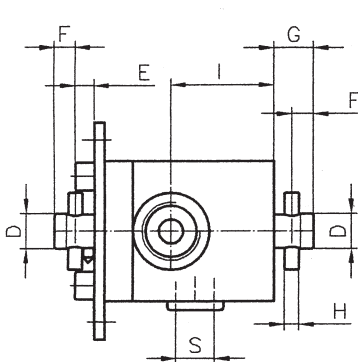
(2) open area 19 mm²

DISK

ITRE 2



(4) open area 26,5 mm²



TYPE	DIMENSIONS																	
	A	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	R	S	T
ITRE1	G3/8	40	50.5	10	6	6	11	4	29	11	9	52	5.5	62	70	58	G1/8	5
ITRE2	G1/2	40	50.5	10	6	6	11	4	25	15	5	52	5.5	62	76	58	G1/8	5

SPILLBACK version

Once selected the nozzle capacity and the minimum pressure in the return line, with the regulator in “0” position (completely open), verify on the nozzle capacity diagram the capacity on the return line at the selected pressure. On the disk plate diagrams select the most suitable one and the desired open area.

EXAMPLE: With a nozzle 500 kg/h, return line pressure 5bar, if there are not diagrams available, you can consider that with the indicated pressure the capacity in the return line is approximately 1,6 times the max nominal capacity of the nozzle ($1,6 \times 500 = 800$ kg/h). Using the regulator diagrams the requested solution is “ITRE 1 with open area 1”. In case is requested a lower pressure on the return line is possible to rotate the disk-plate on the open area 2 obtaining approximately 3 bar.

How to install the actuator on the regulator

Fix the actuator with a joint and plate holder using the holds on the plate. The holes on the body can be used to block the regulator on a plane. On request the graduated upper plate can have different dimensions (specific for the customer).

METERING version

In a steam air pulverization burner the maximum working pressure is approximately 6 bar. The pressure in the line must be 2-3 bar higher of the working pressure (approximately 9 bar). Once selected the requested pressure choose from the diagrams the curves at 6 bar suitable for the application. Please note that on the METERING version the maximum capacity on the nozzle is obtained when with the index in “0” position (completely open).

EXAMPLE: maximum capacity 800 kg/h, looking to the curves at 6 the result obtained is ITRE 1 with open area 1, approximately 870 kg/h. If it is requested a lower max capacity it will be necessary to work with a partially closed regulator.

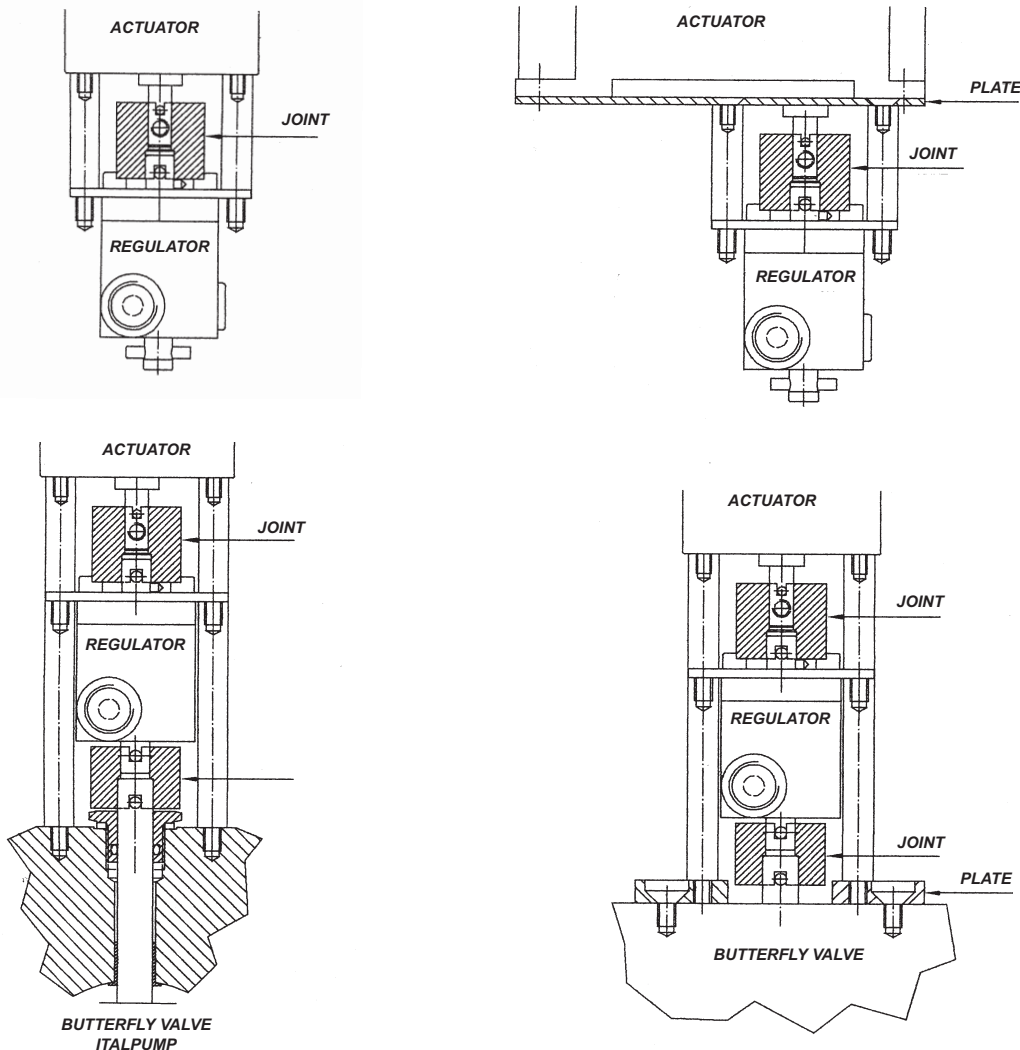
How to fix the regulator on the butterfly gas valve

If the holes of the butterfly do not match with the holes of the regulators it will be necessary to put a plate in the middle and fix it with a joint and a plate holder.

IMPORTANT:

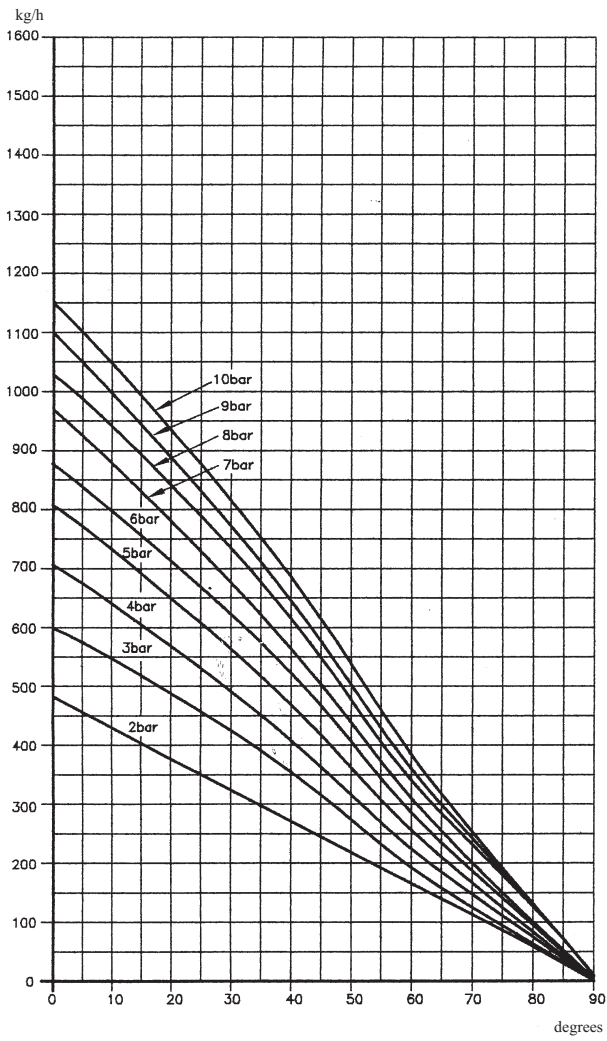
ITALPUMP manufactures butterfly gas valve too and on request can supply the regulator directly mounted on the butterfly gas valve (please specify the size of the butterfly gas valve, of the regulator and the disk-plate open area).

ACTUATOR APPLICATIONS

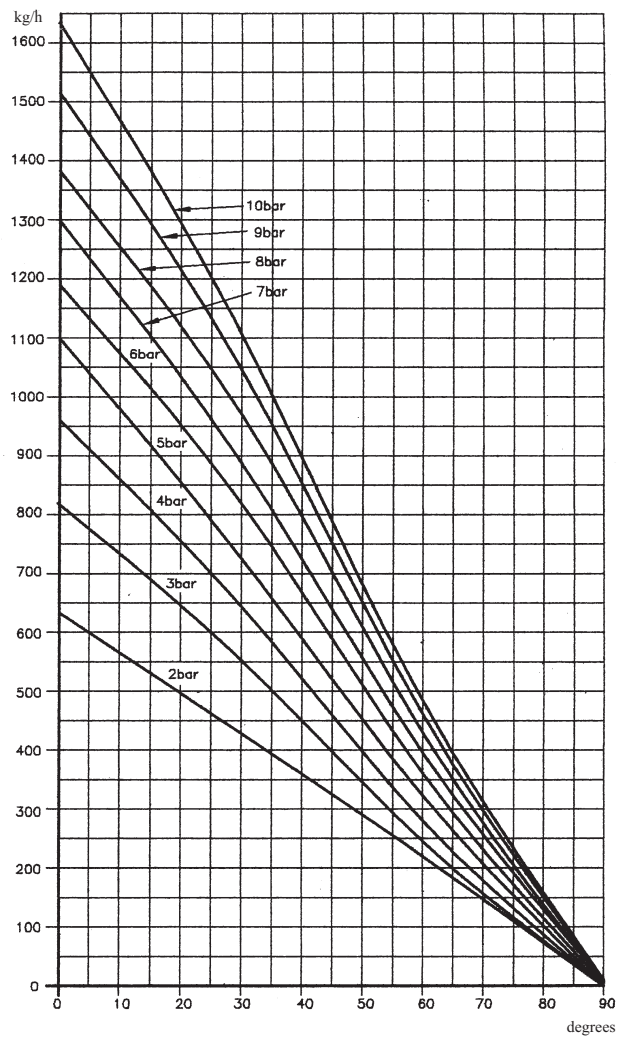


OPENING PRESSURE DIAGRAM

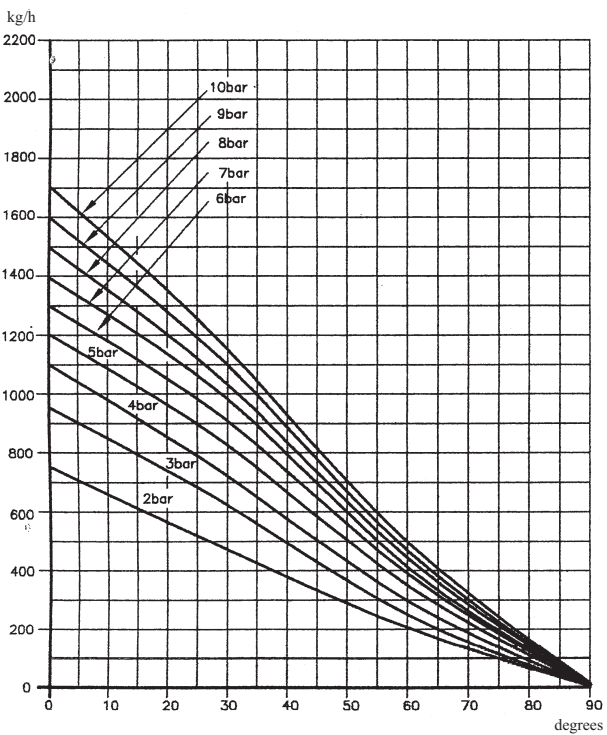
DISK 1 (1)



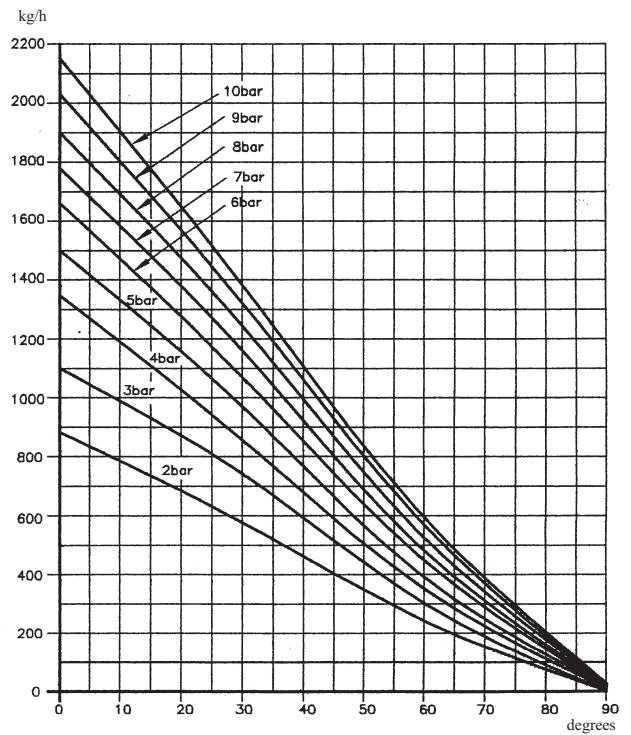
DISK 1 (2)



DISK 2 (3)



DISK 2 (4)



Series ITM



CHARACTERISTICS

Applications:

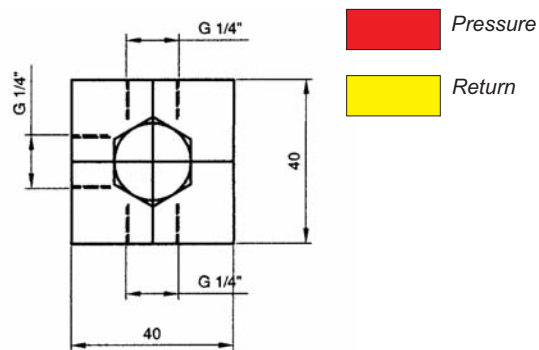
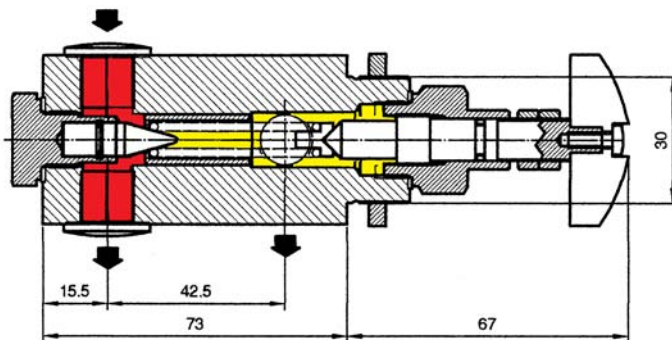
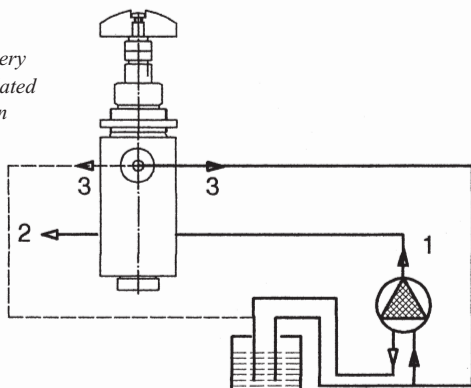
- Fuels or lubricant not corrosive.
- Maximum fluid temperature 150°C.
- Pressure adjustment by screw 5 - 30 bar.
- Manual pressure regulation.

FUNCTION and DIMENSIONS

ITRV valve works as follow: the oil in the supply side “1” is under pressure and the piston keeps constant the pressure leading the oil through the hole in piston to return side “3”. The system pressure coming out from side “2” can be adjusted operating on the wheel.

Legend:

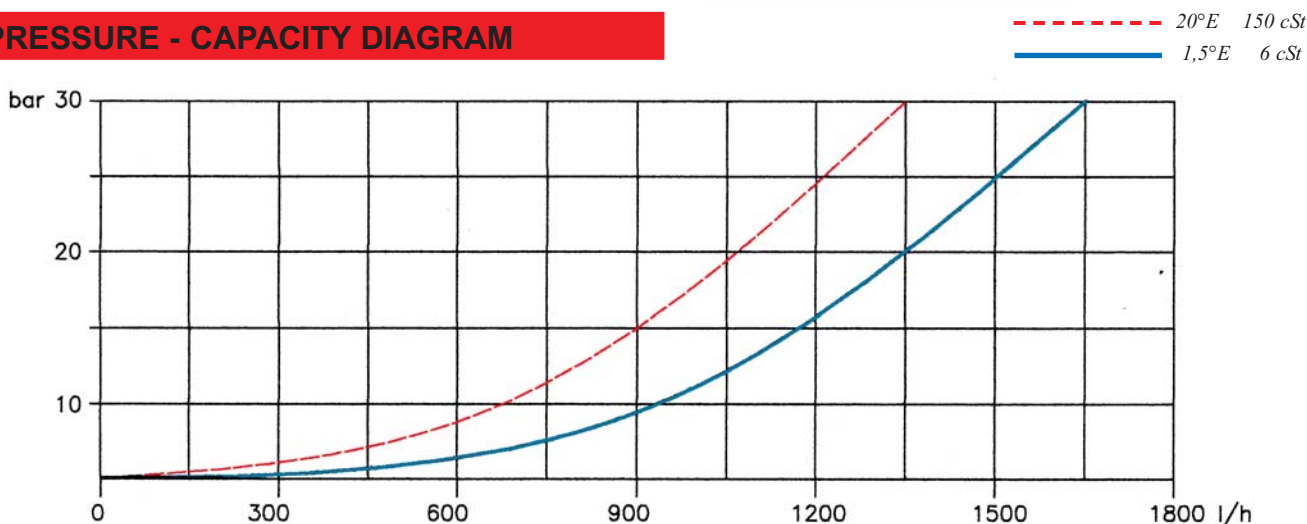
- 1 - Delivery
- 2 - Regulated
- 3 - Return



TECHNICAL DATA

Viscosity range	6 - 150 cSt
Pressure range	5 - 30 bar
Weight	1 kg
Max. oil temperature	150°C
Max. flow rate	1700 l/h

PRESSURE - CAPACITY DIAGRAM



Series PT

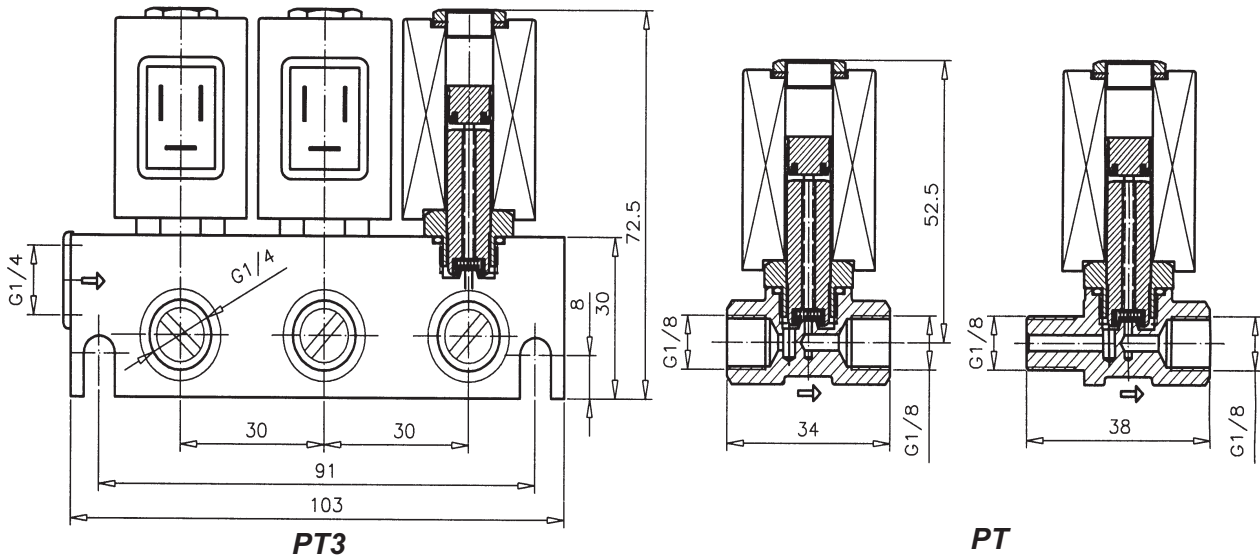


CHARACTERISTICS

Applications:

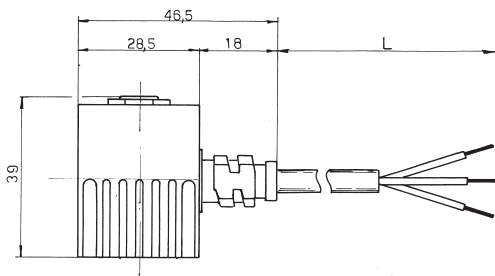
- Light Oil.
- Normally closed.
- Oil cut-off and seal device.
- Two versions:
 - (1) with cable type M81
 - (2) with plug type F84

DIMENSIONS OF THE VALVE



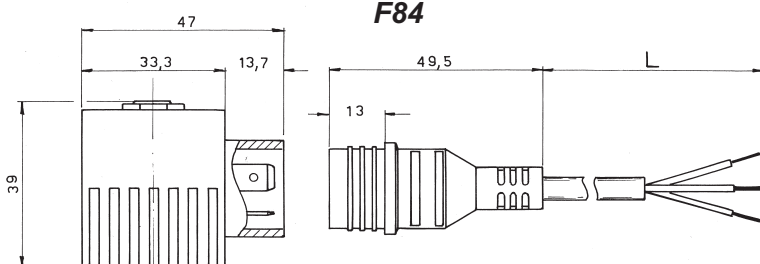
COILS

M81



Coil M81 is with provided built-in cable (H03VV-F3/0,75).

F84



Coil F84 is provided with separated plug and cable (H03VV-F3/0,75)

TECHNICAL DATA

GENERAL DATA

Operating pressure	20 bar max
Power absorption	9 W
Oil temperature	60°C max
Ambient temperature	0-60°C
Protection class	IP 65
Flow factor (Kv)	0,08 m ³ /h (type PT) 1,00 m ³ /h (type PT3)
Orefice	Ø 1,7mm (type PT) Ø 1,9-2mm (type PT3)
Viscosity range	10 cSt max

MATERIALS

Body	Brass
Seal	FPM (Viton)
Plunger	Magnetic Steel
Coil covering	Nylon
Spring	Stainless Steel
O-ring	NBR
Cable	PVC

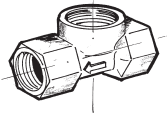
VOLTAGES

Supply Voltages	220-240V, 50Hz (TUV); 220-240V, 50/60Hz; 110V, 60Hz; 24V; 50Hz; 24V; DC
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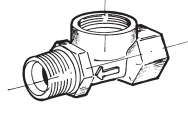
CONNECTIONS

(1) 1/8" FF	female - female
(2) 1/8" M 1/8" F	male - female
(3) 1/8" M 1/4" M	male - male

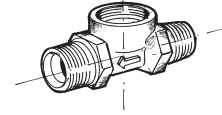
1



2



3

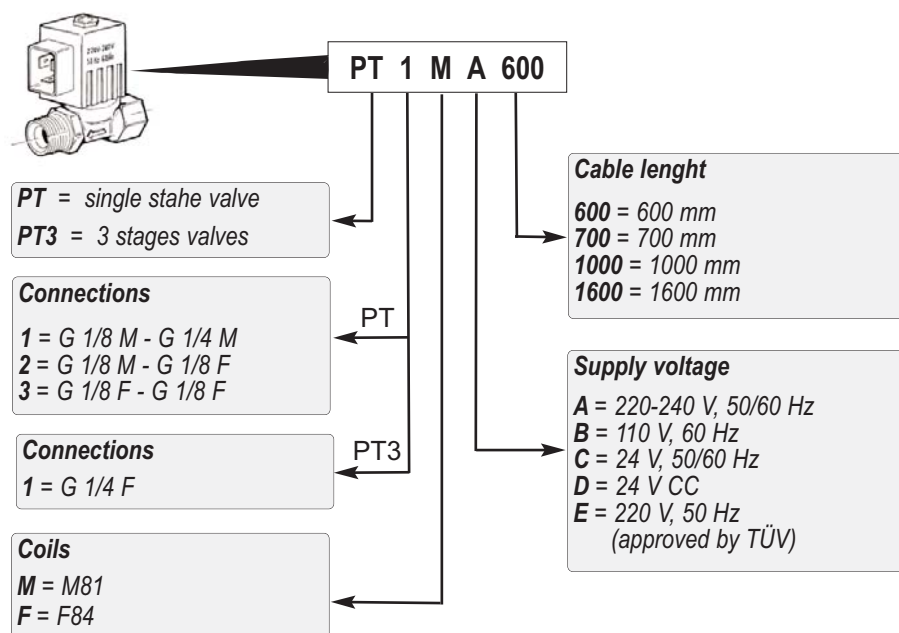


APPROVALS

Type PT and PT3 F84 220-240 V, 50Hz, approved by TÜV
Norms EN 264 and EN ISO 23553-1
Registration n°.



IDENTIFICATION OF THE VALVE



Series ITG



CHARACTERISTICS

Applications:

- Suitable gas hot air, natural gas, town gas, LPG and other non aggressive fuels.
- Low leakage rate and pressure loss.
- Possibility to mount any actuator chosen by the customer.
- Possibility to mount our suggested actuator.
- Low maintenance requirements.
- Modulating Ratio 1:10.

FUNCTION

The butterfly valves series ITG are designed for controlling the volume of gas to supply a modulating or two stage (progressive) burner. The actuating time depends on the type of actuator.

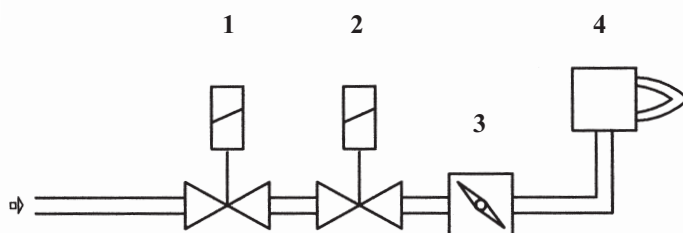
INSTALLATION NOTES

The butterfly valve must be installed between two flanges according to EN-1092. The length of the inlet and outlet section should be $2 \times DN$.

When built into a vertical pipe, dirt may accumulate on the stop bar, which may prevent the valve from closing properly.



Check for leak and function after installation.



Legend:

- 1 - Gas valve
- 2 - Gas valve
- 3 - ITG butterfly valve
- 4 - Burner

TECHNICAL DATA

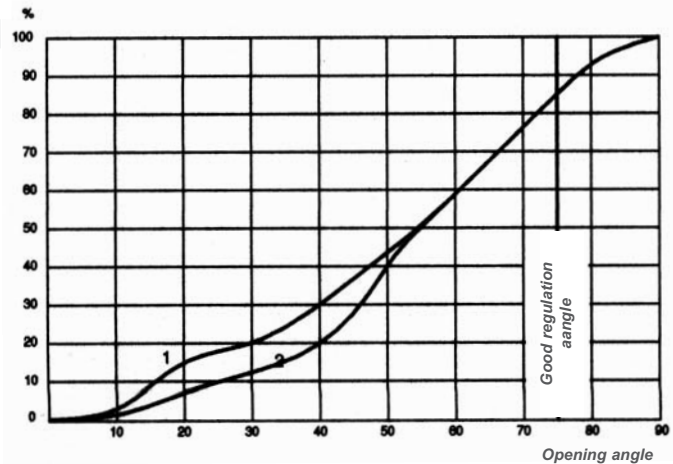
ITG

Max operation pressure	2000 mbar (200 kPa)
Ambient temperature	-20°C to +70°C
Adjusting angle	max.90°
Housing material	aluminium
Shaft material	stainless steel
Seals material	NBR (<i>viton on request</i>)

Legend:

- 1 - Standard butterfly valve
- 2 - ITALPUMP butterfly valve

SECTION-OPENING ANGLE

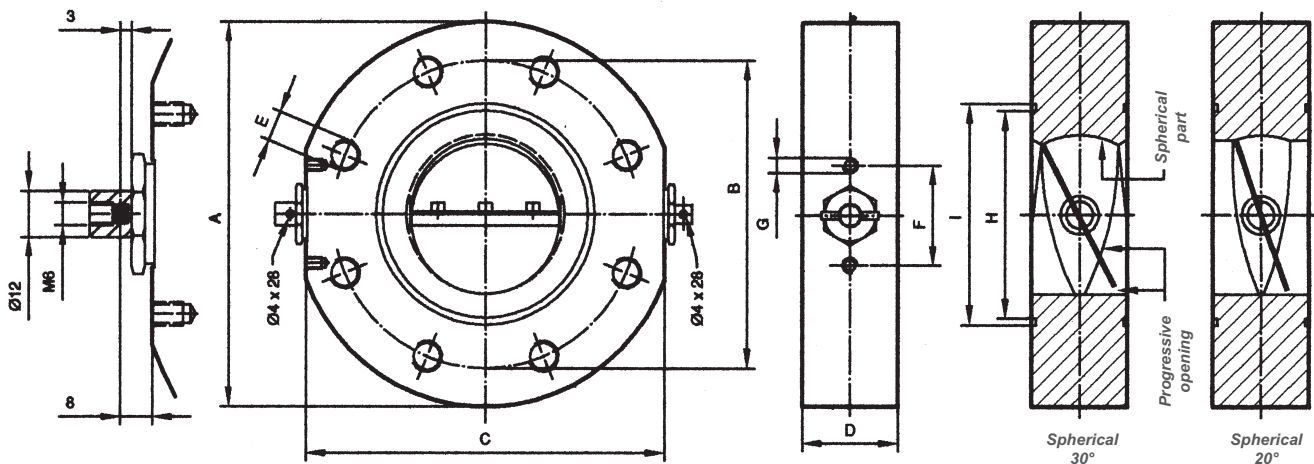


The diagram shows that the curve 2, up to 40°, has a smaller section.

The smaller section make easier the calibration of the burner with high modulating ratio, especially with LPG.

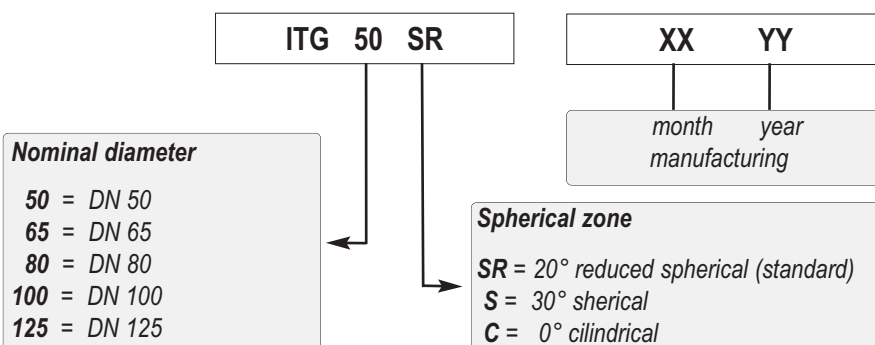
NOTE: In the selection of the correct butterfly valve size you have to consider higher pressure losses grant a better regulation, so according with the line pressure avoid to select butterfly valves with pressure losses 1 - 2 mbar.

DIMENSIONS OF THE VALVE



Type	Spherical	A	B	C	D	E	F	G	H/I -Oring
DN 50	20°	165	125	152	40	n°4 - M16	52	M6	92.8/100 - 2-154
DN 65	20°	185	145	173	44	n°4 - M16	52	M6	107.8/100 - 2-154
DN 80	20°	200	160	188	50	n°8 - M16	52	M6	107.8/100 - 2-154
DN100	20°	220	180	206	58	n°8 - M16	52	M6	144.8/100 - 2-154
DN125	20°	250	210	236	65	n°8 - M16	52	M6	144.8/100 - 2-154

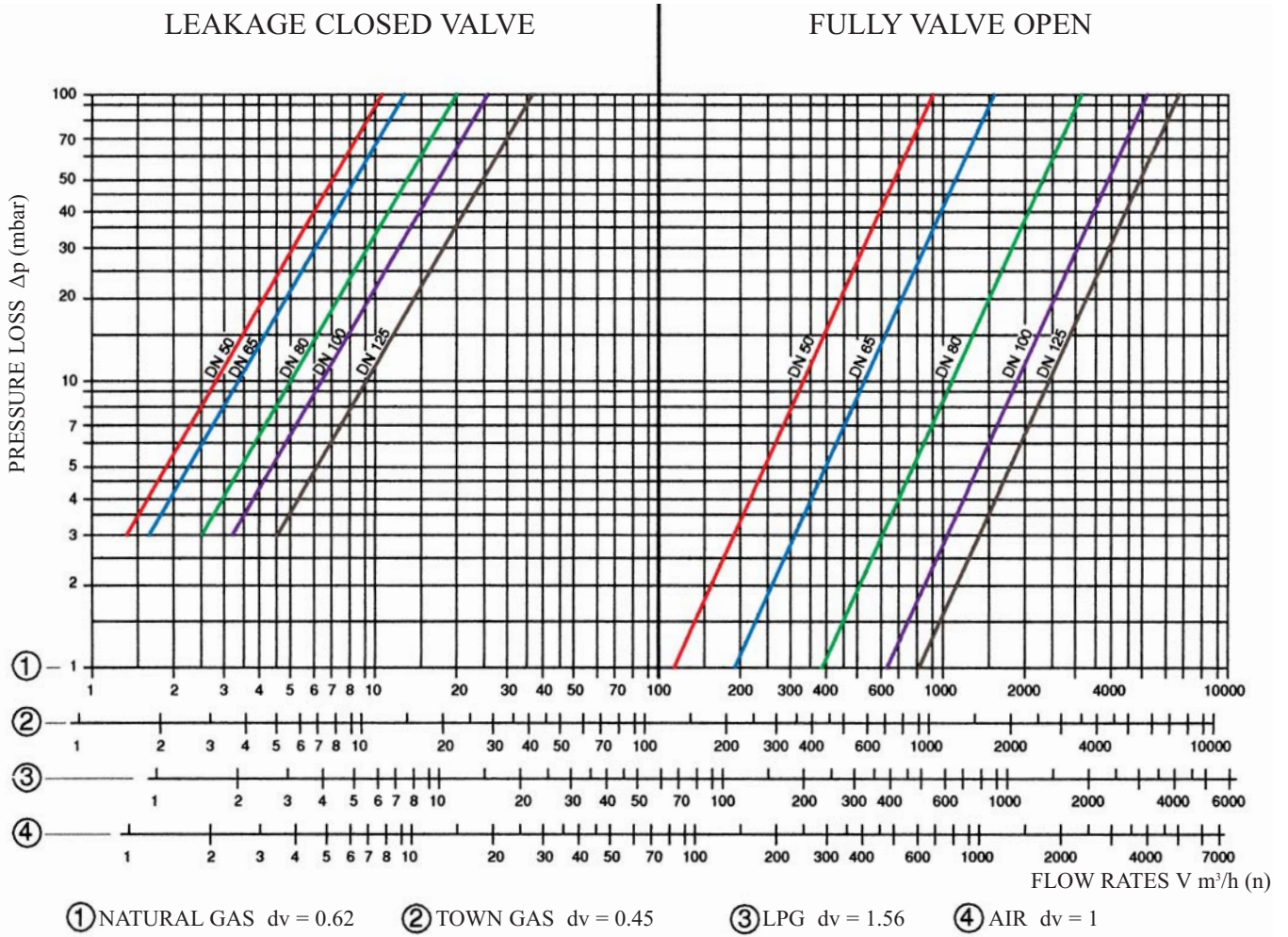
IDENTIFICATION OF THE VALVE



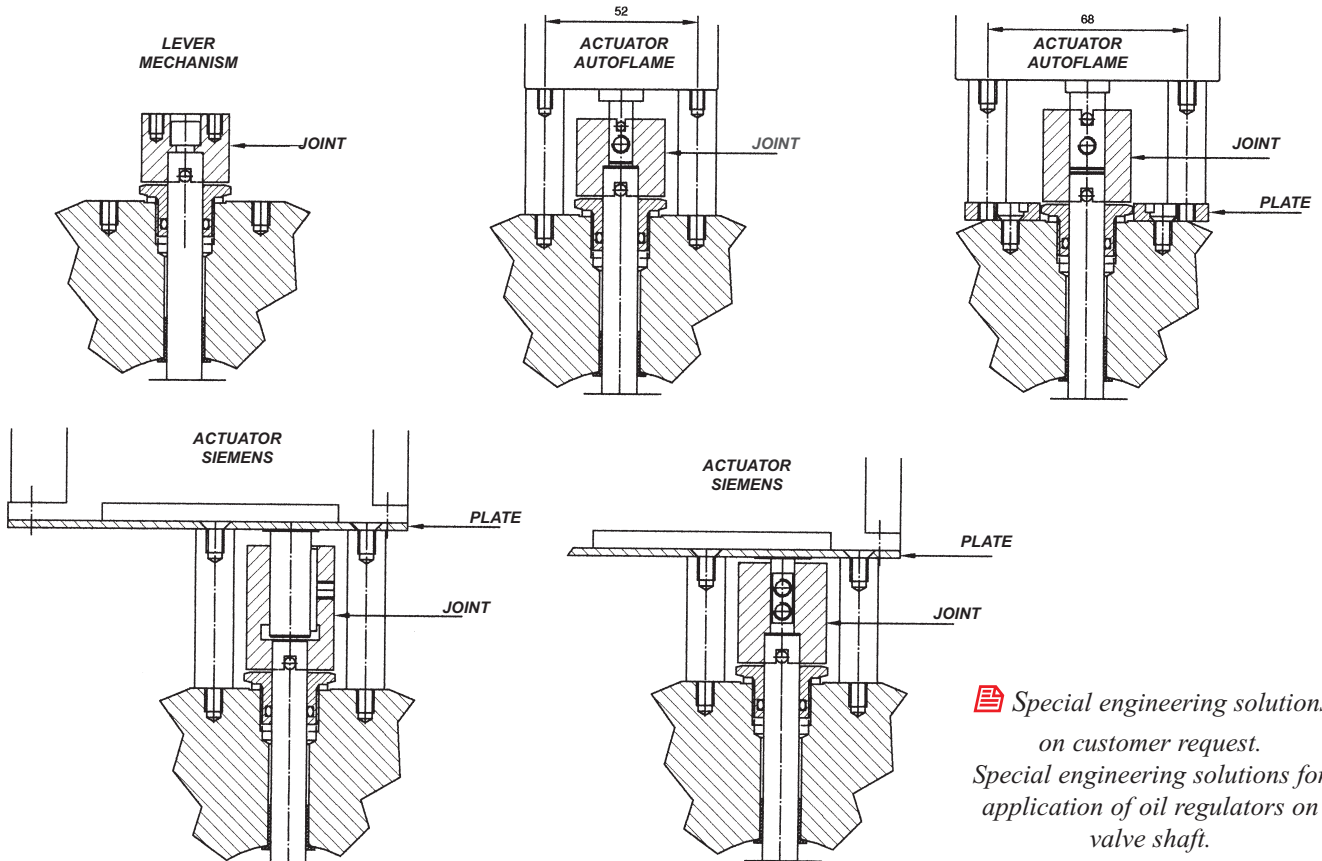
* Note:

- 0° - No spherical zone (cilindrica)
- 30° - Spherical zone for high modulation ratio and LPG

DIAGRAM OF THE VALVE



APPLICATIONS WITH LEVER MECHANISM AND ACTUATOR



BUTTERFLY GAS VALVE COMPACT VERSION

Series ITGR



CHARACTERISTICS

Applications:

- Suitable gas hot air, natural gas, town gas, LPG and other non aggressive fuels.
- Low leakage rate and pressure loss.
- Possibility to mount any actuator chosen by the customer.
- Possibility to mount our suggested actuator.
- Low maintenance requirements.
- **COMPACT VERSION**

FUNCTION

The butterfly valves series ITGR are designed for controlling the volume of gas to supply a modulating or two stage (progressive) burner. The actuating time depends on the type of actuator.

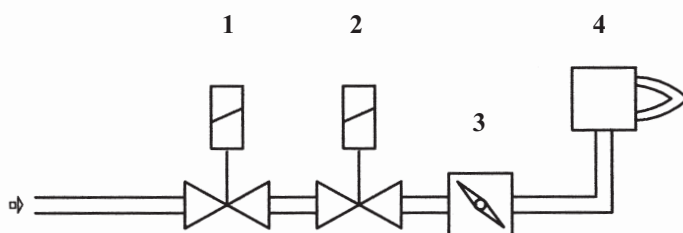
INSTALLATION NOTES

The butterfly valve must be installed between two flanges according to EN-1092. The length of the inlet and outlet section should be $2 \times DN$.

When built into a vertical pipe, dirt may accumulate on the stop bar, which may prevent the valve from closing properly.



Check for leak and function after installation.



Legend:

- 1 - Gas valve
- 2 - Gas valve
- 3 - ITG butterfly valve
- 4 - Burner

TECHNICAL DATA

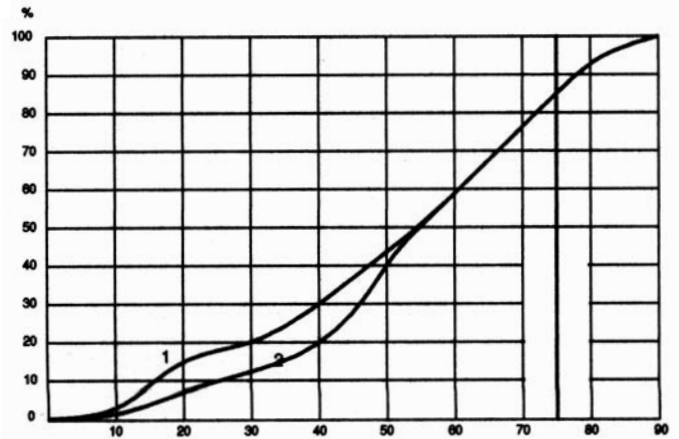
ITGR

Max operation pressure	2000 mbar (200 kPa)
Ambient temperature	-20°C to +70°C
Adjusting angle	max.90°
Housing material	aluminium
Shaft material	stainless steel
Seals material	NBR (<i>viton on request</i>)

Legend:

- 1 - Standard butterfly valve
- 2 - ITALPUMP butterfly valve

SECTION-OPENING ANGLE

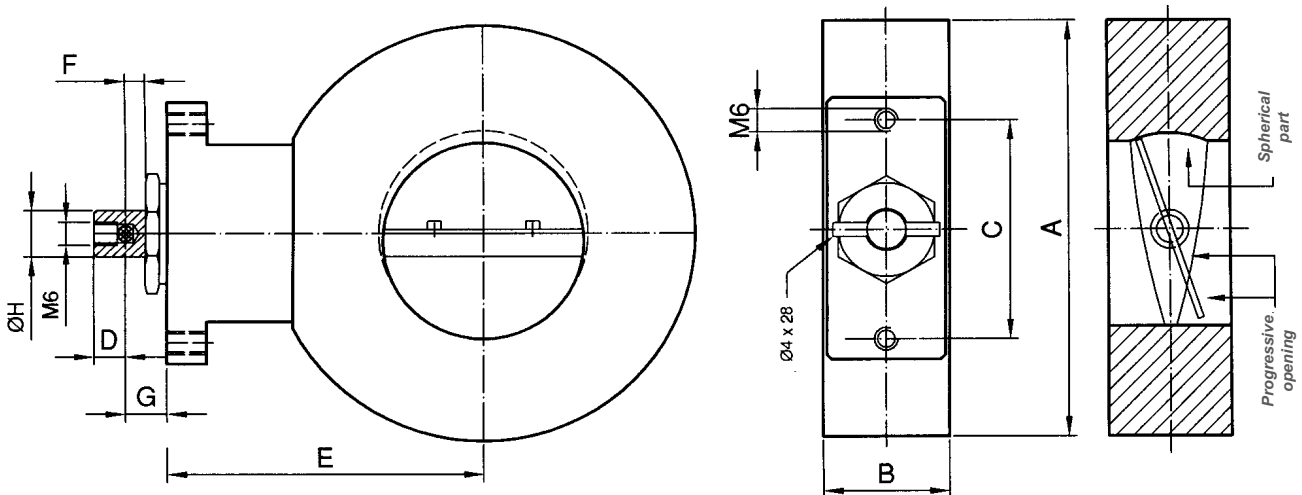


The diagram shows that the curve 2, up to 40°, has a smaller section.

The smaller section make easier the calibration of the burner with high modulating ratio, especially with LPG.

NOTE: In the selection of the correct butterfly valve size you have to consider higher pressure losses grant a better regulation, so according with the line pressure avoid to select butterfly valves with pressure losses 1 - 2 mbar.

DIMENSIONS OF THE VALVE



Type	Spherical	A	B	C	D	E	F	G	H
DN 50 R	20°	105	32	60	8	77.5	4.5	9.5	12
DN 65 R	20°	125	35	60	8	87	4.5	9.5	12
DN 80 R	20°	140	40	60	8	93	4.5	9.5	12
DN100 R	20°	130	46	60	8	104	4.5	9.5	12
DN125 R	20°	190	50	60	8	118	4.5	9.5	12

IDENTIFICATION OF THE VALVE

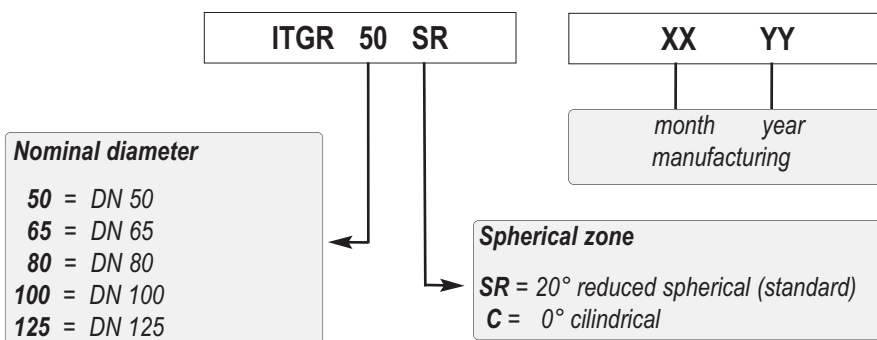
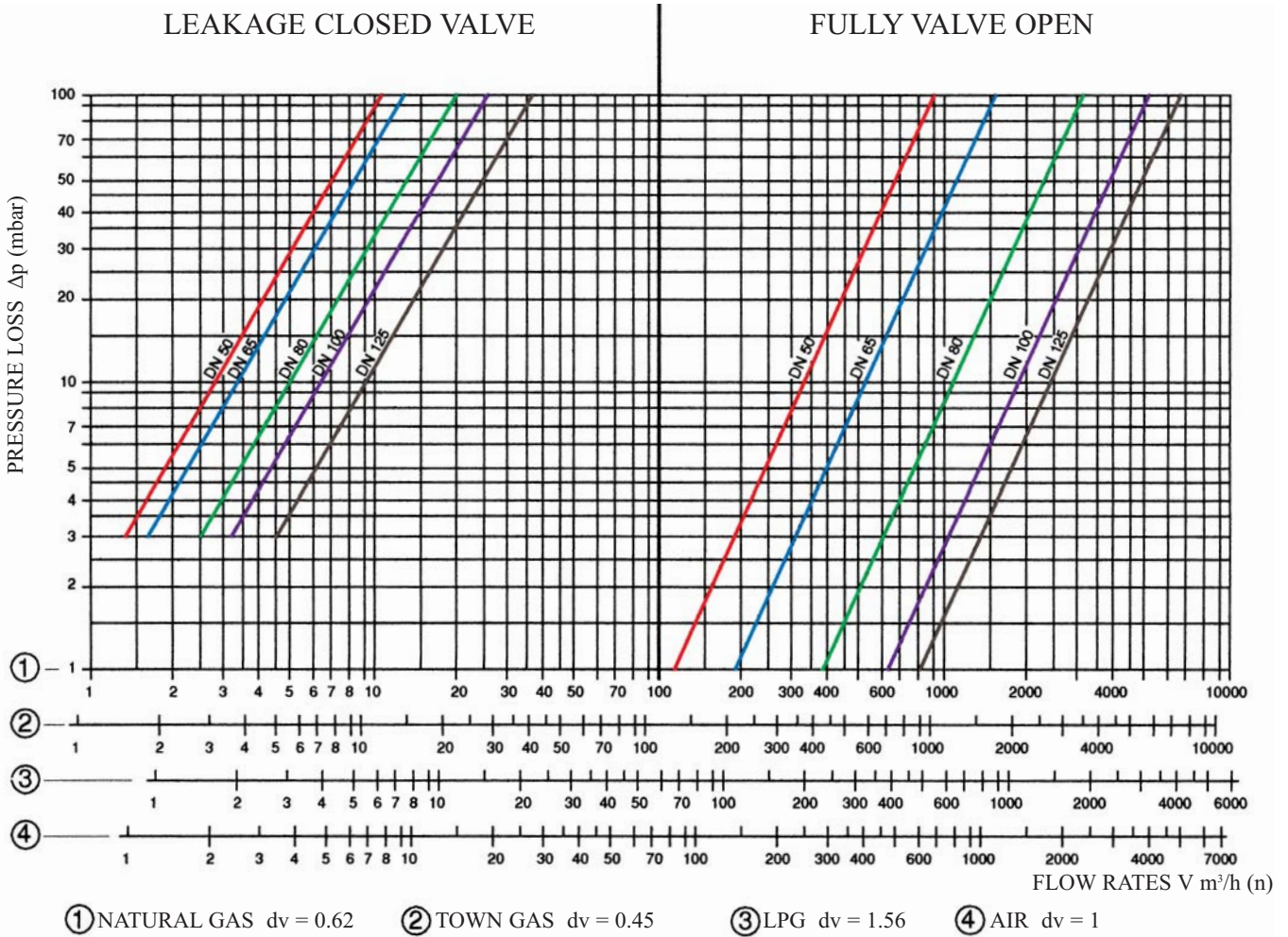
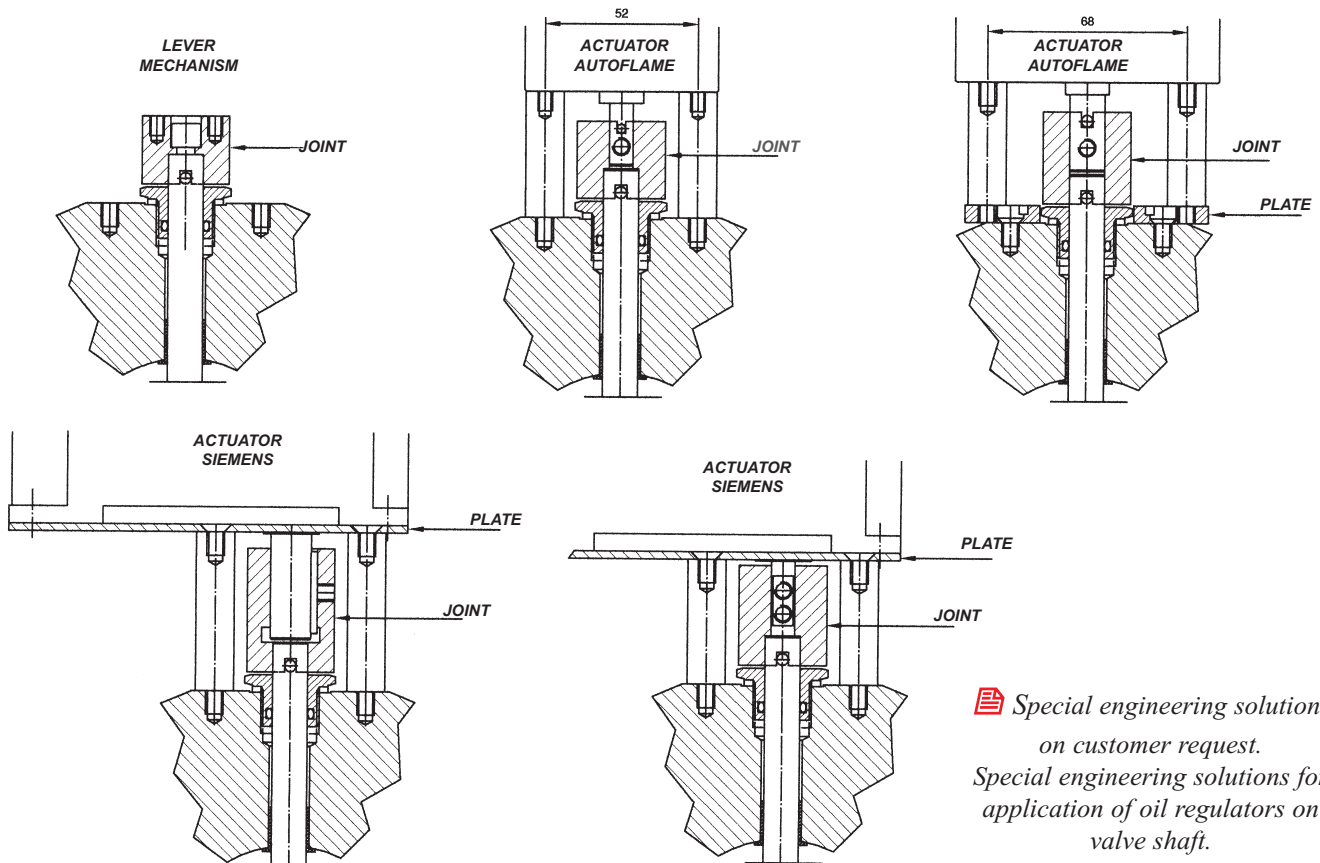


DIAGRAM OF THE VALVE



APPLICATIONS WITH LEVER MECHANISM AND ACTUATOR



Series ITGS



CHARACTERISTICS

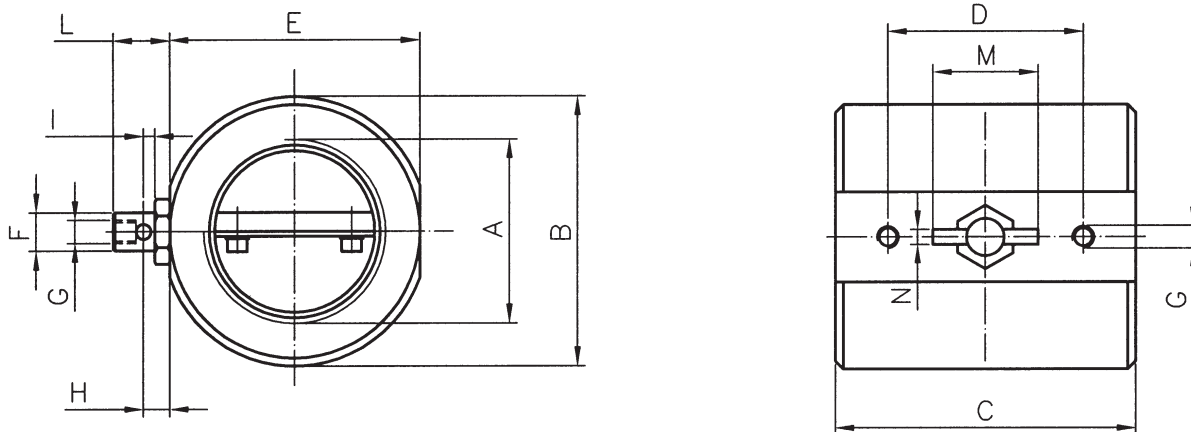
Applications:

- Suitable gas hot air, natural gas, town gas, LPG and other non aggressive fuels.
- Low leakage rate and pressure loss.
- Possibility to mount any actuator chosen by the customer.
- Possibility to mount our suggested actuator.
- Low maintenance requirements.

FUNCTION

The butterfly valves series ITGS are designed for controlling the volume of gas to supply a modulating or two stage (progressive) burner.

DIMENSIONS OF THE VALVE



TYPE	A	B	C	D	E	F	G	H	I	L	M	N
DN 30	Rp 1"	55	70	52	52	10	M6	7	3	15	28	4
DN 40	Rp 1 1/2"	70	80	52	66	10	M6	7	3	15	28	4
DN 50	Rp 2"	80	100	52	76	10	M6	7	3	15	28	4

IDENTIFICATION OF THE VALVE

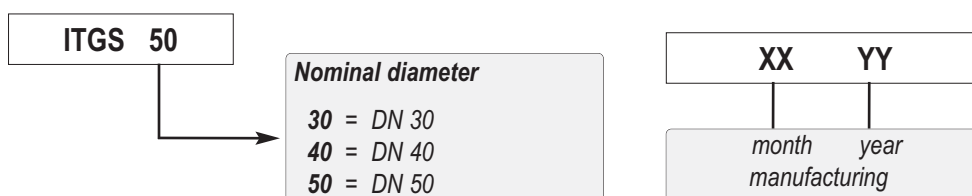
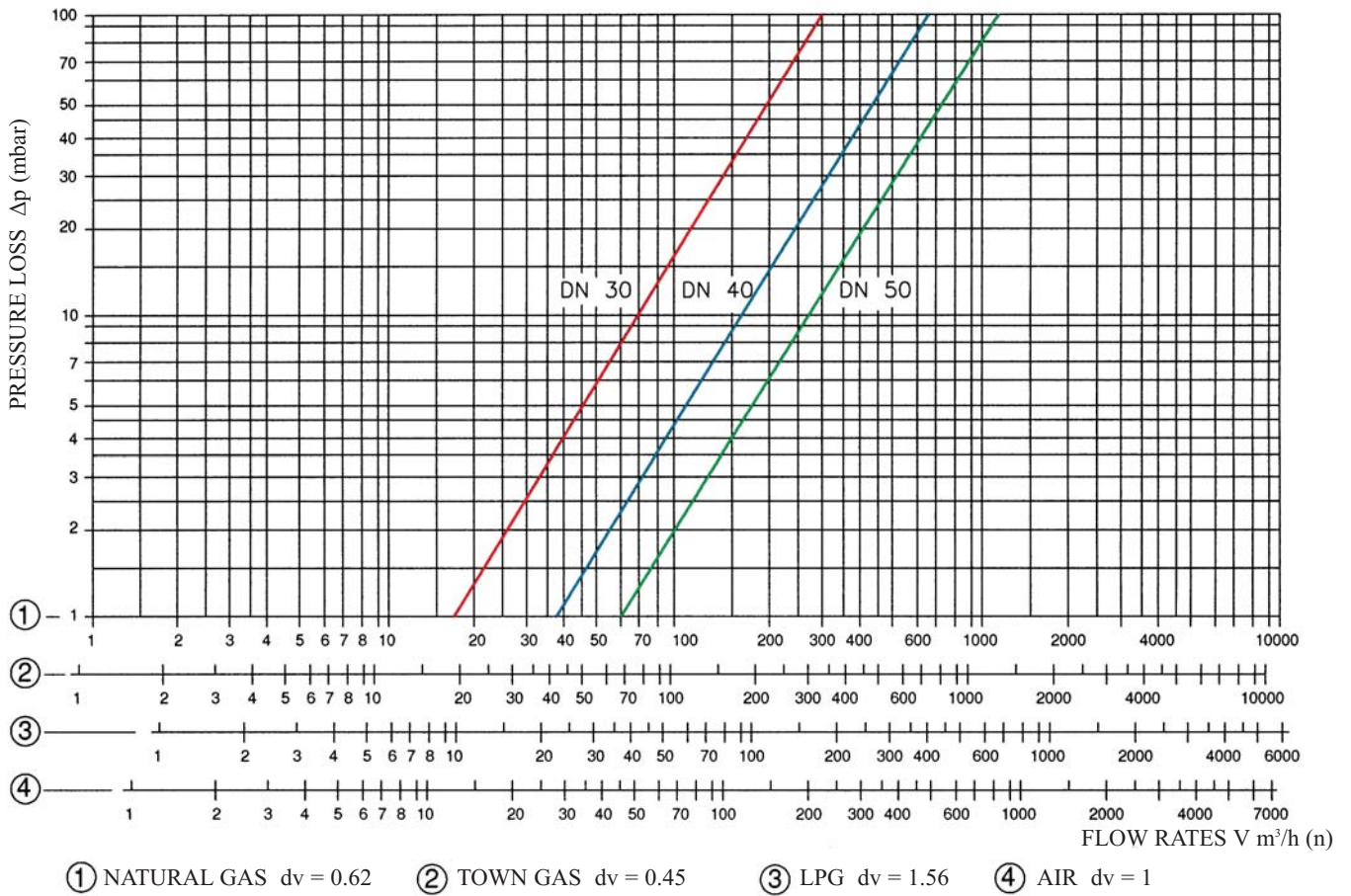
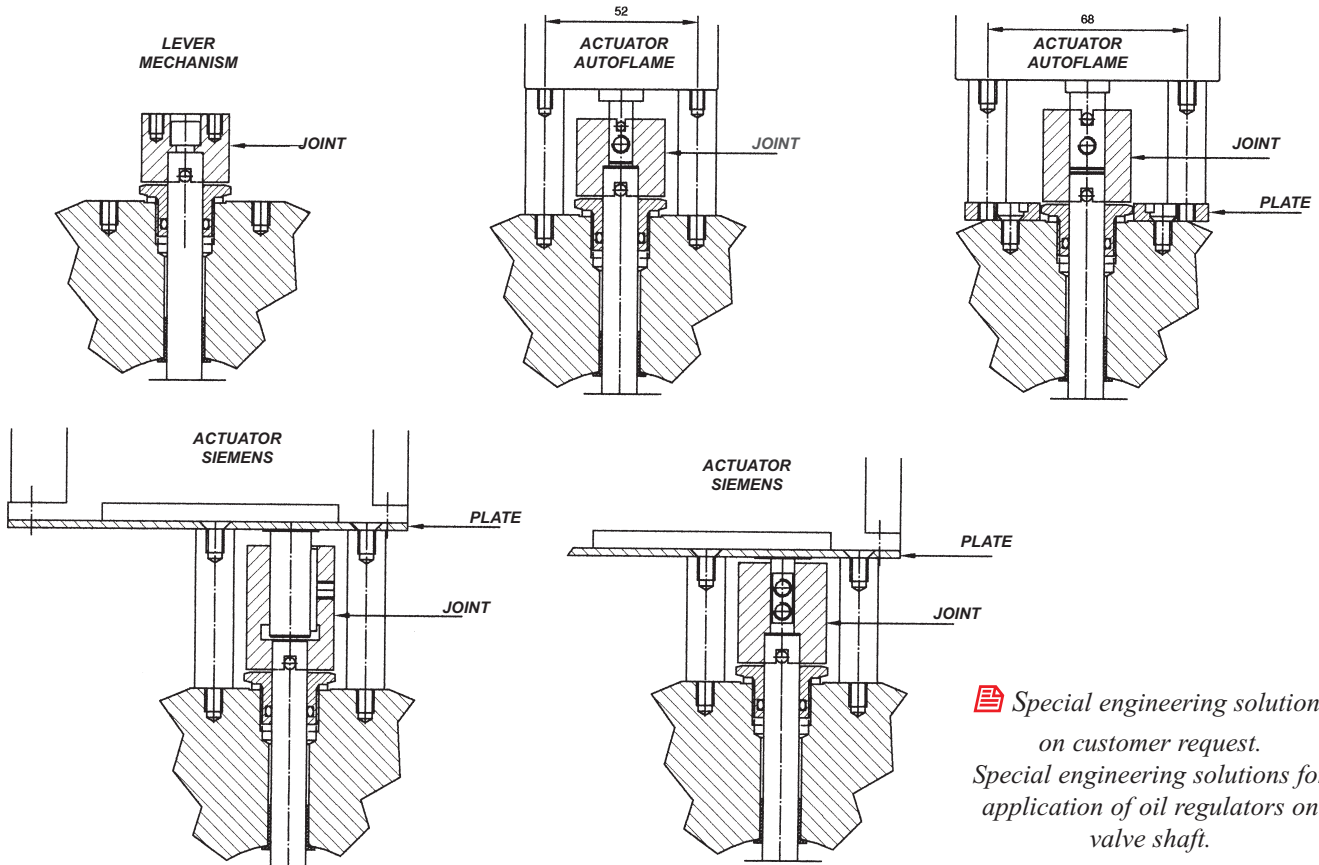


DIAGRAM OF THE VALVE

FULLY VALVE OPEN

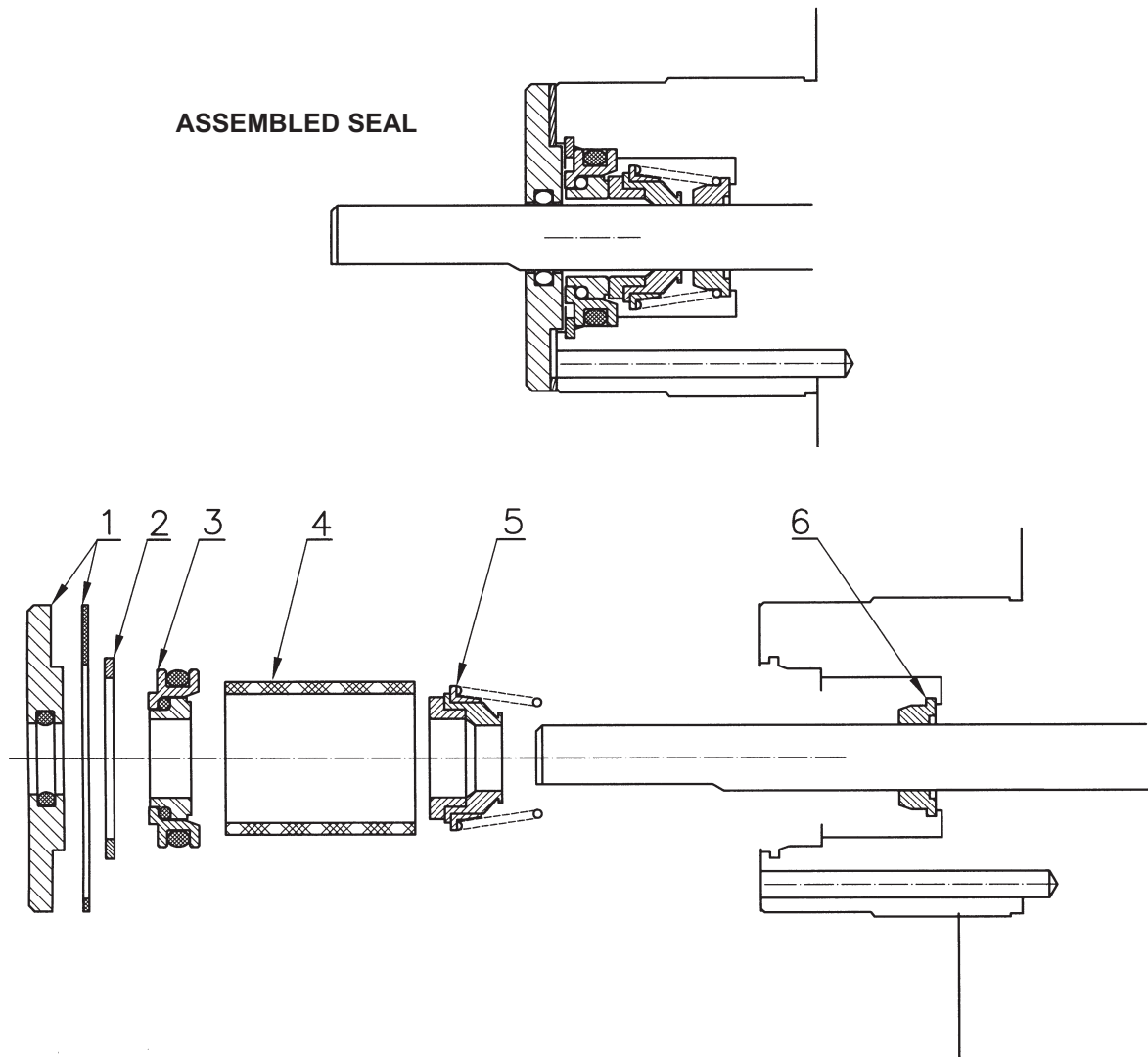


APPLICATIONS WITH LEVER MECHANISM AND ACTUATOR



📖 *Special engineering solutions on customer request.
Special engineering solutions for application of oil regulators on valve shaft.*

Seal Replacement - Pumps N-NR-G



DISASSEMBLY:

- 1 - Remove the plate and the gasket (1)
- 2 - Remove the seeger ring (2)
- 3 - Remove with a small screwdriver the fixed seal (3)
- 4 - Remove with two small screwdrivers the rotating seal without damaging the shaft by the spring (5)

ASSEMBLY:

- 1 - Insert the new rotating seal (5), push inside using the included tube (4), rotating it first in clockwise direction than anticlockwise, so that the spring is fixed into the ring nut (6)
- 2 - Insert the fixed seal (3) and push inside using the tube (4)
- 3 - Mount the seeger ring (2) and the disk with the gasket (1)

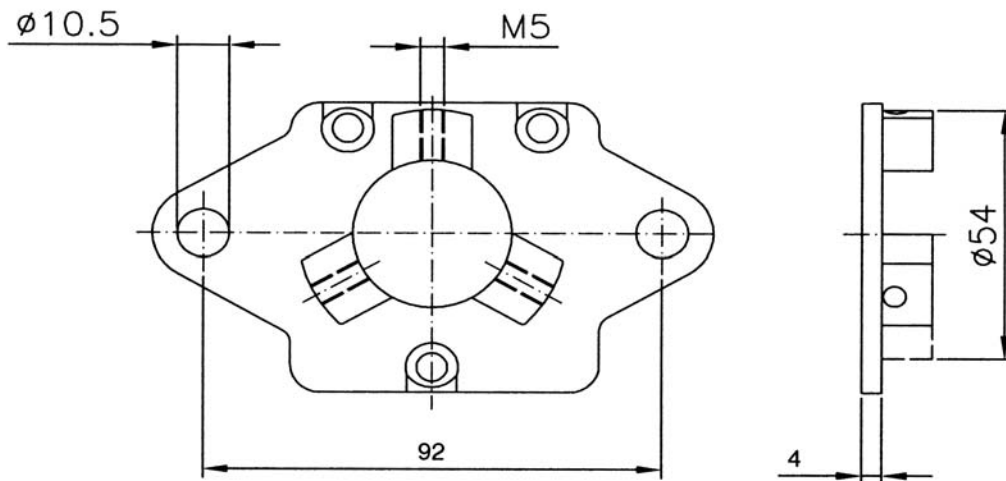
IMPORTANT: Lubricate the pump shaft and the external ring (1) to make easier the seal assembly.



ITALPUMP is not responsible for the non correct installation.

**Flange Application - Pump GB
from $\varnothing 32$ mm to $\varnothing 54$ mm**

The following note describes the flange mounting on pumps series GB/P to transform the pump from hub $\varnothing 32$ mm to hub $\varnothing 54$ mm with flange.



MOUNTING:

- 1 - Put on the flange on the pump's hub.
- 2 - Fix the flange to the pump's hub using n°3 head screws without M5 included in the flange kit.



ITALPUMP is not responsible for the non correct installation.