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Paper Title: Tandem Turning insert Tool

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Abstract: Turning is a machining process, which can be done, manually on a traditional lathe or by an automated CNC lathe. This paper presents the development of an alternative to any turning tools; which has halved the machining time, resulting in multiple profits. This can be achieved by the new design of "Tandem Turning inserts tool" (TTi- tool), which is a modified version of turning tool. It will help reducing the total takt time of machining to half for heavy turning jobs that requires multiple tool change. The TTi-tool can be used in sundry of arrangements viz. Round+ V-type inserts, Square+ D-type inserts combining both strength & accessibility for machining of a turning job in the same tool. This type of combination with strength & accessibility also increases the tool & inserts life; in addition to that the vibration on the tool would be less & part surface finish, will no longer be dependent on worker skill, & would be beyond desired results, within less stipulated time. Also tool-changing time will be reduced, because there is no need to change the tool every time after the roughing operation. The inserts required for roughing & finishing operation can be coupled in the same tool; if there is a two stage roughing operation, then even that can be adjusted in the same tool with two separate roughing inserts. So ultimately the whole operation time will be reduced to half. As both the inserts distributes the load equally on to each other the life of inserts & tool increases, also as the feed rate with TTi-tool will be less than compared to the conventional method of roughing operation, the inserts replacement & cost incurred on insert loss is also saved. This experiment gives the details about the improvised tool that results into better tool life, better finish of the job, unmatched takt time & cumulative cost reduction on all the production jobs that requires heavy turning.