YOUR WORLDWIDE PARTNER FOR BURNING ALTERNATIVE FUELS IN CEMENT INDUSTRY

WALTER Materials handling member of ATS Group

> WASTE TO ENERGY

COMPLETE SYSTEMS FOR WASTE RECOVERING

> HIGH FUEL FLEXIBILITY IN CO-PROCESSING

Shredded tyres
30 - 200 mm
d = 0.45 t/m^3

RDF
20 - 300 mm
d = 0.1 - 0.3 t/m^3

Municipal waste
50 - 400 mm
d = 0.3 - 0.6 t/m^3

Coconuts shells
50 - 250 mm
d = 0.25 t/m^3

Rice husk
1 - 10 mm
d = 0.15 t/m^3

Wood pieces
1 - 500 mm
d = 0.2 - 0.4 t/m^3

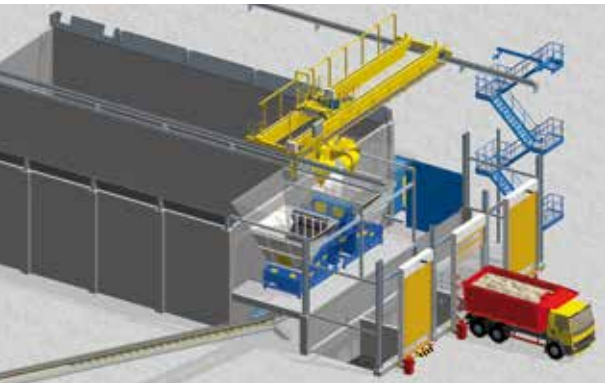
Cashew nut shells
20 - 40 mm
d = 0.2 t/m^3

Car lamps
50 - 500 mm
d = 0.15 - 0.2 t/m^3

The high flexibility of our equipment enables cement plant to change its alternative fuels at any time and get the best price for it!

1. FULLY AUTOMATED STORAGE BUILDING: GRAB CRANE SYSTEM AND DOSING EXTRACTOR

Automated storage management with bridge crane is used for high flow rate up to 20 t/h.
- Automatic extractor loading with grab
- Possibility to manage several products at the same time
- Full automatic running 24h a day, 7 days a week
- Self storage management: ASF build up for the night and week end
- Cycle time calculation for accurate equipment
- Dosing with loss-in-weight system using weight cells under the extractor frame
- High flexibility regarding the range of product
- Grain size from 1 to 500 mm
- Density from 0.1 to 1.5 t/m^3



Storage building with grab crane system and dosing extractor

Orange peel grab

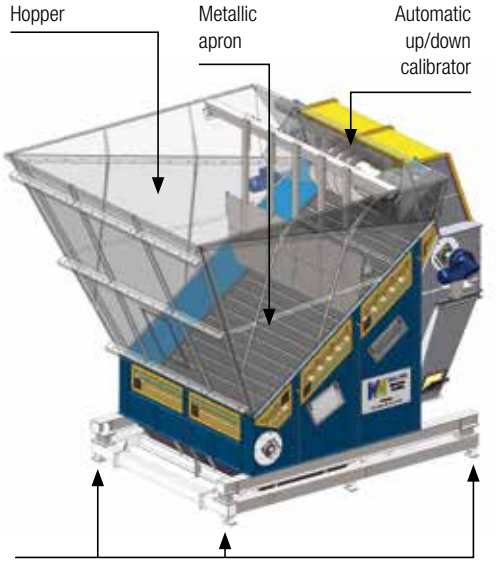
Dosing extractor

2. DOSING EXTRACTOR: MANUAL LOADING BY FRONT END LOADER

Manual loading with front end loader is a common solution for start using alternative fuels as lower investment with flow rate up to 10 t/h.

- Dosing achieved with a weigh belt feeder, using a double regulation system (speed of the metallic apron extractor and weigh belt feeder)
- Flow rate accuracy of +/-1%
- A light signal (red/green) on the hopper indicates when the loading has to be done

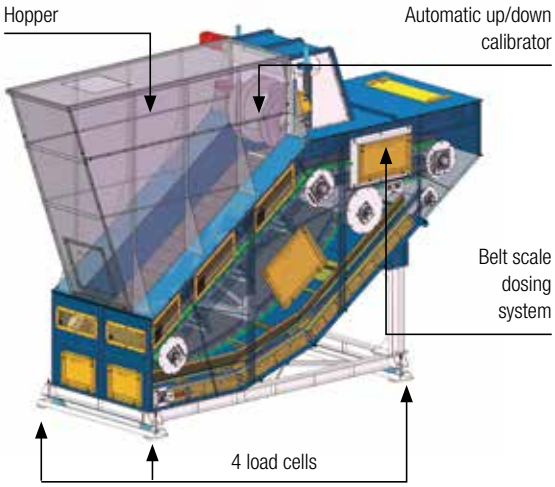
Extractor loaded by front end loader



4 load cells : Dosing based on “lost-in-weight” Principle

3. DOSEAHORSE: DOSING & EXTRACTION CLOSE TO FEEDING POINT

- Dosing & extraction with the same machine
- Product layer thickness ensured by automatic adjustable calibrator
- High reactivity due to dosing close to feeding point in the preheater tower (PHT)
- Continuous hopper feeding possible
- Dosing accuracy less than +/-1%
- Integrated spillage conveyor



Integration in the preheater tower (PHT): Doseahorse, vibrating conveyor and electrical double valve airlock

Doseahorse in the preheater tower (PHT)

> GLOBAL OVERVIEW

WORLDWIDE EXPERIENCE WITH PROVEN MACHINES AND SOLUTIONS

WALTER Materials handling - member of ATS Group - is leading global company providing wide range of technical solutions & equipments for using alternative fuels in cement plants.

With our experts, patented machines and global network, we are the partner to support you in your worldwide projects to achieve your cost reduction goals and sustainability targets over long period.

WALTER Materials handling

Your global partner for co-processing of alternative fuels in the cement industry

A Fully automated storage building managed with grab crane system

B Toploader: reclaimer for small storage capacity

C Dosing extractor loaded by payloader

D Docking station with chain belt conveyor and calibrator

E Sidewalls conveyor for vertical handling

F Doseahorse: Compact dosing extractor installed close to introducing point

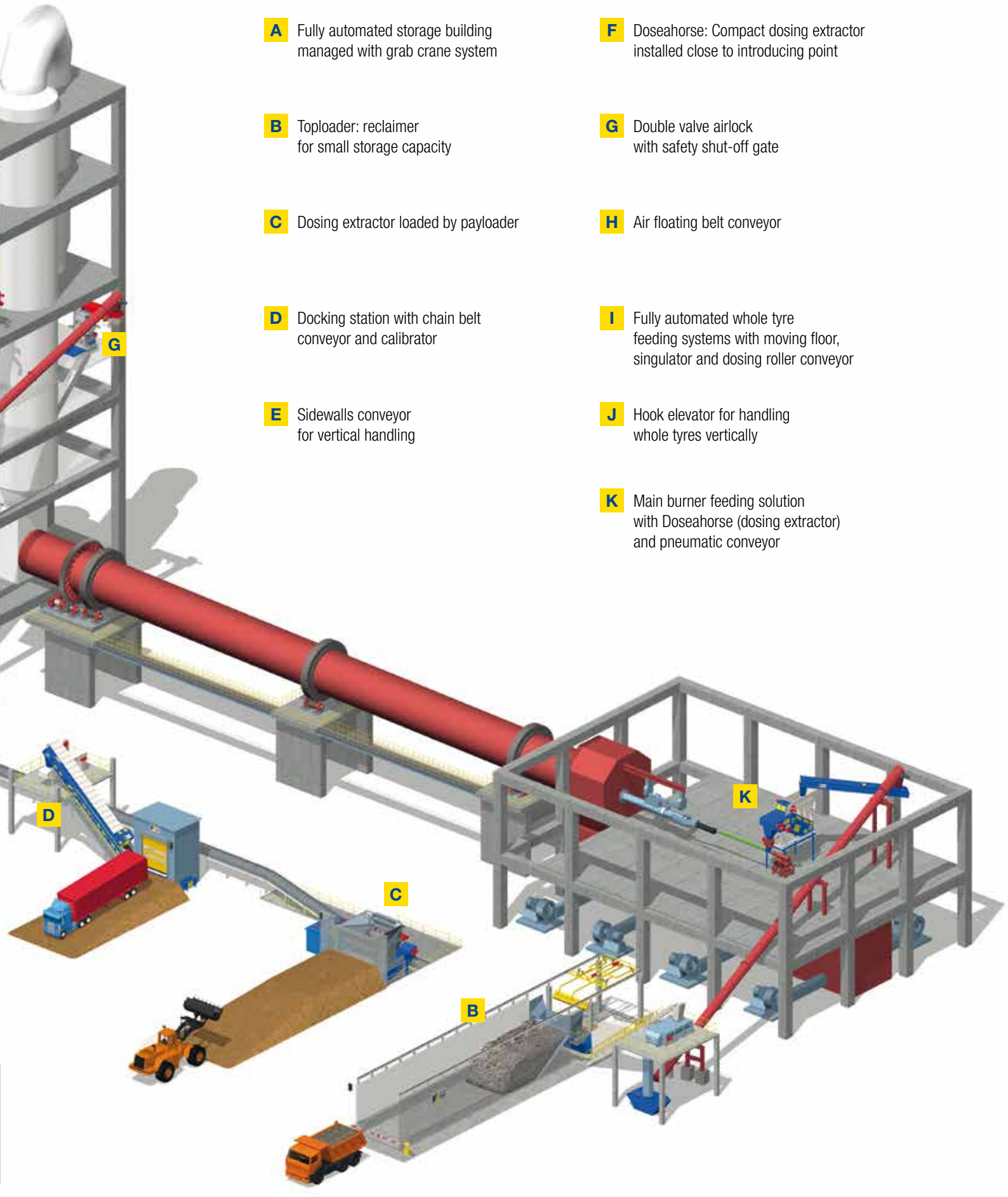
G Double valve airlock with safety shut-off gate

H Air floating belt conveyor

I Fully automated whole tyre feeding systems with moving floor, singulator and dosing roller conveyor

J Hook elevator for handling whole tyres vertically

K Main burner feeding solution with Doseahorse (dosing extractor) and pneumatic conveyor



4. HANDLING SOLUTIONS

For different needs and applications, Walter Materials handling supplies various conveyor systems for handling fine and coarse alternative fuels.

Sidewalls is a vertical conveyor system for handling alternative fuels from the ground to introduction point in the preheater tower. Integrated spillage conveyor is available in option.

Chain belt conveyor is ideally located just after docking station or storage bunker. With its automatic adjustable calibrator and variable belt speed, it is feeding a dosing unit with a controlled output flow which helps to get a high dosing accuracy.

Air floating belt conveyor is a completely close handling solution carrying materials on the air supported belt. The main advantages of this solution are: easy and quick installation, less steel structure, no friction, low-noise level and dust-free, less operation costs (reduced energy consumption, low maintenance), etc.

Conventional belt conveyors, with flat belt for low inclination (≤17°) or chevron belt for higher angle up to 35°, answer to many needs and installations.

Pipe conveyor is a completely close handling solution which allows to make curves when the routing can not be straight.

5. ELECTRICAL DOUBLE VALVE AIRLOCK

The double valve airlock unit consists of two electrical valves and a pneumatic sliding gate. The opening and closing of the valves is done by the pendulum of the single flaps.

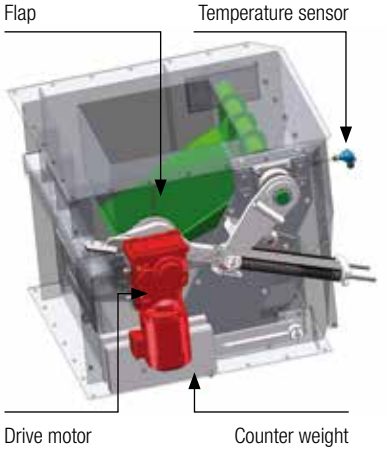
- Very short cycle time (50% reduction compared to the pneumatic system)
- Compact design
- High safety due to materials choice (stainless steel, high temperature steel, refractory protection)
- High temperature resistance till 1100°C
- Excessively high temperatures and pressures detection with sensors

Most advanced and secured double valve airlock on the market today!

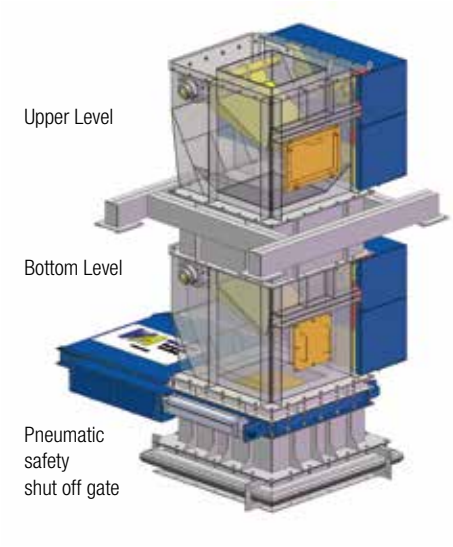
- Standard sizes: 650x650, 800x800

- Flow rate: up to 200 m³/h

- Pneumatic version with section size 900x500, 1300x500 are also available for introduction of whole tyres which have diameters up to 1200 mm



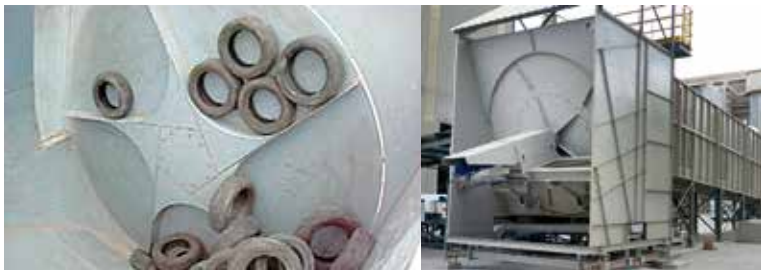
Valve with single flap



6. WHOLE TYRE SYSTEMS

The singulator is a special extraction device for whole tyres (diameter max 1500 mm). It consists essentially of hopper, rotating disc and discharging chute. The complete machine is supported on load cells to indicate the product level inside the hopper. The singulator has been designed to supply tyres at a flowrate up to 10 t/h. The dosing of the tyres will be done one by one using a roller conveyor on load cells. The feeding will happens into the kiln inlet thanks to the double valve airlock.

Moving floor



Singulator: extractor for whole tyres

Hook elevator

Belt conveyor

Roller conveyor

OUR ENGAGEMENTS

- Site measurements
- System and equipment design
- Static Design Calculations (SDC) & Workshop drawings
- Manufacturing of equipments & Factory tests
- Design & manufacturing of electrical panels
- Packing, Transport and Custom clearance
- Erection on site
- Commissioning

WORLDWIDE EXPERIENCED PARTNER

HEIDELBERGCEMENT
LafargeHolcim
CEMEX
VICAT
CIMAT
SAMPYO Cement
CRH
ADITYA BIRLA GROUP
ÇIMSA
TITAN
SHARJAH CEMENT FACTORY
InterCement
SCG
çimentaşgroup
ALSAFWA cement company
fives fcb
SINOMA
FLSMIDTH

Your worldwide experienced partner offers you:

> High quality equipment for safe burning
> Complete solutions for alternative fuels systems
> Security and reliability in all the process

MATERIAL HANDLING SINCE 1866

ATS Group - Walter Materials handling
56 rue du Pâturage
68200 Mulhouse - France
+33 389 32 47 00
wm@ats-group.com
www.ats-group.com

WALTER Materials handling member of ATS Group