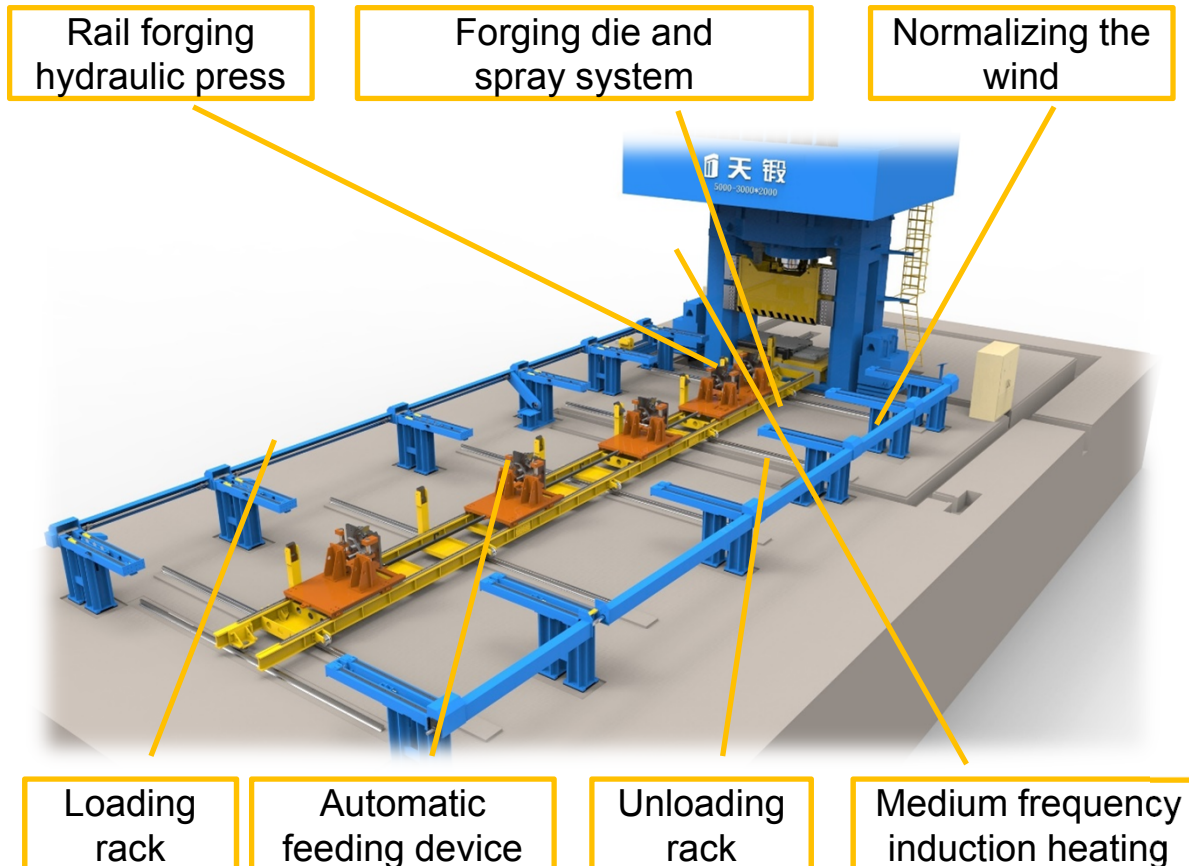
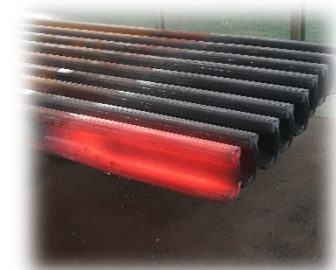
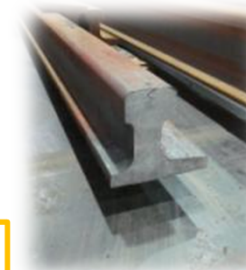


● Full solution for rail forging line

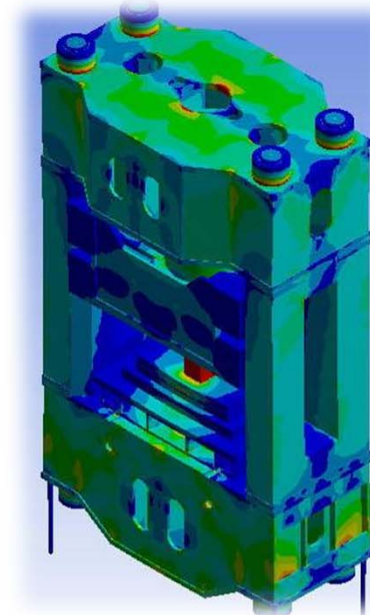
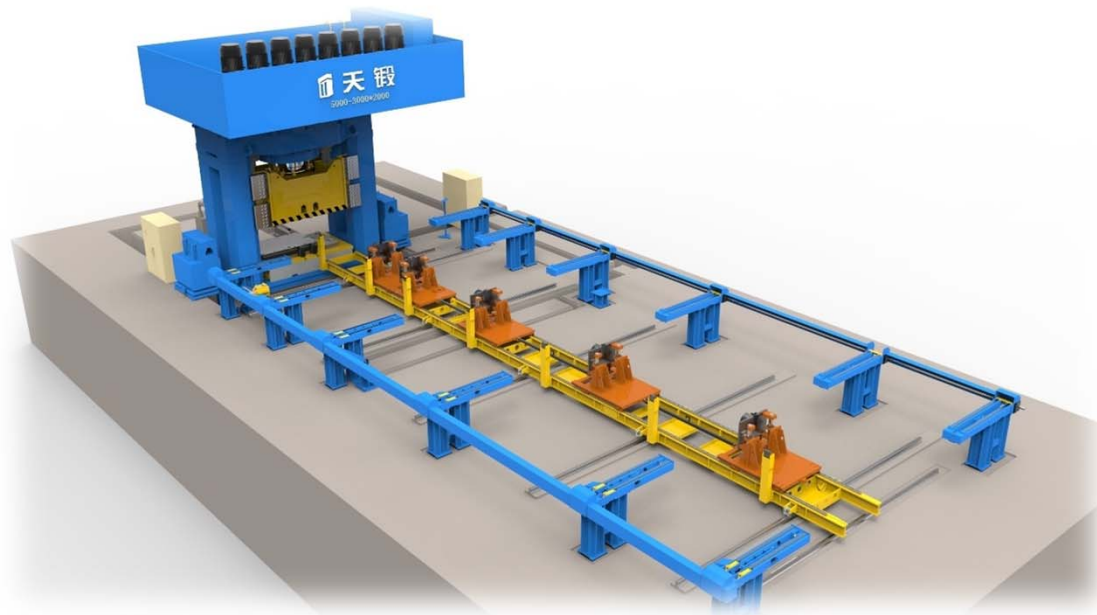


The line has been upgraded to “sixth generation” according to rail end forging process characteristics and new technology of this industry.



- Design concept

Main body design



CAD/CAE/CAM integrated technology for design, analyse and manufacture of hydraulic press; **SOLIDWORKS** for 3D entity assemble and modeling of whole machine and parts; **ANSYS 15.0** for stress simulation to ensure the advanced of whole machine design and process. “**Ensure the stress of each critical points is reasonable when the press is full loaded**”。

● Design methods

Hydraulic system design



● Design concept

Electric system design



Electric system is easy to set and modify the pressure, speed, position, time, temperature, pressure establish rate and other technical parameters, as well as check the examine, analytical curve, product trace and so on.

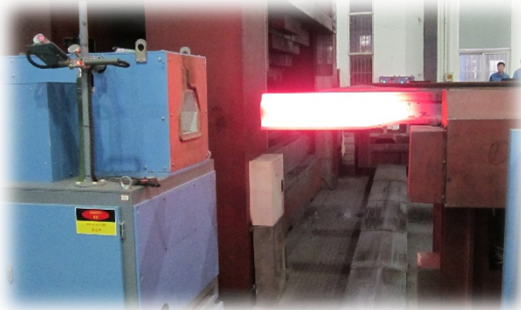
- Design concept

Loading design



The feeding system uses servo motion control system which can make the line has high speed, high precision and stable performance.

● Efficiency of rail end forging line



The efficiency of rail end forging line can reach to 4~6JPH。

1. Rail heating time: 6-10min

2. Forging time of loading system and four stations: 90~120s

3. Time of rail feeding to the unloading rack: 20~25s

4. Feeding system back to loading position: 30~35s

5. Prepare to next working cycle.

● Auxiliary equipment for rail end forging line



Medium frequency induction furnace:

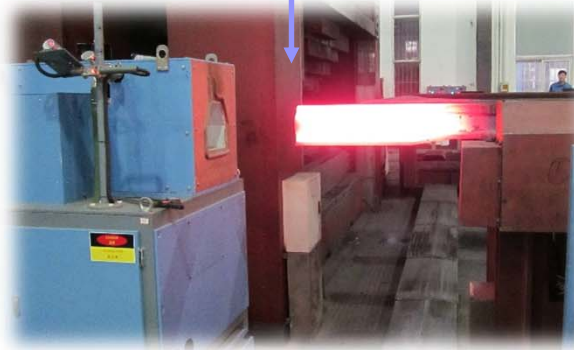
1. Adopt silicon controlled or IGBT.
2. Rail heating time 6~10min
3. Rail heating temperature 900~1150°C, temperature difference of rail ≤100°C
4. Heating length of rail 900/1300mm

Auxiliary equipment:

1. Dies for four work stations.
2. Medium frequency induction furnace.
3. Spray device for die.

Dies for four work stations:

1. The forging process is one time heating, three times forging and one time trimming.
2. Rail forging die include four die cavities for four work stations: initial forging, middle forging, fine forging and trimming.
3. The four work stations has reduce subsequent machining job and improve the efficiency and quality of products.
4. The deformation length of die is 450~500mm and transition length is 150mm.



Spray device:

The operator can spray the die by handheld gun before the work piece into the die. It can remove scale and spray stripping lubrication.

● Remote diagnosis



The data will be saved at cloud development intelligent remote diagnosis operate platform. This platform will real-time display sales and running situation.

● Main achievement of rail end forging



钢轨道岔跟端锻造领域主要业绩			
用户名称	产品型号	属性	备注
中铁山桥	THP10-6000	单台设备	第一代
天水中铁天工制造	THP11G-3000	单台设备	第一代
新铁德奥道岔	THP11G-3000A	单台设备	第一代
铁科（北京）轨道装备	THP11G-5000	生产线	第二代
河南北方铁路器材	THP11G-5000A	单台设备	第二代
河南中志轨道交通	THP11G-3000B	单台设备	第一代
韩国SEAN Inc. 公司	THP11G-3000C	生产线	第三代
济南铁路局	THP11G-5000B	生产线	第四代
中铁山桥	THP11G-3000D	生产线	第三代
广州铁路局	THP11G-5000C	生产线	第四代
中国铁建重工	THP11G-5500	生产线	第五代
中铁山桥	THP11G-6000	生产线	第六代

● Typical application



Generation 1 of “rail end forging line” from Tianduan.

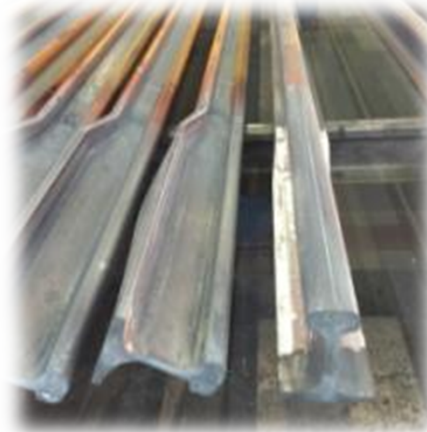
6000/3000T press

Double work stations semi-automatic mode.

Two times forging forming.

Mainly press 50AT and 60AT rail end forging and wing rail forging.

China Railway
Shanhaiguan Bridge
Group Co., Ltd.
6000T (1 set)
3000T (1 set)
Hebei Qinhuangdao
Generation 1



● Typical application



Generation 2 “Rail end forging hydraulic press” from Tianduan 5000T press line

Three work stations

One time forging forming

Mainly press 50AT and 60AT rail end forging and wing rail forging



China CNR (Beijing) Railway
Equipment Co., Ltd.
Beijing 5000T (one line)
Generation line 2



● Typical application



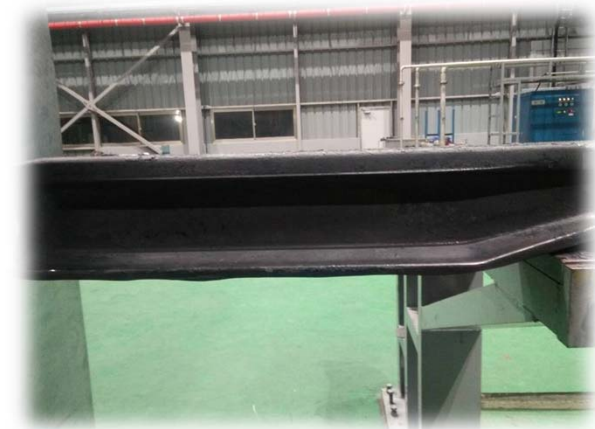
Korea SEAN Inc.
Korea 3000T (one line)
Generation line 3

Generation 3 of “Rail end forging hydraulic press” from Tianduan 3000T press line

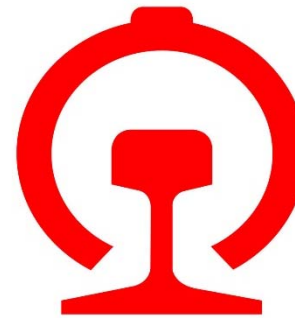
Double work stations semi-automatic mode.

Two times forging forming.

Mainly press **UIC60B-UIC60, UIC60B-60Kg, 70S-60Kg and 70S-50Kg** rail end forging



● Typical application



China Railway Jinan Group Co Ltd. /
China Railway Guangzhou Group
Co.,Ltd.
Shandong Zibo 5000T (one line)
Hunan Hengyang 5000T (one line)
Generation 4

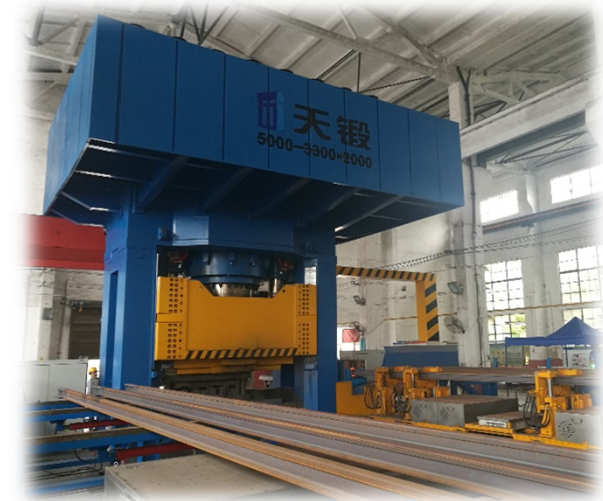
Generation 4 of “Rail end forging hydraulic press” from Tianduan 5000T press line

Four work stations

One time forging forming

Equip with rail end normalizing heat treatment function

Mainly press 50AT and 60AT rail end forging and 60-50 and 50-43
heterotype rail forging



● Typical application



China Railway Construction
Heavy Industry Corporation
Limited
Hunan Zhuzhou 5500T (one
line)

Generation 5

**Generation 5 of “Rail end forging hydraulic press” from Tianduan
5500T press line**

Four work stations

One time forging forming equip with IGBT induction heating furnace

Equip with rail end normalizing air blast heat treatment function

Mainly press 50AT, 60AT1 and 60AT2 rail end forging



● Typical application



China Railway Shanhaiguan
Bridge Group Co., Ltd.
Hebei Qinhuangdao 6000T
(one line)

Generation 6



中国中铁

Generation 6 of “Rail end forging hydraulic press” from Tianduan 5000T press line

Four work stations

One time forging forming equip with IGBT induction heating furnace

Equip with rail end normalizing air blast heat treatment function

Mainly press 50AT, 60AT1 and 60AT2 rail end forging and wing rail forging