

Company Honors

Countless honors have proved the brilliant development of Huaye. They are motivation and responsibility, and inspire Huaye people to forge ahead in a higher and farther septs. Won the "Top 5 Companies in China's Plastic Machinery Industry for Auxiliary Machinery and Accessories", "Zhejiang Hidden Champion", "HUSKY Excellent Quality Award", "Toshiba Machinery Quality Supplier", and "Milacron High Quality Supplier" and so on.



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ZHEJIANG HUAYE PLASTICS MACHINERY CO.,LTD

Company Introduction

ZHEJIANG HUAYE PLASTICS MACHINERY CO., LTD. was founded in 1994. It ranks on the top in this industry, and becomes the preferred screw manufacturer in the plastic machinery manufacturers. Huaye provides high-quality products and services and advanced system solutions for the rubber, plastic and extrusion industries.

Huaye has imported a series of high precision machining equipment, to produce super wear resistance, corrosion resistance, high pressure resistance, high speed and other special high-efficient screw & barrels, synchronized with Europe, the United States and Japan level. Huaye has a professional R&D and service team, focusing on technology innovation, to meet the plasticizing parts innovative demanding of various customers.

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Process and Equipment

Huaye Bimetallic Casting System

Huaye's bimetallic barrel (HK series) is centrifugal casted on the pre-heated high toughness tempering steel, which is fully automatic infrared induction heating. With this heating system, it can quickly penetrate into the microstructure mainly composed of pearlite and ferrite, keep it in its proper position and absorb it sequentially. Therefore, realize high performance process control and uniform the heating to form a high-density alloy layer. To avoid the corrosive volatiles from the polymers or additives during the casting, Huaye creates the propor-

tion of Ni, Cr, Co and Tungsten Carbon, developed series of high hardness and high corrosion resistance bimetallic barrels. The new process reduces the heating time, and the stress relief is made after casting, which saves the machining time for the barrels, improves the efficiency and accuracy of the production. This process also ensures better product quality, which greatly improves the quality and using life of the bimetallic barrels.



International High Level Heat Treatment Equipment NITREX

NITREX nitriding furnace is the top nitriding equipment in the world. It adopts the most advanced nitriding technology. The properties of the nitriding quality are up to the European and American standards. The surface of nitride material structure is fine and exquisite with level 1 vein and level 1 brittleness. The surface hardness of the material is $\geq 900\text{HV}$, and the hardness is $\geq 760\text{HV}$ after surface grinding off 0.20mm.



Fully Computer Controlled Tempering Furnace

The tempering furnace features the composite heat treatment process of quenching and tempering of the steel or steel parts. The steel after quenching and tempering is called quenched and tempered steel. The parts made of quenched and tempered steel are required to have good comprehensive mechanical properties, maintaining high strength and good plasticity and toughness.



PTA Plasma Spray Welding

The spray welding process adopts imported plasma automatic surfacing welding machine. The plasma arc features high temperature, energy concentration, high heat transfer rate and heat utilization rate, so the deposition speed is fast and the penetration controllability is strong, making the alloy layer more compact. Before and after spray welding, stress-relieving and heat-retaining treatments are adopted to effectively prevent the cracking and other phenomena of the alloy layer. The deformation of the workpiece is small, and it is smooth and neat, thereby further improving the wear resistance of the alloy layer.



Chrome Plating

Huaye's Chrome plating production is specialized production, achieving digitization, automation, automatic control of production facilities and environmental protection facilities. The combination of computer and modern analysis technology can control the process, including the plating time, bath temperature, PH value, metal ion concentration, additive consumption, and control the process in the best state to achieve efficient production.



Imported Screw Grinder

It is suitable for screw processing after full hardening heat treatment. No stress is generated during processing, and no deformation problems, while high processing precision is achieved. The concentricity of the bottom diameter and outer diameter is within 0.03mm, which makes it suitable for processing and producing screws with high precision and high firing rate requirements, and adaptable to the grinding requirements of different screws.



Process and Equipment

Austrian CNC Screw Milling Machining Center

The Pick up machining center is equipped with multi-axis CNC control, which allows 6-axis linkage operation depending on the application. Whirling milling, vertical milling, external whirling milling and rolling milling can be carried out by one machining center. The Pick up machining center provides cost-efficient, complete machining of the extrusion and injection moulding machine screws and other complex parts. The WeinCAD SCREWDESIGNER software and tools can be used efficiently, which can quickly and precisely program and design the products.



CNC Lathe

The horizontal CNC lathe has a maximum processing diameter of $\phi 600\text{mm}$ and a length of 12000mm, which is the CNC machining equipment for domestic super big tie bar. The CNC vertical center lathe has a rotating diameter of 1.6 meters, which has good shock resistance and stability, and achieves the all-in-one feature.



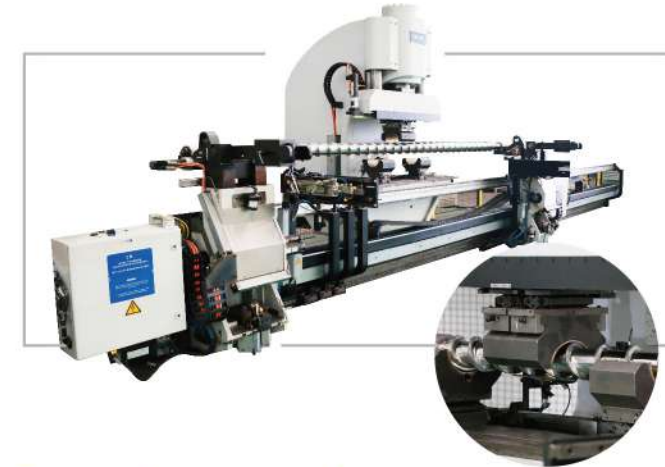
Polishing

The digital and intelligent screw polishing greatly improves screw precision and surface finish. The surface finish can reach Ra0.1, making it not easy to stick materials and the products not prone to blackening and yellowing. It is applicable to all products, and is more advantageous for transparent materials such as PC, PMMA and PCTG.



German MAE Straightener

Huaye introduces fully automatic intelligent straightening equipment - German MAE straightener. After straightening, workpieces have high precision, and can reach the requirement of 0.05mm/m; what's more, it is not required the second tempering to obtain the stability after straightening. The product has higher precision and better quality.



Swiss SUNNEN Horizontal Honing Machine

The length, position and speed of the stroke can be adjusted at any time during honing. Realize high efficiency and precision products, and greatly reduce the lead time.



Testing Equipment

Huaye has a set of strict testing standards, with quality strategy as the guide, comprehensive process management and control, and special emphasis on process control.



HK Bimetallic Barrel



Technical Parameter

Barrel inner bore diameter: $16\text{mm} \leq ID \leq 360\text{mm}$;

Barrel outer diameter D: $OD \leq 450\text{mm}$

Barrel length L: $L \leq 10000\text{mm}$

Inner bore surface finish Ra \checkmark : $0.2 \leq Ra \leq 0.4$
(special customization if below 0.2 requires)

Performance advantages: The alloy powder was melted and then solidified by centrifugal casting at high temperature. A dense alloy layer was formed in the inner bore of the barrel to enhance the wear resistance and corrosion resistance of the barrel.



Hydraulic Injection Molding Machine Standardized Barrel —B Series Bimetallic Barrel

Base material: 40Cr

Main ingredients: C, Mn, Si, B, Ni, Fe, Cr, V

Hardness range: HRC58-62

Performance advantages: Wear resistance is more than twice that of ordinary barrels

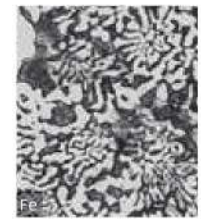
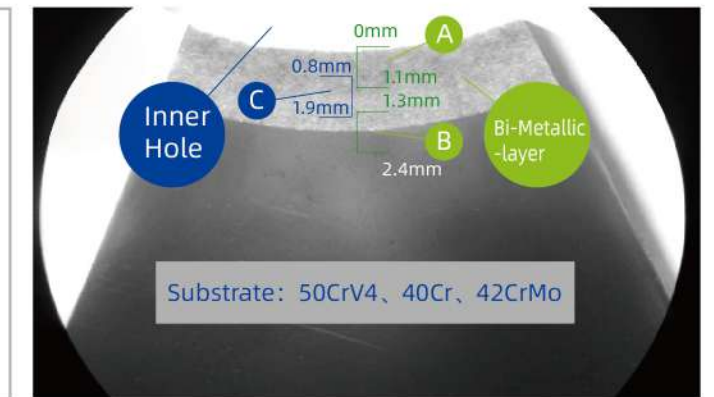
Application: General purpose resins and general engineering resins. PP, PA, ABS, POM, PBT, PC with less than 30% glass fiber. *Not suitable for electric injection machine



HK Test Parameter Comparison

Matrix Table of Wear Resistance and Corrosion Resistance | Test Block Analysis Diagram

| HK type | Bimetallic components | Wear Resistance | Corrosion Resistance |
|----------|-----------------------|-----------------|----------------------|
| B-Series | C+Mn+Si+B+Ni+Fe+Cr+V | ★★★★ | ★★★ |
| HK1 | C+Mn+Si+B+Ni+Fe+Cr | ★★★★ | ★★★ |
| HK2 | C+Mn+Si+B+Ni+Fe+Mo+Cr | ★★★★★ | ★★★ |
| HK3 | W+Cr+B+Ni+Co | ★★★★★ | ★★★★★ |
| HK5 | Ni+Cr+W+B | ★★★★ ★★ | ★★★★ ★★ |
| HK6 | Ni+Cr+W+B | ★★★★ ★★★★ | ★★★★ ★★★★ |
| HK7 | Ni+Cr+W+B | ★★★★ | ★★★★ |



HK1 Iron Base Bimetallic Barrel

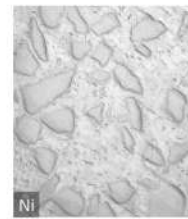
Name: **HK1**

Main ingredients: C, Mn, Si, B, Ni, Fe, Cr

Hardness: HRC58-62

Performance advantages: Wear resistance

Application: General purpose resins and general engineering resins. PP, PA, ABS, POM, PBT, PC with less than 35% glass fiber.



HK5 Nickel Base +25% Tungsten Carbide Bimetallic Barrel

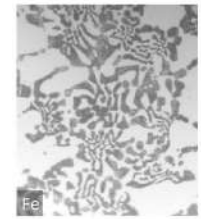
Name: **HK5**

Main ingredients: W, Cr, B, Ni

Hardness: HRC 50-56

Performance advantages: Wear resistance, corrosion resistance

Application: Suitable for wear resistance and corrosion resistance special engineering resin. PP, PA, LCP, POM, PPA, PBT, PPS, PEI, PA46 with less than 30% glass fiber.



HK2 Iron Base Bimetallic Barrel

Name: **HK2**

Main ingredients: C, Mn, Si, B, Ni, Fe, Mo, Cr

Hardness range: HRC 64-69

Performance advantages: High wear resistance

Application: General purpose resins and general engineering resins. PP, PA, LCP, PPS, PPA, POM, PBT, PC with less than 50% glass fiber.



HK6 Nickel Base +45% Tungsten Carbide Bimetallic Barrel

Name: **HK6**

Main ingredients: W, Cr, B, Ni

Hardness range: HRC 58-62

Performance advantages: High wear resistance, high corrosion resistance

Application: Suitable for wear resistance and corrosion resistance special engineering resin. PP, PA, LCP, POM, PPA, PBT, PPS, PEI, PEEK (halogen free materials: PA46, LCP, 4T, 9T, HTN) with less than 65% glass fiber.



HK3 Nickel Base +35% Cobalt Bimetallic Barrel

Name: **HK3**

Main ingredients: W, Cr, B, Ni, Co

Hardness range: HRC 52-56

Performance advantages: Corrosion resistance, high temperature resistance

Application: high temperature resistance resins with iron powder, ceramic powder, aluminum magnesium powder, magnetic powder, copper powder and others.



HK7 Nickel Base +45% Spherical Tungsten Carbide Bimetallic Barrel

Name: **HK7**

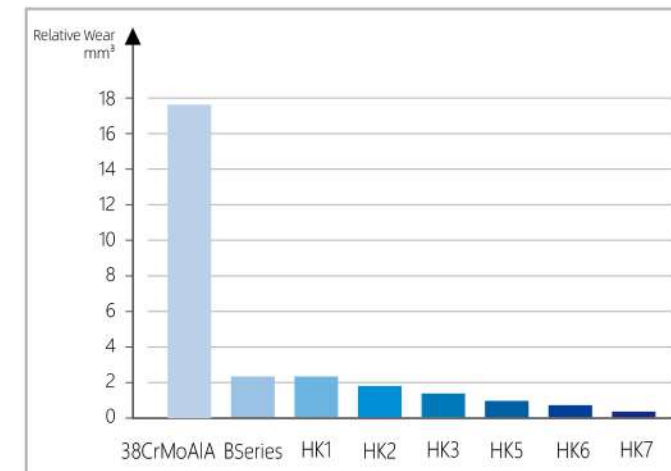
Main ingredients: W, Cr, B, Ni

Hardness range: HRC 60-65

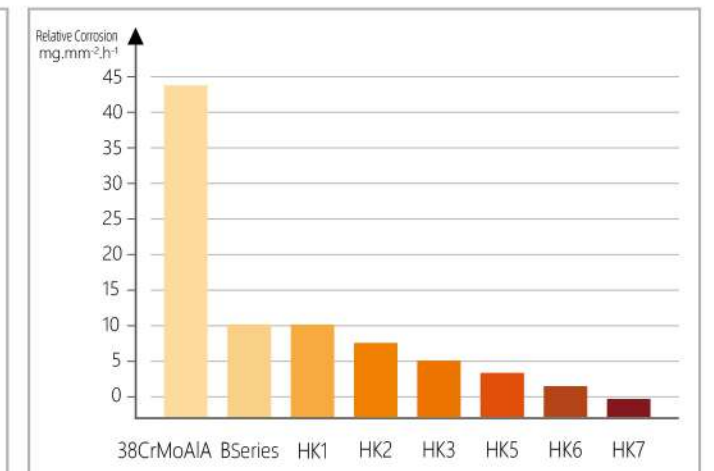
Performance advantages: Super wear resistance, super corrosion resistance

Application: Suitable for special high glass fiber ultra-halogen-free raw materials: 4T, 9T, HTN, DSM, PSM and various acidic plastics with high corrosion.

Relative wear/mud wear test



Corrosion test of relative corrosion/ 10%H₂SO₄ aqueous solution



Thorough Hardened Screw HPT Series

Thorough Hardened screw HPT series is made of imported alloy steel. After high-temperature quenching and tempering treatment, the hardness of the round rod reaches to HRC60. Under the different types of rough & grinding progress, the concentricity of the bottom diameter and outer diameter reaches 0.03mm. It can reach the high-precision requirements of various products and prolong the screw's serving life in different applications. HPT series is suitable for plastic material with 25%-65% glass fiber, with wear resistance, corrosion resistance, high temperature resistance, high pressure resistance, and high speed resistance property, and it is suitable for fully electrical injection molding machine with high speed and high processing requirements. According to the different customers demands, the PVD coating and Chrome plating is applied to improve the wear resistance and corrosion resistance.

HPT1

Name: **HPT1**
Main ingredients: C, Cr, Mo, V
Hardness range: HRC 58-62
Thermal expansion coefficient: 11.0×10^{-6} - 11.4×10^{-6}
Performance advantages: Wear resistance ★★★★★
Corrosion resistance ★★★
Application: General purpose resins and general engineering resins. PP, PA, LCP, ABS, PPA, POM, PBT, PC with less than 35% glass fiber.

HPT3(P/M)

Name: **HPT3**
Main ingredients: C, Cr, Mo, V, Co
Hardness range: HRC 58-62
Thermal expansion coefficient: 11.0×10^{-6} - 11.4×10^{-6}
Performance advantages: Wear resistance ★★★★★★
Corrosion resistance ★★★★★★
Application: It is suitable for special engineering resin PA, LCP, PBT, PEI, PEEK, PP, POM, PPS containing less than 65% glass fiber, and suitable for high temperature resistant resins such as iron powder, ceramic powder, aluminum magnesium powder, magnetic powder, copper powder, etc. and low viscosity plastics. After coating, it is more suitable for resins such as ceramic powder.

HPT2(P/M)

Name: **HPT2**
Main ingredients: C, Cr, W, Mo, V
Hardness range: HRC 58-62
Thermal expansion coefficient: 10.8×10^{-6} - 11.0×10^{-6}
Performance advantages: Wear resistance ★★★★★
Corrosion resistance ★★★★★
Application: General purpose resins and engineering resins. PP, PA, LCP, POM, PPA, PBT, PC, PPS, PEI, PEEK with less than 50% glass fiber.

HPT5(P/M)

Name: **HPT5**
Main ingredients: C, Cr, Mo, V, W, Mn
Hardness range: HRC 60-64
Thermal expansion coefficient: 11.0×10^{-6} - 11.4×10^{-6}
Performance advantages: Wear resistance ★★★★★★
Corrosion resistance ★★★★★★
Application: It is suitable for special engineering resins with super corrosive flame retardant and halogen-free flame retardant formulations, including reinforced PA, PA46, LCP, POM, PBT, PPS, PA4T, 9T and other plastic raw materials and the addition of less than 45% glass fiber.

Optics SCREW

Light guide bar series

Brief Introduction

At present, PC/PMMA plastics are mainly used in the market, with the length ranging from 300 to 860 mm. Most of the plastic brands are Covestro, Mitsubishi Chemical and LG. During injection molding, the requirements for injection pressure, pressure maintaining and process temperature control are high. The plasticizing unit needs to ensure the uniform melting of plastics under high pressure, and also needs more shear heat control of temperature-sensitive transparent plastic.

Features and Advantages

- Low shear - low pressure structure can easily cope with high pressure and slow molding conditions, so that the melt homogenization consistent, the product translucency, impurities, appearance and other control rate is high.
- Plasticizing screw through-body using light rod grinding, excellent dimensional accuracy can make the bottom diameter and outer diameter concentricity control in 0.03mm.
- The fluid polishing after coating, the roughness of the through-body reaches Ra0.07-0.15, which can guarantee the rapid passage of the soluble body to the maximum extent.

Car light series

Brief Introduction

The front and rear PC lampshade and rear tail lamp PMMA are mainly used in auto parts lighting. The mainstream of the market is two-color machine or even three-color machine for integrated internal and external embedded products. The control of silver filament, flow pattern and black spot is the main technical problem encountered during product injection. Over the years, Huaye has formed a relatively mature system in the design of such products, and provides all-round technical support including pre-sale model selection and steel plasticizing unit structure.

Features and Advantages

- Low shear - high pressure structure, so that the product plasticization degree is consistent, the product black spot, impurities, yellowing degree tends to solve.
- Medium and large machines mainly plasticizing screw needs to ensure the consistency of pressure when melting, bottom diameter grinding can accurately ensure that adjacent screw grooves do not appear volume differences.
- The mature hard chrome plating process can make the plasticizing screw through the roughness of Ra0.07-0.15, to ensure that the rapid passage of the solution is a favorable premise to avoid sticky material.

Lens/LED series

Brief Introduction

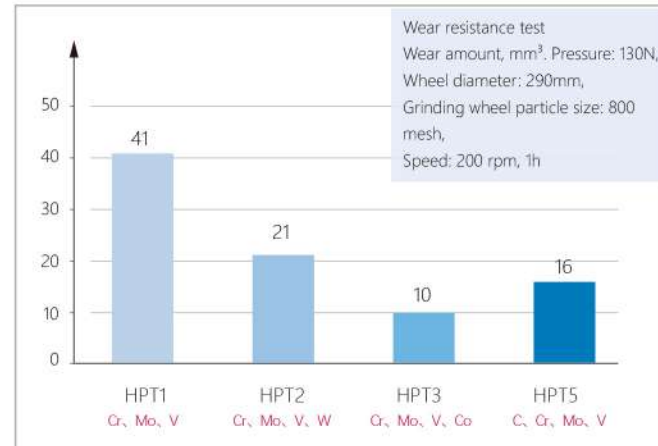
LED is becoming more and more mainstream in lighting products, lamp panel, lamp shade, lens and other products occupy the vast majority of the market, and most of the plastic products are Covestro, Teijin, Chimei Innolux, etc., while the lens in the thick-wall products take PC and PMMA materials into account, and the requirements for the precision of the whole process control of the plasticizing unit are high. The control of black spots, impurities, silver, etc. has become the main technical problem in this market.

Features and Advantages

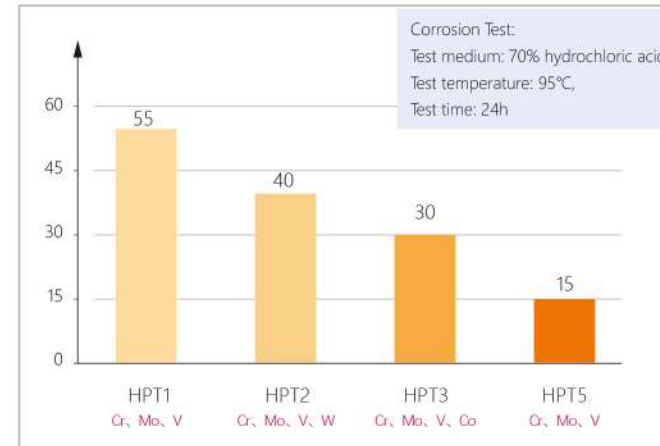
- Low shear - high pressure structure, can make heat-sensitive plastics in the high pressure heat absorption at the same time to reduce part of the surface shear heat, can be for thick-walled products for a long time to keep pressure without over-plastic yellowing phenomenon.
- Mainly small and medium-sized machine plasticizing unit to ensure the injection pressure, while taking into account the use of PC and PMMA.
- The mature hard chrome plating process can make the plasticizing screw through the roughness of Ra0.07-0.15, Huaye's unique fluid grinding process can make the solution quickly through the surface of the screw, to avoid the phenomenon of sticky material.

HPT Test Parameter Comparison

Relative wear/mud wear test



Corrosion test of relative corrosion



PVD Coated Screw

PVD TiN Coating screw

Hardness: HV1800-2200
Coating Thickness: 5-6µm.
Application: PC, PMMA ultra-thin light guide plate (LGP)

PVD CrN Coating

Hardness: HV1700-1900
Coating Thickness: 5-6µm.
Application: glass fiber, metals, Halogen-free flame retardant.

PVD AlTiN Coating

Hardness:HV2800-3300
Coating Thickness: 5-6µm
Application: fluorinated polymer (PTFE, PVDF), polyarylether (PEEK, PPS, PSU, PES, PPE, PPO) .



Application market

HK bimetallic barrel and HPT through harden screw have the advantages of high hardness, wear resistance and corrosion resistance, are widely used in aerospace parts, automotive parts, optical optoelectronics, electronic connectors, metal powder and other related fields. For the material additives, flame retardants and other modified plastics on the market, Huaye's screw & barrel has the optimal solution to meet the plasticization requirements, prolong serving life and achieve more efficient productivity.



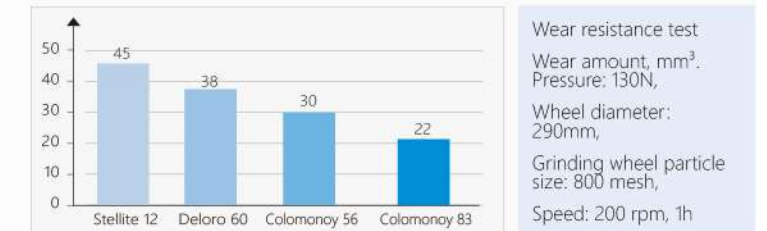
PTA Bimetallic screw



Technical Parameter

38CrMoALA, Gas nitriding and bimetallic welding
38CrMoALA, Ion nitriding, bimetallic welding and Chrome-plating
42CrMo, Ion nitriding, bimetallic welding and Chrome-plating
38CrMoAl nitrogen hardness: ≥HV900
Thickness of Chrome layer: 0.01-0.03mm
Thickness of bimetallic layer: 1.5-2.0mm
Hardness of bimetallic layer: HRC53-57(Ni-based),
HRC60-65(Ni base+tungsten carbide)
Applicable resin: It is suitable for corrosion formula, regrinding resin, calcium powder filling, additive fireproof materials, and additive plastic materials with less than 15% glass fiber.

Relative wear/mud wear test



Screw Tip Assembly (Alloy Spraying, Chrome Plating, Coating)

Technical Parameter

The outer diameter of the Screw Tip Assembly : 15mm≤ds≤300mm
Material: SKD61, HPT series, 38CrMoAL, 42CrMo
Process: coating, alloy spraying, electroplating, gas nitriding, quenching + ion nitriding
Finish ✓: Ra≤0.4 Alloy hardness: nickel-based HRC54-58 Tungsten carbide: HRC58-60
Thickness of Chrome plating layer: 0.03-0.05mm Thickness of alloy layer: 1.5-2mm



Head, Nozzle

Technical Parameter

Material: SKD61, 38CrMoAL, 42CrMo
Process: Inner bore Chrome plating, gas nitriding, quenching, inner bore coating
Type: Pneumatic needle-type shut off nozzle/hydraulic hybrid shut off nozzle/ static mixing nozzle
Filter hole diameter: 0.8mm minimally
Inner hole finish Ra ✓: 0.2≤Ra≤0.4 (special order is needed for Ra below 0.2)



Hinge Pin

Technical Parameter

Processing diameter: 16mm-400mm
Processing length: ≤1000mm
Material & processing: 42CrMo medium frequency +Chrome plating, 42CrMo ion nitriding + Chrome plating, 38CrMoALA gas nitriding, 38CrMoALA ion nitriding + Chrome plating
Finish ✓: Ra≤0.2
Performance advantage: super wear-resistant



Special screws

High-efficient Color Mixing Series

Brief Introduction

The high-efficient color mixing special screw is designed to feature the simplicity, economical efficiency and compatibility of a variety of plastics of common three sectional screw. According to the solid-liquid separation of the melt tank in the compression zone, a melt pressure difference is formed to make the screw with optimal feeding, melting and homogenization, which also solves the difficulty in refilling and washing of the resin under multiple working conditions, this is company's breakthrough achievements after many years of research and development.

Features and Advantages

- Solid and liquid separation in the melt tank of the compression zone; the high- and low-pressure areas, which effectively avoids the pressure accumulation of the conventional structure and causes the shear transition to be linear, playing a role in preventing temperature rise.
- Color additives and resin fillers are evenly dispersed and mixed in the product.
- Excellent product precision and surface treatment increases the speed of refilling and washing, and reduces the temperature rise of shear-sensitive plastics.

Product and Application Markets

Civil industry products based on PP, ABS, HDPE
Auto parts industry (bumper, center console)
Home appliance industry, logistics, packaging field



PVC Special Series

Brief Introduction

As a typical representative of non-crystalline materials, PVC plastic has poor fluidity and is easily decomposed. Stabilizers, calcium carbonate, etc. are often added as fillers in products, which are abrasive to the barrel screws. During the molding process, some PVC resins will release acidic corrosive gas, so the plasticized parts used for molding must have certain corrosion resistance.

Features and Advantages

- The low-shear structure prevents excessive heat concentration and further excessive shearing during the pre-molding process, effectively preventing product black streaks.
- The use of fully automatic plasma surfacing and ion-nitriding electroplating technology has greatly improved the corrosion resistance and wear resistance.

Product and Application Markets

Building materials (plastic pipe fittings)
Medical industry
Toy
Shoe materials, product packaging and other fields



PET Special Series

Brief Introduction

PET resin has poor thermal stability, and is easy to hydrolyze. It is often added pigments such as color oil and color masterbatch, thus is easy to produce excess formaldehyde gas that will acidize during the injection molding, which is typical in the bottle preform molding industry. With the popularity of lean production, the screw structure tends to low-shear - high mixing. After years of research and development and practical analysis, the single melt tank is divided into high- and low-pressure areas to form a wavy structure, in substitution of solid and liquid tanks, so that the melt will shunt itself in this area without hindering the travel time, thus achieving the best energy-efficiency ratio.

Features and Advantages

- Color additives and resin fillers are evenly dispersed and mixed in the product. It can discharge the water molecules between the pellets in time during the molding process to avoid the existence of air in the products.
- The plasticization efficiency is improved by 35-50% compared with the conventional structure, and the application range is extended to the injection blow molding and extrusion blow molding industries.

Product and Application Markets

Preform
Auto parts
Electronic appliances
Blow molding



Packaging Products Series

Brief Introduction

Customers of packaging products will require short molding cycle and high plasticization efficiency. Huaye has proven design in this application. The screw is designed in a separate type, with deep screw groove and small compression ratio.

Features and Advantages

- The screw has deep grooves and high plasticizing efficiency.
- The screw has a separate structure, which contributes to the complete melting of the plastic, high exhaust performance and good plasticizing effect of the product.
- The screw can be used for high speed injection moulding.

Product and Application Markets

Food
Alcohol, Beverages
Medicine
Cosmetics



Screw and Barrel For Extrusion Machine



Technical Parameter

Screw out diameter d: 15mm≤d≤300mm

Screw length L: L≤10000mm

Nitriding hardness: HV≥900

After grinding 0.20mm, HRC ≥760 (38CrMoALA);

Nitrided brittleness: ≤2 level

Surface finish Ra: Ra0.4μm

Straightness: 0.015mm

Thickness of bimetallic layer: 1.5-2.0mm

Hardness of bimetallic layer: HRC56-60

Thickness of chrome plating layer: 0.03-0.05mm

Screw and Barrel For Extrusion Machine

- Screw 42CrMo Ion nitriding and Chrome-plating
- Screw 42CrMo Ion nitriding, bimetallic welding and Chrome-plating
- Screw 38CrMoAlA Low pressure nitriding
- Screw 38CrMoAlA Ion nitriding and Chrome-plating
- Screw 38CrMoAlA Ion nitriding, bimetallic welding and Chrome-plating
- Barrel 38CrMoAl Nitriding
- Barrel HK1 Bimetallic Barrel
- Barrel 38CrMoAl Nitriding
- Barrel 38CrMoAl Nitriding
- Barrel HK1 Bimetallic Barrel



Screw and Barrel For Rubber Machine

- Screw 38CrMoAlA Low pressure nitriding
- Screw 38CrMoAlA Ion nitriding and Chrome-plating
- Screw 38CrMoAlA Ion nitriding, bimetallic welding
- Barrel 38CrMoAl Nitriding
- Barrel 38CrMoAl Nitriding
- Barrel HK1 Bimetallic Barrel



Application market

It is suitable for ABS sheet, PVC soft and hard pipe, cable, blown film, cast film, blow molding, profile, pipe and other products.

Application market

Tires, shoe materials, wires and cables, pipes, seals, etc.

Parallel Twin-screw&Barrel For Extrusion Machine

Technical Parameter

Product category: corotating bon-screw & barrel, counter-rotating parallel twin-screw & barrel

Surface processing technology: nitriding, alloy spraying, chrome plating, etc.

Nitriding hardness HV: 860-980

Straightness: 0.05mm Surface finish Ra \checkmark : Ras0.2

| Specification | ϕ 52/25 | ϕ 60/25 | ϕ 75/36 | ϕ 90/36 |
|---------------|---------------|---------------|---------------|---------------|
| | ϕ 107/28 | ϕ 120/26 | ϕ 130/28 | ϕ 135/28 |
| | | | | ϕ 160/33 |



Screw

- Produced with High-quality 38CrMoALA or 1.8550 forging material, with quenching and tempering to HV290-320, flight surface made with nickel alloy plasma welding, alloy thickness \geq 1.7mm, hardness \geq HRC58, nitriding by NITREX process after finishing machine, nitriding depth: 0.5-0.7mm, hardness: HV860-980, grade 2 metallographic structure or above.

Barrel

- The barrel is made of high-quality 38CrMoALA forging material, after quenching and tempering to HB290-320, nitriding with NITREX furnace process after finishing machine, the nitriding depth is 0.5-0.7 mm, the hardness is HV860-980, with grade 2 metallographic structure or above.
- The barrel is designed as "detachable", 42CrMo barrel is quenched and tempered to hardness HB290-320, inlaid with German HPT1 alloy sleeve. The thickness of the alloy is more than 7 mm, the hardness is HRC58-62, the shell of the barrel can be used, and the inner alloy sleeve can be replaced after wear out.



Application market

- It is suitable for extrusion of PVC pipes, profiles and sheet foam products.
- It is suitable for CPVC pipe extrusion.



Conical Twin-screw&Barrel For Extrusion Machine

Technical Parameter

Product category: corotating bon-screw & barrel, counter-rotating parallel twin-screw & barrel

Surface processing technology: nitriding, alloy spraying, chrome plating, etc.

Nitriding hardness HV: 860-980

Straightness: 0.05mm Surface finish Ra \checkmark : Ras0.2

| Specification | ϕ 45/97 | ϕ 51/105 | ϕ 55/113 | ϕ 65/132 |
|---------------|---------------|---------------|---------------|----------------|
| | ϕ 80/155 | ϕ 92/188 | ϕ 95/191 | ϕ 115/225 |



Screw

- Screw is made of high-quality 38CrMoALA or 1.8550 forging material, with quenching and tempering to HV290-320, flight surface made with nickel alloy plasma welding, alloy thickness \geq 1.7mm, hardness: HRC58, nitriding by NITREX process after finishing machine, nitriding depth: 0.5-0.7mm, hardness: HV860-980, grade 2 metallographic structure or above.

Barrel

- The barrel is designed as "detachable", 42CrMo barrel is quenched and tempered to hardness HB290-320, inlaid with German HPT1 alloy sleeve. The thickness of the alloy is more than 7 mm, the hardness is HRC58-62, the shell of the barrel can be used, and the inner alloy sleeve can be replaced after wear out.



Application market

- It is suitable for extrusion of PVC pipes, profiles and sheet foam products.
- It is suitable for extrusion of PE, PP bellows.



Tie Bar

Tiebar of two-platen injection moulding machine

It is mainly used for medium and large tonnage plastic injection moulding machines over 500T, which adjusts the platen in-between distance through the ring groove



Technical Parameter

Surface processing technology: nitriding, post-oxidation treatment, Chrome plating

Gas nitriding process: nitriding depth: more than 0.2mm, surface hardness: HV650~HV750

Chrome plating process: thickness of the plating layer: 0.02MM~0.08MM, hardness: above HV650

Processing dimensions: outer diameter: 150mm~600mm, length: 2500mm~10000mm

Surface finish Ra \checkmark : Ra \leq 0.4

Plasma Nitrocarburizing and Post-Oxidation tie bar



Technical Parameter

Processing technology: Plasma Nitrocarburizing and Post-Oxidation

Nitriding depth: 0.2mm Surface hardness: HV650~HV700

Processing dimensions: outer diameter: 50MM~600MM, length: 1000MM~8000MM

Advantages: clean and environmentally friendly, low surface friction coefficient, less deformation.

Nut

Material (such as 45#, 40Cr, 42CrMo, castings) will be choosed according customers' needs; heat treatment process could be: blackening, galvanizing, salt bath nitriding, gas nitriding. Currently, the maximum outer diameter of nuts can reach ϕ 1600mm.



Piston Rod

Material aterials (such as 45#, 40Cr, 42CrMo, etc.) can be selected according customers' needs, heat treatment process could be surface chrome plating and intermediate frequency.

