



CLESSE



COMPACTr175  
2175T

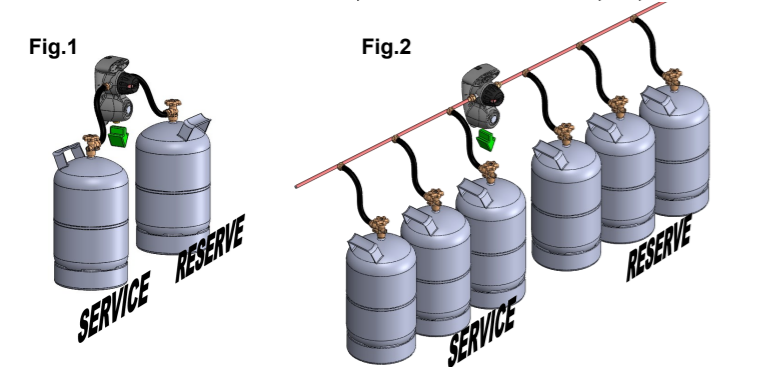
English - 91030140 - Ind.E

Automatic changeover  
« Telemetry Ready »

COMPACTr175 and 2175T Telemetry Ready automatic changeover range is designed to be connected with a wide range of communication modules **Compacti** (Bluetooth Low Energy, GSM, RF, IOT).

#### Application

In LPG (Propane, Butane or mixture which may be partially or totally of bio-renewable origin) installations using 2 cylinders (Fig.1) or 2 groups of cylinders (Fig.2), where the automatic change-over provides continuous gas delivery by preferentially using one group of cylinders « SERVICE », until insufficient gas pressure remains to satisfy the consumer appliance demand. Then switching automatically to the other group of cylinders « RESERVE » to ensuring continuous supply of gas exists without interruption inconvenience to the consumer and the cylinders have been effectively emptied.



*Note : in the further text, in order to simplify the reading, we refer only to 2 cylinders installations. In case of an installation with 2 groups of cylinders, the word "cylinder" will have to be understood as "group of cylinders".*

The automatic change-over allows the off-take of gas firstly from the « SERVICE » cylinder (Fig.10), then off-takes gas from the « RESERVE » cylinder only when the « SERVICE » one is not able to supply the requested flow rate (Fig.10). An indicator (B) built in the hand wheel (C), informs on the functioning state. When it shows red, it indicates that gas is currently being supplied totally or partially from the « RESERVE » cylinder.

This automatic change-over combines first stage regulation only (COMPACTr175) and regulated outlet pressure limiter (2175T) functions allowing connection directly to the installation pipe where a second stage regulator is normally required work supplying the premises.

Operating temperature from -20°C to +50°C.

#### Warnings

- This automatic change-over must be used only with vapour phase LPG and be positioned above the gas cylinders as indicated in Fig.1, Fig.2 and Fig.8. It must not be used with cylinders supplying liquid phase LPG.

- The number and type of cylinders, the type of gas used, the location of the installation, the pressures and the type of safety devices may be subject to local rules and safety restrictions. Please refer to them.

- When, no cylinder is connected to one of the inlet connections, the automatic change-over still provides the regulating function. For safety reasons, the non-used inlet shall be sealed with an appropriate cap (Clesse P450200).

- COMPACTr175 and 2175T Telemetry Ready automatic change-over is not intended for gas installations in touring caravans and motor caravans.

#### Design and construction

Designed, assembled and tested in accordance with the European standard EN 16129. The main components of the automatic change-over are made of the following materials:

- body and cover: zinc alloy according to EN 1774,
- diaphragm and sealing: rubber conform to EN 549,
- wall fixing bracket : polyamide 6.6,
- protecting casing : ABS,
- rotating hand wheel : polyamide 6,
- connectors : depending on the model brass according to EN 12164 or zinc alloy according to EN 1774.

Both inlets connections are equipped with:

- non-return valves which prevent any leakage during cylinder changing,
- filters, which prevent the ingress of any debris.

The dimensions are shown on Fig.3.

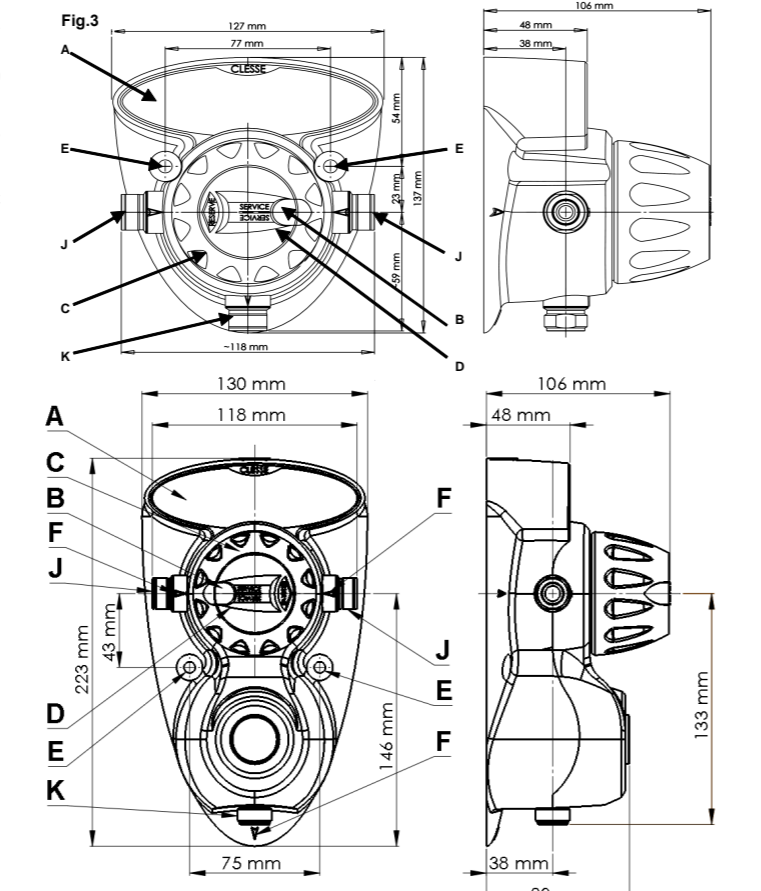
*Note that the dimensions between the connections are approximated as they depend on the type of connection.*

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#### Automatic change-over functioning

##### Type of gas in the cylinders

LPG (liquefied petroleum gas) contained in the cylinders is composed mainly with butane and propane. It contains also, in minor quantity, other hydrocarbons. Depending on the country and the gas distributors, 3 types of gas are generally marketed:

- Commercial butane, which contains approximately 80% of butane
- Commercial propane, which contains approximately 80% propane
- LPG mix, which contains an undefined mixture of butane and propane.

##### Vaporisation in the cylinder (Fig.4)

In a cylinder (Fig.4), LPG is liquid at the bottom (T) and vapour under pressure at the top (R). When there is an off-take of gas, the gas volume (R) is regenerated by boiling of the liquid part. This vaporisation cools down the liquid. The liquid is then heated up by the cylinder wall in contact with atmosphere. *Note that hydrocarbon components delivering high pressure (propane) vaporise faster than those delivering low pressure (butane).*

##### Pressure in cylinder (Fig.5)

The pressure in the cylinder depends only on the composition and temperature of LPG at any instant. The graph (Fig.5) shows the pressure gauge in the cylinder for butane and propane. During off-take, the temperature decreases, then the pressure decreases. When only a small amount of liquid remains in the cylinder, the pressure is lower than when the cylinder was full. This is due to the preferential vaporisation of hydrocarbons delivering higher pressure.

##### Typical low rate capacity of cylinders (Fig.6)

The maximum flow rate depends on:

- the type of gas,
- the level in the cylinder,
- the ambient temperature,
- the using time,
- the dimension and material of the cylinder,
- the number of cylinder.

Table (Fig.6) shows typical flow rate capacity for one 10-15kg load steel cylinder, half full, depending on type of gas (butane or propane), temperature and using time.

##### Automatic change-over function

The arrow (D) embossed in the hand wheel indicates the « SERVICE » cylinder. The other cylinder is the « RESERVE » one.

When the pressure in the « SERVICE » cylinder is sufficient, the entire flow rate is delivered by the « SERVICE » cylinder only.

When the pressure becomes insufficient, the flow rate is delivered:

- From both « SERVICE » and « RESERVE » cylinders (at the very end of the « SERVICE » cylinder contents),
- In totality from the « RESERVE » cylinder (when the « SERVICE » cylinder is empty).

In any condition, if the « SERVICE » and « RESERVE » cylinders are of identical type, the « SERVICE » cylinder will empty before the « SERVICE » one. The indicator (B) shows red when the « SERVICE » cylinder does not deliver the entire flow, and indicates the cylinder requires replacement. The gas supply when switching from « SERVICE » to « RESERVE » bank is automatic. The hand wheel (C) should only be rotated by the person exchanging the cylinder.

##### Telemetry function

The automatic change-overs COMPACTr175 and 2175T are designed to be fitted with an integrated telemetry backplate, from the Clesse **Compacti** range. If this feature is not used at installation ensure the plastic Ti cover (L) (Fig.7) is fixed in place before mounting the automatic change-over.

This back plate provides several types of information, depending on the model :

- The functioning state « SERVICE » or « RESERVE » as mentioned by the built-in indicator (B) integral to the hand wheel (multi patented®, FR priority 18/55668, EP3587896, US2019390791, AU2019204413, BR102019014013, CN201910899101.X and India 0191402493).
- The left or right hand wheel position (multi patented®, EP3001082, AU2015238769, BR102015002880, CN201510031773, US15369889, US9677684 and India 154MUM2015).

##### Pressure limiter

This safety device, installed downstream of the first regulation stage of 2175T automatic change-over, limits the downstream pressure to a maximum specified value without shutting off the gas flow, in the event of a failure of the regulating function. The pressure limiter is integrated with the first stage regulating device.

No additional pressure limiter shall be installed downstream to the automatic change-over.

The pressure limiter setting is indicated by "LIM".

##### Marking

In conformity with EN 16129 requirements the main characteristics are marked on the automatic change-over (A) using a laser process providing a high resistance. Additionally, arrows are engraved in casing to show the direction of the inlet and outlet flow of gas.

Automatic change-over marking (refer to product laser marking)	NF Type	Other types
Manufacturer mane	CLESSE	
Referring standard	EN 16129 NF M 88-781/1	EN 16129
Product commercial name	2175T	COMPACTr175
Type of gas	PROPANE	
Flow capacity	5 kg/h	6, 8, 10 or 12.5 kg/h
Inlet pressure range (Pu)	2 ÷ 16 bar	See
Outlet set pressure (Pd)	1,5 bar	See
Pressure limiter Plim	LIM 1,8 bar	/
Inlet connection (G)	Male M20x1,5 (G.13)	See G.xx
Outlet connection (H)	Male M20x1,5 (H.1)	See H.xx
Manufacturing date	ww/aa (week / year)	ww/aa (week /year)

##### Warning before installation

FAILURE TO FOLLOW THESE INSTRUCTIONS CONTAINED IN THIS DOCUMENT WILL RESULT IN THE EXCLUSION OF THE LIABILITY OF THE MANUFACTURER FOR ANY DAMAGE OR LOSSES THAT COULD OCCUR.

Pressurised gases may be dangerous. Failure to follow these instructions or to properly install and maintain this product could result in an explosion or in a fire, that could cause damage property, serious injuries and fatal accident.

Installation, inspection and maintenance must be performed by persons with the necessary competence (certified in certain countries), in relation to the type of gas and its required usage.

The installation must be performed, inspected, used and maintained in conformity with the laws in force in the country of installation. If in doubt, contact qualified service or installation personnel/engineer.

Check that the automatic change-over has not been damaged or contaminated during storage and transport. Make sure that cylinder and installation valves are closed and that no sources of ignition are nearby. Verify that the inlet connection (J) and the outlet connection (K) of the automatic change-over are compatible with those of the installation. If present, thoroughly clean (blow through) upstream tubing. If required, check the suitability, conservation status and validity of seals and connecting hoses. If gaskets must be used in the installation (connector with a nut), check the presence of the gasket and its integrity. Replace it if necessary.

The automatic change-over must be connected directly to a cylinder, or a multi cylinder system. In case of use of a second stage regulator downstream the automatic change-over, make sure the regulator setting is compatible with the output pressure indicated on the automatic change-over.

To achieve satisfactory operation in all conditions of use you must carefully assess the capacity of vaporisation of cylinders used and the losses of pressure in pipes, fittings, valves and other components.

##### Installation

The automatic change-over should preferably be installed outdoors (see local legislation) and be protected from rain, rain splatters, snow, submerging in water and from all other agents (i.e. dust, sand, mortar,...) which could obstruct the vents. Its position shall be higher than the cylinder valves and the outlet connection valve must be orientated vertically downward.

##### ALWAYS ORIENTATE THE OUTLET CONNECTION DOWNWARD

All upstream tubes and pigtails shall have a steady fall back to the cylinders and their length shall not be excessively long (Fig.1, Fig.2 and Fig.8). The automatic change

-over shall be fixed wall, or suitable vertical surface, using 2 screw holes (E). Make sure that the types of connection on the hoses or tubes to be connected to inlets (J) and outlet (K) are compatible with those of the automatic change-over. Attach these connections following the gas passage direction, indicated by the arrow (F) and test for gas leakage as per local regulations. *Important: the automatic change-over "Telemetry ready" includes a magnetic function. For an optimal functionality, if the automatic change-over is fixed on a metallic surface, it is recommended to interface a plastic base (10 mm thick at least) between the metallic surface and the automatic change-over.*

##### Commissioning

After installation is completed, replacement of a cylinder, closing the supplying valve then it is necessary to commission the gas installation:

- 1) open all upstream valves (« SERVICE » and « RESERVE »), one by one. It's important to avoid any quick opening that could generate an excessive pressure on the inlet of the automatic change-over.
  - 2) slowly open the downstream valves, if any.
- The indicator doesn't show red colour anymore. Check joints with a suitable leak detection fluid.

##### Cylinder replacement

The « SERVICE » cylinder is empty when the indicator is red in a stable no-flow or sustained low-flow condition. It is recommended to check this condition after a stabilisation time of a few hours.

To replace an empty cylinder (Fig.10) :

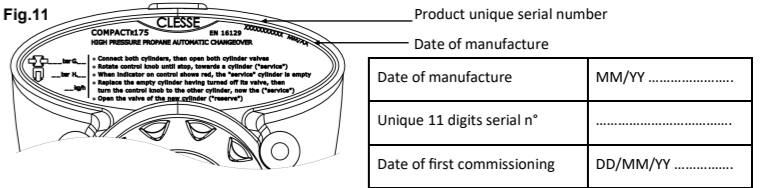
- Close the empty « SERVICE » cylinder valve,
  - Rotate the hand wheel (C) half turn to the previous « RESERVE » cylinder a click stop can normally be felt (respect the manual hand wheel direction of rotation as indicated in Fig.9). Now this becomes « SERVICE » cylinder and the red colour indicator disappears,
  - Replace the empty cylinder with a full one and tighten the connections,
  - Open its valve. This cylinder is now the new « RESERVE » cylinder.
- Always re-check joints with a suitable Leak Detection Fluid.



##### Maintenance

Due to normal wear or damage that may occur from external sources, it is recommended the operation of the automatic change-over and gas installation shall be inspected periodically. In normal use conditions and in order to guarantee the correct operation of the installation, we recommend replacing the automatic change-over within 10 years of use. In severe service conditions, the inspections shall be more frequent and the automatic change-over replaced sooner.

##### Locating the unique product Serial No. and date of manufacture



The product is marked with a unique Serial Number (Fig.11). Please record this below for your service records together date of first commissioning.

##### Safety instructions

Periodically and in any case after first commissioning, after a prolonged disuse, after an intervention on the gas installation or in suspicion of possible gas leaks always check gas pressure tightness of the system with an appropriate methods such a leak detector fluid (eg. DETECTO CLESSE).

##### NEVER USE FLAME FOR LEAK TEST

In the case of smell of gas and/or gas leaks, shut off the valves and ventilate the rooms (open doors and windows) before working on the potential causes of the gas leak. If the leak persists, turn off gas cylinder valve, disconnecting them, taking them to outdoors (only if possible to do so safely) and call qualified service personnel.

In case of use, do not lay the gas cylinder and do not move the cylinder with the system in use.

##### INSTRUCTIONS TO BE KEPT BY THE USER

*The content of this instruction sheet is presented solely as information, as despite efforts to ensure its correctness, it should not be interpreted as an explicit or implicit cover guarantee for the products or services described or for their use or applicability. We reserve the right to change or improve product design or specifications at any moment and without notice.*

*We do not assume any responsibility for the selection, use or maintenance of any product. The responsibility for proper selection, use and maintenance remains solely with the purchaser.*

CLESSE  
**Compacti**  
sold separately

The new experience for gas suppliers, single users, holiday and park operators. Solutions to suit any size of park or individual owners.

Page 4

