

## THERBLIG ANALYSIS CHECKLIST

Reach and Move	Yes	No
1. Can either of these therbligs be eliminated?	"	"
2. Can distances be shortened to advantage?	"	"
3. Are the best means (conveyors, tongs, tweezers) being used?	"	"
4. Is the correct body member (fingers, wrist, forearm, shoulder) being used?	"	"
5. Can a gravity chute be employed?	"	"
6. Can transports be effected through mechanization and foot-operated devices?	"	"
7. Will time be reduced by transporting in larger units?	"	"
8. Is time increased because of the nature of the material being moved or because of a subsequent delicate positioning?	"	"
9. Can abrupt changes in direction be eliminated?	"	"

Grasp	Yes	No
1. Would it be advisable for the operator to grasp more than one part or object at a time?	"	"
2. Can a contact grasp be used rather than a pickup grasp?	"	"
3. In other words, can objects be slid instead of carried?	"	"
4. Will a lip on the front of bins simplify grasping small parts?	"	"
5. Can tools or parts be pre-positioned for easy grasp?	"	"
6. Can a vacuum, magnet, rubber fingertip, or other device be used to advantage?	"	"
7. Can a conveyor be used?	"	"
8. Has the jig been designed so that operators may grasp the part easily when removing it?	"	"
9. Can the previous operator pre-position the tool or the work, simplifying grasp for the next operator?	"	"
10. Can tools be pre-positioned on a swinging bracket?	"	"
11. Can the work table surface be covered with a layer of sponge material so that the fingers can enclose small parts more easily?	"	"

Release	Yes	No
1. Can the release be made in transit?	"	"
2. Can a mechanical ejector be used?	"	"
3. Are the bins that contain the part after its release the proper size and design?	"	"
4. At the end of the therblig release, are the hands in the most advantageous position for the next therblig?	"	"
5. Can multiple units be released?	"	"

Pre-Position	Yes	No
1. Can a holding device at the workstation keep tools in the proper positions and the handles in upright positions?	"	"
2. Can tools be suspended?	"	"
3. Can a guide be used?	"	"
4. Can a magazine feed be used?	"	"
5. Can a stacking device be used?	"	"
6. Can a rotating fixture be used?	"	"

Use	Yes	No
1. Can a jig or fixture be used?	"	"
2. Does the activity justify mechanized or automated equipment?	"	"
3. Would it be practical to make the assembly in multiple units?	"	"
4. Can a more efficient tool be used?	"	"
5. Can stops be used?	"	"
6. Is the tool being operated at the most efficient feeds and speeds?	"	"
7. Should a power tool be employed?	"	"

<b>Search</b>		<b>Yes</b>	<b>No</b>
1.	Are articles properly identified?	"	"
2.	Perhaps labels or color could be utilized?	"	"
3.	Can transparent containers be used?	"	"
4.	Will a better layout of the workstation eliminate searching?	"	"
5.	Is proper lighting being used?	"	"
6.	Can tools and parts be pre-positioned?	"	"
<b>Select</b>		<b>Yes</b>	<b>No</b>
1.	Are common parts interchangeable?	"	"
2.	Can tools be standardized?	"	"
3.	Are parts and materials stored in the same bin?	"	"
4.	Can parts be pre-positioned in a rack or tray?	"	"
<b>Position</b>		<b>Yes</b>	<b>No</b>
1.	Can such devices as a guide, funnel, bushing, stop, swinging bracket, locating pin, recess, key, pilot, or chamfer be used?	"	"
2.	Can tolerances be changed?	"	"
3.	Can the hole be counterbored or countersunk?	"	"
4.	Can a template be used?	"	"
5.	Can the elimination of burrs decrease the problem of positioning?	"	"
6.	Can the article be pointed to act as a pilot?	"	"
<b>Inspect</b>		<b>Yes</b>	<b>No</b>
1.	Can inspection be eliminated or combined with another operation or therblig?	"	"
2.	Can multiple gages or tests be used?	"	"
3.	Will inspection time be reduced by increasing the illumination?	"	"
4.	Are the articles being inspected at the correct distance from the worker's eyes?	"	"
5.	Will a grazing light accentuate defects and facilitate inspection?	"	"
6.	Would an electric eye be useful?	"	"
7.	Does the volume justify automatic electronic inspection?	"	"
8.	Would a magnifying glass facilitate the inspection of small parts?	"	"
9.	Is the best inspection method being used?	"	"
10.	Has consideration been given to polarized light, template gages, sound tests, performance tests, and so on?	"	"
<b>Rest to Overcome Fatigue</b>		<b>Yes</b>	<b>No</b>
1.	Is the best order-of-muscles classification being used?	"	"
2.	Are temperature, humidity, ventilation, noise, light, and other working conditions satisfactory?	"	"
3.	Are benches of the proper height?	"	"
4.	Can the operator alternately sit and stand while performing work?	"	"
5.	Does the operator have a comfortable chair of the right height?	"	"
6.	Are mechanical means being used for heavy loads?	"	"
7.	Is the operator aware of his or her average intake requirements in calories per day?	"	"
<b>Hold</b>		<b>Yes</b>	<b>No</b>
1.	Can a mechanical jig, such as a vise, pin, hook, rack, clip, or vacuum, be used?	"	"
2.	Can friction be used?	"	"
3.	Can a magnetic device be used?	"	"
4.	Should a twin holding fixture be used?	"	"