JIPM Karakuri Kaizen Exhibition 2024 Work No

Work

Nork Outline

Improving efficiency of Fr suspension in house sequence process

In-house development powerless device

The muda of operation could be eliminated by realizing the full box and empty box exchange of Fr suspension order in house sequence parts and dust covers.

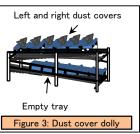
CURRENT: SPS workers shown in the engine Fr sus in house sequence work allocatin diagram. Provide in house sequence parts in the working position of the engine springs. The work steps are as follows

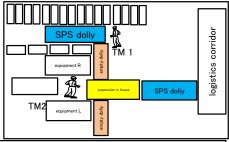
Step1:TM1 picks in the SPS area according to production instructions and manually connects the SPS dolly (Figure 1) to the engine spring allocatin dolly. Manually turn on the switch, place the in house sequence parts on the spring allocatin dolly, take the empty trays by hand, and return them to the SPS dolly. Prepare the left and right dust covers and place them on their respective shelves.

Step2:TM2 takes out the Fr suspension in house sequence parts and manually places the empty trays on the collection shooter., remove the dust cover by hand

and return the empty tray to the collection

Before Kaizen





Engine front suspension post layout before kaizen

<u> robl</u>	ems:	<u>1. </u>	here	is	<u>muda</u>	<u> </u>	<u>movement.</u>	
						N	umber of	

NO	muda of movement	Number of times	Time (sec)	Number of units	Seconds/unit
1	Walking	2	21	6	3.5
2	Switch it on	2	3	6	0.5
3	Take the empty	3	22	6	3.6
	7.6				

Risk Score	Risk Level	Risk Contents	Risk Signs
11 mins	В	Moderate risk	Bb

After Kaizen

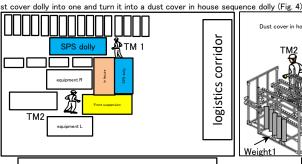
full box and empty box exchange of trays and in house sequence utilizing the principle of gravity eliminates operational muda.

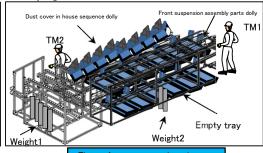
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source	Power				
Power transfer	Lever/Link/Roller				
mechanism	Spillings/Wheel				

Countermeasure: Change the layout of the entire engine Fr suspension in house sequence post (layout diagram after kaizen). A new non-powered device has been added (see Figure 4): Step 1: Using the non-powered device (Fig. 4), combine the dust cover assembly stand and the front suspension assembly parts stand. When TM2 takes out the parts in order, it uses the principle of gravity to replace the full box and empty box exchange, muda unnecessary movement (including the unnecessary walking of TM1).

Step 2: Combine the left and right dust cover Step3: The SPS dolly is pulled by

an AGV, and the trays and the assembled parts are exchanged for empty and filled parts.





Engine front suspension post layout After kaizen

After kaizen: 1. muda unnecessary movements

NO	muda of movement	Number of times	Time (sec)	Number of units	Seconds/unit	
1	Walking	0	0	12	0	
2	Switch it on	0	0	12	0	
3	Take the empty	0	0	12	0	
total					0	

2. Eliminate the risk of contact between people and vehicles

1. Process time reduction: Realization of manual operation and elimination of muda operations, reducing labor hours by 7.6 seconds per unit.

2. Safety: Eliminates the risk of contact between people and vehicles.

Kaizen