武汉建恒工业技术有限公司
Wuhan Jianheng Industrial Technology Co.,Ltd.

Pipe Fittings & Valve by Lost Foam Casting

Zhang Jianman, Liang Qingmin, Lei Bo, Ding Huanjun

Web:www.jianhengid.com **Email:** admin@jianhengid.com
Address: B2001, Guanggu Times Square,, Hongshan District, Wuhan, Hubei, China

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Brief introduction:

Wuhan Jianheng industrial technology Co.,Ltd is an integrated service company committed to the development of foundry industry. The company owns a team with professional knowledge and rich practical experience in casting technology and management, engaging a number of senior foundry experts as consultant; the company will strive to become a modern service industry enterprises focusing on foundry consulting, research, technology, production, supplyment, trade, human resources and other service .

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Ⅰ Introduction

It is very mature to produce pipe fitting parts by lost foam casting process. More large-scale pipe fittings foundry have been formed in China, producing more than 10,000 tons of pipe fittings a year. Some super-large lost foam foundry produce more than 100,000 tons of pipe fittings a year.

At same time, more and more foundry are beginning to produce valve body castings by lost foam casting process.

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Ⅱ What is Lost foam casting?

White foam making

Foam assembling

Coating & drying

Molding

Pouring

Shake out

Cleaning

Other process

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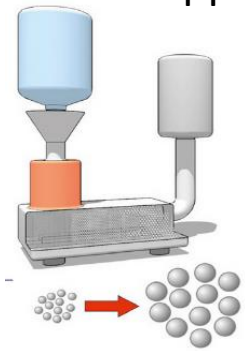
Ⅲ How it works:

3.1 Pre-foaming

To preset the polystyrene beads (EPS) to the appropriate density, which is usually carried out by steam rapid heating.



	STMMA	EPS
Steam pressure	0.03-0.06	0.03-0.05
Temperature	80-110	80-110
Time	50-70s	20-40s
Density	17-19g/L	14-16g/L

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3.2 Foaming

The pre-foamed beads should under stabilizing treatment first, and then sent to the hopper of molding machine. After mold cavity full of pre-foamed beads, pass into the steam to let the beads softend, expansion, packed with all the gaps and glue as a body.

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3.3 Foam assembling & drying

For the casting usually assembled by different foam sheets. By this way, we can reduce mold cost, and saving foaming time, etc.

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3.4 Dip-Coating & drying

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3.5 Sand filling & Pouring

To prevent white foam deformed, special sand feeder to add sand slowly.

Main parameters:

Vacuum pressure;

pouring time;

temperature;

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3.6 Shaking out & Cleaning

The production of pipe fitting and valve by lost foam process can greatly reduce the labor intensity of worker. Because more surface quality and size accuracy.

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3.7 Machining & Test

Pipe parts test pass rate:

Casting yield: >95%;

One press test yield: 70% - 80%;

Two press test yield (after repair): >90%

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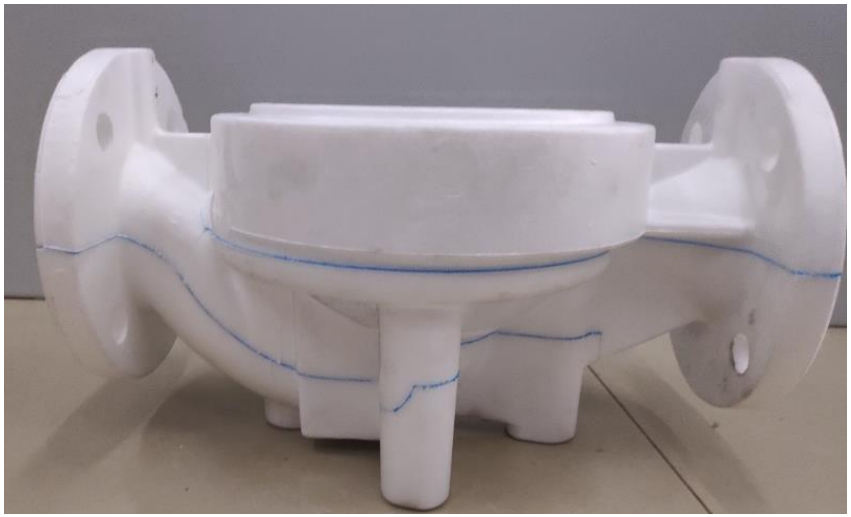
IV Advantage of lost foam casting

1) Production costs are lower , no sand core and parting surface,

and less labor and clean work;

2) High size precision, reduce machining allowance;

Dimensional accuracy: CT 7-9 ; Machining allowance: 1.5-2mm.



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3) High production efficiency;

4) High sand recovery rate;

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5) Low mold cost;

6) More environmentally friendly.

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V Typical foundry by lost foam

5.1 Wuhu Xinxing Ductile Iron Pipe Co., Ltd

Production line:

Ø 2000*2000 (Small flask)

Ø 3200*2800 (Big flask)

Target annual production: 180,000T;

Target products: DN80 – DN1600;

Material: DI.

5.2 Shanxi Panshi (Industrial) Group

Production line:

Small line for DN80 – DN600

Medium line for DN700 – DN1100

Big line for DN1200 – DN1400

Target annual production: 150,000T;

Material: DI.

5.3 Anhui Redstar Valve Co.,Ltd

Flask size:1500*1200*1100mm;

Target annual production: 20,000T;

Material: DI;

Area: 87000m2;

Staff: 300.

5.4 AVK Advanced Casting (Anhui) Co.,Ltd

Production line: 1200*900*1200mm

Target products: DN80 – DN200

Target annual production: 5000T

Material: DI;

Staff: 100.

Area: 7000m2;

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VI Lost foam casting equipment

5.1 Typical equipment line

5.1.1Automatic production line

1） High production efficiency: 8-12 mold/h;
2） Lower production costs;
3） Casting quality more stable.

Suitable for mass production of medium and small products.

5.1.2 Open production line

1） Production efficiency: 3-5 mold/h;

2） Lower investment cost;

3） More flexible production;

Suitable for big parts and insufficient investment, etc.

5.2 White area main equipment

5.2.1 Pre-forming machine

To preset the polystyrene beads (EPS) to the appropriate density.

5.2.2 Bead storage systems

Expanded beads can be routed directly to the foam mold machines to keep transfer logistics simple.

5.2.3 Forming machine

5.2.4 Steam tank

5.2.5 Drying room

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5.3 Yellow area main equipment

5.3.1 Coating mixer

5.3.2 Drying room

5.4 Black area main equipment

5.4.1 Sand hopper

5.4.2 Flask

5.4.3 Vibration table

5.4.4 Turning machine

5.4.5 Sand preparation

5.4.6 Dust collector

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VI Lost foam mold and materials.

We help our customers to purchase foundry material from China, to got high quality goods by less money, like mold, eps beads, coating, glue, fiber rod and ceramic sand.

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Ⅶ Our service

From 2011, we begin to help our customers build casting projects for higher quality casting and more competitive markets. During this process, we build experienced casting team to do this work. We have experienced engineers in our team with rich experience in cast iron, cast steel and non-ferrous castings.

We can provide whole technique support for lost foam plant, including plant planning and designing, equipment line designing and selection, casting process designing and parameters designing, casting defects solution and casting quality improvement, main foundry materials selection, lost foam patterns and equipment supply, etc. We provide one-stop service for lost foam process to protect our customers' interest.

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For pipe & valve castings, our service including:

1. Basic casting technique consulting and data analysis;
2. Plant and shop layout designing and implement;
3. Equipment designing and selection;
4. Mould designing and manufacturing;
5. Foundry materials selection and using guidence;
6. Casting defects analyse and solution;
7. Workers training and operation guidence;
8. Guidence and advice on Production control and management
9. Supply for Other necessary equipment and material.

We will offer whole support for the project till the production stable

For more information please visit: *www.jianhengid.com*

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Contact information

Zhang Jianman
Tel: +86-135-45239290
Email: zhangjianman66@163.com

Liang Qingmin
Tel: +86-187-71036713
Email: 18771036713@163.com

Lei Bo
Tel: +86-156-23247330
Email: 15623247330@163.com

www.jianhengid.com
www.jhcasting.cn