

# Table

DATE: 05.Jan 2009

Category	Item	Action(ex.)	Description	Standard Time		Remarks		
				Unit	(sec)			
Manual	Load & Unload & Carry	Walk		/m	1			
		Obtain parts (SS-size)	Obtain <b>SS-size</b> from rack or pallet, table by operator	each SS-size part	1.5	2 parts can be held at once.		
		Obtain parts (S-size)	Obtain <b>S-size</b> parts from rack or pallet, table by operator	each S-size part	2	2 parts can be held at once.		
		Obtain parts (M-size)	Obtain <b>M-size</b> parts from rack or pallet, table by operator	each M-size part	2.5	2 parts can be held at once.		
		Obtain parts (L-size)	Obtain <b>L-size</b> parts from the rack or pallet, table by operator	each L-size part	3.5			
		Set parts (SS-size)	Set <b>SS-size</b> to JIG by operator	each SS-size parts	2			
		Set parts (S-size)	Set <b>S-size</b> parts to JIG by operator	each S-size parts	2.5			
		Set parts (M-size)	Set <b>M-size</b> parts to JIG by operator	each M-size parts	3			
		Set parts (L-size)	Set <b>L-size</b> parts to JIG by operator	each L-size parts	4			
		Unload Sub-Assy	Unload Sub-Assy from JIG by operator	each parts	2.5	2 can be held at once.		
		Unload L-size Sub-Assy	Unload L-size Sub-Assy from JIG by operator	each L-size parts	3			
		Put Sub-Assy	Put Sub-Assy on table by operator	each parts	2.5			
		Put Sub-Assy	Put Sub-Assy into rack by operator	each M-size parts	3			
		<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;">                     Note: Each movement must include walk time. However, if pallets are located to prevent operator to make direction changes, walk time should not be added.                 </div>						
		Load - Assist (Not Electrical)	Obtain hanger	Obtain hoist by operator			3	
Travel hanger	Walk with hanger		/m		1.5			
Get up hanger	Get up hanger to JIG				2			
Hang on panel or Sub-Assy	Get or put panel or Sub-Assy				2			
Get off hanger	Get off hanger from JIG				2			
Carry panel or Sub-Assy	Carry panel or Sub-Assy with hoist		/m		1.5			
Operation	Close manual clamp	Close manual clamp by operator	each clamp		1.5			
	Open manual clamp	Open manual clamp by operator	each clamp		1.5			
	Shift manual pin	Shift manual pin operator	each pin		1.5			
	Un-shift manual pin	Un-shift manual pin operator	each pin		1.5			
	Turn Table	Turn Table operator	/180°		3.5			
	Push Button(P.B)	Push Button by operator	each timing		1.5			

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Category	Item	Action(ex.)	Description	Standard Time		Remarks
				Unit	(sec)	
Manual	Spots Weld	Obtain manual gun	Obtain & Positioning <b>S/M-size</b> manual gun	each gun	<b>3</b>	Walk time included
		Obtain manual gun	Obtain & Positioning <b>L-size</b> manual gun	such gun	<b>5</b>	Walk time included
		Spot weld (easy access)	Manual spot weld ( <b>easy</b> access)	each spot	<b>2.5~3.0</b>	Gun movement time included
		Spot weld (normal access)	Manual spot weld ( <b>normal</b> access)	each spot	<b>3.0~3.5</b>	Gun movement time included
		Spot weld (difficult access)	Manual spot weld ( <b>difficult</b> access)	each spot	<b>4</b>	Gun movement time included
		Spot weld (difficult access with L-size manual gun)	Manual spot weld ( <b>difficult</b> access with <b>L-size</b> manual gun)	each spot	<b>4.5</b>	Gun movement time included
		Dispose manual gun	Dispose to home position <b>S/M-size</b> manual gun	each gun	<b>2</b>	Walk time included
		Dispose manual gun	Dispose to home position <b>L-size</b> manual gun	each gun	<b>3</b>	Walk time included
	Mig Weld	Obtain mig torch	Obtain mig torch	each torch	<b>3</b>	
		Mig weld	Manual mig weld	/ 10mm	<b>1</b>	
		Dispose mig torch	Dispose mig torch	each torch	<b>2</b>	
	T-Stud Weld	Obtain T-stud gun	Obtain & positioning T-stud gun	each gun	<b>3</b>	
		T-stud weld (easy access)	Manual T-stud weld ( <b>easy</b> access)	each stud	<b>1.5</b>	Gun movement time included
		T-stud weld (normal access)	Manual T-stud weld ( <b>normal</b> access)	each stud	<b>2.5</b>	Gun movement time included
		T-stud weld (difficult access)	Manual T-stud weld ( <b>difficult</b> access)	each stud	<b>3.5</b>	Gun movement time included
		Dispose T-stud gun	Dispose mig torch	each gun	<b>2</b>	
	Sealing	Obtain sealer gun	Obtain & positioning manual sealer gun	each gun	<b>3</b>	
		Apply sealer	Apply sealer (Hemming sealer)	/mm	<b>0.006</b>	adjust according to device spec
		Apply sealer	Apply sealer (Mastic sealer)	/mm	<b>0.01</b>	adjust according to device spec
		Apply sealer	Apply sealer (Mastic sealer)	each spot	<b>3</b>	adjust according to device spec
		Dispose sealer gun	Dispose sealer gun	each gun	<b>2</b>	

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Category	Item	Action(ex.)	Description	Standard Time		Remarks
				Unit	(sec)	
Machine	Operation	Clamp A.DV.			1.5	
		Clamp RET.			1.5	
		Pin shift ADV.			1.5	
		Pin shift RET.			1.5	
		Unit swing/shift ADV.			2	
		Unit swing/shift RET.			2	
		Lift Down			3	
		Lift Up			3	
		JIG/Fixture swing ADV.			(3~**)	
		JIG/Fixture swing RET.			(3~**)	
		JIG/Fixture slide ADV.			(4~**)	
		JIG/Fixture slide RET.			(4~**)	
		Transfer(shuttle)	Carry Sub-Assy by Shuttle transfer (UP/ADV./DOWN/RET.)		(15~**)	
	Transfer(Belt conveyor)	Carry Sub-Assy by Belt conveyor		(5~**)		
	Auto weld	Hard auto gun weld		each spot	3.0	
Mig weld			/10mm	1		
Hydraulic	Clinch nut		each nut	3.5		
	Pierce hole		each hole	3.5		
	Hemming			(20~)		
Robot	Welding	Spot weld (easy access)	Robot spot weld ( <b>easy</b> access)	each spot	2	Gun movement time included
		Spot weld (normal access)	Robot spot weld ( <b>easy</b> access)	each spot	2.5	Gun movement time included
		Spot weld (normal access)	Robot spot weld ( <b>normal</b> access)	each spot	3	Gun movement time included
		Spot weld (difficult access)	Robot spot weld ( <b>difficult</b> access)	each spot	3.5	Gun movement time included
	Mig weld	Robot mig weld	/10mm	1		
	Sealing	Apply sealer	Apply sealer (Hemming sealer) by Robot	/mm	0.003	adjust according to device spec
		Apply sealer	Apply sealer (Mastic sealer) by Robot	/mm	0.006	adjust according to device spec
		Apply sealer	Apply sealer (Mastic sealer) by Robot	each spot	1.5	adjust according to device spec
	Handling	Carry panel or Sub-Assy	Carry panel or Sub-Assy by Robot hand	Par 90 degrees	1	
Obtain panel or Sub-Assy		Get up JIG and obtain panel and get off JIG		8~10		
Load panel or Sub-Assy		Get up JIG and set panel and get off JIG		8~10		