Its appearance is same as CT88K PLC fully hydraulic die forging hammer.

Its driving system is fully hydraulic driving system designed and made by CFM company, fixed on columns with elasticity anti-vibration cushion block. This system uses advanced taper valve control technology, combine cylinder transit technology, double anti-leakage and hydraulic integrating technology, simple system structure. And Key hydraulic components and seals are imported.

Its striking system use separated hammer body structure, using old pneumatic hammer columns and anvil to modify, and columns are connected to anvil by bolts.

Its guiding is using the steel X-shape guide rails fixed on the columns by bolts. Extending line of contacting surface of guide rails and ram crosses on the ram center, which cannot effect guide clearance due to heating, and clearance between ram and guide rails can be adjusted to be small to assure die matching. Radial X-shape wide guide structure make sure ram guiding clearance will be not changed due to heating.

And this guide rails lubrication is automatic and exclusive, whose lubrication oil volume can be preset by operator according to machine requirement, and its level can be
monitored. Once there is problem on lubrication system or level too lower, there will be alarm on touch screen and this system buzzer with alarm.

Conversion of existing steam (air) the die forging hammer with fully hydraulic driving system is with very obvious economic effect and much cheaper than a new fully hydraulic die forging hammer. If the pump house was not considered, the hydra-pneumatic hammer may be cheaper than the fully hydraulic hammer. But in fact if the pump house and the piping system should be calculated together, the steam die hammer conversion will almost be equal. If maintaining cost is considered again, the pneumatic die hammer numerical control transformation I cost will be lower.

Striking program is easy to input, no need skilled computer engineer, and even semi-skilled worker is OK. When hammer working, control system can check oil temperature, pressure, cleanness and position and then numerical display. Once problem, the malfunction alarm light will be on and the malfunction position and character will be on touch screen.

(1) **Main features:**

1.1 Program control, numerical input, simple operate;
1.2 High integrated hydraulic control system, accumulator fixed directly on main valve block without any pipe connecting, improve hydraulic system efficiency and easy for maintenance
1.3 Advanced taper valve control, fast response, good sealing and not easy to inner leakage;
1.4 High response speed and high reliable redundancy design;
1.5 Hydraulic driving system and power system assembled on top separately, no hydraulic pump station on floor;
1.6 Touch screen man-machine interface and automatic malfunction diagnosis and alarm, easy for machine operation and maintenance;
1.7 Safety design for inner accumulator and pipeline assembly;
1.8 Swaying combine oil cylinder and thin piston rod flexible design;
1.9 High and low pressure double anti-leakage design;
1.10 Long ram structure can improve working accuracy;
1.11 Striking energy and steps can be preset at will, no surplus striking energy can reduce striking noise and improve die life;
1.12 Slow up and down in the case of releasing hydraulic system pressure to make die changing safety;
1.13 Ram buffer is inner hydraulic buffer, to make sure safety and effective;
1.14 Special designed die automatic lubrication, blank convey system, ejector and scale removing system are for customer to choose. They can be linked to hammer through program to realize die lubrication locating, timing, quantifying control, to improve its productivity and reduce labor intensity.
1.15 Remote monitor system can save maintenance engineer to user’s workshop time and cost. It not only save large labor and resource cost, but also supply fast service to customer to reduce loss arising from hammer stopping.

(2) Advantages:
2.1 High efficiency
The special fully hydraulic power driving technology makes the hydraulic hammer obtain the huge kinetic energy in the extremely short stroke, that is, getting fast forging, high-frequency continuous forging in short stroke. And the additional die automatic lubrication system, ejector system, blank convey system and remote monitoring system linked to forging hammer can reduce more operator labor intensity and improve working efficiency greatly.

2.2 Energy-saving
Its driving efficiency reaches 65%, over 30 times than other steam hammer. Besides that, its energy saving is also to striking energy precise control.

2.3 High accuracy
The one-piece high rigid U-frame body and the radial wide guide rail make this hammer working precision keep well. High striking energy can be controlled, to avoid surplus striking energy to extend much die life and hammer reliability.

2.4 Low noise
The forging hammer noise is inevitable, but may be reduced. If the forging hammer striking energy is enough to form the forging without more striking energy, giving full striking energy but no surplus, the situation will be different.

The traditional forging hammer striking energy is not adjustable. Usually worker uses biggest energy, which is not need. The operator also is familiar with several strikes, which is actually surplus.

It can control the striking energy precisely, especial for high striking energy. Each striking energy may be adjustable according to the design procedure. In such way, surplus striking energy can be controlled, thus the noise also will be reduced.

2.5 Lower vibration
Considering reducing and absorb vibration, the hammer tie plate is soft connected to hydraulic driving system are connected, and big tonnage forging hammer hydraulic driving system and hydraulic system pump station are assembly separately and anti-vibration.
2.6 Reliable quality
If the forging hammer is operates by man, no matter how skilled worker, it also is unable to keep 100% consistency, especially when shifting, it is difficult to obtain the consistent striking energy and time for the same kind of forging. This hammer use the electronic procedure control, no matter who steps on the foot switch, striking is consistent. The procedure to some particular part progress can be stored. Later if forging the same components, you will only assign out this components procedure and the forging will be done.

2.7 Low running cost
The energy saving not only refers to the high hammer transmission efficiency, but also includes the energy saving benefit from the accurate control. Unnecessary striking energy wastes energy and affects the equipment and the die life, because they are absorbing surplus energy.

High integrated, compact structure hydraulic driving system can reduce hydraulic leakage and hydraulic oil consumption. And in normal condition, it no need to add high pressure nitrogen.

2.8 Wide application
A person can explain how large forging can be forged by one press. But to hammer, it is not easy to define.

The high forging speed and short die contacting time can be good for forgings deforming and extend die life. Such hammer is used to forge thin board, complex forging with different weight, which can manifest its performance and economical superiority fully.

2.9 Ease maintenance and operation
It is designed compact and using standard hydraulic priority valve to realize charging oil, discharging oil, adjusting and striking and so on.

It supervises the hydraulic oil cleanliness, temperature and pressure through the sensor. Once the phenomenon is not conformed to system condition, it can auto-alarm, also can realizes the breakdown automatic diagnosis and protection itself to stop the hammer. At the same time, it will supervise the safe ancillary facilities as far as possible. If it does not conform to the request condition, it cannot realize the main engine start.

For the better and quicker service and maintenance, it equips with the Chinese and English normal problems display window. Once there appears exceptionally, through the window we can quickly find the reason to solve rapidly and reduce maintenance time.
New designed remote monitor system can save maintenance engineer to user’s workshop time and cost. It not only save large labor and resource cost, but also supply fast service to customer to reduce loss arising from hammer stopping.

(3) **Main parameter:**

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<th>Item</th>
<th>unit</th>
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<td>Max. Striking frequency</td>
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