LESSON PLAN

Date_____ Trade:- Welder

Name_____ Week No:- Thirteen and fourteen

Subject :- specifications of pipes, various types of pipe joints, pipe welding position and procedure. Difference between pipe and plate welding.Pipe Development for Elbow Joint, T joint, Y Joint & branch joint. Manifold systems.

Motivations:- in previous week we learned about Arc blow –causes and methods to controlling. Distortion in arc and gas welding and methods employed to minimized distortion, Arc welding defects –causes, and remedies.

PREPARATION: - Teaching Aids:-Chalk, Charts,

INTRODUCTION: -pipe welding is very important in welding procedure. In industry, fabrication mostly pipe joints used for make a job. We must well skilled and read about pipe welding in details.

PRESENTATION:-

Topic	Information Point	Spot Hint
Let us first Discuss about WHAT IS PIPE! **It is a Tubular item made of metal, plastic, glass etc. meant for conveying Liquid, Gas or any thing that flows.** **It is a very important component for any industrial plant. And it's engineering plays a major part in overall engineering of a Plant.**		
• There are two types of steel pipes: 1. Seam pipe 2. Seamless pipe • Seamed tubes are heavier and more rigid. They are used for as gas transportation, plumbing. • Seamless tubes are typically more light weight, and have thinner walls. They are used for bicycles and transporting liquids.		

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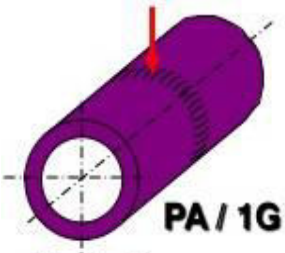
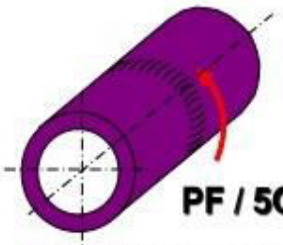
Pipe Welding Positions



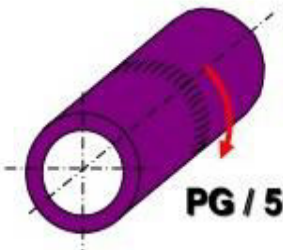
PA / 1G

Weld: Flat
Pipe: rotated
Axis: Horizontal



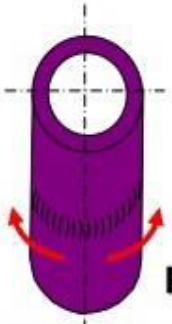
PF / 5G

Weld: Vertical upwards
Pipe: Fixed
Axis: Horizontal



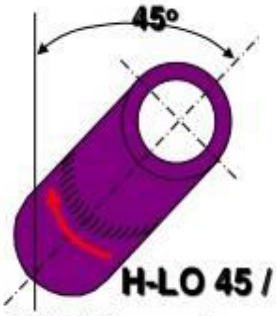
PG / 5G

Weld: Vertical Downwards
Pipe: Fixed
Axis: Horizontal



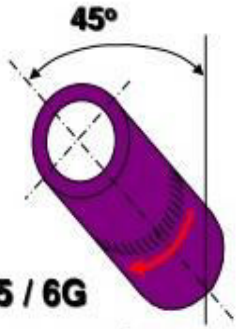
PC / 2G

Weld: Horizontal
Pipe: Fixed
Axis: Vertical



H-LO 45 / 6G

Weld: Upwards
Pipe: Fixed
Axis: Inclined



J-LO 45 / 6G

Weld: Downwards
Pipe: Fixed
Axis: Inclined

Welding Positions

PA	1G / 1F	Flat / Downhand
PB	2F	Horizontal-Vertical
PC	2G	Horizontal
PD	4F	Horizontal-Vertical (Overhead)
PE	4G	Overhead
PF	3G / 5G	Vertical-Up
PG	3G / 5G	Vertical-Down
H-L045	6G	Inclined Pipe (Upwards)
J-L045	6G	Inclined Pipe (Downwards)

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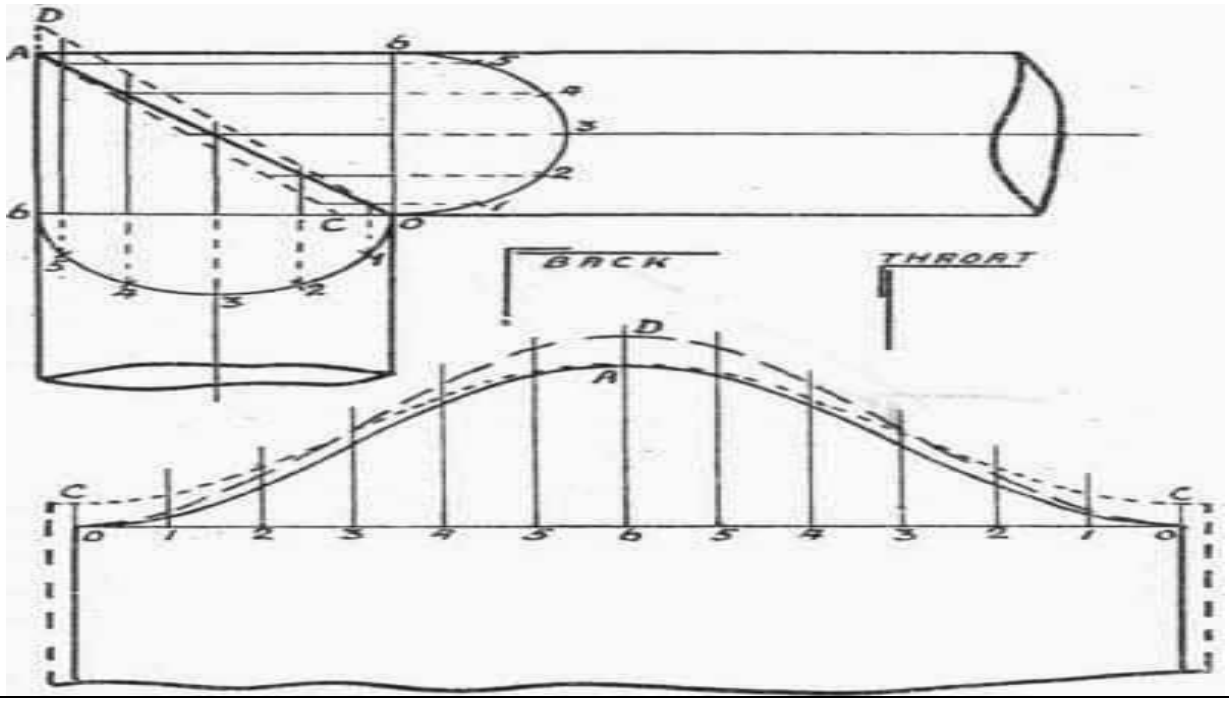
<table>
<tr><td>Classification of Pipe</td><td colspan="2">1. Standard Pipe
2. Thin wall pipe
3. Structural pipe
4. Mechanical pipe
5. Pressure pipe
6. Line pipe
For ms pipe we use painting, electroplating, galvanizing for shielding from rust and moisture</td></tr>
<tr><td>Pipe Joints</td><td colspan="2">1. Square butt joint (gap or without gap)
2. Tee joint (root gap or without root gap)
3. Branch pipe joint
4. Bell and spigot joint
5. Elbow joint
6. Flange joint</td></tr>
<tr><td>Difference between pipe and Plate welding</td><td>Pipe Welding
1. Maximum positional welding required
2. Maximum job no see clearly
3. Sealing run not weld easily
4. Low distortion
5. Leak proof welding required</td><td>Plate Welding
1. Used normally one position
2. Weld bead see clearly
3. Sealing run weld easily
4. High distortion
5. In rare jobs leak proof required</td></tr>
<tr><td colspan="3">Pipe Development
 
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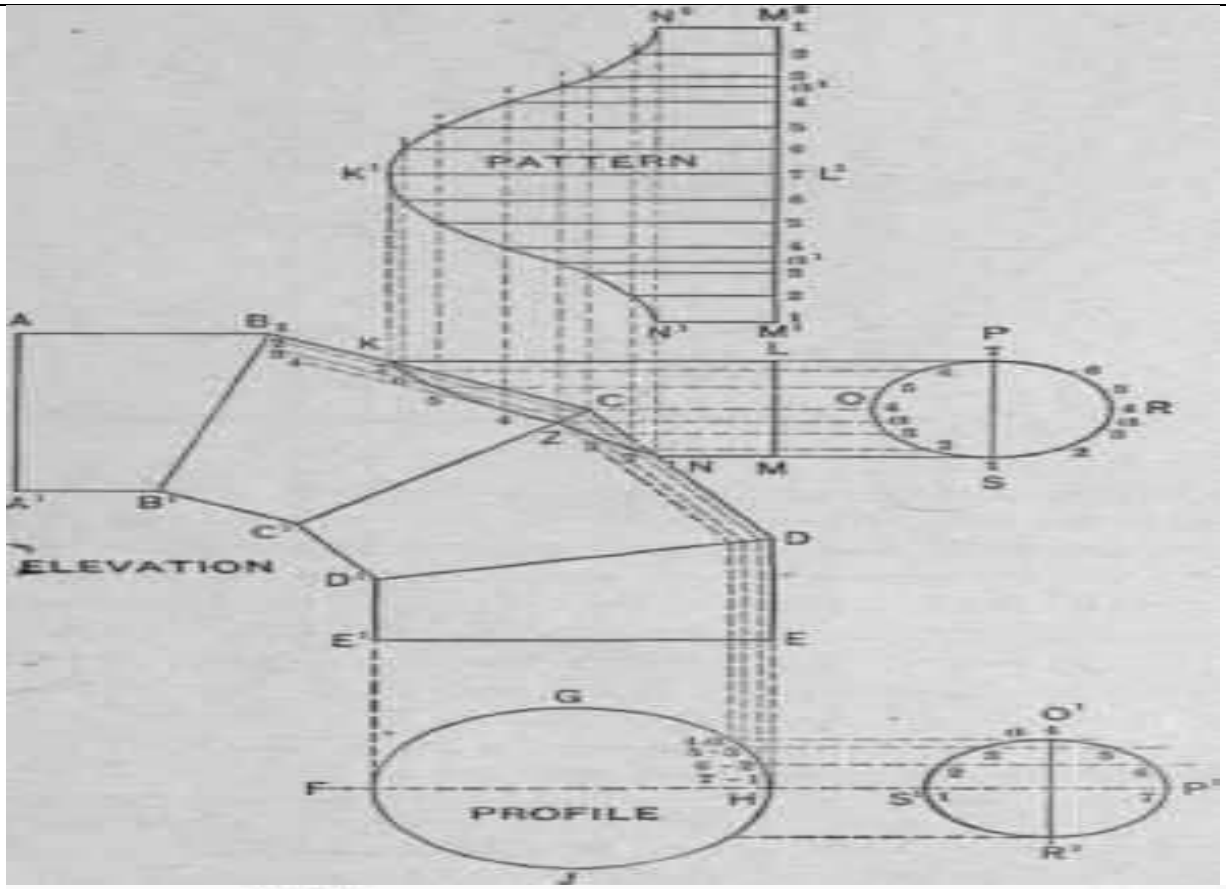

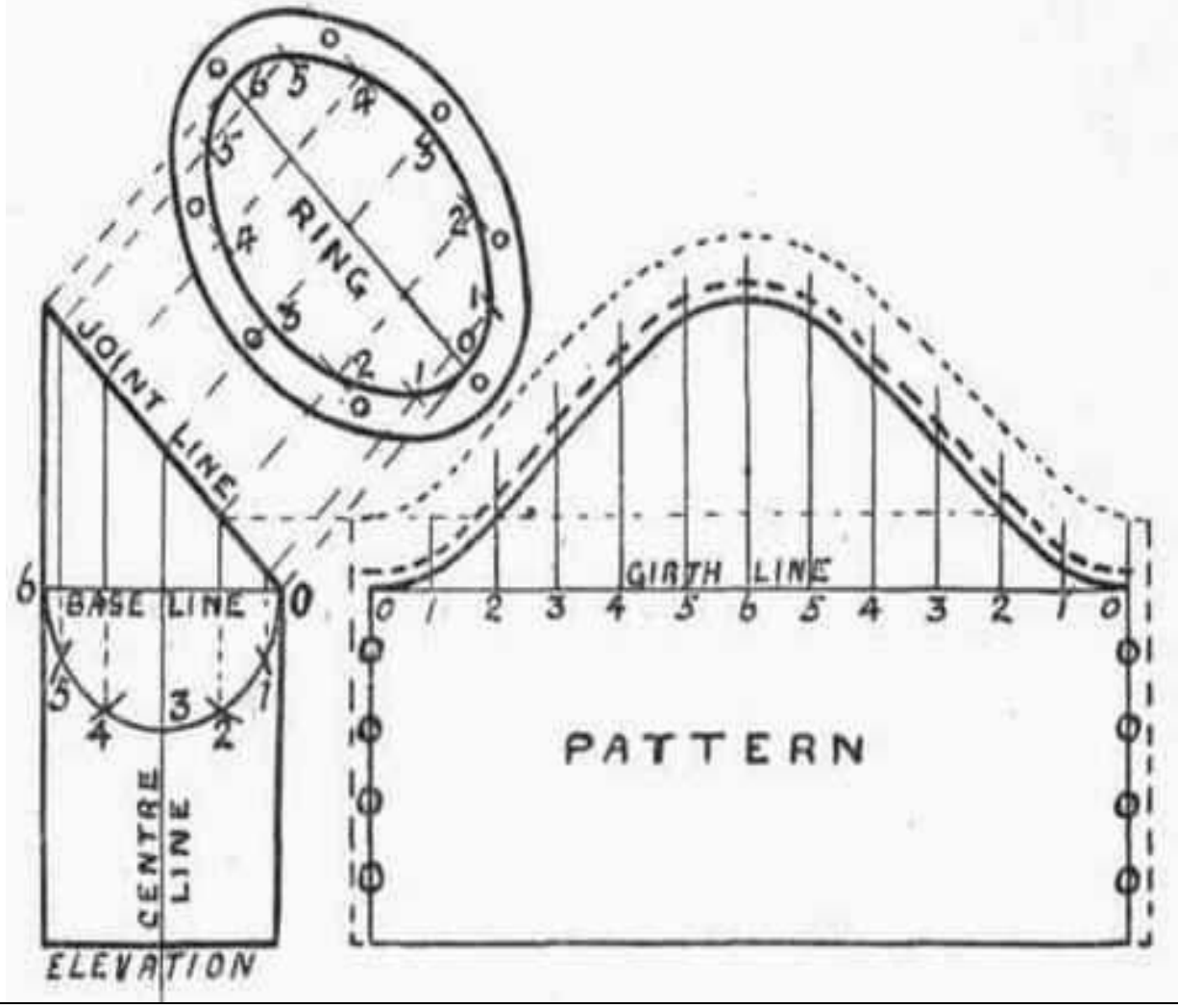

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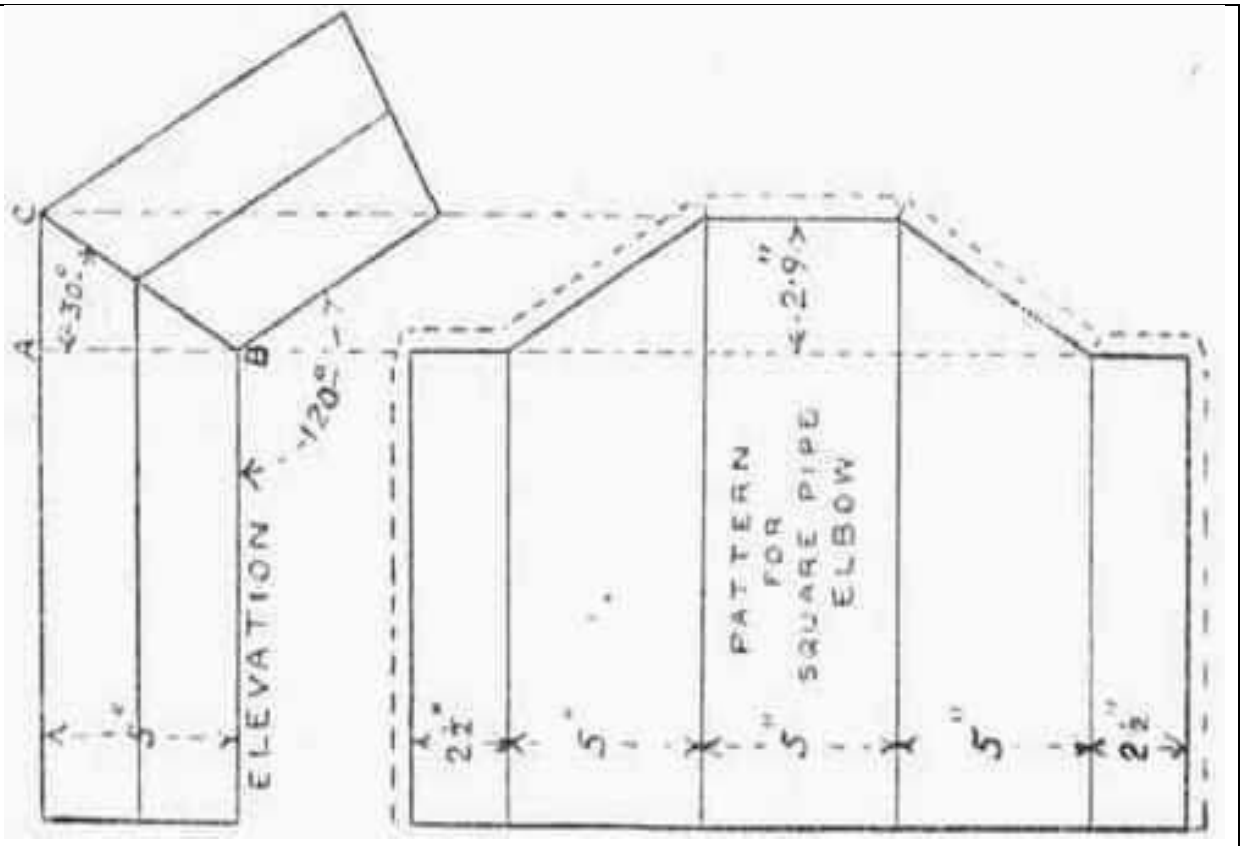
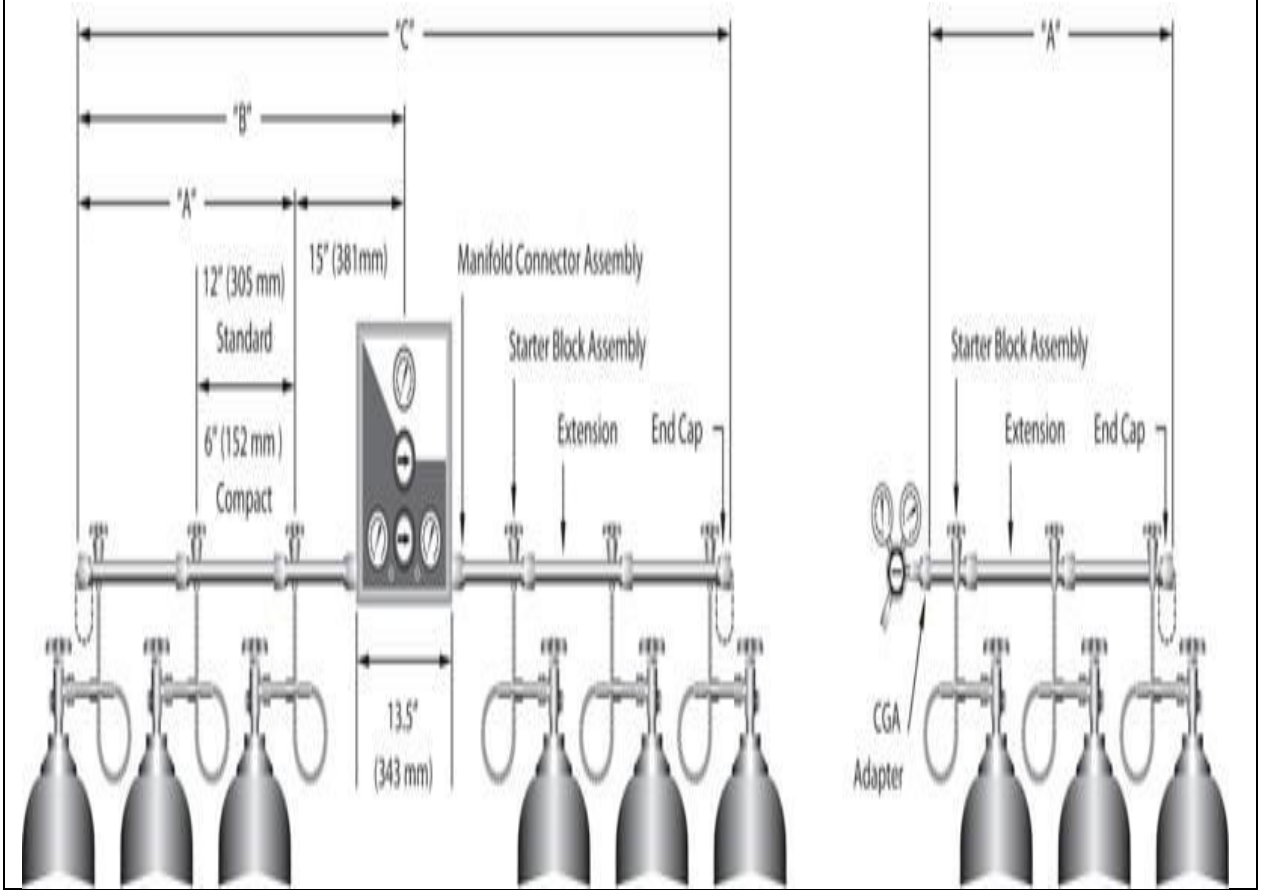


Manifold System



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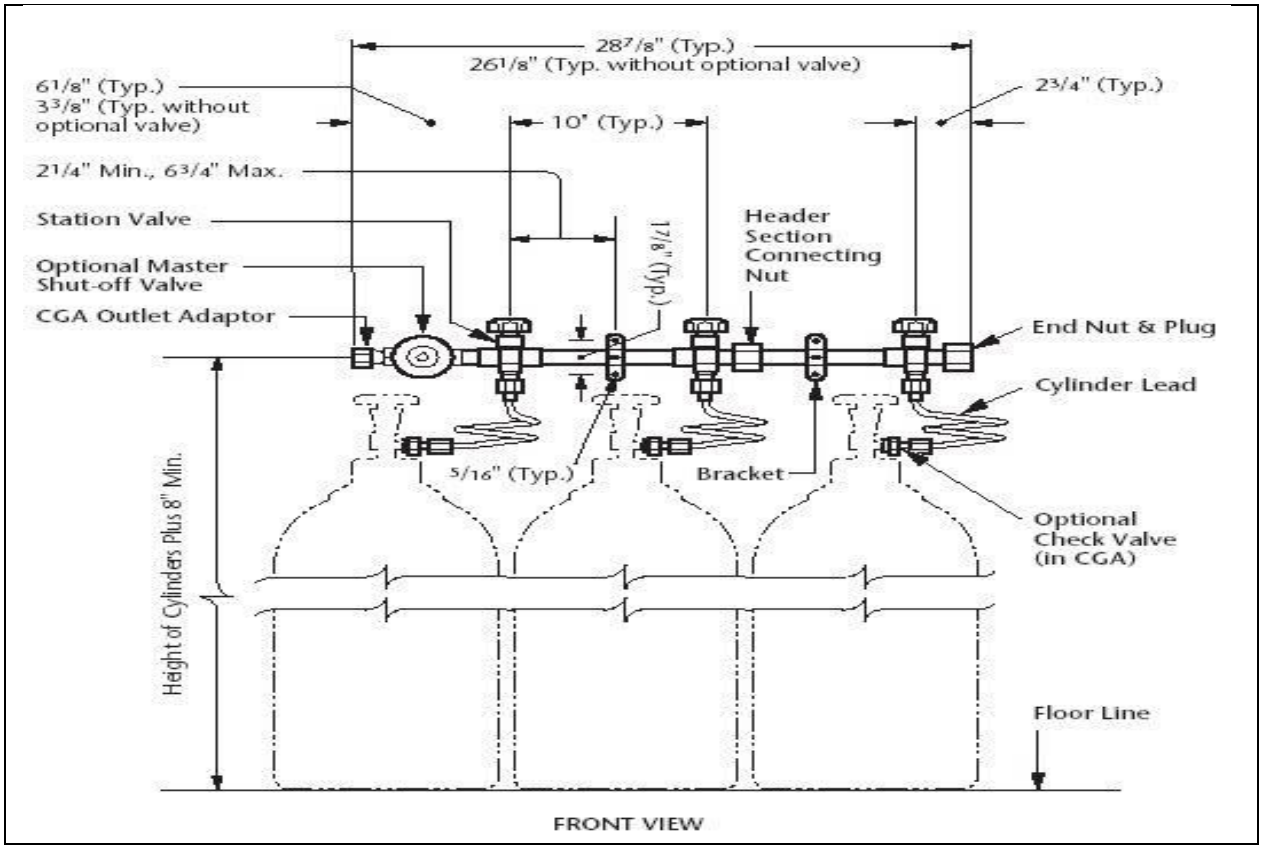

Questions:-

1. What is pipe and how many types of pipe?
2. What is manifold system?
3. Draw a 45 degree pipe development.

Next Week:- Gas Welding Filler rods, specification and sizes. Gas welding flux-types and functions. Gas brazing and soldering, principles, types fluxes & uses. Gas welding defects causes and remedies.

Assignments:- specifications of pipes, various types of pipe joints, pipe welding position and procedure. Difference between pipe and plate welding. Pipe development for elbow joint, Y joint and branch joint, manifold system.

Checked by……. Instructor……

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