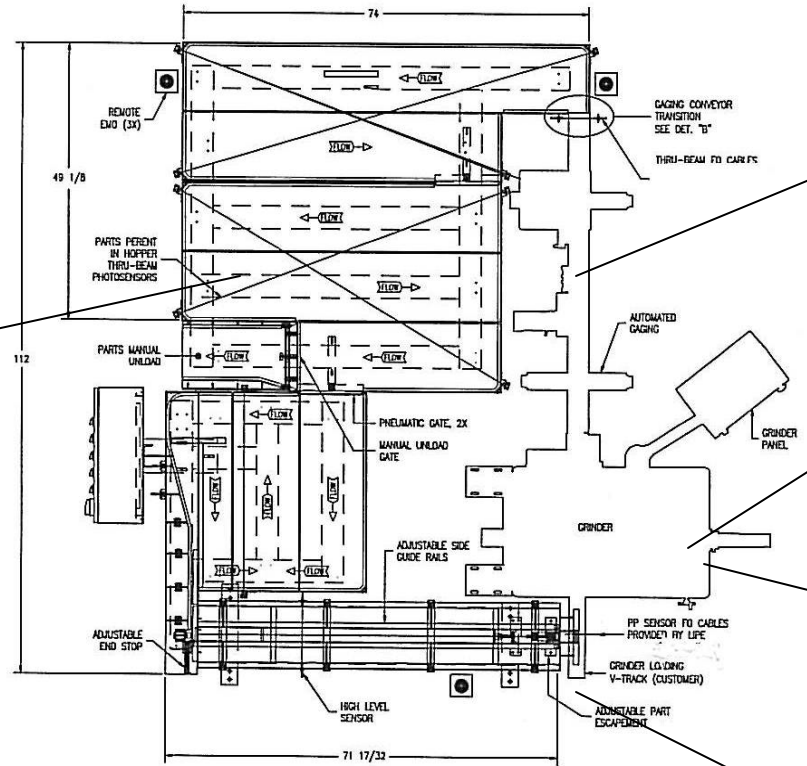


Lights Out Automation Cell

- **System illustrated is for Centerless Grinding. This methodology can be employed for any system which requires multiple processing steps and would benefit from asynchronous accumulation.**
- **System Features: Panel View Interface, PDA or Internet configurable system. Self contained feeder / accumulator / loader/ gauging system incorporates PLC based controls to allow for integration to grinder and programming requirements for a wide number of parts.**
- **Programmable variables include feeder speed control, multiple pass cycles with run times to 72 hours, automated gauging as well as time and event recording capabilities**
- **Operator loads parts into Dyna-Slide Accumulator-Feeder and enters part SKU. (Feed system is scalable to any size part or part quantity.) The program specific to that SKU is enabled which configures system to gently feed/load/grind and gauge and then accumulates parts automatically. Grinder resets, cycle repeats. Process is repeated as programmed until batch is completed and finished part is achieved.**



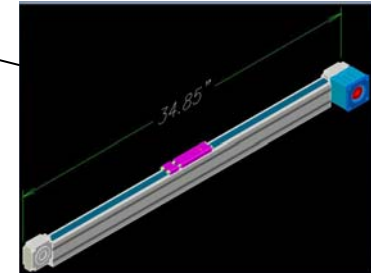
Zoned Accumulation



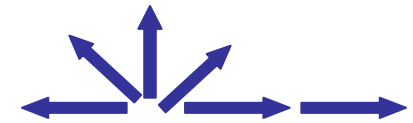
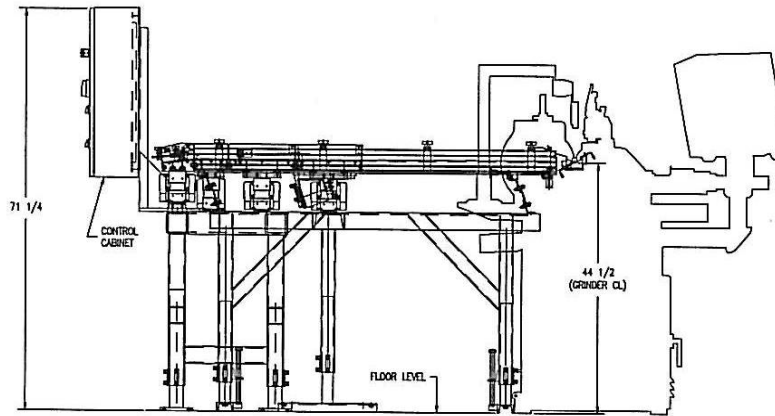
Part Gauging



Part Loading-Presentation



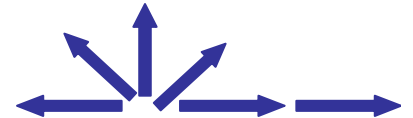
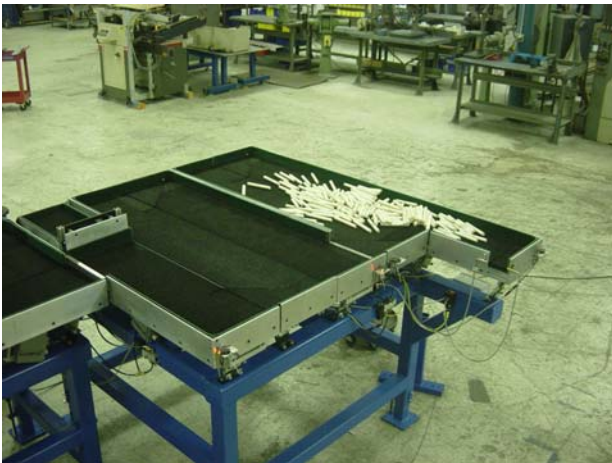
Orientation & Feeding



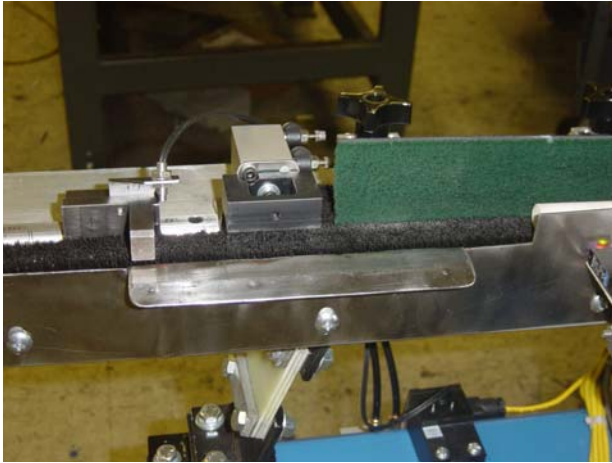
Zoned Accumulation



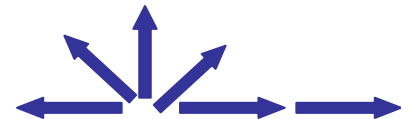
- System is designed to accumulate up to 600 parts. To accommodate this large number of parts without damage required segmenting accumulation table into zones. Each zone is segmented using pneumatic gates. Gating the zones had the added benefit of allowing positive part separation to be maintained between grind cycles.



Part Orientation

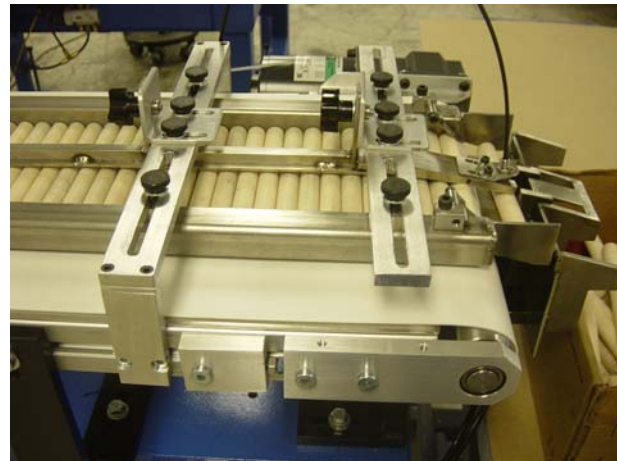


- Parts are oriented and loaded onto belt magazine using Dyna-Slide Feeder technology. This allows for very rapid change over between parts and ensures gentle handling.
- Part is squared and discharged at right angles to horizontal magazine using pneumatic right angle pusher with adjustable backstop.



Part Loading & Gauging

- Parts are loaded to horizontal belt magazine which is based on standard Dyna-Belt LP series conveyor. System includes an adjustable vertical escapement which loads parts into loading track.
- Parts could also be presented to robot for machine loading step.
- In the case of a thru part loading application a loading track with a Servo controlled pusher which is programmable for both loading stroke (part length) and speed is used. System stores program by part sku and runs program unique to part.
- Automatic gauging allows for system confirm part dimensions at each pass. Parts not meeting tolerance are rejected by gauge and system deducts from part total.



System is Handling:	Rods Diameter.350 to .950 in, and the length ranges from 2.40 to 9.80 in. Length = 2.48", starting dia = .575 (600 parts / Cycle) Length = 3.20", starting dia = .615 Length = 3.25", starting dia = .860 Length = 3.20", starting dia = .950 Length = 5.40", starting dia = .600 Length = 9.75", starting dia = .425 (225 Parts/ Cycle)
Product is entering system via operator:	Initial Cycle-Loading horizontal hopper Repeat Cycles- Automated Return- Multipass to grinder
Part orientation desired is:	Part is generally rod shapped, defined orientation desired is, random end leading, random face up, single layer, single file
Product feed rate:	75 ipm to 240 ipm
Environment:	Wet
Weight:	tbd
Product is being discharged from system	To Royal Master Grinder –Automated Grinder Load System
Process Control	Ethernet Communication & Data Collection

Industrial Class

A=USDA/FDA	B=Pharmaceutical	C=Packaging	D=Robot Cell	E=Electronic	F=Heavy
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Duty Class

1 Shift X 8 X () Days 2 Shift X 8 X () Days 3 Shift X 8 X () Days

Code 1	Code 2	Code 3
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Industrial Classification

Nema / CE Class

Hazard Rating (All "S" ratings require properties sheet)

Nema 1 =Code 4	Nema 12 = Code 5	Nema 4 = Code 6	Nema 4X = Code 7	Hazard Rating=S *
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* Hazard Rating must be confirmed at time or order.

Motor Supply Voltage	Control Supply Voltage	Pneumatic Supply
120/3/60	120VAC/1/60	20 cfm @ 80 psi

