Improving Machinery Safety: current issues and emerging risks, automation, robotics and the new Machinery Directive

Agriculture machinery: safety problems with power take-off (PTO) drive shafts and their guards
The EN 12965 specifies safety requirements and their verification for the design and construction of power take-off (PTO) drive shafts and their guards linking a tractor or self-propelled machinery to the first fixed bearing of recipient machinery. It describes methods for the elimination or reduction of risks which need specific requirements including such risks arising from misuse, reasonably foreseeable by the manufacturer.
MAIN ISSUES

Difficult access to locking system

Damaged/removed guards

Fatal accidents
At present a locking system actuated from the outer part of the guard which does not rotate with the PTO drive shaft is included: it is an alternative to the traditional locking system.

An entanglement test has been introduced: at present clamp/flange type yoke are excluded from the test.