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Module 2 – Geometry and Pattern Development

Unit 11 – Common Central Sphere

Learning Outcome:

Key Learning Points:

Training Resources:

Exercise:

Key Learning Points Code:

Common Central Sphere

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Figure 1 - Common Central Sphere

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Module 2 – Geometry and Pattern Development

Unit 11 – Common Central Sphere

Duration – 12 Hours

Learning Outcome:
By the end of this unit each apprentice will be able to:

- Identify the conditions where the common central sphere method is applied
- Locate the centre for the common sphere
- Determine the sphere diameter
- Locate joint lines
- Develop the patterns including all allowances

Key Learning Points:

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Training Resources:

- Drawing instruments, equipment and materials
- Textbook: The Geometry of Sheet Metalwork
- Instructor handouts, drawings

Exercise:
Sample exercise - Figure 1.

Key Learning Points Code:

M = Maths  D = Drawing  RK = Related Knowledge  Sc = Science
P = Personal Skills  Sk = Skill  H = Hazards
Exercise/Procedure Instructions
Answer Sample Questions

1. Fig. 1 shows the elevation of a revolving cowl.
   (a) Use the Common Central Sphere to determine the joint line.
   (b) Develop half patterns for each part. Scale 1 : 5

2. Fig 2 shows two intersecting right cones.
   (a) Draw the given view and determine the diameter of the Common Central Sphere.
   (b) Draw the joint line.
   (c) Develop a half pattern for cone A. Scale 1 : 5

3. Fig. 3 shows a cone intersected by a pipe.
   (a) Draw the given view including the joint line.
   (b) Develop a half pattern for each part. Scale 1 : 5

Figure 1 - Common Central Sphere
Common Central Sphere

The CCS or Common Central Sphere is used to determine the joint line between two or more intersecting pipes or cones.

Figure 1 gives excellent examples of the application of the CCS.
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