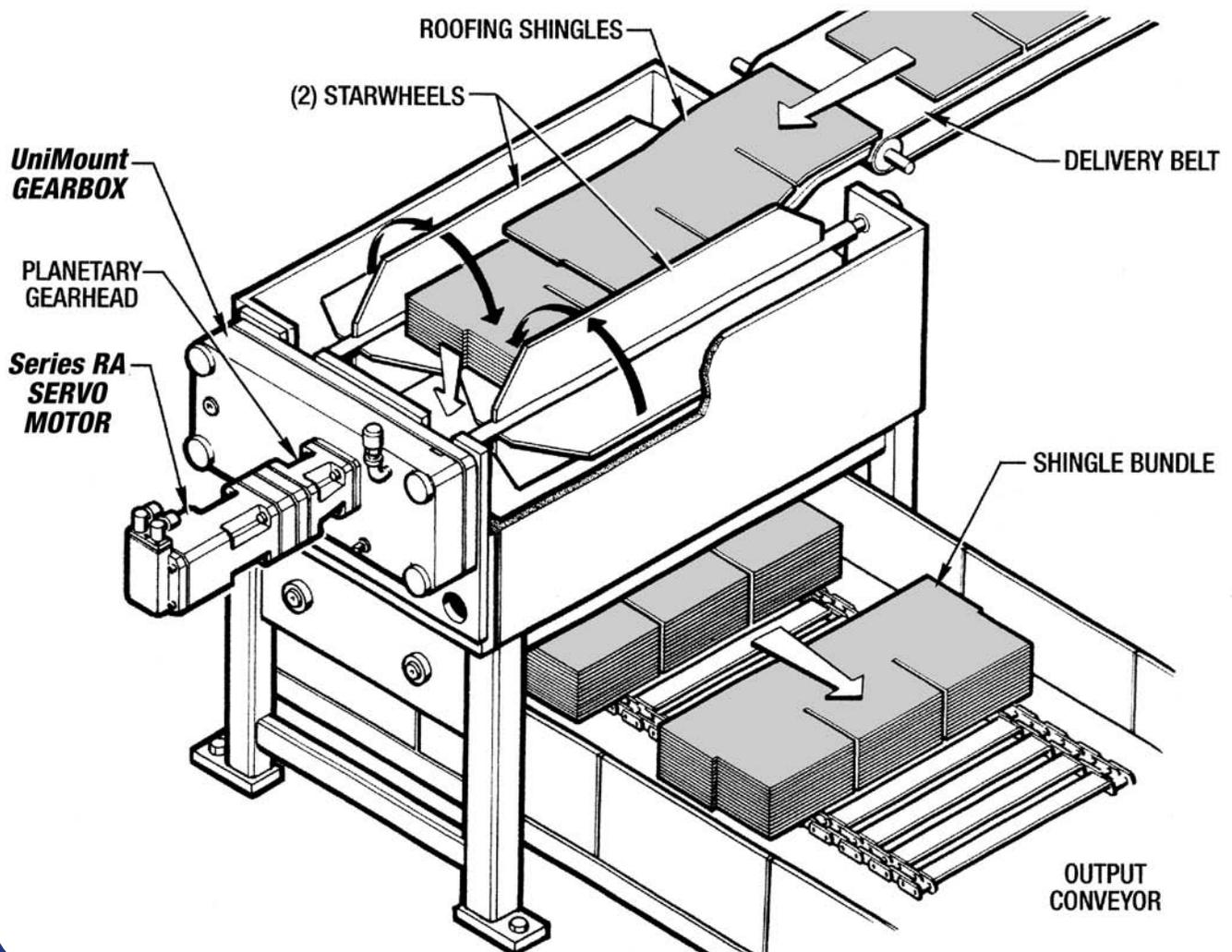# APPLICATION BULLETIN

FORCE CONTROL

APPLICATION: Auto Catcher & Stacker *(PosiDrive)*

INDUSTRY: Asphalt Roofing Shingle Plants

PRODUCT: *PosiDrive* Servo System with *UniMount* Gearbox

AUTO CATCHER & STACKER *(PosiDrive)*

ROOFING SHINGLES

(2) STARWHEELS

UniMount GEARBOX

PLANETARY GEARHEAD

Series RA SERVO MOTOR

DELIVERY BELT

SHINGLE BUNDLE

OUTPUT CONVEYOR

AUTO CATCHER & STACKER (PosiDrive)

WHERE THEY ARE USED: Shingles are manufactured by spreading colored granular material on one side of a wide web of paper or fiberglass saturated with hot asphalt. After the asphalt has cooled, the web is slit into three or four strips. Each strip is then notched and cut to length forming a finished shingle. Shingles are fed into a speed up conveyor to establish spacing between the ends of each shingle. Shingle Catchers, (also called Auto Catchers or Shingle Stackers), are used to catch and stack finished shingles into bundle size groups prepared for wrapping. Three or four catchers are required per line.

HOW THEY WORK: Shingle Catchers have two parallel shafts with blades located at 90 degrees along each shaft called **"Star Wheels".** The inside blades of the star wheels are positioned to form a shelf for the finished shingles fed by a high-speed conveyor. When a pre-determined number of singles, usually ranging from three to seven, are caught on the inside horizontal blades, the star wheels are indexed 90 degrees allowing the group of shingles to drop into a collection chamber below. Precise, rapid indexing between the continuously fed shingles is required to prevent jams. The Star Wheels require precise accuracy to ensure the blade position is maintained. This is easily achieved using the **UniMount** Gearbox and the **PosiDrive** Servo System. After a full bundle is caught, the collection chamber is opened and the full bundle is dropped onto a conveyor, which takes the shingles to be wrapped.

PROBLEMS SOLVED: The **PosiDrive** Servo System provides more consistent performance to minimize shingle jams and maximize machine output.

There are very few mechanical components so there is little maintenance required.

IMPORTANT FEATURES:

- **PosiDrive** Servo Motor with low inertia and high torque provides maximum performance for this demanding application.

- **PosiDrive** Servo Control is prepackaged and pre- programmed for the customer. The control panel may have two or more **PosiDrive** Servo Amplifiers for multiple diverters, catchers, flippers, or stackers for a customized solution to the plant. Final system startup variables are input through the **TSI (Touch Screen Interface).** There is no complex programming language to learn.

- The **TSI** can be mounted in its own small enclosure near the catcher with the main amplifier control panel being remote on multi-axis systems. This saves space in the critical area near the catcher while providing operators the flexibility of having the **TSI** nearby for system operation and monitoring. The **TSI** can communicate with multiple (8) **PosiDrive** Servo Drives on multi-axis systems.