

LPR Global

Hot-Formed & Cold-Formed Pressure Vessel Heads

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About Us

LPR’s hot and cold forming hemi-head facility in South Korea is a leading provider of pressure vessel heads for the petrochemical, cryogenics, LNG and refinery industries. We specialize in making hot-formed and cold-formed one-piece hemispherical and elliptical heads for utility vessels. A variety of materials can be used based on the customer’s request. Commonly used materials at our facility include carbon steel, alloy steels, stainless steels, duplex stainless steels, nickel alloys and aluminum. Our facility is certified to ISO and DNV standards, and equipped with a wide range of hydraulic forming presses with capacities from 300 tons to 4,500 tons.

We have served as a sub-contractor of pressure vessel heads to global EPC clients and pressure vessel manufacturers for over two decades. Our client list includes major global players such as *GE, Sumitomo, VOGT Group, Amec Foster Wheeler, CMI Group, Doosan Heavy Industry* and *Toyo Engineering*.

Project Experience and Capabilities

Based on A516-70 Material 2:1 Elliptical Tank Head

| Product | Forming Process | Diameters | | Thicknesses | | Weight | Material |
|------------------|-----------------|-----------|--------|-------------|-----|----------------|--|
| | | Min | Max | Min | Max | | |
| Heads | Cold | 350 | 6,500 | 5 | 135 | Max 30 ton/set | Carbon steel, low-alloy steel, high-alloy steel, non-ferrous |
| | Hot | 500 | 3,600 | 30 | 168 | | |
| Expansion Joints | Cold | | | | | | |
| Floating Heads | Cold | 350R | 1,500R | 5 | 175 | | |
| Knuckle Cone | Cold | 500 | 6,500 | 5 | 135 | | |

Hot-Formed 2:1 Elliptical Head

| | <=10 | <=20 | <=30 | <=40 | <=50 | <=60 | <=70 | <=80 | <=90 | <=100 | <=110 | <=120 | <=130 | <=140 | <=150 | <=160 |
|----------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| D<=500 | | H | H | H | H | H | H | H | H | | | | | | | |
| D<=700 | | H | H | H | H | H | H | H | H | | | | | | | |
| D<=1,000 | | H | H | H | H | H | H | H | H | | | | | | | |
| D<=1,200 | | H | H | H | H | H | H | H | H | H | H | | | | | |
| D<=1,400 | | H | H | H | H | H | H | H | H | H | H | H | | | | |
| D<=1,600 | | H | H | H | H | H | H | H | H | H | H | H | H | | | |
| D<=1,800 | | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H |
| D<=2,000 | | | H | H | H | H | H | H | H | H | H | H | H | H | H | H |
| D<=2,200 | | | H | H | H | H | H | H | H | H | H | H | H | H | H | H |
| D<=2,400 | | | H | H | H | H | H | H | H | H | H | H | H | H | H | H |
| D<=2,600 | | | H | H | H | H | H | H | H | H | H | H | H | H | H | H |
| D<=2,800 | | | H | H | H | H | H | H | H | H | H | H | H | H | H | H |
| D<=3,000 | | | H | H | H | H | H | H | H | H | H | H | H | H | H | |
| D<=3,200 | | | | H | H | H | H | H | H | H | H | H | H | H | H | |
| D<=3,400 | | | | H | H | H | H | H | H | H | H | H | H | H | | |
| D<=3,600 | | | | H | H | H | H | H | H | H | H | H | H | H | | |

Hot-Formed Hemispherical Head

| | 20~29 | <=30 | <=40 | <=50 | <=60 | <=70 | <=80 | <=90 | <=100 | <=110 | <=120 | <=130 | <=140 | <=150 | <=160 | |
|----------|-------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|--|
| D<=500 | H | H | H | H | H | H | H | | | | | | | | | |
| D<=600 | H | H | H | H | H | H | H | | | | | | | | | |
| D<=700 | H | H | H | H | H | H | H | | | | | | | | | |
| D<=800 | H | H | H | H | H | H | H | H | | | | | | | | |
| D<=900 | H | H | H | H | H | H | H | H | H | | | | | | | |
| D<=1,000 | H | H | H | H | H | H | H | H | H | H | | | | | | |
| D<=1,200 | H | H | H | H | H | H | H | H | H | H | H | | | | | |
| D<=1,400 | H | H | H | H | H | H | H | H | H | H | H | H | | | | |
| D<=1,600 | | H | H | H | H | H | H | H | H | H | H | H | H | H | H | |
| D<=1,800 | | H | H | H | H | H | H | H | H | H | H | H | H | H | H | |
| D<=1,900 | | H | H | H | H | H | H | H | H | H | H | H | H | H | H | |
| D<=2,000 | | H | H | H | H | H | H | H | H | H | H | H | H | H | | |
| D<=2,100 | | H | H | H | H | H | H | H | H | H | H | H | H | | | |
| D<=2,200 | | | | | | | | | | | | | | | | Shall be determined after confirm the Tangent length |

Cold-Formed Elliptical Head

| | 5~10 | <=20 | <=30 | <=40 | <=50 | <=60 | <=70 | <=80 | <=90 | <=100 | <=110 | <=120 | <=130 | <=140 | <=150 | <=160 |
|-----------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| 400~500 | COLD | COLD | COLD | COLD | COLD | | | | | | | | | | | |
| D<=700 | COLD | COLD | COLD | COLD | COLD | COLD | | | | | | | | | | |
| D<=1,000 | COLD | COLD | COLD | COLD | COLD | COLD | | | | | | | | | | |
| D<=1,200 | COLD | COLD | COLD | COLD | COLD | COLD | COLD | | | | | | | | | |
| D<=1,400 | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | | | | | | | |
| D<=1,600 | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | | | | | | |
| D<=1,800 | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | | | | | |
| D<=2,000 | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | | | |
| D<=2,200 | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | | |
| D<=2,400 | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | |
| D<=2,600 | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD |
| D<=2,800 | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD |
| D<=3,000 | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD |
| D<=3,200 | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD |
| D<=3,400 | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD |
| D<=3,600 | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD |
| D<=3,800 | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD |
| D<=4,000 | | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD |
| D<=4,500 | | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | | | |
| D<=5,000 | | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | | | | | | |
| 5001~6500 | | COLD | COLD | COLD | COLD | COLD | COLD | COLD | COLD | | | | | | | |

Cold-Formed Hemispherical Head

| | 10~19 | <=20 | <=30 | <=40 | <=50 | <=60 | <=70 | <=80 | <=90 | <=100 | <=110 | <=120 | <=130 | <=140 | <=150 | <=160 | <=170 | <=180 |
|------------|-------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| D<=400 | Mold | Mold | Mold | Mold | | | | | | | | | | | | | | |
| D<=600 | Mold | Mold | Mold | Mold | | | | | | | | | | | | | | |
| D<=900 | | Mold | Mold | Mold | Mold | | | | | | | | | | | | | |
| D<=1000 | | S.G | S.G | S.G | S.G | | | | | | | | | | | | | |
| D<=1200 | | S.G | S.G | S.G | S.G | S.G | | | | | | | | | | | | |
| D<=1,400 | | S.G | S.G | S.G | S.G | S.G | S.G | | | | | | | | | | | |
| D<=1,800 | | S.G | S.G | S.G | S.G | S.G | S.G | | | | | | | | | | | |
| D<=2,000 | | S.G | S.G | S.G | S.G | S.G | S.G | S.G | | | | | | | | | | |
| D<=2,200 | | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | | | | | | | | |
| D<=2,600 | | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | | | | | | | |
| D<=2,800 | | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | | | | | | |
| D<=3,000 | | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | | |
| D<=3,200 | | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | |
| D<=3,400 | | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G |
| D<=3,600 | | | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G |
| D<=3,800 | | | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G |
| D<=4,000 | | | | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G |
| D<=4,500 | | | | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | | | |
| D<=5,000 | | | | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | S.G | | | | | | |
| D<=5,500 | | | | S.G | S.G | S.G | S.G | S.G | S.G | S.G | | | | | | | | |
| 6,000~6500 | | | | S.G | S.G | S.G | S.G | S.G | | | | | | | | | | |

Hot Forming Process



Plate Heating using Electric Furnace



Mold Setting



Mold Pre-Heating



Plate Setting on Female Mold



Transfer to Storage for Natural Cooling



Drawing Out



Pressing



Edge Preparation using Turntable



Non-Destructive Examination (NDE)



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