

For more than 62 years, PRONAL has been developing and supplying flexible solutions made out of elastomer coated fabric to the transformer industry.

PRONAL is supplying to distribution & power transformers OEM's, service teams & maintenance companies, with:

- Rubber bladders (also called STP, air cells, rubber bags...): STP are installed inside the conservator tank to compensate oil volume variation during operation while avoiding external air pollution.
- Pneumatic lifting bags: used during setting up to the « active part » to lift the coil and allow spacer insertion/adjustment.
- Flexible tanks: to store oil during commissioning and/or maintenance operations.



➤ 62 years
of experience at your service

➤ 180 employees

➤ Over 3,000
customers across the world

➤ 4 sites



www.pronal.com



FRANCE

PRONAL FRANCE

Z.I. Roubaix Est - BP 18
14 Rue du Trieu du Quesnoy
59115 LEERS
Tel: +33 (0) 3 20 99 75 00
Fax: +33 (0) 3 20 99 75 20
contact@pronl.com
www.pronal.com



USA

PRONAL USA

3000 Opportunity Court-Suite A
SOUTH DAYTONA
FL 32119
Tel: + 1 386 310 1558
Fax: + 1 386 310 1559
contact@pronl.com
www.pronal.com



MALAISIE

PRONAL MALAISIE

Pronal Sdn. Bhd.
B1-2-1 Solaris Dutamas
No.1 Jalan Dutamas
50480 KUALA LUMPUR
Tel: +603 2711 0820
contact@pronl.com
www.pronal.com



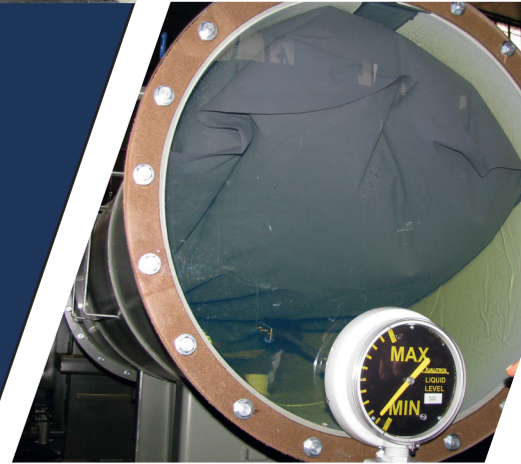
PORTUGAL

PRONAL PORTUGAL

Herdade da Mancoca
7600-503 Rio de Moinhos
Aljustrel
Tel: +351 2842 49842
contact@pronl.com
www.pronal.com



Solutions & products
for power transformer
industry



www.pronal.com



STP: Flexible separator



STP rubber bags are installed to line inside the conservator tank, allowing oil volume variations while protecting the oil from any type of contamination (external corrosive agents, such as air, ozone, nitrogen, humidity, etc...).

STP rubber bags are made out of elastomer-coated fabric, vulcanized at high temperature under vacuum: fabric reinforcement & external coating are designed to provide very high external resistance to oil and internal protection from nitrogen and atmospheric agents including ozone.

PRONAL offers a large range of elastomers to meet specifications (oil type, working temperatures...) and a wide range of shapes and sizes to fit every requirement.

- LARGE RANGE OF FLANGES
- EASY & QUICK ASSEMBLY
- LONG SERVICE LIFE
- MAINTENANCE FREE
- HIGH MECHANICAL RESISTANCE



Pronal also proposes a special range for offshore applications. Consult us

PRONAL's advantages

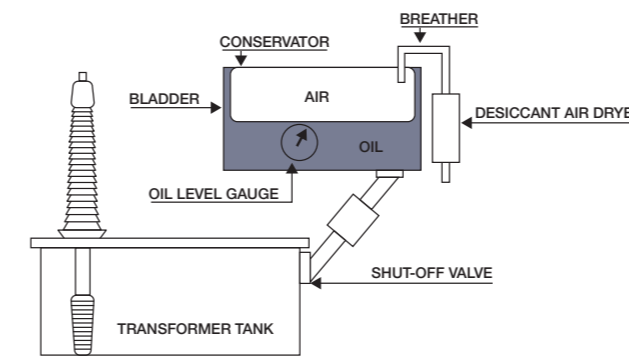
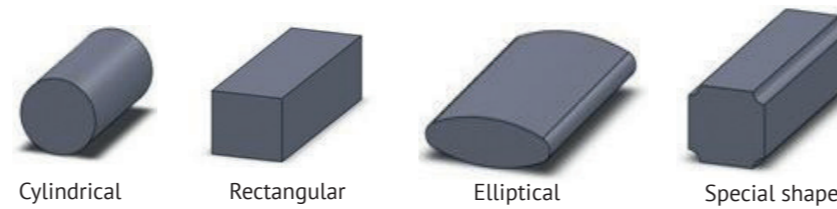
- High quality rubber
- Wide range of working temperatures from - 50 °c to + 110 °c
- Reliability: maintenance free product
- No contact between oil & air: no oil pollution, no condensation, no oxidation, no hydrolysis
- Vulcanized-in flange: no possible leakage !
- Interior fabric reinforcement at points of contact to avoid punctures
- Excellent tightness to oil/gases and water vapour
- Quick manufacturing response

Specifications, including temperatures, may change based on product improvements and technology updates.
For the most up-to-date information, please visit our website or contact our customer service.



Different shapes

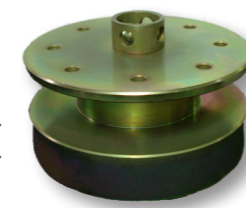
PRONAL's rubber bags can be used in several conservators shapes.



Accessories

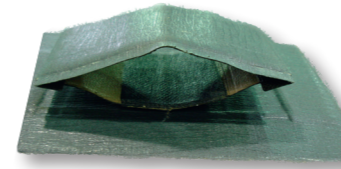
FLANGE

An insert is vulcanized into the rubber. The flange is assembled on this insert. This insures a perfect air tightness. Several flange models are available to fit every conservator types.



RUBBER BAGS LUGS

Typically, the STPs are fitted with 2 attachment lugs, located in a precisely-defined position. Special positions or additional lugs are available upon request.



CONSERVATOR ATTACHMENT

Lugs are installed on the conservator welded attachment hook.



Bladder rupture relay

The Bladder Rupture Relay (BRR) is associated with the STP rubber bag. It is an intelligent system able to detect any abnormal liquid present in the preservative membrane. For example, it can detect oil in case of leakage or condensation due an air dryer problem.

The system consists of :

- an optical sensor,
- a connection box,
- a LED control unit.



Flexible tanks

Thanks to their low volume when packed and their quick & easy installation, flexible tanks can save you money during several life stages of the transformer:

- Commissioning: flexible tank will simplify your logistic by having the oil on site at any time. Oil filtering can be made directly from the tank before filling the transformer.
- During maintenance operations on the transformer, oil could be stored temporary in flexible tank.
- Oil treatment: filtering station can be connected to the tank.



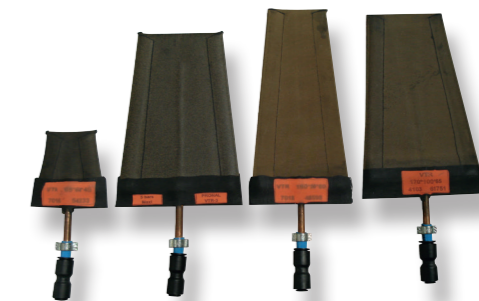
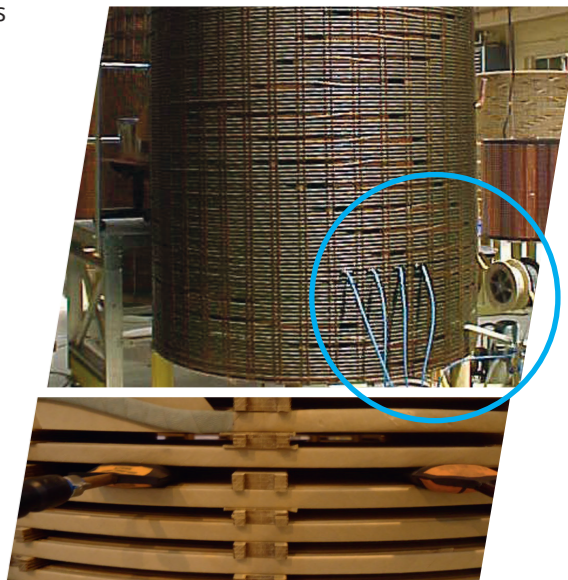
Lifting bags

Pneumatic lifting bags are an alternative lifting method to insert/adjust spacers into the winding of the coil. VTR are available in several sizes, thicknesses, working pressures. (Contact us for more technical info).

They are inserted between the winding and are then inflated. They smoothly lift the winding and allow the spacer insertion/adjustment.

Due to their special features, Pronal lifting bags prevent:

- Stress on the winding that could cause damage.
- Damages on the insulating paper.



Bund liners

The flexible retention system acts primarily as a double wall for flexible tanks. It is mainly used for chemicals, oil storage tanks and fuel bladder. Indeed, in case of a problem during the use of the flexible tank, the losses of fuels and oils are retained in the retention. Thus, the impact on the environment is minimized.

The flexible retention is a tailor-made solution. Several flexible tanks can be installed in the same retention tank depending on the dimensions.

Secondly, the retention tank can also contain rigid elements. Oil processing machines (or other fluids) as well as transformers and hydraulic systems can be installed there. During maintenance, they are isolated from their environment.

