## Suga MAKEEN ENERGY



Siraga's offer

CATALOGUE



#### **LPG Equipment**

Palletizing	p. 6
Filling	p. 1
Safety and checking of the cylinder	p. 1
Cylinder capping & sleeving	p. 2
Around the side-entry valve	p. 2
Cylinder handling	p. 2

#### **Maintenance & Refurbishment**

Maintenance p. 32 Refurbishment p. 42



#### **Services**

nstallation & commissioning	p. 48
Spare parts	p. 48
After sales service	p. 48
.PG Academy	p. 49

For Siraga, the customer is the center point ...

Best judge of the quality of our services and equipment is customer.

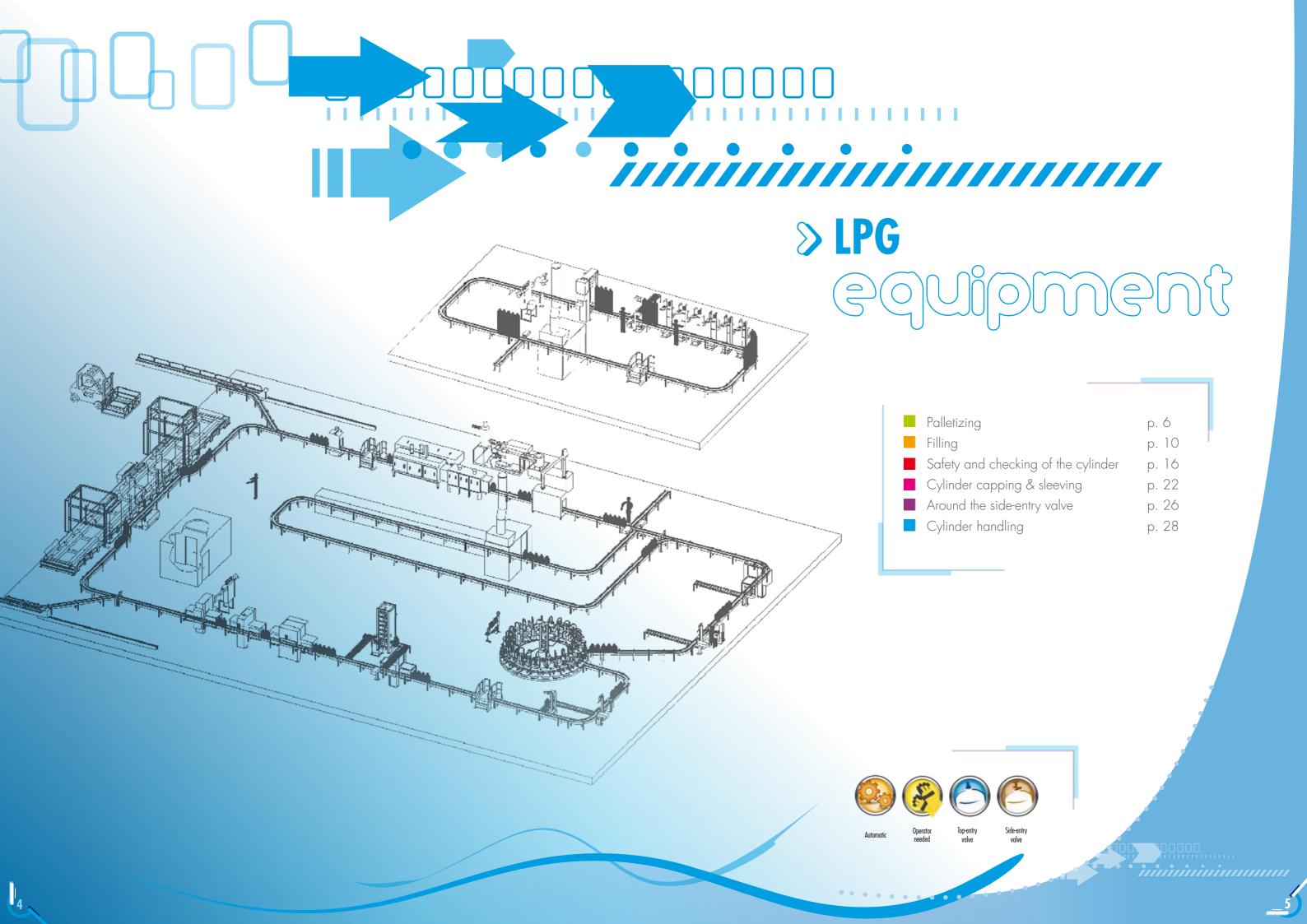
That's why we give great importance to safety and quality during the design of our equipment.

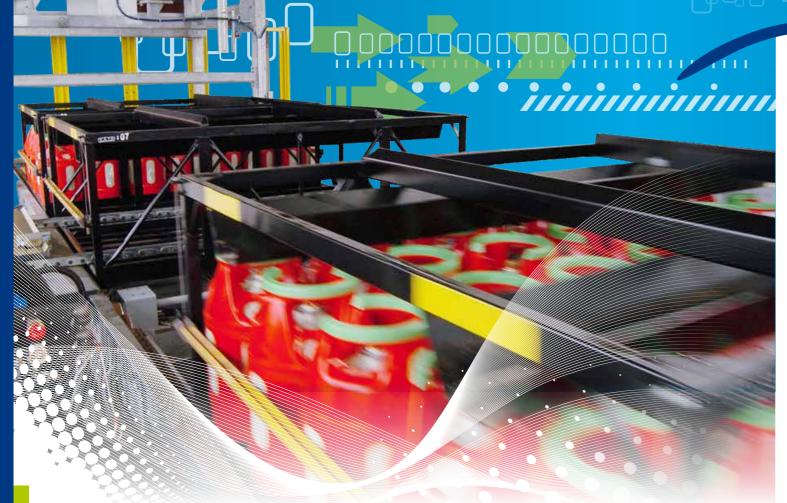
The value added by Siraga lies in our know-how and particularly in design philosophy of our equipment:

- Equipment "made in France"
- Robust and tailor-made machines
- Safety and environment-friendliness
- Low maintenance costs

"Built for you, Built to last"







Palletizers \_\_\_\_





Pallets

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#### Pallets for LPG cylinders

- Fiber glass closing bar
- Galvanized frame
- Possibility to supply pallets in kits (shipment by 80 or 150 kits, in 20' or 40' containers)



## Electronic Palletizer

WITH HYDRAULIC MOTORIZATION





Since 1968, more than 300 palletizers have been manufactured and sold by siraga in more than 25 countries

#### HYDRAULS®





- U-profile independent galvanized modules
- Cycle management through PLC, located in hazardous area
- Low maintenance cost

#### **■ High-performance**

- Handles all types of pallets, even severely damaged
- Electronic control coupled with hydraulic power
- Compact with equal production
- Independant control of each module

#### Safe

- Bi-directional transfer to resume cycle in case of an incident
- Protection of operators(emergency stop systems)
- Reduction of men power

#### Evolutive

- Possibility to connect to the CAPM
- Modular design.



Capacity: up to 2400 cylinders per hour



Scan this flash code and find the video of the Hydraulis Palletizer on our website

www.siraga.com













Carouse's and filling scales



8 posts carousel



48 posts carousel



24 posts carousel

#### LPG bottling carousel with mass flow meter or with load cells

- All sizes of cylinders (from small to high capacity)
- All types of materials (steel, composit, ...)
- All types of valves
- Available in 8, 12, 18, 24, 30, 36, 48 posts
- Capacity from 300 to 2,800 cylinders / hour
- Electronic scales



Flexible

It is possible to add filling scales to the carousel frame according to required production needs withou any modification



#### THEMIS

#### Electronic filling scales on carousel

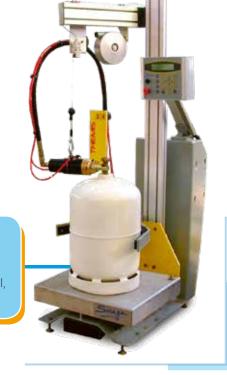
- Type: BECT
   Filling head for top-entry valve
- Cylinder shunting unit
   Robust design: 300 kg capacity load cell, resistance to schocks up to 450 kg

#### THEMIS

#### Electronic filling scales on carousel

- Filling clamp for side-entry valve
- Cylinder centering unit
  Robust design: 300 kg capacity load cell, resistance to schocks up to 450 kg





## 



#### THEMIS

#### Electronic filling scales on carousel

- Filling clamp for top-entry valve
  Automatic height positioning of filling head
  Robust design: 300 kg capacity load cell, resistance to schocks up to 450 kg



#### THEMIS

#### Electronic filling scales on carousel

- Type: BECP + OFR
   Filling clamp for side-entry valve

- Automatic valve opening and closing
   Filling clamp for side valve
   Robust design: 300 kg capacity load cell, resistance to schocks up to 450 kg





is an intrinsically safe PLC especially designed for LPG filling equipment.

This intrinsically safe conception allows to read and modify data directly on the machine without using any explosion proof housing, barriers or fire permit.



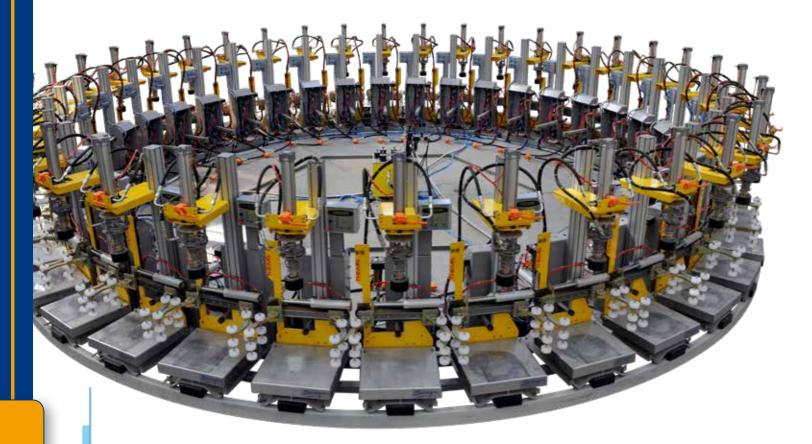
#### MASSFLOW METER

All Siraga carousels can be equipped with a massflow meter system



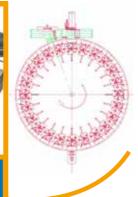


## Carouse's and filling scales



Number of posts	8	12	18	24	30	36	48
Diameter (mm)	3100	3450	4500	5500	6550	7600	9000





#### LPG supply from top: Many benefits:

- Limited civil works at the installation

- No LPG piping at low point - Easy implementation

- Easy maintenance















#### **Carousel Electrification**

Siraga can convert any mechanical carousel into an electronic one within 3 days only.





#### Gas extractor



#### **Driving group**



#### LPG pressure regulation skid



#### **Pumping skid**





## Stationary

#### or in line filling



#### THEMIS

#### Electronic stationary filling scales

- For domestic cylinders , equipped with side-entry
- Accuracy: Display 50 g, internal division 5g
  Robustness: 300 kg capacity load cell, resistance to shocks up to 450 kg
- Simplicity: maintenance assistance thanks to ULIS 2



#### THEMIS

#### **Electronic stationary filling scales**

- For cylinders from 11 to 35 kg, equipped with top-entry valves
- Accuracy: Display 50 g, internal division 5g
  Robustness: 300 kg capacity load cell, resistance to shocks up to 450 kg
- Simplicity: maintenance aid thanks to ULIS 2



#### THEMIS

#### Stationary filling scales

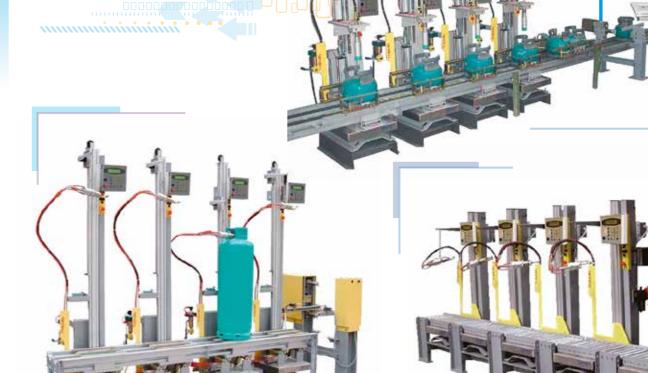
- Type: BESM
   For cylinders from 3 to 6 kg, equipped with
- camping gas valves
   For cylinders up to 15 kg
   Robustness: 300 kg capacity load cell, resistance to shocks up to 450 kg



#### THEMIS

#### In-line stationary filling scales

- For cylinders from 3 to 6 kg, equipped with top-entry valves diam. 20
- Robustness: 300 kg capacity load cell, resistance to shocks up to 450 kg



#### In-line stationary filling scales

THEMIS

- Type: BELE
   For cylinders from 17 to 35 kg, equipped with sideentry valves
- Robustness: 300 kg capacity load cell, resistance to shocks up to 450 kg



#### In-line stationary filling scales with roller conveyor

- For cylinders from 6 to 13 kg, equipped with side-entry valves
  Robustness: 300 kg capacity load cell, resistance to shocks
- up to 450 kg





#### **FILLING UNIT IN CONTAINER**

Konten'er is a fully equipped container with filling and control equipment adapted to production and type of cylinder, ollowing customer requirements.



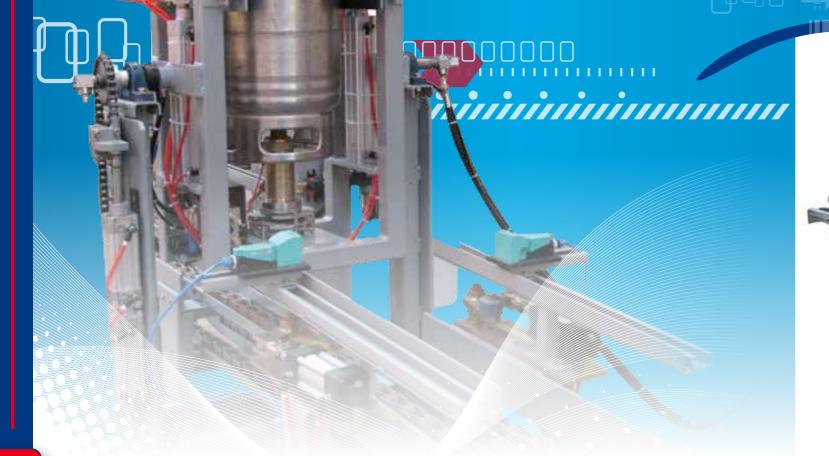




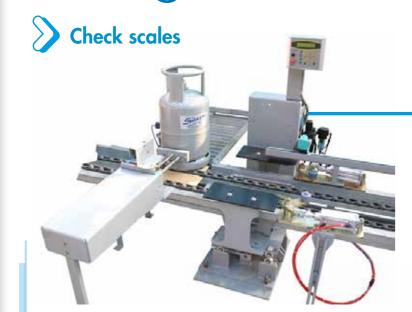
Scan this flash code and find all information concerning Konten'er



EP R

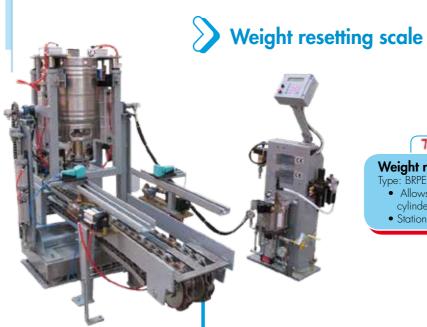


## Weight Checking Check scales



#### Electronic check scale

- Centering stop units
- Cylinder shunting device for non compliancies
   Robustness: 300 kg capacity load cell, resistance to shocks up to 450 kg
- Production capacity: Up to 1400 cylinders /hour



#### Weight resetting scale

THEMIS

Type: BRPE

• Allows to correct the weight of non compliant cylinders after filling

Electronic check scale Type: BCDA

• Installed on chain conveyors

• Production capacity: Up to 1,900 cylinders / hour

Stationary

#### Automatic weight resetting scale

- Allows to correct the weight of non compliant cylinders after f lling



#### THE BENEFITS OF CAPM (COMPUTER-AIDED PRODUCTION MANAGEMENT)

- Remote control from a smartphone
- Anti-fraud system
- Real-time display / management of production
- Highly accurate control of the filling operation
- Constitution of a technical and commercial data base
- Immediate data storage



Dynamic check scale

• Accuracy : 50 g

Type: BCCA
• Production capacity: Up to 1,900 cylinders / hour



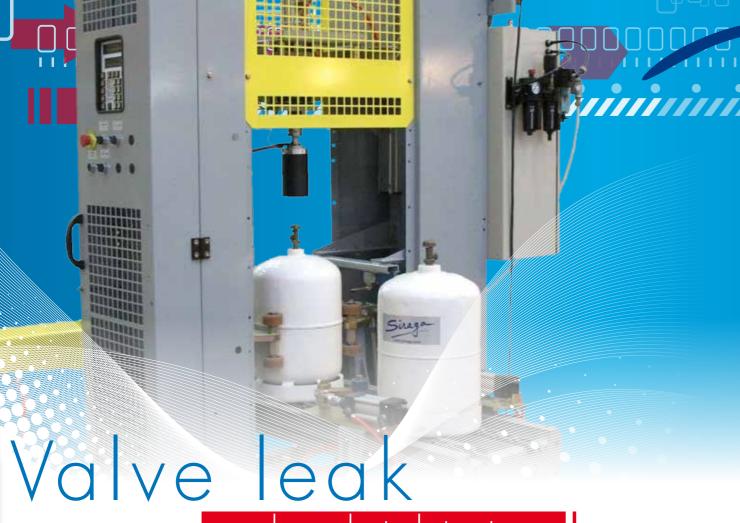
#### Electronic check scale

• Design for 35 kg cylinders

THE CYLINDER

CHECKING

SAFET



and gasket detector



CHECKING

A Z Z

SAFETY



#### Valve leak and gasket detector

Type: DFIA+DPJV

----

Detection: valve leak: 0.7 g / gasket leak: 1.5 g

Capacity up to 1800 cylinders / hour (2 heads version)





#### In-line leak detection

- Cylinders are driven by chain conveyorModel presented is for 13 kg cylinders

#### In-line leak detection

• For 3 to 6 kg cylinders

#### Tilting test bath

- For water immersion with low production
   Manual or pneumatic functioning













**Automatic leak detector** 

Type: DFIA Double



## 90 further.

### Electronic leak detector

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DUAL: 2 in 1 solution



#### **DUAL: integral valve** control

Only one machine is now required where two were necessary in the past.t Dual checks are: leaks at the thread, valves and seal. Compact design ensures better safety and greater accuracy.

This machine was launched in 2004 and now its range has been extended from one to three heads, to suit production rates.





We manufacture all our machines to order, which means we can offer you equipments that are tailormade to suit your needs.

> Furthermore, the purpose of our machine design policy is to guarantee you maximum reliability and safety, without jeopardising the functionality and competitiveness of our machines.



#### Avantages:

- Check more than 2000 cyl/hr with 3 detection heads
- Higher safety level for end user
- Fully automatic equipment
- Compliance to regulations
- Compact design
- Proven technology

#### Since 2011...

#### Safety of people and machines

#### **Control Authority**



Through our organization and the implementation of procedures, we assure that the equipment manufactured is in compliance with the models tested and presented to obtain the "EC TYPE" certificate. We use ATEX certified electrical and electronic components.

To renew our ATEX certification on items designed by Siraga and our self-certification ability, we and our subcontractors are audited annually by a testing laboratory.



#### **Operator: Customer**



#### Manufacturer: Siraga

iraga is certified ISO 9001, V2008 since 2001



#### Testing laboratories

Approval of electrical and electronical equipment ATEX directives. Annual audit of Siraga.



equipped with improved version of infrared analyser since 2012.





CYLINDER

CHECKING

SAFET



## Capping and sleeving

SLEEVING

CYLINDER CAPPING AND





#### Sleeve shrinking machine Manual version

- Type: MRMM
   Functioning with hot air
   Certified EEx IIB T2



#### Sleeve shrinking machine

- Functioning with hot air
- Capacity up to 1200 cylinders per hour in simple version or 1800 cylinders per hour two heads, depending on sleeve type



#### NEW "themo-shrinkable cap fitting machine"







#### **Built for you...**

SIRAGA team assists customers in defining theirs needs, from adequate sleeve creation till setting up of the best solution to meet their requirements (manual, semi-automatic or fully automatic).

## Streamer laying

on LPG cylinders

#### Advantages:

- Intrinsically safe PLC management
- Automatic stopping in case of break of the roll
- Maintenance assistance thanks to inputs/outputs TEST mode and STEP BY STEP mode
- The machine is delivered with



Making your gas cylinders tamper-proof

SIRAGA has developed a device to make gas cylinders tamper-proof after filling. Once leak detection checks are processed, the machine lays a PVC sleeve that is shrinked with hot air and has a single-use strip for opening. This machine has been set up to ensure the double process laying and shrinking - for a tamper-proof product.

The machine offers a capacity of over 2000 cylinders / hour and can be installed on any type of filling line.

SIEEVING<sup>-</sup>

CAPPING AND

• Roll change in a few minutes

- ATEX and EEC certificates



Siraga has developed streamer laying and removing solutions Please feel free to contact us for further information



#### Streamer laying: A simple and efficient tool for cylinder brand differenciation

#### **Communication**

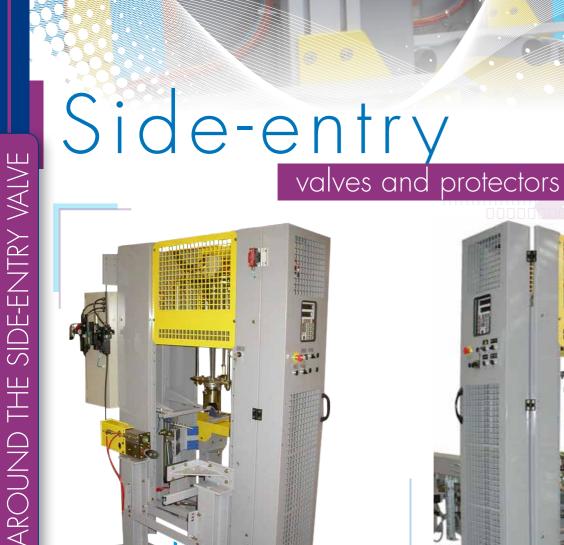
- Use cylinder as a new communication tool
- Increase your communication space
- Get a competitive advantage by proposing an attractive design streamer

#### Sales promotion

• Cylinder becomes a sales promotion tool

• Safety instructions and suggestions can be highlighted on cylinder body





#### Screwing and unscrewing of valve protectors

- Torque control on screwing operation and unblocking secu-
- rity by unscrewing 1/4 back

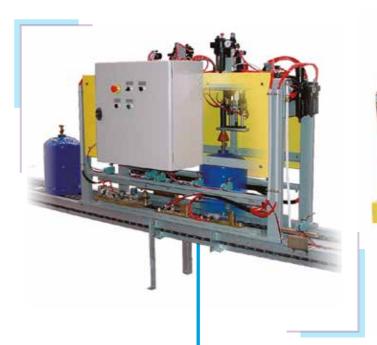
   Automatic ejection for all cylinders with metallic protector blocked or impossible to screw / unscrew

  Capacity up to : 1200 cyl / h



#### Valve orienting machine

- Single orientation version or with valve opening before introduction on carousel
- Electronic version
- Capacity up to 1200 cylinders / hour



#### Valve opening and closing machine

- Bell driven by pneumatic motor
   Capacity: 1200 cylinders / hour = 1 head 1800 cylinders / hour = 2 heads



#### presence

Type: DLDM

- For side-entry valves
- Valve opening and closing integrated in the detection bell
- Capacity up to 1200 cylinders / hour





#### Electronic leak detector

#### Version with automatic valve opening and valve closing control

- Infrared gas detector
   Detection from 1.5 to 5 g / h
- Capacity: up to 1,200 cylinders per hour under certain circumstances



#### Machine to check the torque

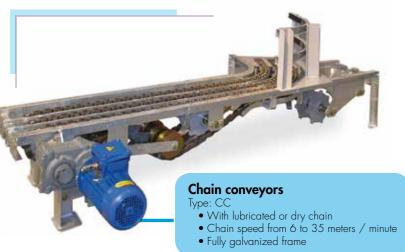
- Type: MCFR

   Checking of the torque and number of rotations required to open & close the valve
- Electronic version
  Capacity up to 1,200 cylinders per hour



# 

## Conveyors





- Galvanized rollers



Electrical driving unit for chain conveyor system with direct shaft mounting





• Ball bearings



#### Telescopic chain conveyor Type: CT • Designed to load and unload un-palletized

- Capacity up to 1,200 cylinders / h with a chain speed of 16 m / mn



#### Over-head conveyor

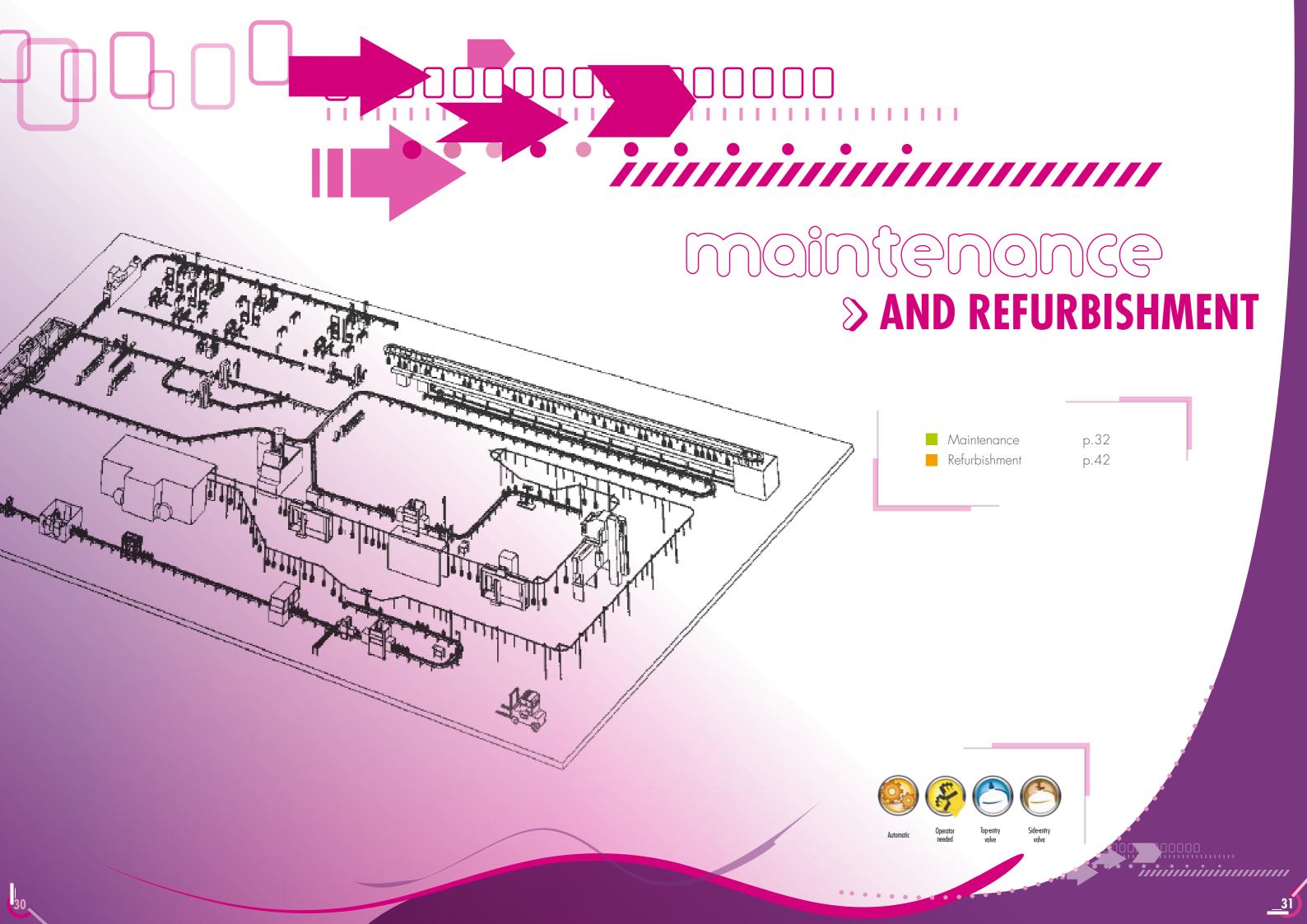
Type: CAR

• Automatic hooking and unhooking



Siraga conveyor can be built for any configuration







## Emptying



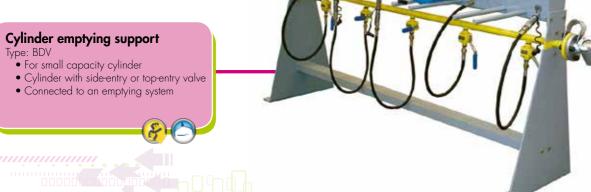
#### **Cylinder emptying support** Type: BDV

• All types of cylinders with all types of



#### Cylinder emptying support

- Connected to an emptying system





#### Large capacity cylinder emptying Type: BDVB

 System allowing the operator to tilt cylinders easily



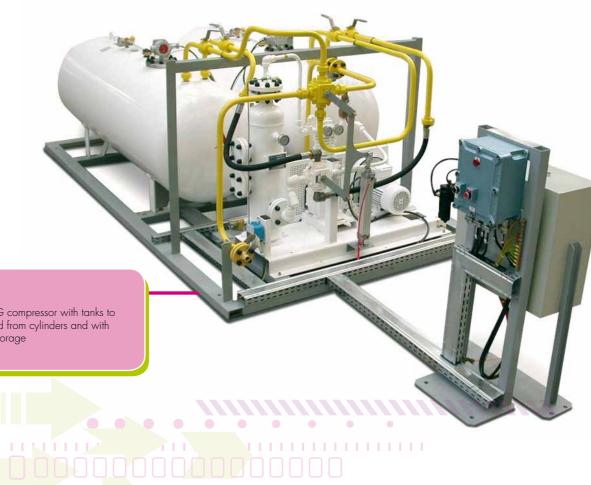
#### Pneumatic draining pump

Type PPV

• Designed to transfer LPG from one point to



- Emptying unit
  Type: UDV
   Functioning by LPG compressor with tanks to receive gas sucked from cylinders and with discharge to the storage
- Fully automatic





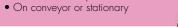
## Valve screwing





#### Valve screwing and unscrewing post Type: PVDR • For all kinds of cylinders

- With manual or pneumatic screw





#### Hydraulic screwing and unscrewing machine Type: MVDR • Torque adjustment according to the hydraulic pressure • Bi-manual command for the operator

- 2 speeds : starting and finishing





without collar ring

• Small and large capacity cylinders





#### Valve changing unit on filled cylinders

- The preliminary cylinder draining is not necessary!

  Semi-automatic functioning
- Electronic version
- Capacity up to 60 cylinders per hour



#### Top-entry / side-entry valve screwing / unscrewing machine

- For large capacity cylinders
   Torque adjustment according to the hydraulic pressure
- Bi-manual command for the operator
- 2 speeds : starting and finishing









## 90 Jurther.

Side-entry / top-entry valve

changing machine

This machine allows to change side-entry or topentry valves on filled cylinders without evacuation. Designed for hazardous areas classified zone 1 according to IEC 79-10 and class 1, division 1 according to NEC art 500 (USA).



#### Just 1 minute...

Valve on a leaky cylinder can now be replaced 40 times faster than traditional method.





Scan this flash code and watch the video of the operating machine



#### ■ The advantages of the VCM :

- No move nor dangerous handling
- No VOC (Volatile Organic Compound)rejected in the atmosphere
- Semi-automatic functioning
- Time-saving
- Return on investment in less than 6 months
- Capacity up to 60 cylinders / hour

### Change your valves in 4 steps:

#### Step

Automatic positioning of the cylinder on the frame after operator's authorization



#### Step 2

Descent of the head Unscrewing Spindle lifting



#### Step 3

Valve extraction and replacement



#### Step 4

Descent of the spindle and screwing of the new valve at the preset torque







## Hydraulic testing ramp



#### **Tilting testing rack**Type: REB

- 1, 2, 3, 6 or 10 testing postsAll kinds of cylinders
- Manual or automatic rotation
- Possibility of automatic leak detection with electronic management



#### Tilting testing rack

• Version for different sizes of cylinders



#### Tilting testing rack

Type: REB

• Version for large capacity cylinders



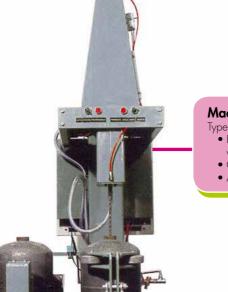
#### Automatic testing rack

- For 26 litres cylinders
- In line functioning on chain conveyor
- Electronic management



Removing residues





#### Machine to remove residues

- Residual water suction after inside washing or testing
  • Capacity up to 300 cylinders / hour
- Automatic version

#### Removing residual unit Type: PADR

- Residual water suction after inside washing or testing
- Capacity up to 300 cylinders / hour
- Manual version



## Taring

\*\*\* **//////** 

## **Electronic cylinder taring scale** Type: BCSM

#### Cylinder tare stamping unit

Type: PM

• Designed to stamp tare or total weight on

#### **Machine to mark valve protector** Type: MMBA

- Production: from 350 to 400 cylinders / hour for a chain speed at 8 meters / minute

  For domestic cylinders
- Stamping assisted by pneumatic vibrator







Gassing

Gassing unit
Type: AG

• Gassing thanks to a gassing cane
• LPG supply is coming from one

LPG cylinder fixed on the back of the equipment (with no excess flow valve) and upside down.

#### Gassing under vacuum unit

- 1 up to 4 posts under a vacuum pump
- Stationary or on chain conveyor





Foot-ring and

Foot-ring and shroud straightening unit

#### Foot-ring or shroud straightening unit Type: MRPB • All types of cylinders

- Vertical or horizontal machine
- 2 work sides on horizontal cylinders,
- 2 types of foot-ring or collars on the same machine



#### Foot-ring straightening machine

shroud straightening





#### Automatic detection of damaged collar ring

- Sorts out unacceptable cylinders due to damaged collar ring
- Electronic version
- Capacity up to 1200 cyl / h with 1 head, up to 1800 cyl / h with 2 heads

#### Foot-ring and collar remplacement unit



Foot-ring or collar cutting post
Type: PDP

• All types of cylinders

- By plasma cutting or chiselling





#### Foot-ring straightening machine

• For large capacity cylinders



#### Type: BDS • All types of cylinders

- Manual, semi-automatic or automatic version







## **Dents removing**



#### **Dents removing post**

• Hand-torch heating

• Capacity from 5 to 15 cyl / h according to





#### Normalization furnace

All types of cylindersCapacity from 50 to 600 cylinders / hour



#### Shot blasting



#### Shot blasting machine Type: GDB • All types of cylinders

- Horizontal or vertical on overhead conveyor



#### **Painting**



#### Painting booth for filling plants, refurbishing plants or manufacturing plants • Painting system up to 1800 cylinders per hour • Water curtain or dry painting booth, installation on chain or overhead

- Protection system for the valve
- Classical liquid or electrostatic paint
- Possibility to install an automatic painting booth on chain





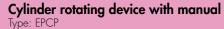
#### Zinc spraying unit with water curtain

Type: CPRE

• Manual or automatic







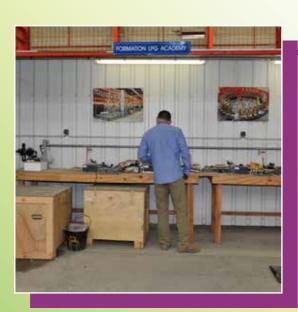












## SENVICES

Installation & commissioning	p.48
Spare parts	p.48
After sales service	p.48
LPG Academy	p.49





COMISSIONING

Siraga ensures the installation & commissioning of the equipment on your production sites. Thanks to a team of local or multilingual technicians and experienced installers, Siraga guarantees a smooth installation process and provides a high-quality service.

Contact: cha@siraga.com



#### SPARE PARTS

Siraga markets a wide range of spare parts: with more than 50 000 spare parts available within the shortest possible time, at a competitive price. Thanks to a highlyexperienced team, Siraga provides technical support and a service that exceeds your expectations. Please ask for the Spare Parts catalogue at :

#### ■ AFTER SALES

With a dynamic team of qualified technicians, Siraga provides the best response to your' needs in all fields: technical information, troubleshooting, auditing or repair of equipment, whatever the time

Contact: sav@siraga.com







#### OUR COMPLETE AND TAILORED TRAINING OFFER

You are attentive to the long-term, potential development of your employees, you wish them to adapt

to the technical evolutions of your filling plant, you also wish them to be more qualified and thus more

efficient? Then discover or re-discover our complete and tailored training offer: the LPG ACADEMY!

#### Specialised LPG training courses, applied to the SIRAGA

Today, we offer you a wide range of professional training courses:

- specific to the SIRAGA equipment,
- on more general themes as hydraulic, pneumatic or industrial electricity. On requirement, we also organize seminars on more global subjects such as "the conception of a filling plant", "the safety in a filling plant",...

#### A tailored organization

Our training teams are flexible and enable us to organize training sessions in various locations:

- directly in your plant,
- at SIRAGA's.
- or in the latest generation premises of our partners.

We tailor the length as well as the contents of these courses to your objectives and constraints.

Do you wish to know more? Download part of the training programs on www.siraga.com and for a tailored training:

lpg-academy@siraga.com

#### Why choose the LPG Academy?

#### » For the exchange of expertise and know-how

- Because during these courses, you will alternate theory and practical exercises and be in contact with various LPG experts,
- Because the diversity of participants and experiences will enable to exchange ideas over your problems and to enhance your network

#### >> For the professionalism

- Because the LPG Academy is a training organism recognized and integrated into the ISO certification field, to continuously ensure and improve your satisfaction,
- Because the internal trainers know the machines perfectly, because they have often participated in their conception, because they are experts in their field or also because the outside partners have been carefully selected since the creation of the LPG

Academy. It represents the insurance of a training of quality.

#### >>> For the services

- Because we fully organize your stay, from your arrival to the remittance of your diploma at the end of the course,
- Because after the work, it is time for relaxation. You will enjoy the French art of living to its fullest in a friendly and convivial atmosphere.

#### LPG Academy contact:

Stéphane PEGUET stephane.peguet@siraga.com Tel: +33 2 54 84 50 36



## Siraga



#### Your contacts:

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Marketing department: marketing@siraga.com

After sales department: sav@siraga.com **Spare parts department:** spr@siraga.com

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