

MARK V SERVICE POINTERS - Speed Changer

On the Shopsmith MARK V, the Speed Changer is a dial that is used to control the speed or rpms of the machine's main or auxiliary spindle. This speed is adjustable from 700 to 5200 rpms. With the machine turned ON, you turn the dial clockwise to increase the speed — counter-clockwise to reduce the speed.

Before changing operations or turning the machine off, **ALWAYS** return the Speed Dial to the “A” (Slow) setting. Failure to do so puts unnecessary strain on the machine during start-up and could fuses to blow or circuit-breakers to cut out when the machine is turned back on.

Unless performing certain maintenance procedures, **NEVER** turn the Speed Dial when the MARK V is not running, as this could damage the speed changing mechanism.

WARNING: ALWAYS unplug the MARK V prior to performing any service procedure.

Problem	Possible Cause(s)	Remedy
MARK V won't change speeds from high to low — or low to high	Control sheave stuck on idler shaft	Free sticking sheave. Lubricate sheave and idler shaft.
	Floating sheave stuck on motor shaft.	Free sticking sheave. Lubricate motor shaft and floating sheave.
	Bent or burred long key in motor shaft.	Remove key. File off burr or replace key.
	Motor sheaves mis-aligned.	Align motor sheaves.
Speed setting creeps up when MARK V is running	Leaf spring under handle doesn't press hard enough against control handle	Remove control handle, gently bend spring up slightly
	Speed control bracket bearing worn	Replace control bracket
	Worm gear worn	Replace worm gear
Speed dial hard to turn	Sheaves sticking	Lubricate sheaves, motor & idler shaft
	Foreign matter in quadrant mechanism	Clean mechanism
	Faces of sheaves damaged	Remove burrs or nicks with fine file
	Lower sheaves misaligned	Align lower sheaves
	Keys on motor or idler shafts damaged	Remove burrs from keys with file — or replace keys
Speed changes when handle is turned, but speed dial doesn't move	Gears behind handle stripped	Replace either handle, idler gear or speed dial, whichever is worn
Speed dial moves when handle is turned, but speed doesn't change	Control arm quadrant worn	Replace control arm quadrant
	Retaining loop on upper floating sheave disconnected	Connect retaining loop to control arm quadrant
	Control handle mounted improperly on control shaft	Tighten setscrew in handle so it seats in depression on worm control shaft
Speed dial rattles	Spring under speed dial broken or missing	Replace spring
Speed dial doesn't lay flat in headstock	Screws loose, missing or holes stripped	Tighten or replace screws, if holes are stripped, add nuts
Control handle comes off	Control handle improperly mounted on control shaft	Tighten setscrew in handle so is seats in depression on shaft