automated dome reclaim systems
TRADITIONAL RECLAIMING SYSTEM

The automated reclaiming equipment normally consists of:

1. Mechanical or pneumatic load-in
2. Headhouse column drive equipment
3. Rotating screw reclaimer
4. Controlled discharge and mechanical or pneumatic load-out
CAMBELT MEANS PROVEN PERFORMANCE

Cambelt International's Automated Dome Reclaim Systems are in operation in concrete storage domes throughout the world. This proven technology allows the dome and its superior strength to be more fully utilized in storing large quantities of bulk materials. This unique storage concept provides the following advantages:

- Lower Investment
- Reduced manpower
- Lower operating costs
- Lower maintenance costs
- Full utilization of dome volume
- High reclaim capacity
- Blending of product
- Operational safety
- Minimal product degradation
- Simple foundation requirements
### AUTOMATED RECLAIMING

The reclaiming system pulls the stored material to the center of the dome and discharges to the load-out conveying system through a 72" to 96" diameter opening. Initially, the stored material will gravity discharge without the use of the screw, until it approaches its angle of repose. The reclaim screw is then lowered to the pile and the screw begins to cut into the pile, gently assisting the material to the discharge opening. Only during the final phase of reclaim of material from the dome does the "open" screw perform all of the work of drawing the material to the discharge opening.

1. **Load-in conveyor featuring Cambelt’s enclosed CamSpan Gallery (alternate in-flow conveying systems are available).**

2. **Drive assembly mounted in the headhouse at the apex of the dome rotates the center support column.**

3. **Rotating vertical center column with open reclaiming screw attached to support bridge.**

4. **Reclaimed material is discharged to a load-out conveyor or pneumatic take away system.**

*Column drive equipment and enclosed electrical slip ring assembly.*
Reclaiming Screw Reclaiming to Dome Floor

Phase 3

Camber International Corp.
FALK column rotation drive with sprocket, chain and load cell

Emergency discharge with manual gate

Tubular shaped bridge and screw near

LESS-TUNNEL SYS

Elimination of below grade tunnel

Above grade construction reduces potential high water problems.

- Reduced “live loads” into soils
- Redesigned tubular screw bridge reduces vertical loads by 30-40%
- Lower overall system costs
- Increased dome storage capacity in a dome with the same site footprint.
- Uses the same proven Cambelt technology and maintains the advantages of mechanical reclaim.

Note: Cambelt components can be interchanged between Cambelt's “standard”, “alternate”, and “less tunnel” systems, to achieve maximum efficiency and reduced cost. Please consult with a Cambelt Sales Engineer or your local representative.
Cambelt International includes a fully automated central control with each reclaiming system. An Allen Bradley Control Logix PLC is used to control the mechanical reclaiming equipment. It is interfaced with a PC using WonderWare GUI software, to provide an easy to operate graphics control package.

**Meeting Your Needs**
- Standardized format with the flexibility to meet specialized needs.
- Control systems designed for maximum reliability with minimum down time

**Cost Analysis**
- Capability of information systems, that could provide customized reports such as a detailed cost analysis.
- Provide the most beneficial system with an eye for initial cost, performance and lowest operational cost, over time.

**Key Benefits**
- Most beneficial, reliable control system with the capability of meeting your specialized needs, with standard features of alarm logging, event logging and security protection
- Modem/Internet support service adds the extra security of knowing that technical support is just a phone call away.

**Program Strengths**
- Modem/Internet support service, you can rest easy, knowing 24/7 someone is available to assist in all aspects of daily operations from trouble shooting to training.
- If training is needed, on-line training while your plant is running. Learn from the experts.
- With Modem/Internet support, necessary changes or additions to the system can be made from any worldwide, off-site location.
- Alarm logging allows traceability back to the original problem.
- Event logging, provides a history of what happened, and in what order order, which is critical in trouble-shooting a problem.
- 999 levels of security protection. You can truly customize authorization and access.
CAMBELT’S COMMITMENT TO EXCELLENCE RESULTS IN CONTINUOUS IMPROVEMENT PROCESS FOR AUTOMATED DOME RECLAIM SYSTEM

As the automated dome reclaim system has matured and evolved, Cambelt’s continuous improvement process has identified, re-engineered and implemented improvements that have kept the Cambelt Automated Dome Reclaim System on the cutting edge of innovation in bulk handling equipment. Some Key improvements are:

**Hoist modifications that include:**
- Encoder style VFD Motor
- Hoist load cell relocated to the column
- Increased number of cable falls and increased drum diameter

**Improved flow control gate arrangement**
- Redesigned and custom built aerated pad style emergency discharge points
- Improved design for the primary discharge aeration system

**Improved Auto Lubrication System**

**Revamped enclosed slip-ring assembly with NEMA 4 rating**

**Continuous Software Improvement**
- Modification of sensors and load cells to give better information feedback to the HMI system

**Column Rotation Drive**
- Improved column roller design in the headhouse
- Eliminated column rotation gear box lube pump

Cambelt’s Tubular designed bridge
ALTERNATE DOME LOADING AND UNLOADING

Cambelt’s Alternate Loading and Unloading System is used for storing and reclaiming materials that are not free-flowing.

THE CAMBELT DIFFERENCE

At Cambelt, we work together to identify customer needs, develop effective solutions, formalize plant engineering and fabricate equipment in a modern, quality-controlled environment.

We are committed to excellence in all we do, with a genuine understanding that our company exists to satisfy customers. As a business organization, we are committed to this philosophy and constantly refocus on this basic premise.