

The molding tool CAD gathers the technique

Contents brief summary: Pass to analyze the calculator the assistance inject the mold design with make in the each link commonly shared of technique with information, this text announces to public to inject the mold CAD gathers technical and basic content, and the research heat that put forward it orders with trend.

the plastics molding tool CAD gathers technique

The manufacturing of the plastics molding tool contains the construction design of the shape design, molding tool and the number of the analysis, molding tools that include the plastics products control to process(electricity process, the line incises etc.), throw the light with go together with to try the mold and take shape manufacturing etc. quickly.The each link a CAD for involving unit technique has:

The shape design(CAD) with the construction, fast anti of the product shape beg(RE), construction analysis with excellent turn the design(CAE), lend support to the manufacturing(CAM) and process the process conjecture imitate true(SIMULATION), product and molding tools take shape(RP) quickly, assistance craft process(CAPP) with product data management technique(PDM) etc..The plastics molding tool CAD gathers technique,Is to gather plastics molding tool manufacturing process a various units for involving technique get up, unify the database to deliver the format with the document, realize the information gather share with the data resources, from but shorten the design manufacturing period of the molding tool consumedly,Increases to make the mold quantity.

the CAD design of the plastics product begs with fast anti of the shape

The plastics molding tool that proceed the square one designs the manufacturing is the design of the a product.The traditional product design method is a design to product of three is conceive outline to use two plane chart papers expresses to come out, marking clearly the craft and starting construction the method on the diagram paper,

This kind of method comes to a decision the simple of a design sketch and can'ts control to make the quantity directly.The modern design method is a design establish the product directly on the computer of three the model,

According to the product three models proceed the molding tool construction the design and excellent turn the design,

Design according to the molding tool construction again three $\hat{\Gamma}$ -models proceed to process to weave the distance and establishment crafts plan. This kind of method makes product model design, molding tool construction design, process to weave distance and technological designs regard a data as the foundation, realizing the data share, can not only increase to design the efficiency quickly, but also can guarantee the quantity, decline low cost. The source of the computer a product model has three kinds of: Making use of the CAD system software proceeds the product model the design and make use of the real object measures fast anti in proceeding beg to set up the mold and make use of the standard format document of the other the system of CAD. Source method that aim at these three kinds of products model,

have studied every kind of technique now to the design efficiency that increases product model with quantity. The underneath further analyzes every kind of technical content with the characteristics. Making use of the CAD system software proceeds the product model design, its technique includes primarily two are several why the sketch draws, two the parameter of is turn the design of the sketch, three entity shape design, three characteristic shape design, three the parameter of is turn the entity shape the design, three curved face shape design, free shape in space design, the external appearance of the product exaggerates, product of dynamic advertise to design the etc.. These softwares contain many typical representatives. Two the software of is have: ME10, CADKEY, AUTOCAD, DHCAD, Genis, etc. of Sigraph; three the software of $\hat{\Gamma}$ -s have: UGII, PRO/ E, IDEAS, CATIA, etc. of EUCLID; free shape in product and advertise the software of the design have:

Alias, etc. of CDRS. Two $\hat{\Gamma}$ -s are several why the sketch draws is to make use of the flat surface CAD software draw the spare parts sketch, then replace the handicraft painting with the calculator; but two the parameter of is turn, Then the calculator realizes the sketch changes the deal designs, making modification more convenient; three $\hat{\Gamma}$ -shape designs is a true shape that the product that the arithmetic figure turn design, it expressed completely product, can be further to designs for the molding tool, analysis with processes the mathematics model of the necessity of offering; the free shape in space design is the art of the product shape to design, making product been not only is a function product, but also art article;

It is every kind of need that the external appearance of the product exaggerate that product of the result designs, making product more beautiful, the color can attract people more; the

dynamic advertisement design of the product is a result that design to make to promote the advertisement directly the product,

Proceed the market expansion.making use of the real object measures fast anti of proceeding beg to set up mold is current investigative a little bit hot of a,

It is an important technique that product imitate the type foundation go forward a line of the product modification designs.Its basic principle is to passes three coordinateses measure the machine, laser measure machine or electronicses copy the few 0Ç to proceed to scan the diagraph to the real object,

The data of large quantity that arithmetic figure turn that gets to measures the acquisition orders anti that send into the high class CAD software beg mold piece or appropriative anti beg the software inside, anti beg the software can read directly a data cluster,

Combining can proceed the editor, filter, tidy up, beg the to a data cluster, row preface, part modification and reorganization, then automatic born curved face,

It is end to acquire together the real object precision is consistent of or computer    a product model that pass through reforms.This way can increases biggest new product design velocity.Current mature curved face anti beg to set up the mold software has: Surfacer,Cimatronreng, etc. of Strim100.

Make use of the standard format document of the other the system of CAD to set up the mold, this way than convenience.Because the world of the market turns with the technical development in the network of INTERNET,

The CAD technique exchanges of the molding tool business enterprise with cooperate to have many pass the CAD document method proceed.Because the CAD system category is more, therefore documentary format must follow the international standard,such as the DXF, IGES, STEP, VDA, etc. of STL.Pass to read standard format document to establish directly or establish the product model after modifying, since can quickly, deepen the customer and the exchanges of the molding tool factory house,also can shorten the product the design the period.

the CAD design of the molding tool and analysis

The CAD design of the molding tool, analysis, include to divide the type, certain type according to the product model molding tool of proceeding the design with the type $\frac{D}{4}$, molding tool structural and detailed design, the plastics fills process analysis etc. a few aspects. Make use of the advanced characteristic shape software, such as PRO/E, etc. of UGII, the very easily certain dividing the type, Born top and bottom mold with mold $\frac{D}{4}$, then the proceeding flows a way, sprinkle a people and cool off the pipe line of arrange etc.. Made sure these designs data hereafter, then make use of the molding tool analysis software, Proceed such as the MOLDFLOW, CFLOW the plastics take shape the process analysis. According to the software of MOLDFLOW with it of the material, craft database of plentifulness, pass the importation take shape the craft parameter,

Can the development imitate the true analysis plastics to inject in note $\frac{D}{4}$ mold $\frac{D}{4}$ the process flows the circumstance (the plastics with sprinkle a people more inject remits to flow the analysis of), analyze the temperature pressure variety circumstance and analyze to note a remaining should dint etc.. According to analyze the circumstance to the rationality that check the molding tool construction, flow quantity problem etc. of the rationality, product of the appearance. For example whether the esse sprinkles to note the system not reasonable, appear to flow way with sprinkle a position size not appropriate, Can't equilibrium alive with type; whether to exist product construction absurdity or molding tool constructions or not is not reasonable, appearing the product $\frac{D}{4}$ dissatisfied (namely short shoot the phenomenon); whether to cool off asymmetry or not, the influence produces the efficiency with product quantity; Whether the esse notes the craft of wrong, appear the song of the product transform etc.. The molding tool passes the CAD the design with analyze, can dissolve mistake at design the stage, increase to try once the mold the success the rate. At plastics molding tool design with analyze to apply many new computer-aided technique this stage, if the parameter turns technique, characteristic shape technique, database technique etc.. There is many standards piece in the plastics molding tool, Turn such as the standard mold a parameter for outing organization, sprinkling noting system, cooling system...etc. can adopting basing on database managing the characteristic shape design method proceed the design or establish the standard a, like this since can realize the data share, Can satisfy the customer again to the at any time modifying of the design, make the design analysis of the molding tool fast, accurate, efficiently. The parameter turns the characteristic shape can not only describe the product completely then several why sketch information, And can acquire accuracy, material and assemble etc. informations of the product, its a product for establishing model is a kind of apting to handle and can reflect design intention with process the model of the

characteristic. Therefore, the parameter turns the characteristic shape technique is one of the most important techniques in process in manufacturing in molding tools.

the technical application in CAM of the molding tool, process to imitate true and manufacturing

The calculator assistance manufacturing (CAM) technique of the molding tool applies primarily in the aspects of counting to control processing, line incising to process, electricity spark processing to wait. The technique of CAM rises in the type, type $\text{D}^{3/4}$ of the complicated molding tool and of the electrodes process particularly more important function. Its main technique characteristics includes: (1) the processes the knife have the track excellent to turn the programming with the instruction of NC creation, (2) the knife has the category, characteristic to establish with the material, (3) slicing the process the craft parameter to really settle, (4) The commonness slices the to slice with the high speed the characteristic that process controls, (5) over slice the check with process the superficial accuracy control, (6) processing the computer entity of the process imitate the realistic, (7) The computer control number controls the technique of DNC and clusters of the machine bed control the technical and applied etc..

Need the CAD specially in technical application in CAM three product model data. More profession computer plait distance software, such as MASTERCAM, UNIMOD, etc. of CIMATRON, when the plait distance of many curved faces processes have the higher request to the curved face model of the product,

Intend with the high accuracy of the curved face to match such as the directional consistency, curved face in U, V of the close together curved face, inclined rate in curved face continuous variety etc.. In high class CAD/ the integral whole of CAM turn system, (such as UGII, PRO/ E)

Because making use of the parameter turns the characteristic shape design with same database technique, making the type of the product model data, molding tool have the track data to have got the inside contact with the type $\text{D}^{3/4}$ model data, knife,

The modification knife of the product model has the track to also modify automatically. The molding tool processes the entity imitates the true technique more and more mature, also is more and more valued by people. It is mimicry machine bed that processing the entity imitate process the process on the computer, can keep the result that view reflect process, Can takes the gauge of directly quantity that after processing spare parts, can check the mistake that process. At check quantity that after processing spare parts, can at the computer is last to process behind of the entity model proceeds the aleatoric slices, Measure its size directly with the accuracy. Therefore, it can dissolve mistake at process the stage of craft plait distance design, reduce to repair after

processing with return the work, increases consumedly the manufacturing efficiency of the molding tool with quantity.

plastics product and its molding tools take shape the manufacturing quickly

Plastics product and its molding tools use the computer CAD technique design after completing, can pass the fleetness take shape the technique make. This is the manufacturing technique of a kind of all new concept,

It abandoned the traditional machine processes the method. Its take shape principle is three CAD entity models are long-lost set up a series of a layer data of the thickness, make use of the laser take shape machine or others take shape the equipments read these datas, Increase the method technique with the material, pile up the each layer to take shape one by one in order. This technique calls the fleetness to take shape the technique automatically. (Rapid Prototype) It is also a CAD to gather the technical importance constitutes the part.

The first pedestal takes shape the equipments quickly to bear in the United States a company in 1987, because of its characteristics is to has nothing to do with the complicated degree of the product of the manufacturing, bringing the manufacturing industry the enormous vibration. Henceforth decade, Take shape quickly the technique be flown to develop soon, the category of the equipments also piles up one after another, Turn from the material the method can is divided into the laser with not the laser burns the knot method (SLS), solid surface layer shape method (SGC), layer a manufacturing method (LOM) and melt to sink to accumulate the method (FDM), district constituency glues the knot method (DSPC), laser spirit to sink to accumulate method (SALD) etc. mutually. Every kind of method characteristics is: The method of SLA is applied at the earliest stage of took shape the technique quickly, the early market occupied the bigger cent sum, but is narrow because of the material scope, the cost is higher, taking shape the piece was heat-proof and bore the burthen with applied color the ability low, The recent years was gradually replaced by the other method. The method of FDM because of taking shape the speed quick, the cost is low, get the good application in plastics product profession, because the size of the spare parts is small, accuracy bad, Also suffer certainly of restrict. The method of LOM because of adoption paper or is outline edge that thin slice plastics, the cost is low, and the laser projects light upon each layer only, as a result take shape the speed quick, But the product surface quantity is bad. The method of SLS proceeds to burn the knot with the laser, adoptive material than wide, if the plastics, anticipates, porcelain and ceramics, metals etc. all can take shape, taking

shape the piece is heat-proof and bear the burthen with apply color the ability stronger,Have the extensive and applied foreground.The other method also gets the application in some special kinds process.

According to above take shape the method characteristics, take shape the technical function quickly to consist in primarily:

The manufacturing useds for the design with the on trial product model, make to used for the small the molding tool that batch quantity produce to process with the special spare parts in small batch quantity.Take shape the product model of the technique manufacturing quickly in the aspects of material the ratio tradition processes the product model of the method manufacturing has the difference, but in shape and sizes almost complete similar, and there is certain machine strength, can make the function experiment, handles through surface at the same time, looking similar to true product,can advertise the propaganda material.Take shape the molding tool of the technique manufacturing quickly,is a soft material to take shape the mold(the mold of , wreath oxygen resin mold,rubber mold, low orders the metal alloy casts mold etc.) primarily to synthesize the hard type in material mold with porcelain and ceramics or metals »is now.Hard mold in manufacturing the hour can take shape with the fleetness the spare parts makes the female die,create first the soft mold between wreath oxygen resin mold or other material, sprinkle to note porcelain and ceramics or gypsum molds in soft mold, then sprinkle the steel of steel mold; or sprinkle the admixture that note in soft mold chemistry contain steel powder glue knot,proceed to burn to become the steel mold.Take shape the steel mold of the technique manufacturing quickly to process after needing further did to throw light etc., make into the small batch quantity produce of note the mold of .Because the molding tool sprinkles to note or burn the knot with the steel powder but,material and common molding tool steel contain certain margin, therefore, the life span is shorter, cans make to manufacture on a trial basis product or small batch quantities produce.Moreover, taking shape the technique quickly can also manufacture the special spare parts,if make with the metallurgy powder legal system the metals electrode, nicety cast the legal system makes the copper electrode, ÑĐ mold legal system makes graphite electrode etc..

Take shape the technique creation molding tool quickly to model the equipments with the product, all is STL to read CAD system creation or CLI etc. document format datas,different document format data to the product accuracy of the creation contain bigger margin, therefore, study the system of CAD to take shape quickly the document format of the equipments output to have the very important meaning.

the molding tool CAD gathers technical development trend

A calculator for saying, molding tool CAD gathering technique is applying in molding tool making each link assistance technique on the $\times\hat{U}$ with each link information that realizes the technique gathers. Obviously, The information gathers unify with data the management is a key. The information of the product is to pierces through in the design, analyze, process, examine, assemble a stage, Fluency, solution data format that realizes each link information standardizes and the data maintenance is a point with future CAD that share to gather technique development. The system of PDM emergence is to resolve this problem brought the first light of day. It is molding tool business enterprise application CAD that the system of PDM puts into practice gather technical and important lesson. Design in molding tool manufacturing aspect, The intelligence that imply the research, high speed that abundant expert's knowledge turn molding tool CAD/ the system of CAM slices the \ddot{E} -processes and its plait distance etc. is a trend that future study the development.