Film-Tech

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The two most common complaints about reverse scan analog and Dolby digital basement readers associated with Simplex 5 Star soundheads.
1. Dolby Digital looks fine on O' scope but error rate reads 8, F, 8, F,
2.Reverse scan analog reader won't stay in lateral alignment

Following are some helpful hints on how to troubleshoot these problems

Figure 1 shows the result of defective bearings and/or drag on the flywheel from the cover or wiring touching the flywheel. Either will cause wow and flutter in the analog system and high vertical jitter in the digital system.
DO NOT USE SEALED BEARINGS they have too much drag. Replace the bearings as necessary with 6202 ZZ shielded bearings. Insure also that the spring washer under the rear bearing is properly installed. Re route wiring if necessary under the back cover. Sometimes the rear cover itself must be held away from the flywheel when you tighten the screws that attach it. The scanning drum assembly should spin freely for 15 seconds or so after tail out.

Figure 2 shows the result of misalignment of the rollers in the soundhead that cause analog tracking problems and lateral misalignment to the digital reader.

To expose this condition, thread up buzz track or Cat. 97, and adjust the lateral guide. With the loop still threaded, turn the projector on and off a few times letting it stop completely in between. Recheck the lateral guide adjustment. If adjustment has changed it is likely that the lateral guide is wandering.

The film path symptoms are,

1. Wear on the outer flange of the idler roller
2.The film will not lie "flat" between the idler or the tensioning roller.
3.The film will "climb" up the flange and then fall back into the roller.
4.The lateral guide will "wander" inboard.

Figure 3 shows what happens when the spring tension in the tension device is too high.

Figure 4 shows the proper distance between the scanning drum and the lateral guide.

Figure 5 shows how to set the lateral guide in the absence of a gauge or calipers.

Figure 6 show how to align the idler roller to the properly aligned lateral guide.

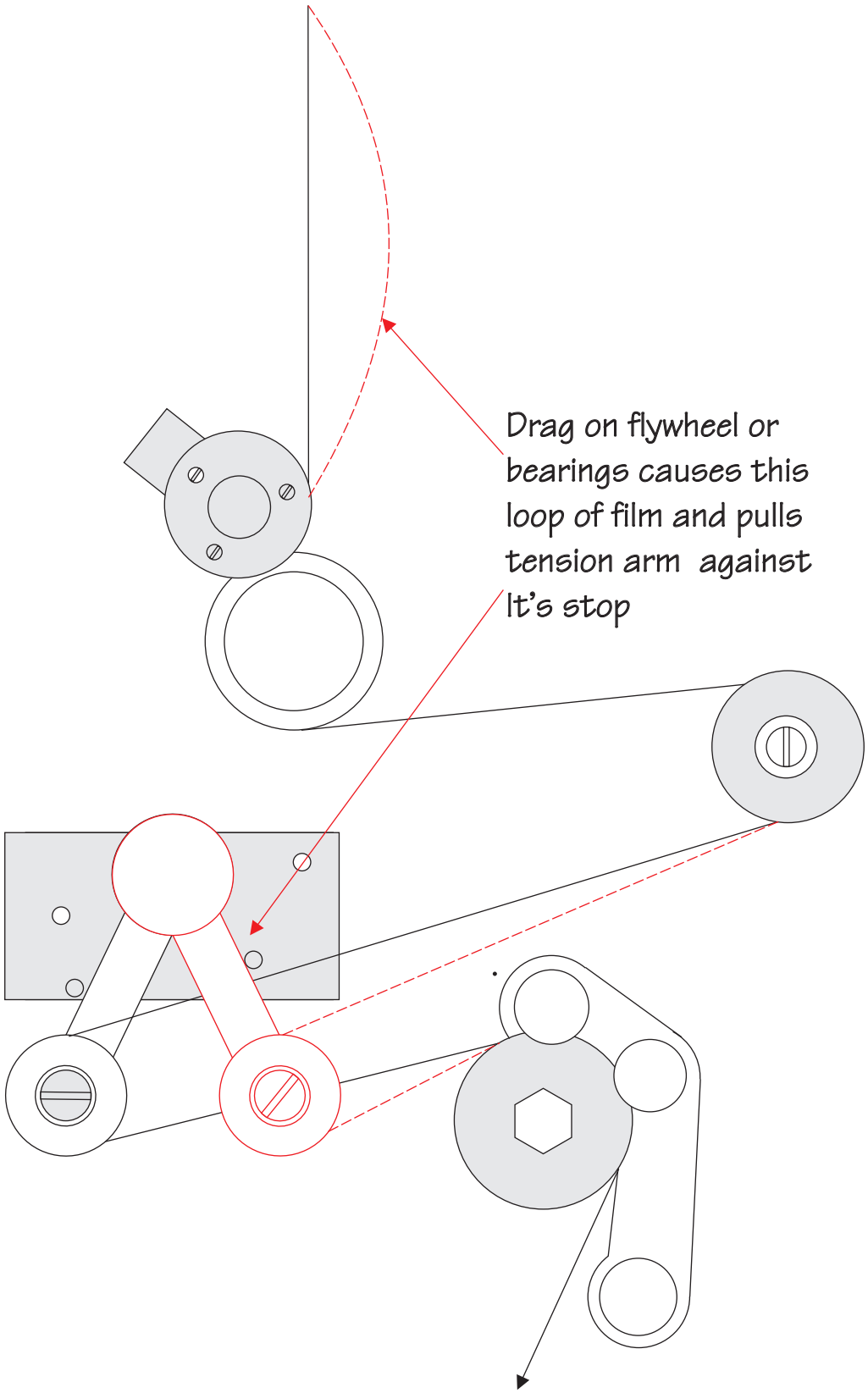
Drag on flywheel or
bearings causes this
loop of film and pulls
tension arm against
It's stop

Figure #1

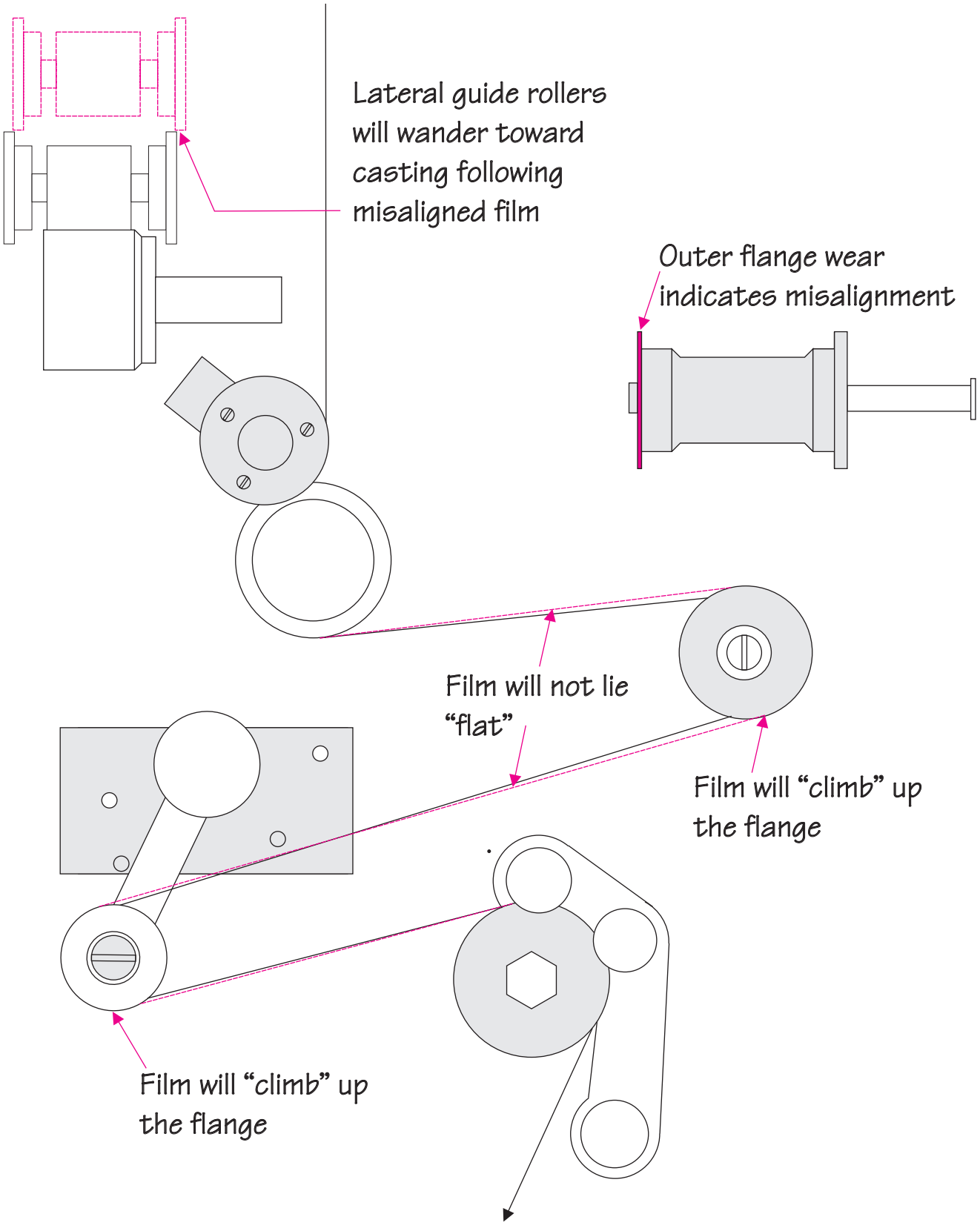
Lateral guide rollers will wander toward casting following misaligned film
Outer flange wear indicates misalignment
Film will not lie "flat"
Film will "climb" up the flange
Film will "climb" up the flange

Figure #2

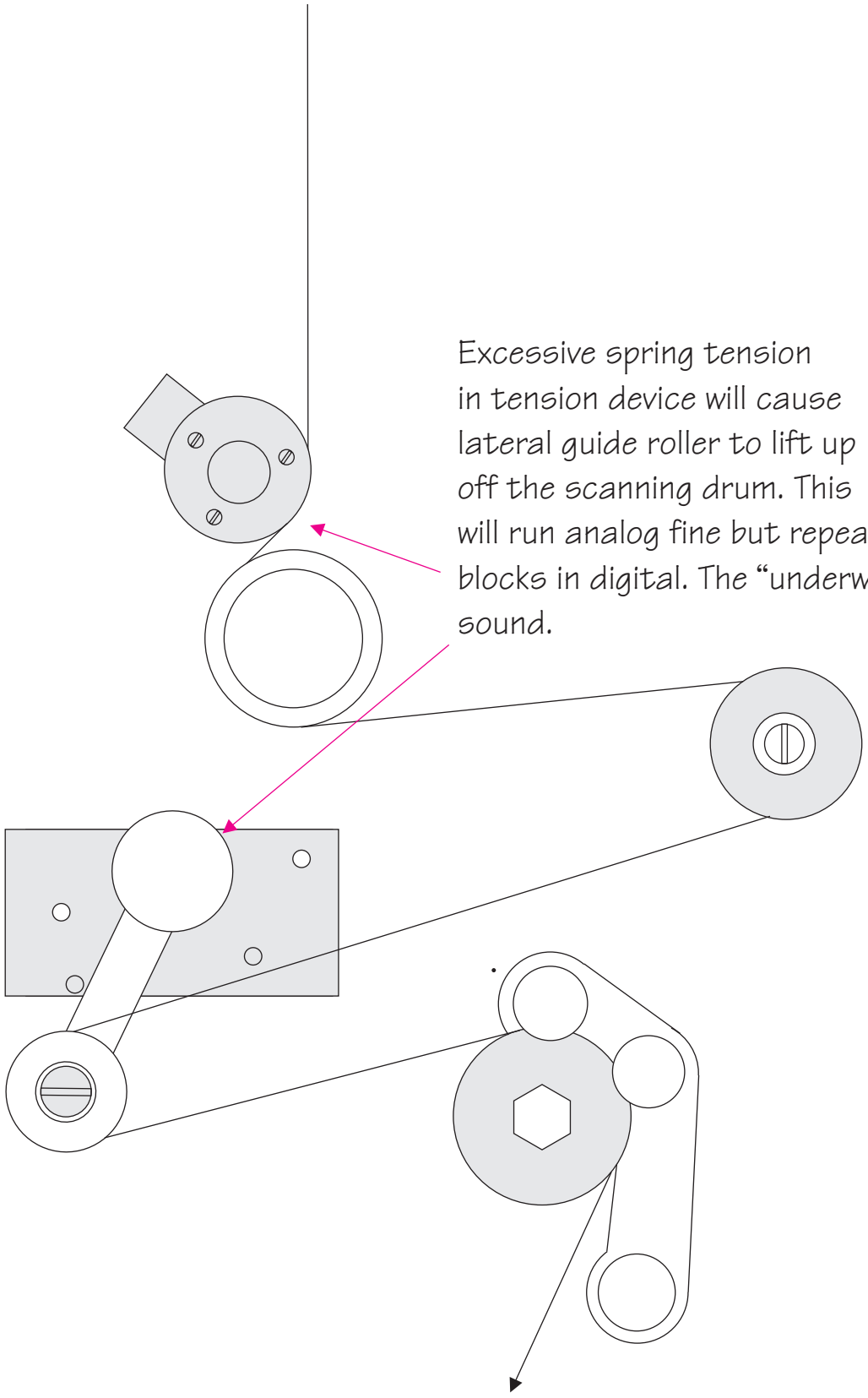
Excessive spring tension
in tension device will cause
lateral guide roller to lift up
off the scanning drum. This
will run analog fine but repeat
blocks in digital. The “underwater”
sound.

Figure #3

Use a gauge or calipers to set this distance.

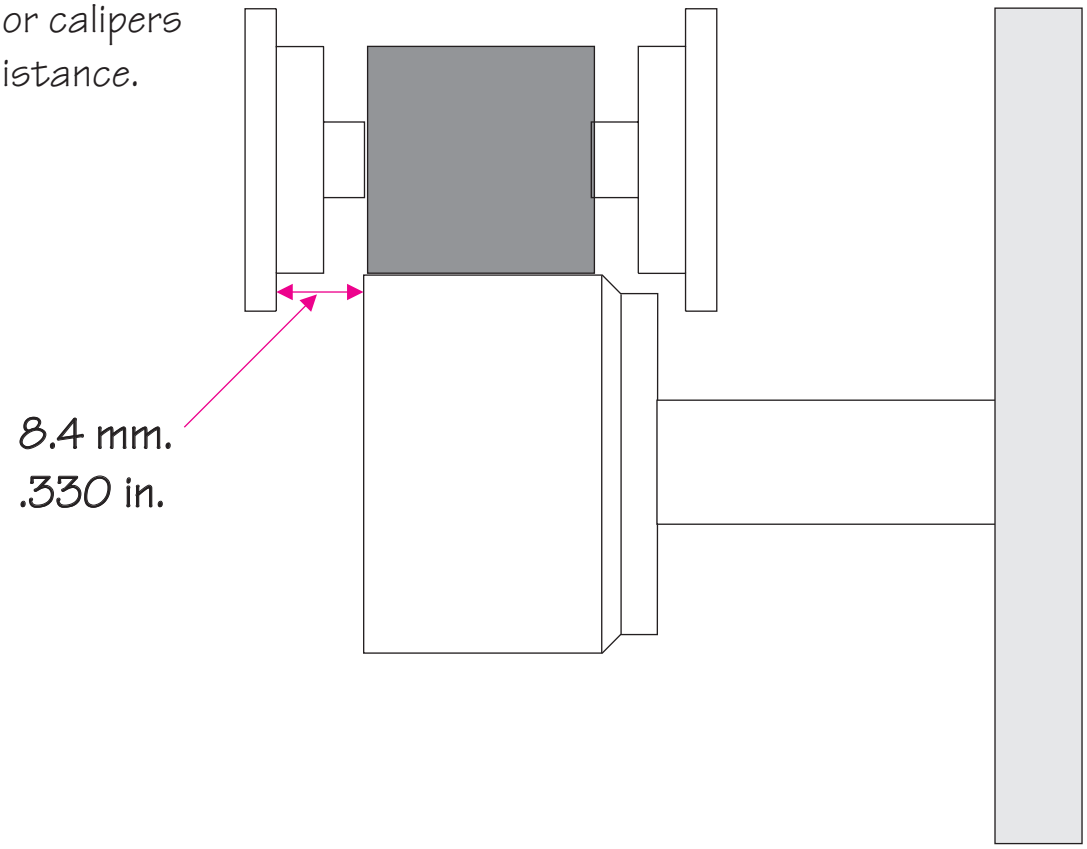

Figure #4

The large teeth of the Buzz track will be completely visible out over the edge of the scanning drum

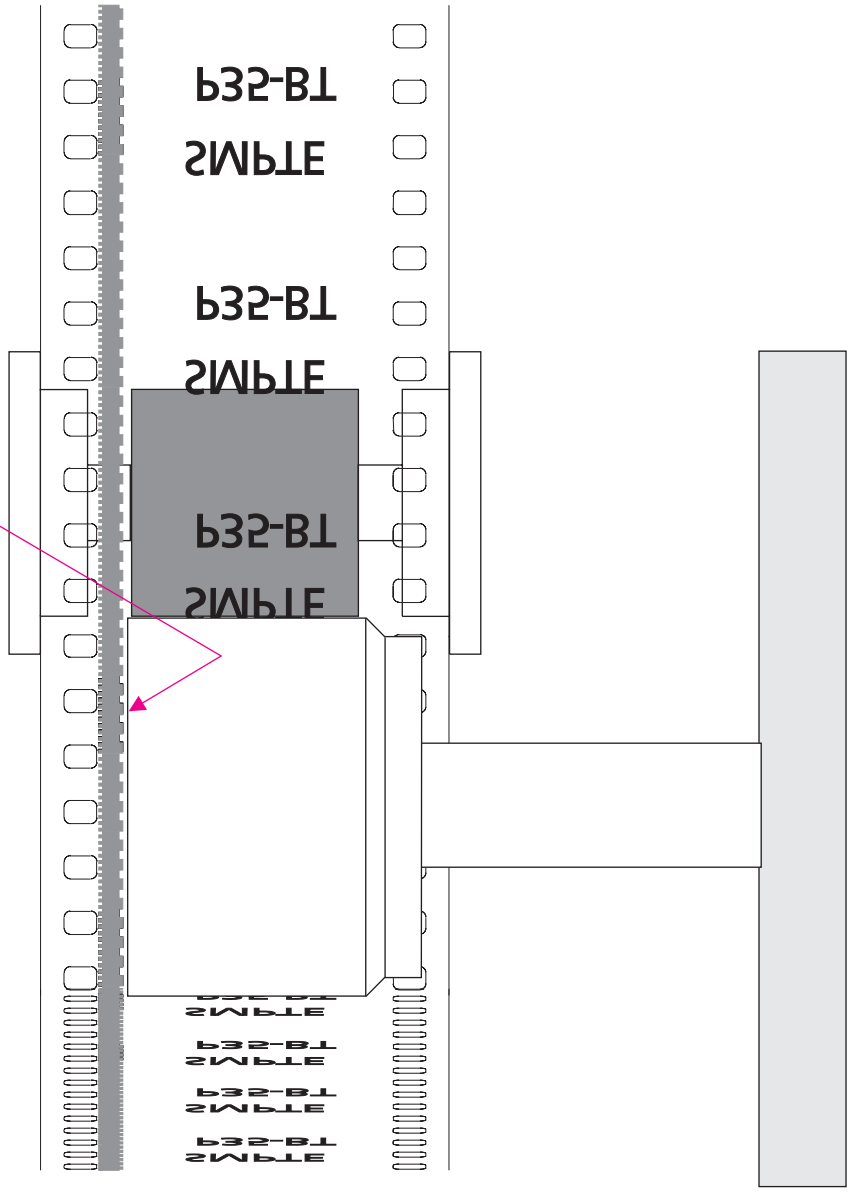

Figure #5

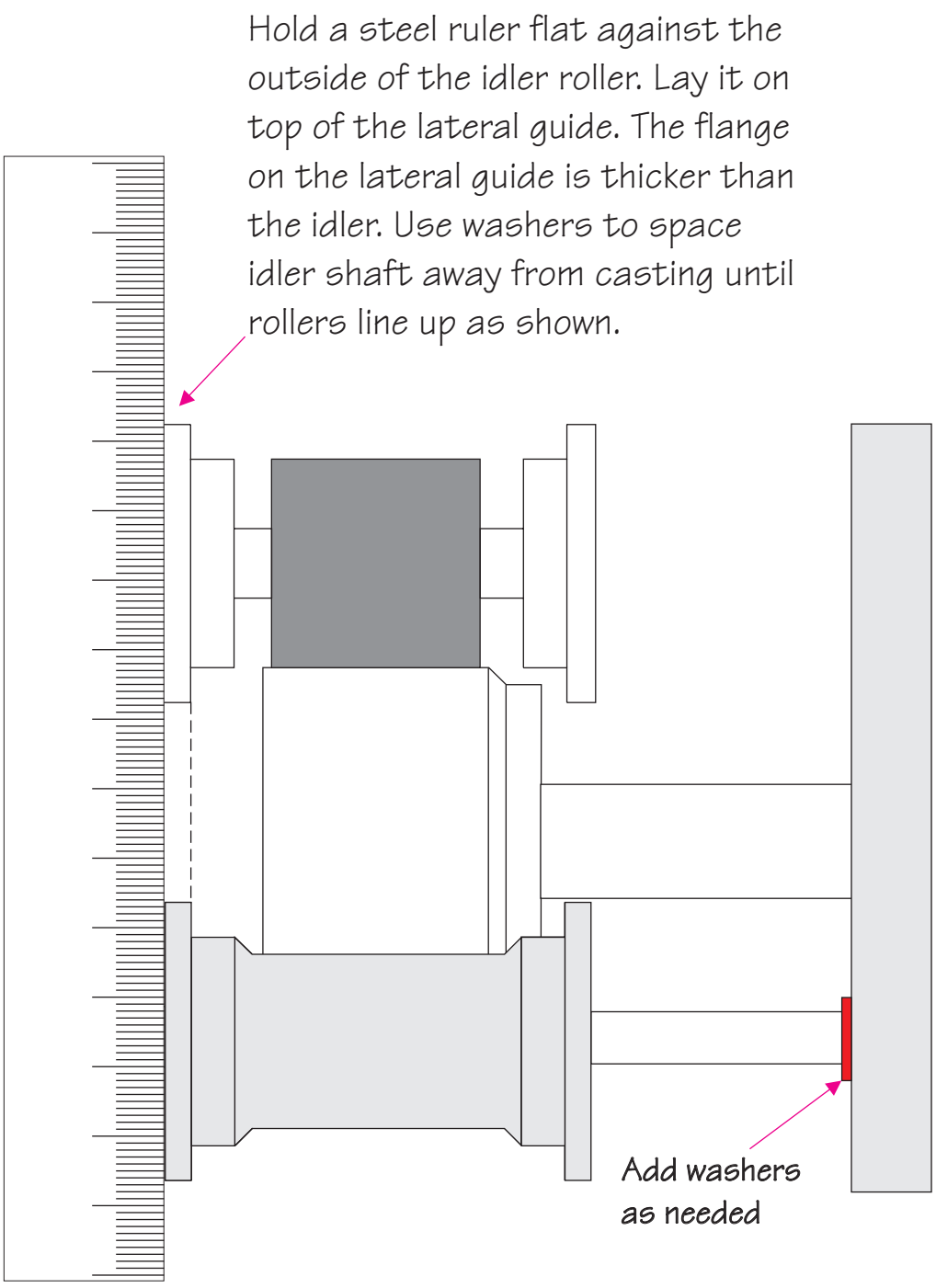
Hold a steel ruler flat against the outside of the idler roller. Lay it on top of the lateral guide. The flange on the lateral guide is thicker than the idler. Use washers to space idler shaft away from casting until rollers line up as shown.
Add washers as needed

Figure #6