

BURR TOOL INC.

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TROUBLESHOOTING THE FIN DIE

The following guide lists the problem or condition first, then where to check to correct the problem. This is only a quick guide. If a specific solution cannot be found, please refer to your Machine Manual or contact Burr Oak Tool Inc., and we will try to help resolve the problem to return your machine to full production.

LUBE DIP TANK

PROBLEM	CAUSE	SOLUTION
Fin stock breaking apart in die.	Fin stock failure, collars breaking, draw cups breaking from improper lube coating.	Stock must be coated with an ample and uniform application of stock lubricant. Observe the stock as it enters the die and watch for dry areas on the stock surface. This can be corrected by adjustment of the wiper rollers located in lube dip tank. Normally they are set parallel for stock thickness plus a couple of thousands of inches apart. When using an evaporative type lubricant a heavier coating of lubricant must be applied. This can be achieved by spreading the wiper rollers further apart by approximately .005" (.127mm)

STOCK GUIDE

PROBLEM	CAUSE	SOLUTION
Fin stock not going straight through die, miss-feeding.	The guide rails p/n 4156, are not correctly lined up.	Move the fin stock to the back of the die and line it up so that it's in the center of the die. Once the stock is centrally located to the die, slide the guide rails to within 1/64" (0.4mm) clearance of the stock and tighten down the rails.
	No oil in tank.	Fill with light weight machine oil.

FIN DIE LUBE

PROBLEM	CAUSE	SOLUTION
No oil to pins, bushings, etc.	No air pressure to tank.	Set air regulator to proper setting (Fig, 4).

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UNCOILER

PROBLEM	CAUSE	SOLUTION
Pinch rollers do not operate.	Stock fault or slack stock detectors out of alignment.	Readjust or replace sensors.
Fin stock wrinkles when passing thru pinch rollers.	Fin stock coil not centered on spindle in relation to die.	Center stock coil, refer to uncoiler section in Fin line manual.
	Unequal compression on either end of pinch rollers.	Adjust spring plungers on pinch roller locking bar.
Fin stock unrolls from coil too slowly.	Insufficient compression between pinch rollers.	Adjust spring plungers on pinch roller return locking bar.
	If variable speed, motor speed set too low	Increase uncoiler drive speed, refer to uncoiler section in Fin Line Manual.
	Clutch/Brake pressure regulator set too low.	Adjust pressure regulator to required setting. Refer to tag or to Uncoiler section in Fin line manual.
Fin stock unrolls from coil too quickly.	Spindle brake malfunction.	Identify problem and repair or replace defective brake unit.

DIE RETARD STATION

PROBLEM	CAUSE	SOLUTION
Over feeding.	Not enough retard pressure.	The retard pin creates drag on the material that helps to hold the material against the feed fingers as it decelerates and stops, refer to correct air pressure on regulator.

DIE STATION

PROBLEM	CAUSE	SOLUTION
Material fails.	Incorrect oil.	Change to appropriate oil.
	Not enough lubricant is getting onto stock.	Refer to lube dip tank section.
	Incorrect draw dial setting.	Refer to draw chart setting. Sometimes raising the draw by several numbers prior to the failure will help.
	Always inspect the upper draw plate for imbedded draw bubbles trapped in draw plate hole.	A pick (tool) can usually remove these broken pieces, careful not to damage hole.

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DIE STATION (Con't)

PROBLEM	CAUSE	SOLUTION
Material fails (Cont'd)	Draw punch stuck up too high caused by the accumulation of material (debris) under the lower draw plates	Using a plastic mallet hit the side of the punch, driving it into the damaged area. Raise and lower the punch to see if it moves freely.
		Pieces of scrap are forced around the draw punch, closing the hole in draw punch holder. To fix a sticking punch remove the lower draw and form plate, examining the area around the sticking punch and determine which side of hole is damaged.

FORM STATION

PROBLEM	CAUSE	SOLUTION
Form on fin not correct or damaged.	Broken pieces (debris) of fin stock lying on form plates causes deformation of part.	Make sure the form plates and bushings are kept clean of debris.

PIERCE STATION

PROBLEM	CAUSE	SOLUTION
Off location hit piercing partial slug or miss feed.	Progression changer not operating properly or not set correctly.	Refer to Die Manual or fin line manual instructions, re-adjust if necessary.
	Press-Die timing not set correctly.	Refer to Die Manual instructions "timing" sheet- height off stop pins in forward feed position.
	Over feed or under feed.	Too much or not enough retard pressure or feed not set correctly.
Broken Punches, Die Inserts and/or Flare Bushings.	Stock not stripping correctly.	Check springs under stripper plates, stripper pins, and push pin springs.
	Pierce punch air hole is blocked or restricted.	Remove obstruction; make sure air is coming thru air hole.
	Pierce punch air is blocked or restricted.	Plant air supply is contaminated, air compressor has malfunctioned.

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PIERCE STATION (Cont'd)

PROBLEM	CAUSE	SOLUTION
Broken punches... (Cont'd)	No air from punches.	Air blow off switch (console) turned off. Air blow off valve solenoid failure
	Debris packed in around die insert, punches, and flare bushings.	Keep die free from debris, check frequently, may be necessary to remove Flare bushing holder.
	Fin stock failure from improper lubrication.	Lube level in dip tank is low. Re-adjust lube rollers, see lube tank instructions.
Fin stock breaking at the base of collar.	Draw punch stuck in up position. This causes fin stock failure and a build up of debris, as well as broken tooling.	Clean and tap draw punch down.
	Foreign matter in draw, form or pierce of die.	Keep die clean, check often.
	Wrong draw settings on dial.	Re-adjust; correct to match chart on stripper rails.
	Stock is too thin.	Check fin print for correct material thickness.
	Feed set wrong.	Refer to feed adjustment in die manual.
	Damaged upper/lower form plate.	Repair or replace.
Misalignment of pierce tooling.	Retard pressure wrong.	Adjust air regulator to correct setting.
	Pierce stations not replaced correctly.	Tooling can be examined visually with an optical magnifying glass. The cutting edges must be sharp, with no damage. If there is mis-alignment, the punches will show damage on one side. There will be rub marks or shiny spots on side of punch. If there is a mis-alignment, the station will have to be re-aligned and re-doweled.

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ENHANCE STATION

PROBLEM	CAUSE	SOLUTION
Broken tooling.	Accumulation of stock powder or slivers.	Some fin stock material is prone to have excess powder. This is the residue left in the lube dip tank, using a filtration system on lube dip tank helps. It is very important to regularly inspect and clean this station.

REFLARE STATION

PROBLEM	CAUSE	SOLUTION
Fins per inch incorrect.	Incorrect reflare dial settings.	Reset to proper setting; Refer to chart for reflare. On die. Refer to Fin print for flare diameter.
	Press ram to bolster not parallel.	Refer to press manual
	Collar heights not the same.	Refer to "adjustment of new style reflare" sheet in die manual – die instruction section.
	Incorrect shut height.	Check to be sure there are no obstructions in die, readjust to proper setting.
Fin stack not level.	Aluminum scrap or debris on surface of reflare receiver.	Remove debris. Keep reflare receiver clean and free of scrap pieces.
	Reflare wedge not level.	If the stack of fins on adjustment side is low, check to see if the "T" nut is in bind, This may cause the wedge to tilt.

EDGE TRIM

PROBLEM	CAUSE	SOLUTION
Slug removal.	Slug build up due to air blow off problem.	Check for insufficient air or no air at all getting to edge trim correctly.
Punch sticking.	No lubrication; spring is weak or broken.	Check and repair faceplate bearing washers; P/N 656 too tight on faceplate.

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SLIT STATION

PROBLEM	CAUSE	SOLUTION
Steps on fin edge.	Slit blades not set correctly.	Refer to "Maintaining Proper Slit Balance" in Fin Die manual - Die Instruction section.
	Stock not tracking thru the die straight.	Realign fin stock from uncoiler to cutoff.
Slit has ragged cut.	Dull blades.	Refer to "Maintaining Proper Slit Balance" in Fin Die manual - Die Instruction section.
	Worn blade holders (old style).	Repair or replace.
	Loose/misaligned dowels (old style).	Repair or replace mounting plates.
	Misalignment between upper and lower mounting plates.	Re-align and re-dowel.
Will not slit.	Blades not set correctly.	Refer to "Maintaining Slit Balance" in die manual - Die instruction section.
	Obstruction in die.	Open die and carefully check for foreign objects.
	Slit Selector Plate.	Foreign material under slit selector plate.

FEED STATION

PROBLEM	CAUSE	SOLUTION
Under feeding.	Retard pin pressure not correct.	Generally, the air regulator is set at 40 psi; adjust accordingly.
	Progression changer out of adjustment.	Refer to Die or Press manual – Die instruction section feed adjustment.
Over feeding.	Not enough retard pin pressure.	Refer to Retard station section.
	Feed bar stops driven out of position.	Reset feed bar stops against pillow blocks, make sure feed adjustment is correct.
	Progression changer out of adjustment.	Refer to under feeding.

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CUTOFF

PROBLEM	CAUSE	SOLUTION
Cutoff does not operate.	Console not turned on.	Turn cutoff switch to auto.
	Stroke counter not turned on.	Reprogram counter.
	Fin counter defective.	Replace counter.
	Not enough blade by-pass.	Blades may have been sharpened too much.
Upper blade does not return properly.	Springs may be weak or broken.	Replace springs, faceplate bearing washers P/N656 too tight on face plate.
Gag rod does not operate properly.	Manifold seals worn.	Replace seals, bad cutoff valve.

DIE RELATED STACKING PROBLEMS

PROBLEM	CAUSE	SOLUTION
Excessive bow in fin.	Certain patterns and certain conditions may cause the fin to bow.	If the fin leaves the die and is curved down towards the die shoe the stock straightener needs to be lowered until the fin comes out flat.
Fins sticking in suction sheet.	Flare diameter is too large for groove in suction sheet.	Refer to fin print in die manual for diameter of flare on collar.
Fin not dropping onto stacker rods.	Stacker rods not lined up with die and suction sheet.	Realign stacker with press and suction sheet.
	Sometimes outside rows spread outside grooves in suction sheet.	Suction sheet may need retainer blocks to guide out side fins into suction sheet grooves.

DIE RELATED LACING PROBLEMS

PROBLEM	CAUSE	SOLUTION
Flare diameters.	Reflare maybe incorrectly adjusted.	Check to see if flare diameter is within tolerance. Normally the outside rows have larger diameters then center of the die, so it good practice to set the die up so that the side rows are measuring close to the maximum diameter.
Collar splits.	Hard material, too large flare diameter, dull pierce tooling.	Eliminate the cause, if you have a lot of split collars, this will make some rows hard to lace.

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DIE RELATED LACING PROBLEMS (Cont'd)

PROBLEM	CAUSE	SOLUTION
Collar base.	Die not closing properly high collar equal less defined base. (Fig, 15)	Check to see that the die is coming closed all the way (Bottom of stroke, touching positive stop pins). Some conditions thicker stock will gap the die. You need to have a good collar base for fins to "nest" properly. If you're running high collars, you probably will loose base definition in the center of the die, but this is normal.
Long coils "fin length".	Fin length varies across the die, outside rows are usually longer then the center rows. This causes the distance between holes to be slightly longer.	If you use multiple sections of the stacker to build one coil, you should refrain from mixing outside rows with center rows in the same coil.
	Material, stock straightener not set correctly.	Check to see that the fin is flat. Too much bow in the fin will shorten the center hole distance.
Fins bowed.	Damaged fin collars or damaged hairpins.	Check the ends of the hairpins, make sure there are no burrs.
Trouble inserting hairpin.	Damaged fin collars or damaged hairpins.	Check the fin part to see that the fin collars are not tipped in anyway.