MOTION ANALYSIS
CHECKLIST

Reach and Move

1. Can either of these motions be eliminated?
2. Can distances be shortened to advantage?
3. Are the best means (conveyers, 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 affected 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

1. Would it be advisable for the operator to grasp more than one 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 re-positioned for an easy grasp?
6. Can a vacuum, magnet, rubber fingertip, or other device be used to advantage?
7. Can a conveyer be used?
8. Has the jig been designed so that operators may grasp the part easily 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 worktable surface be covered with a layer of sponge material so that the fingers can enclose small parts more easily?

Release

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 and the proper size and design?
4. At the end of the movement release, are the hands in the most advantageous position for the next movement?
5. Can multiple units be released?

Pre-Position

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

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?

Search

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

Select

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?

Position

1. Can such devices as a guide, funnel, brushing, 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?

Inspect

1. Can inspection be eliminated or combined with another operation or movement?
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 workers eyes?
5. Will a grazing light accentuate defects and facilitate inspection?
6. Would an electric eye be useful?
7. Does the volume justify automatic and electronic inspection?
8. Would a magnifying glass facilitate the inspection of small parts?
9. Is the best inspection method being used?
10. Has the consideration been given to polarized light, template gages, sound tests, performance tests and so on?

Rest to overcome Fatigue

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 ultimately 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?

Hold

1. Can a mechanical jig such as a vise, pin, hook, rack, clip or vacuum be used?
2. Can a magnetic device be used?
3. Can a friction be used?
4. Should a twin holding fixture be used?