

Kobayashi 20 Keys Template

Key No	Key Description	Stage Score	Stage1	Stage 2	Stage3	Stage4	Stage5
1	Cleaning & Organising		Untidy. Paper, Tools, Parts scattered	Dispose of unneeded items. Keep floor clean	Clean up equipment, clear out corners	Organise and mark all sections. Organise storage	Eliminate causes of dirt and disorder
2	Rationalising (Hoshin)		No clear management system	Clear Responsibility	Instructions from top broken down at each level	Levels work co-operatively to co-ordinate efforts	Work together to create common goals, individual skills
3	Improvement Team Activities		No desire to get involved in teams	Suggestion Scheme. Team activities start	Autonomous Teams begin. Groups: 2 projects pa Individual: 1 suggestion / month	Alignment of teams & company. Groups: 4 projects pa Individual: 2 suggestions / month	After work team activities. Groups: 6 projects pa Individual: 5 suggestions / month
4	Reducing Inventory & Lead Times		WIP is a necessary evil	Inventory reduction launched. Inventory reduced in at least one area	Start a handbook-based inventory reduction program	Integrating production lines results in lower inventory. 75% inventory reduction	Make only what customers want
5	Changeover		Nothing done	Some employees learn SMED	10% of changeovers are SMED	SMED on all machines. Single files in office	Single operators can do SMED on all machines
6	Value Analysis & Methods Improvement		Shotgun approach to improvement	Systematic improvement has begun	People have learned how to do system improve at all processes	Pokayoke and low cost automation result in doubling productivity	Improvement making is systematic and continual

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7	Zero Monitoring Manufacturing		Low recognition that monitoring (watching machines) is waste	Everyone recognises that monitoring is waste	10% process have unmanned operation during breaks	All machines can operate during breaks; operators handle > 1 machine	All machines are running on one-cycle automation zero monitoring
8	Coupled/Synchronised Manufacturing		Each workplace functions independently	Emphasis on connections between processes	Factory employees set up kanban stores	Clearly visible kanban established throughout. Fishbowl offices	All inter-department walls are demolished. Goods and info flow freely
9	Maintenance		Run machines into the ground	Everyone understands the need for TPM. OEE is measured.	Operator responsible for elimination of 3 evils (contamination, inadequate lubrication, disoperation)	Full commitment to focused improvement. Zero breakdown goal. Downtime reduced by 75%	A focused improvement programme is in place OEE is 95%
10	Time Control & Commitment		Work & break times left to operators discretion	Morning meetings are held. Safety equipment is worn at all times	Supervisors meet to establish time control issues. Work starts promptly. Tools returned	Workers are conscientious about time. No early stops. Next day assignments known	Rhythm is established. Value adding work performed for full shift
11	Quality		Quality left to inspectors	Operators inspect their own products	Defect info passed along immediately. Prevention takes place immediately	Pokayoke's are being built	Full pokayoke. Zero customer complaints

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12	Supplier Development		Manufacturer / Supplier relationship limited to purchasing, acceptance, price negotiation	Technical assistance is given in response to supplier queries. Support for upstream process	Send technical assistance to suppliers. Provide QC and IE support	Suppliers and manufacturers work together on implementing all 20 keys	Suppliers have reached a score of at least 70 on the 20 keys
13	Waste Elimination		Little understanding of waste	Everyone knows what waste really is	Waste elimination begins by operators	Actual work ratio is 85% (Value Add v Waste)	Actual work ratio is at least 95%
14	Worker Empowerment		Improvement is someone else's job	Improvement corners set up. Teams make their own shelves, tables, etc	Workers participate in making their own tools. SMED has begun	Low cost automation devices are designed and made in house	Factory makes and uses its own automation devices such as detectors, sensors, sorters
15	Skill Versatility		No one is interested in skill versatility	Cross training begins. Willingness to learn	Complete cross training being implemented. Everyone's core skills have doubled	Everyone embraced the goal of the adaptable factory. Cross training across classifications	The factory is fully able to adapt to change by re-assigning trained employees. Most on 'Master' level

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16	Scheduling			Deliveries rarely on schedule	Some late delivery. Non uniform production still exists	Work operations levelled throughout the month. Clear visible schedules	100% on time delivery, level schedules, plus level 3 on all keys	Level schedules, with pull, plus level 4 on all other keys
17	Efficiency Control			Indirect efficiency control reporting used	Labour content reported by family. Efficiency charts established	Standard and actual times set and reviewed. Graph's kept	Efficiency control monitored and graphed daily	Everyone motivated to achieve suitably challenging goals
18	Shop Floor Information Systems			Low awareness of CIM, OA, POP information	Used in limited areas	A factory wide automation policy developed	CIM system fine-tuned after level 3 in other keys. POP system implement	CIM and POP systems fully implemented
19	Energy & Materials			Conservation not considered	Company wide conservation policy begun	savings on existing equipment begun	Comprehensive programme in place	Full pursuit of conservation
20	Leading Technology & Benchmarking			No monitoring of competitors	Position with respect to competitors established	Keeping pace with average for the industry	One step ahead of industry average. Easy incorporation of new technologies	Site technology amongst the best in the industry. Monitors leading edge technology