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## Closing Station Problems:

- Capsules are not fully closed or locked.
  - ✓ Closing pins are too far down
  - ✓ Counter closing block is too high
  - ✓ Powder slug is too long or too hard
- Capsules have dented bottoms.
  - ✓ Powder has built up on the tips of the closing pins
  - ✓ Closing pins are set too high
  - ✓ Install larger diameter pins with concave tips, if possible
  - ✓ Powder slug is too hard
- Capsules are “splitting” when closed.
  - ✓ Counter closing block is too low
  - ✓ Capsules are too loose in the segments
  - ✓ Worn segment carrier
  - ✓ Segments not aligned
  - ✓ Excessive powder on the capsule body lip area (no slug formation)

## Sorting Station Problems:

- Capsule low-level alarm keeps going off when hopper is full.
  - ✓ Adjust sensitivity
  - ✓ Check for damaged cable
- Capsules will not feed into the magazine channels.
  - ✓ Adjust small hopper gate opening
  - ✓ Check opening of channel for damaged capsules
- Capsules will not exit the magazine channels.
  - ✓ Adjust feed plunger higher
  - ✓ Check discharge point for damaged capsules
  - ✓ Check “L” shaped spring on gate for damage
- Capsules are being pushed all of the way out of the sorting block.
  - ✓ Adjust the sorting fingers back
  - ✓ Sorting block worn
  - ✓ Capsules are dried out
- Capsules are not rotating fully at the front of the sorting block.
  - ✓ Sorting fingers are too far back
  - ✓ Magazine fingers are damaged
- Capsules are not entering the segment correctly.
  - ✓ Sorting stations are not in alignment with the segment position
  - ✓ Capsules are not rotating properly
  - ✓ Capsules are too big; Change supply – new lot number
- Capsule tops are falling off.
  - ✓ Vacuum is too strong
  - ✓ Separation pins are too low
  - ✓ Sorting station too far towards center of machine
- Capsules are not separating.
  - ✓ Vacuum not strong enough
  - ✓ Vacuum line is clogged
  - ✓ Vacuum pre-filter is dirty
  - ✓ Vacuum shoes not seating against lower segment body
  - ✓ Vacuum shoes worn or blocked
  - ✓ Magazines are not the same height
  - ✓ Segments not aligned
  - ✓ Segment carrier worn
  - ✓ Vacuum solenoid not functioning
- Separation cam and/or cam follower wearing.

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- Separation pin plate hitting machine top as the pins go down
  - Adjust linkage

## Dosing Area problems:

- Dosing disc difficult to align.
  - ✓ Tamping pin guide ring worn
  - ✓ Disc has damaged holes
  - ✓ Alignment pins are bent or damaged
  - ✓ Dosing disc shaft is damaged
- Excessive powder coming out from below dosing disc.
  - ✓ Tamping ring too low
  - ✓ Tamping ring not level
- Tamping head difficult to raise/lower.
  - ✓ Damaged or un-lubricated lifting shafts
  - ✓ The bolts securing the guide ring are too long
  - ✓ Check chain tension
  - ✓ Damaged or worn bevel gears on crankshaft
- Tamping pins will not lock in their holders.
  - ✓ Damaged locking slide
- Cannot achieve correct fill weight.
  - ✓ Wrong size dosing disc
  - ✓ Broken springs in tamping pin holder
  - ✓ Powder level in bowl too high/too low
  - ✓ Incorrect settings of tamping pins
- Loose powder on top of segments.
  - ✓ Segment turret not in line with transfer station
  - ✓ Wiper block set too high
  - ✓ Powder level in bowl too high
- Powder is not forming a solid slug.
  - ✓ Not enough tamping – possible disc change required
  - ✓ Properties of product
- Weights can be achieved but vary during run.
  - ✓ Broken tamping spring in holder
  - ✓ Incorrect setting of tamping pin holders
  - ✓ Powder level in bowl not consistent
  - ✓ Properties of product

## Faulty Capsule Ejection Station Problems:

- Unopened capsules are not being ejected.
  - ✓ Arm is set too low
  - ✓ Arm is set too high causing bottoms of capsules to hit pins
  - ✓ Air pressure is too low
- Ejection arm breaks.
  - ✓ The arm usually breaks when it is in its down position. Check the clearance by the lower segment mounting screws.  
Some arms require to be machined or filled where the bend is.
  - ✓ Timing not correct
- Tops of opened capsules are being ejected.
  - ✓ Air pressure is too high
  - ✓ Arm is set too high

## Ejection Station Problems:

- Capsules are not being ejected down the chute.
  - ✓ Air blast is not strong enough
  - ✓ Air blast is too short

## Cleaning Station Problems:

- Segments not getting cleaned.
  - ✓ Air blast is not strong enough
  - ✓ Air blast timing is incorrect – adjust at main control panel
  - ✓ Nozzles damaged or clogged

## Main Shaft Problems:

- Cam wearing  
This is due to lack of lubrication or a worn cam follower. Normally, the cams have a long life. Check for misalignment of the actuating arms. The cam follower that is attached to the arm must run parallel to the track. Also, the cam follower must not be in the track too deep whereas it rubs against the inner face of the track.
- Arm is loose  
This is due to general wear. It normally has nothing to do with set up or maintenance. The needle bearings in the pivot point cannot be lubricated once they have been installed. The bearings should be replaced at the first sign of wear to prevent further damage.
- End bearing at the ejection station worn  
This bearing cannot be lubricated once it has been installed. When replacing it, remove one of the race seals and check the amount of grease inside. Some bearings do not come with a lot of grease in them.  
It is possible that the end of the main shaft will wear if the bearing is bad. Having the area where the bearing fits turned down to accept a bearing with a smaller ID can save the shaft.  
A plate with a grease fitting mounted to it can be installed onto the hanging bearing flange. The outside race seal is removed to allow grease to flow into the bearing.  
When replacing the bearing be sure that the new bearing has plastic seals and not metal ones. The plastic seals are better for keeping out powder.
- Star wheels have sharp edges on the tracks  
This is due to normal wear **OR** bad bearings on the indexing crank. Check to ensure that the double bearings on the crank are not worn or frozen. When replacing the double bearings make sure that the bearing on the bottom has a spacer shim! This spacer shim prevents the outer race of the bearing from wearing against the crank surface. Lack of the spacer shim will lock up the bearing rapidly.  
If the star wheels do have sharp edges, they can be repaired. Hardened inserts can be fitted in the worn tracks. **Contact Index for repair options.**  
Check to ensure that the star wheel locking arms move freely and are entering the star wheel track smoothly. If not, the timing of the crank bearings will be off causing damage.  
Check to ensure that the star wheels are rotating smoothly. Normally, the segment star wheel moves very easily in that there is no or little restriction. However, the powder star wheel can have a lot of restriction due to maladjustment of the tamping ring or worn bearings in the shaft area.  
To check the rotation of either star wheel, the top section of the encapsulator must be free of any restricting parts or assemblies such as pins, which go up through the segments.  
Release the spring on the locking arm and move the arm out of the star wheel track. By hand rotate the wheel. It should rotate easily. **Be careful where pinch points are located!**  
If the powder star wheel does not rotate freely, most likely the bearings are bad. **Contact Index for repair/replacement options.**

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- Bevel gears are not meshing properly  
The gears are hardened and normally do not wear out. During a major overhaul these will be replaced as a precaution measure.  
It is possible that the gears can move away from their mating gear if the setscrews loosen. When assembled, the main shaft is spot drilled where the screws go in. The setscrews have points on them to dig into the shaft. Most of the time it is the gear that is on the main shaft that moves. Loosen the three setscrews and move the gear towards its mating gear. Retighten the setscrews. There must not be any play between the two gears.
  
- Play between the indexing crank and bevel gear  
A vertically mounted shaft connects the bevel gear and indexing crank. The ends of the shaft where the gear and crank are fitted have keys in them. Over a period of time or if there have been numerous jams, the keys wear out. When this happens, the timing of the index and when the locking arm enters the star wheel track is off. **Major damage to the machine may occur!**  
If this happens at the powder section, the entire index drive yoke can be removed and repaired without disturbing the rest of the main shaft components.  
If this happens at the segment turret section, the indexing yoke can only be removed for repair by dropping the main shaft. **For assistance with either section, please contact Index.**