Prob 7.1| Lay out a crank rocker mechanism so that the output rocker will rotate through 60° and the minimum transmission angle is 40°.

Given:

1. 4 Bar mechanism
2. Rocker/Follower rotates through 60° angle
3. The minimum transmission angle is 40°

Assumptions:

1. The mechanism must be able to complete a cycle without b/c the need to disassemble the mechanism.
2. One of the links should not be able to make a full revolution during the cycle
3. All links are rigid
4. The links of the mechanism all move in the same plane or in parallel planes.

Find:

1. Design the 4-bar mechanism that meets the design specifications

Figure:

Non-quick return line

Distance from B₁ to potential A₁'s

O₂ locations →

Distance from B₂ in cm to potential A₂'s

Lines through O₄ connecting corresponding A₁'s & A₂'s

B_1 B_2

Minimum transmission angle 40°

O_2 O_4 60°

All the possible locations of A₂-B₂, A₁-B₁, O₂ & O₄ shown result in Grashof devices. No timing ratio is specified, so the designer has a choice. The result must be checked.