

KIKK TIP CHANGER

EFFICIENCY

ANALYSIS

KIKK Tip Changer Efficiency Analysis Presentation

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Manual vs. Robotic changes

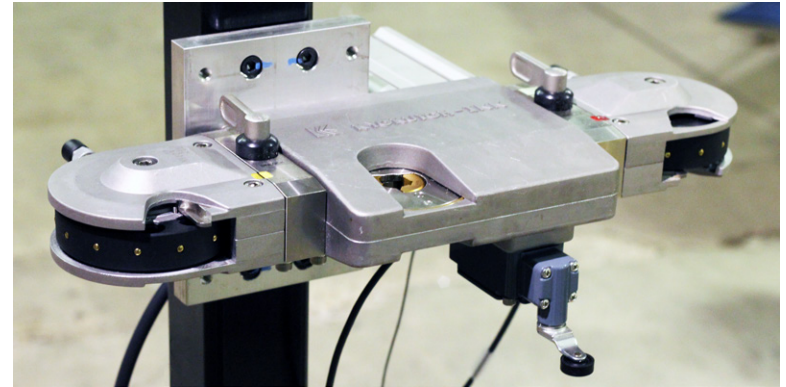


Manual Cap Changes

- 1 Robot calls for tip change
- 2 Operator walks to weld cell exterior, stops cooling system
- 3 Operator performs lock-out tag-out (LOTO) and enters cell
- 4 Operator uses wrench to remove weld tips
- 5 Operator pages supervisor for replacement weld tips
- 6 Operator replaces tips and secures them with a hammer
- 7 Operator exits weld cell and turns on cooling system
- 8 Operator actuates tip dresser

Robotic Cap Changes

- Auto change cycle (with tip dress) takes 25–40 seconds

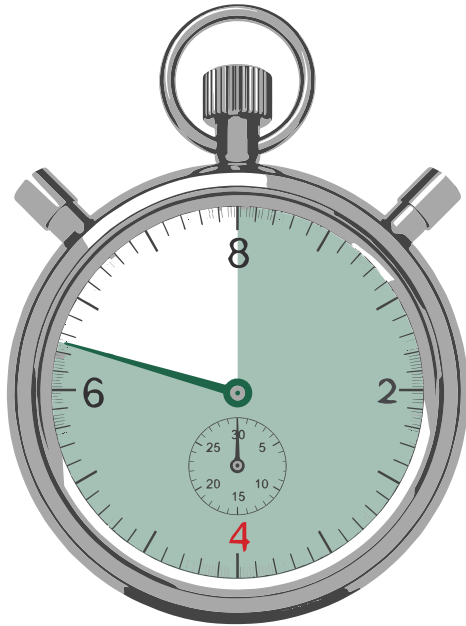


Example: Goal 1*

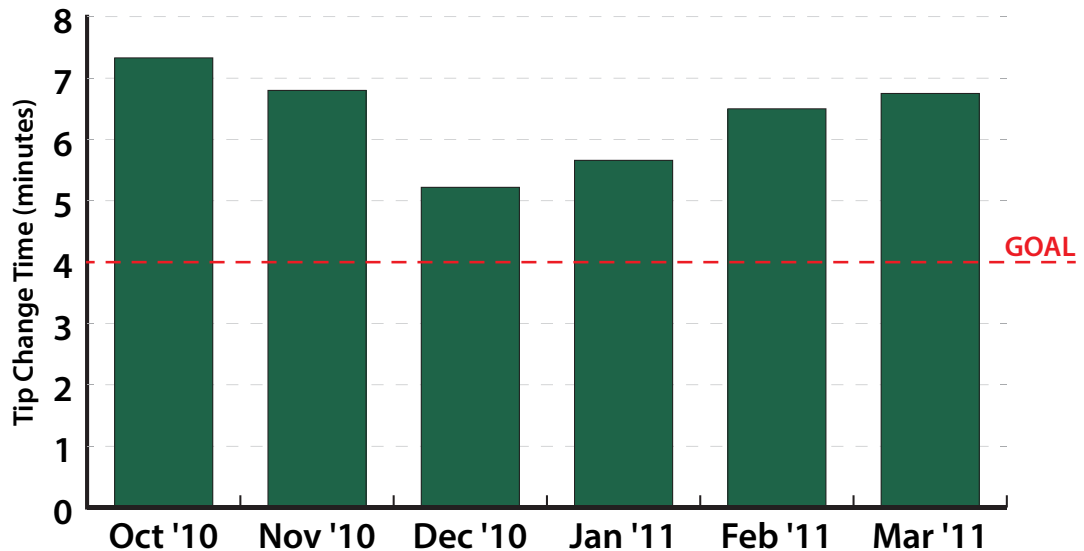


GOAL 1

Reduce tip change down time
from **385 seconds (6:25)** to reach
target of **240 seconds (4:00)**



Manual Tip Change Duration



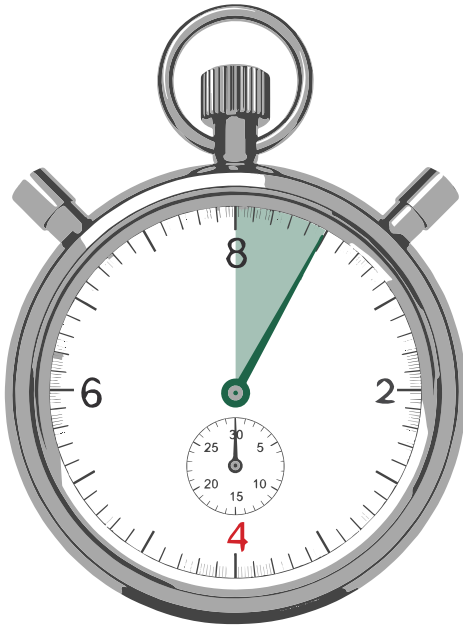
* Actual customer implementation

Example: Goal 1*

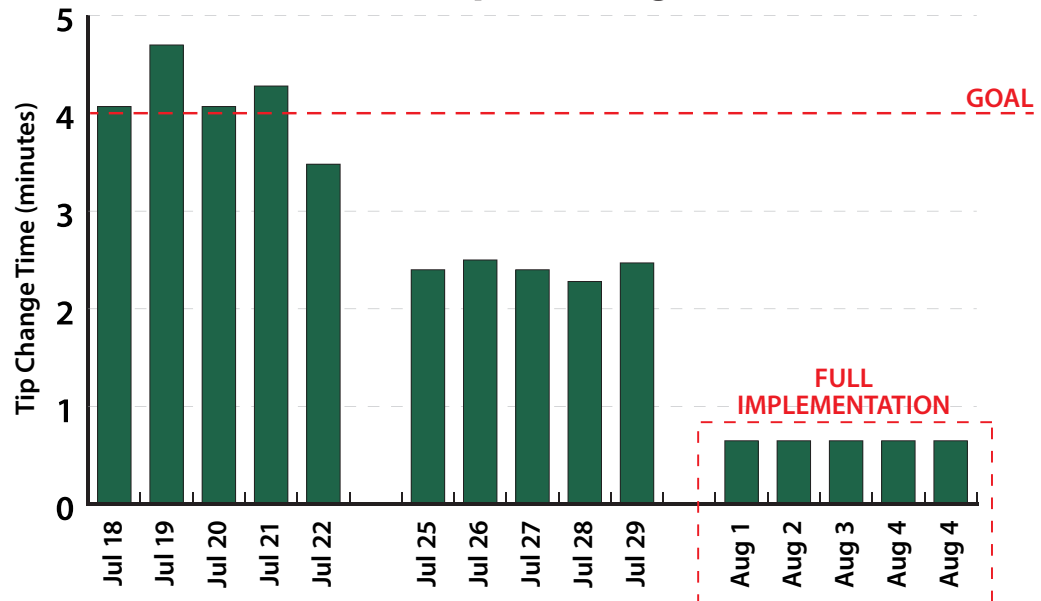


IMPLEMENTATION RESULT

Reduced down time per tip change cycle by **346 seconds (5:46)**
to **39 seconds**



Automatic Tip Change Duration

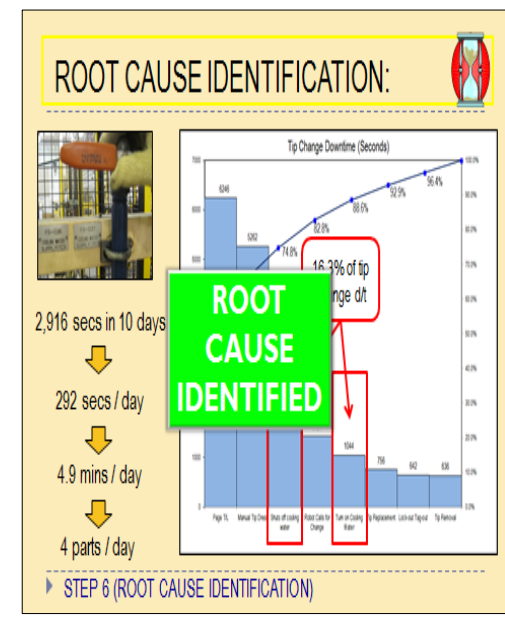
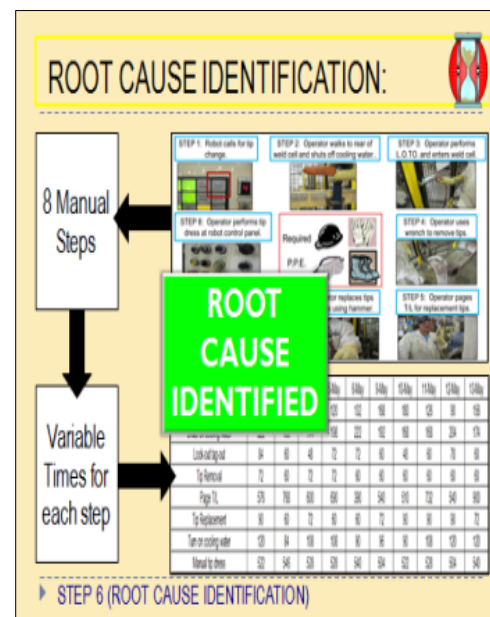
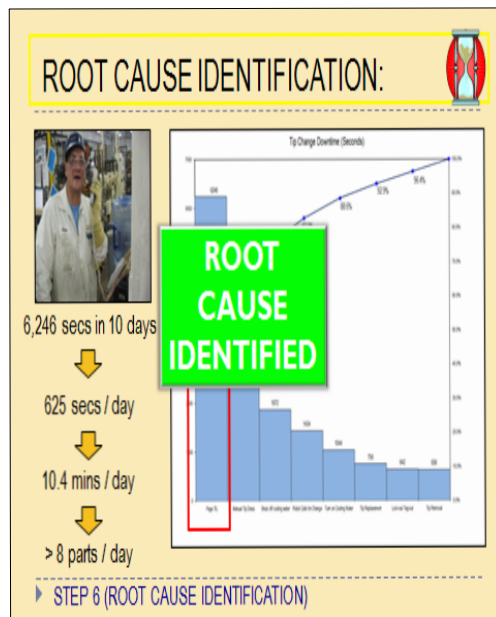


* Actual customer implementation

Example: Goal 2*

GOAL 2

Produce **12 additional parts per day** by using counter-measures for identified root causes



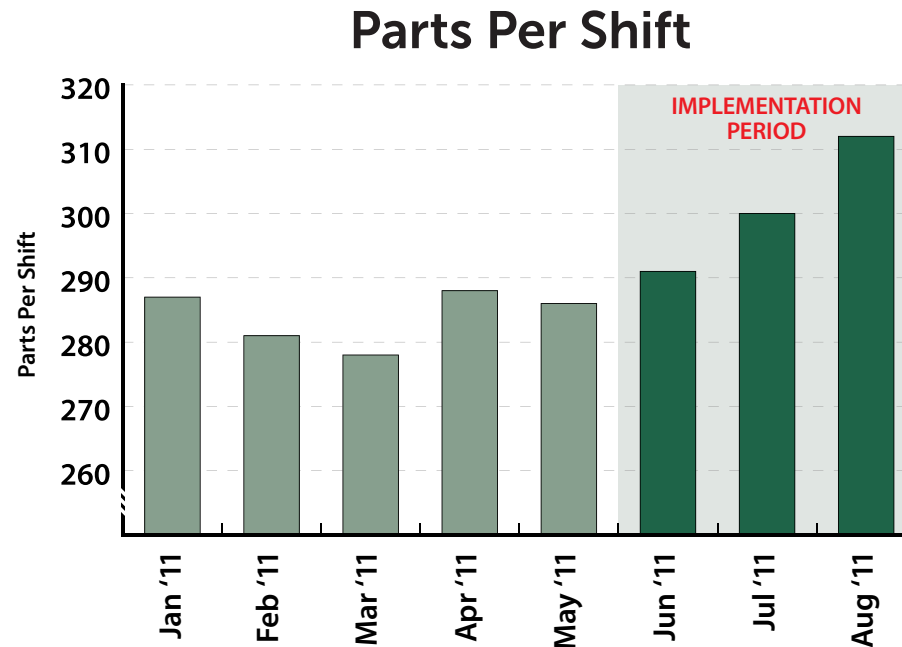
* Actual customer implementation

Example: Goal 2*



IMPLEMENTATION RESULT

Increased production from 291 parts per shift to 312, a **42-part per day** increase over two shifts



* Actual customer implementation

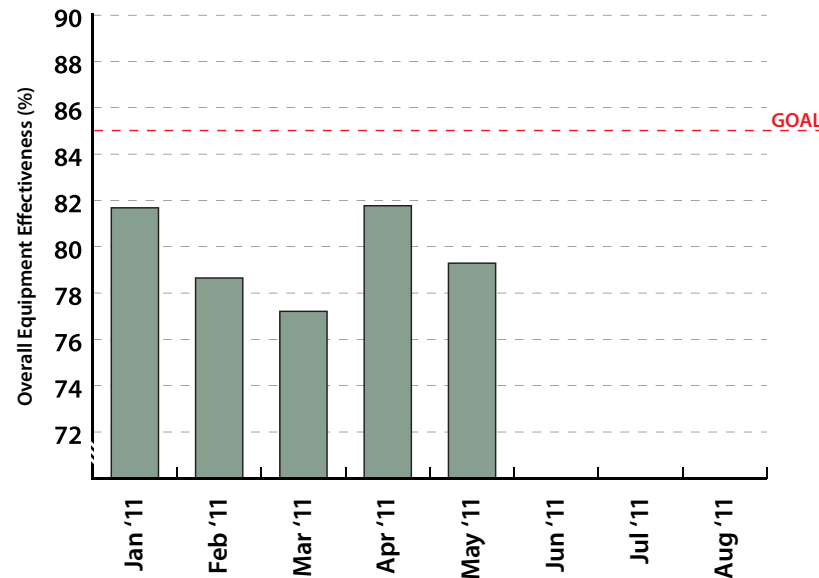
Example: Goal 3*



GOAL 3

Via Goals 1 and 2, reach
**85% Overall Equipment Effectiveness
(OEE)** as outlined by business plan

OEE Measure



* Actual customer implementation

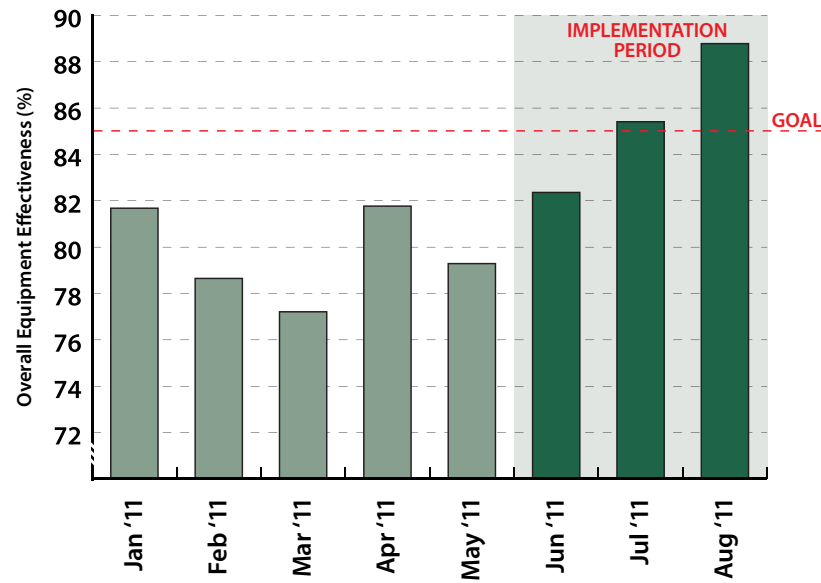
Example: Goal 3*



IMPLEMENTATION RESULT

OEE increased to **89%** by eliminating unplanned downtime and reducing planned tip change time by **86%**.

OEE Measure



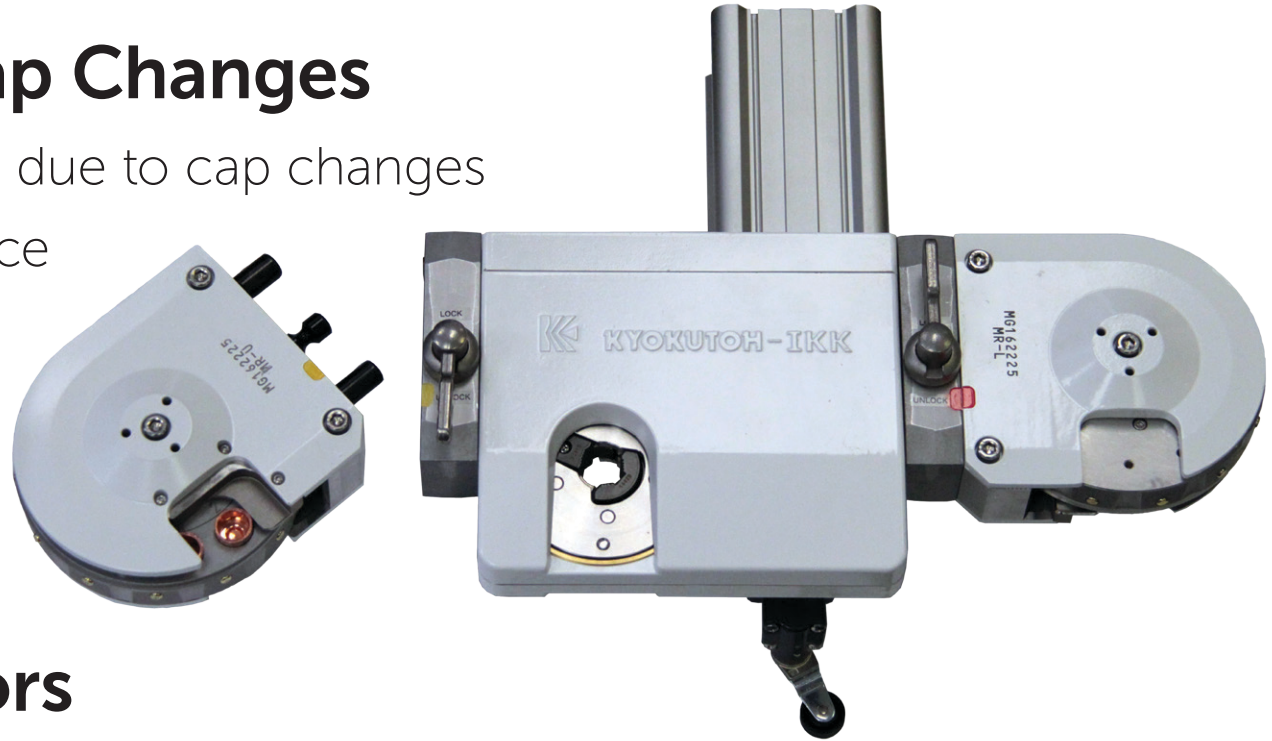
* Actual customer implementation

Advantages of the KIKK



... vs. **Manual Cap Changes**

- Reduces downtime due to cap changes
- Maximizes floorspace utilization
- Less pressure and torque on gun arms than manual tip changes



... vs. **Competitors**

- Cast frame, built to last
- Can be used on end effectors for use with stationary guns or multiple guns using the same weld caps
- Fast no-tool magazine changes (*spare mags available*)
- Simple integration

G.E. Schmidt contact



G.E. Schmidt, Inc., founded in 1960, is a manufacturer and international distributor of resistance welding machines and components throughout North America. We specialize in pedestal welders, electrodes, tip dressing systems, quality assurance systems and nut/bolt loading systems.

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