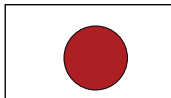









## DELIVERY COUNTRIES:


-  JAPAN
-  THAILAND
-  INDONESIA
-  TURKIYE
-  BRAZIL
-  MEXICO
-  GERMANY

# PRODUCT CATALOG

THE CORE TECHNOLOGY OF  
SCREWS AND CYLINDERS

## GET IN TOUCH

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# SCREW CYLINDER INJECTION MOLDING MACHINE

## Table Of Content



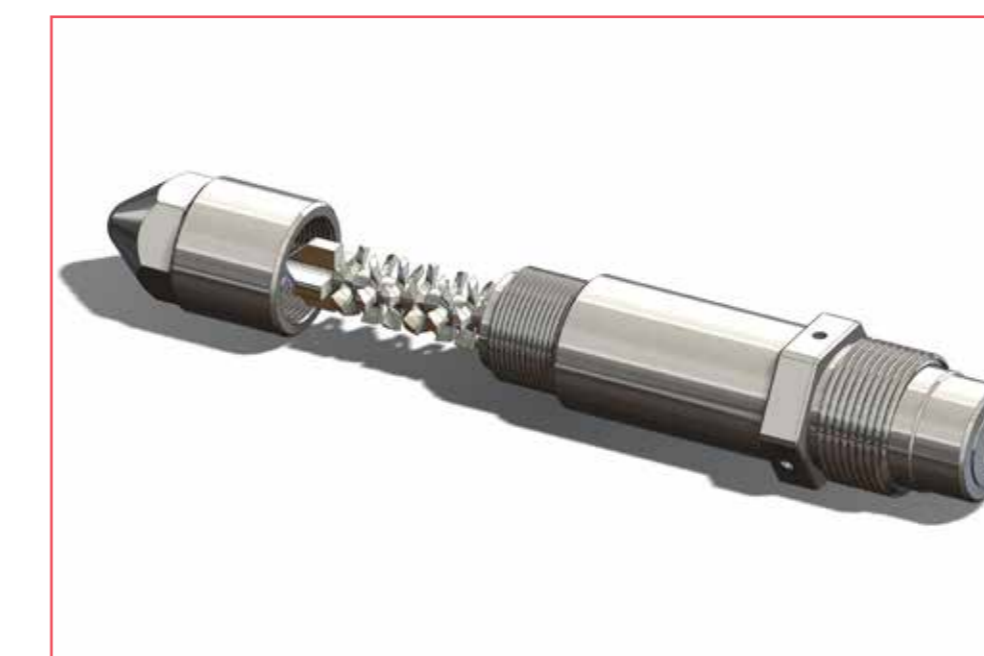
### Screw

High-quality screws employ advanced technologies such as Bimetallic Screw, PTA Welding( Plasma Transferred Arc ), HVOF spray coating ( High Velocity Liquid Fuel ), and nitrided screws, enhancing the performance and durability of plastic molding machines in demanding environments



### Cylinder

By employing advanced technologies such as Centrifugal casting cylinders and Sintered cylinder barrel, our products enhance performance and ensure product quality during the plastic molding process



### Nozzle

Nozzle with diverse designs, suitable for all types of customer requirements. Shut-off nozzle, Mixing nozzle...



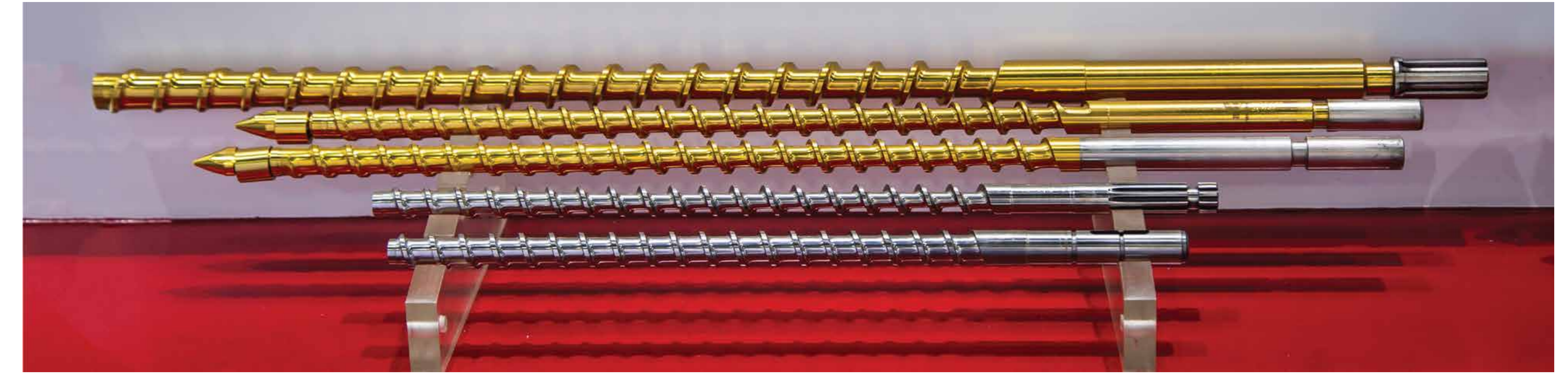
### Screw tip

TiN and TiAlN coating technology helps the screw tip set increase hardness and abrasion resistance, reduce noise and increase the life of the plastic injection machine.



# SCREW

INJECTION MOLDING MACHINE



## Specification

Minimum diameter : Ø14mm  
 Maximum diameter : Ø150mm  
 Minimum Screw length : 500mmL  
 Maximum Screw length : 4900mmL  
 Production capacity : 1200 sets/ year



## 3D coating by laser fiber

Melting alloy powder by laser to coat on the surface of the component, covering the working area of the component by a layer of alloy powder with strength increased.

## Bimetallic Screw

The product is heat treated in Vacuum heat treatment furnace, so it will prevent the surface of metal from being reacted with elements in the air: oxidation, carburization, decarburization.

Advantages of vacuum heat treatment include improved material strength, high consistency and low contamination.



## PTA Welding ( Plasma Transferred Arc )

The screw flight top is welded by PTA welding, this method makes the weld powder layer having better mechanical properties than the base material and it will increase the abrasion and corrosion resistance of the screw.

We use different weld powder for each type of plastic because they have different additives, so the ability of abrasion and corrosion is different.



## HVOF spray coating ( High Velocity Liquid Fuel )

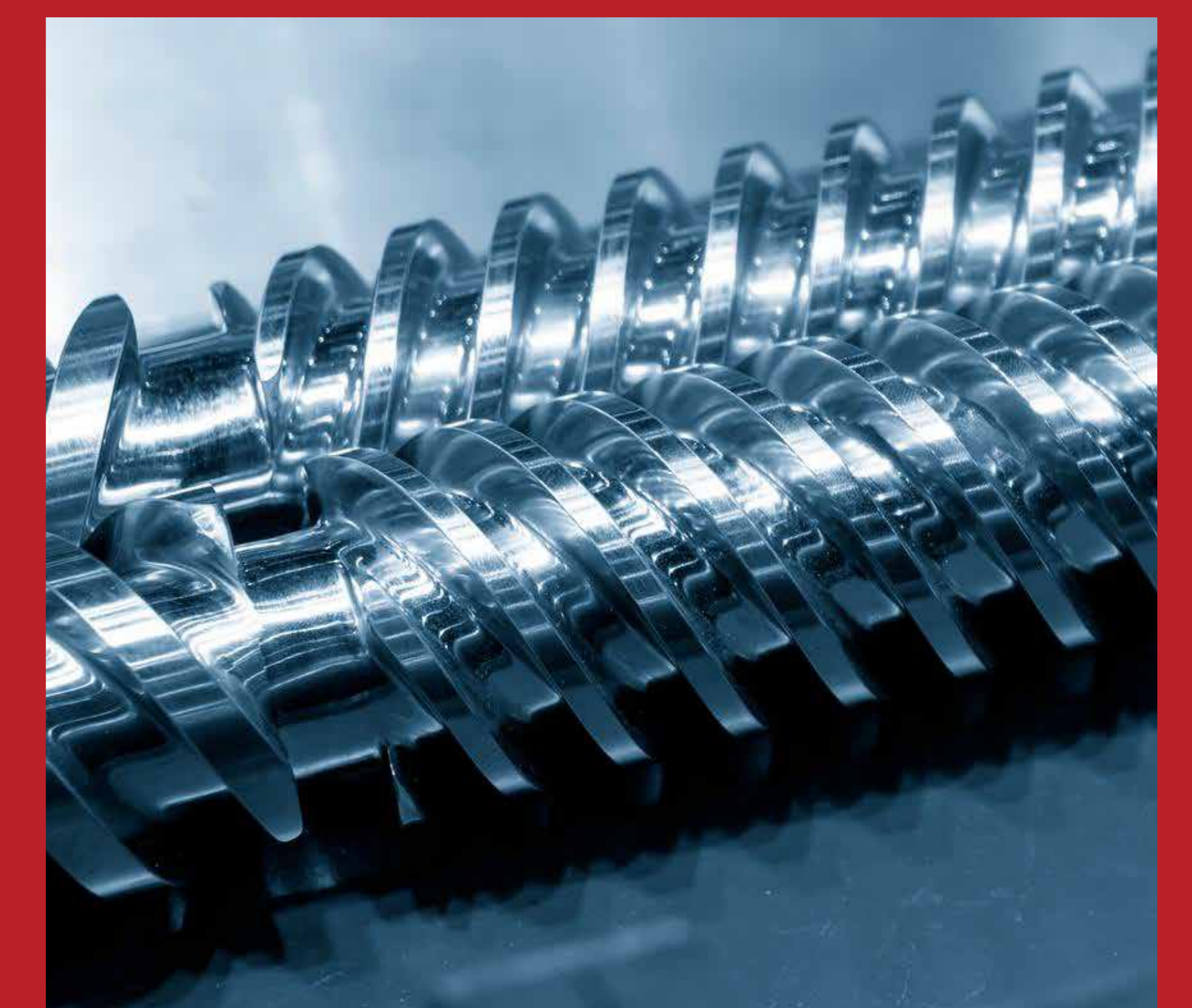
HP/HVOF bimetallic spray coating is a thermal spray technology used to improve or enhance screw surface properties such as corrosion resistance, high temperature oxidation resistance, thermal insulation, and thermal conductivity, wear-resistant, prolonging product life.

The alloy powder is melted and sprayed at high speed (700-1500mm/s), creating a coating on the surface of steel, with high hardness, better corrosion and abrasion resistance than the base material.



## Sintering Screw: Hot Isostatic Press (Only used for small part)

Hot isostatic pressing (HIP) is a manufacturing process, used to reduce the porosity of metals and increase the density of many materials. This improves the material's strength and workability. Due to the high purity of the material and the characteristics can be selected through the composition of the metal powder, so it's the best technology to deal with plastic material with halogen-free fire retardant.



# CYLINDER

INJECTION MOLDING MACHINE



With more than 10 years of experience in the technical plastics industry, we are proud to have successfully provided screw cylinder solutions to hundreds of domestic and foreign partners.

To meet special production requirements for customers, we have the ability to design and produce specifically for each product according to the different uses of the product.



## *Sintered cylinder barrel*

Using alloy tubes made by sintering technology (Hot Isostatic Press) to press into the barrel. Because the characteristics of the sintered material are much better than conventional ones, so this type of cylinder can anti-corrosion and anti-abasion very effectively.



## *Centrifugal casting*

In this method , we put alloy powder into the cylinder, then heat the whole cylinder and turn the cylinder round very fast to make a coating inside of it by centrifugal force.

For different plastics we use different alloy coatings. Especially for plastic material with Halogen-Free fire retardant, ASG uses the alloy that are extremely anti-corrosion and anti-abrasion, significantly prolonging the life of the cylinder.

# NOZZLE



## INJECTION MOLDING MACHINE

### Shut-off nozzle

Shut-off nozzles differ from open nozzles because of their closable melt channel. Shut-off nozzles are used to avoid drooling of the melt and stringing, as well as to feed with a retracted nozzle. With many years of design experience, ASG will advise customers and provide the most optimal design for each type of plastic injection machine. Shut-off nozzles can be self-controlled or externally controlled.

1. Self-controlled: The needle keeps the nozzle orifice closed by spring pressure. When the injection pressure increases, the melt will push back on the needle head and try to open the nozzle. Once the melt inside the nozzle reaches a certain amount of pressure, it will succeed in pushing the needle back against the spring. Therefore, there must be a minimum pressure for the opening process to overcome the force of the spring. Once the nozzle opens, the pressure will drop again and the spring-operated needle will close the nozzle tip orifice.

2. Externally controlled: The nozzle is opened by external force, independent of the melt-pressure. The shut-off nozzle's actuation is hydraulically or pneumatically driven. Externally actuated shut-off nozzles can have different ways of closing the melt stream. Due to the fact that they operate independently of melt-pressure, they can be used for a range of applications such as melt pre-compression, physical and chemical foaming and high-speed injection molding.



Normal Nozzle



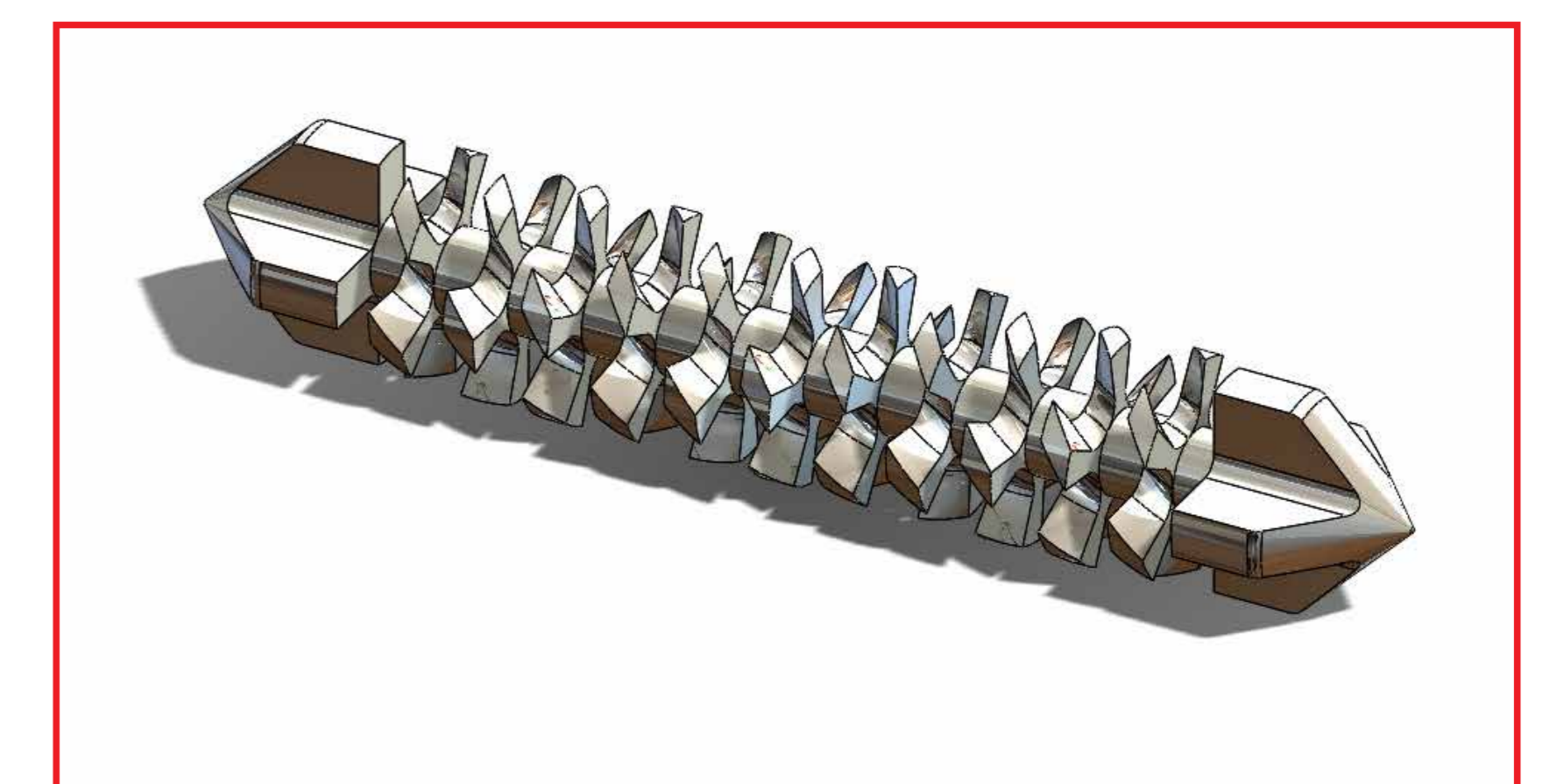
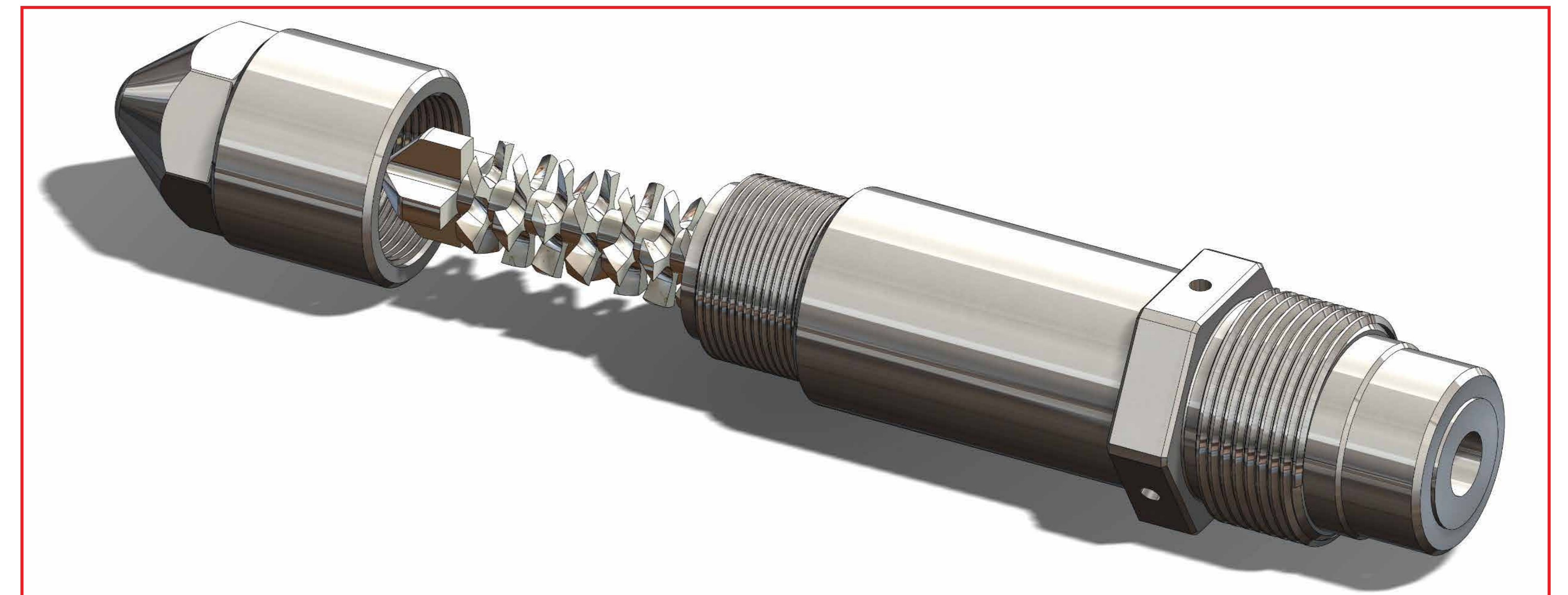
Shut-off Nozzle



Shut-off Nozzle

### Mixing nozzle

To solve the problem of uneven color plastic mixing and color spreading, ASG offers a solution using a mixing nozzle. Our mixing nozzles are usually cleaned without dismantling. Cleaning is carried out by purging with the new polymer. Because of the optimum nozzle and mixer geometry, there are no deposits or dead zones. Therefore, color or material changes are completed after just a few injection molding cycles. This effectively prevents unnecessary material loss and additional cleaning effort.



# SCREW TIP

INJECTION MOLDING MACHINE



## TiAlN Coating

TiAlN  
BASE

↑ 2 - 4μm

Color: Purple black

Working temperature: Up to 800°C

Characteristics and applications

- Resistance to chemical corrosion
  - + Used for fireproof plastics such as PEEK, LCP, PPS, PA9T...
- High hardness: 2000 ~ 3000 HV (65 HRC ~ 820 HV)
  - + Good abrasion resistance, used for plastics > 40% GF

## TiN Coating

TiN  
BASE

↑ 2 - 4μm

Color: Yellow

Working temperature: Up to 600°C

Characteristics and applications

- Anti-adhesion ability
  - + Application for producing products with clear colors like lenses
  - + Shorten the time to change the type of plastic produced
- High hardness: 1800 ~ 2200 HV (65 HRC ~ 820 HV)
  - + Good abrasion resistance



## Mixing Screw Tip

With many years of experience in design, ASG's mixing screw tip will optimally support the mixing of colored plastics and additives. Screw Tip assembly normally wear faster than screw, which require higher quality material and treatment to ensure similar function time of screw, we offer material in Bimetallic, Through Hardened, sintered material and all kinds of surface treatment like 3D coating, PVD coatings.

