BIMETALLIC SINGLE、TWIN SCREW AND BARREL

－FOR WW EKOCHEM POLAND

Characteristic Of Bimetallic Screw And Barrel

1/The plastics industry and the technical of injection and extrusion is developing continuously, many kinds of plastic material is published under different functions. The screws and barrels' work condition is be bad, decaying and wearing away is the main reasons.

2/we made the screw surface coating or welded inlay for flight having super wear-resistant and corrosion-resistant to increase the life time for screw wear, corrossion, high temperature oxidating. Bimetallic screw and barrel is suitable for high capacity glass fibre filling material extruding and injecting.

3/For its excellent anti-erosion and anti-abrasion characters, the bimetallic screw and barrels are widely used in the extrusion lines. With HVOF high speed spraying equipment, spray a layer of metal melt on the screw surface; a melt-cast method is adopted to get bimetallic barrel.

4/Bimetallic barrel and screw set-with 9.5% tungsten carbide composition included in the barrel's bimetallic content, coupled with a screw whose flights are hardened through PTA Bimetallic alloy treatment process.

Performance of the bimetallic

Property	**Primary compostion**	**Hardness (HRc)**	**Tensile strength (kgf/mm^2)**	**Elastic coefficient (kgf/mm^2)**	**Thermal expansion coefficient RT-400℃(1/℃)**
Abrasion-resistance and anti-corrosion	Ni+Cr+Wc +Co+B	55-65	110	20,000	$12.0x10^{-6}$

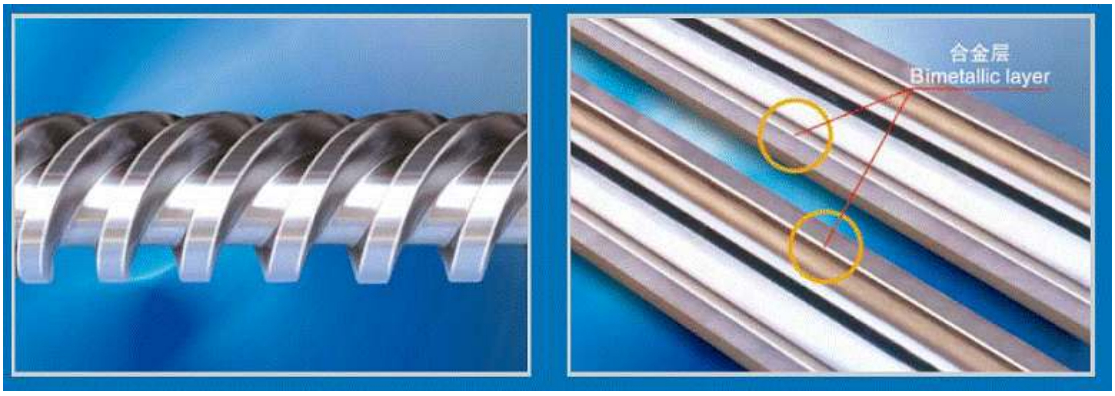
Press for making the bimetallic

For bimetallic screw:

We use the alloy powder,with HVOF high speed spraying equipment, spray a layer of metal melt on the screw surface.

Alloy coating's material is Stellite alloy

Leadscrew's material is 38CrMoALA

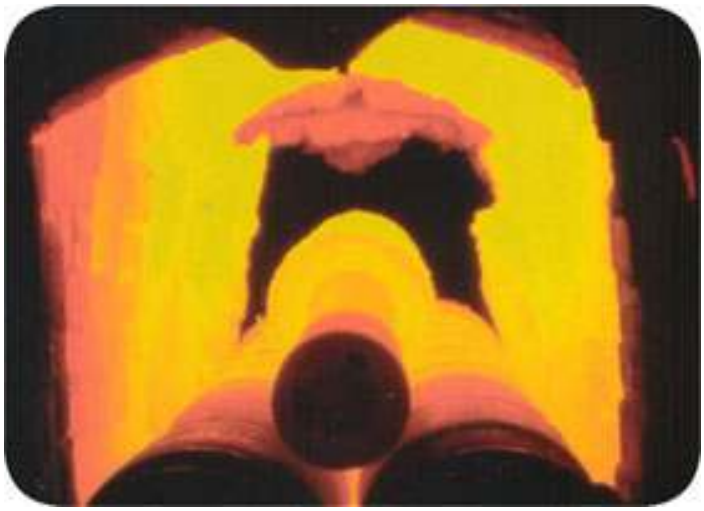


Specification for bimetallic screw:

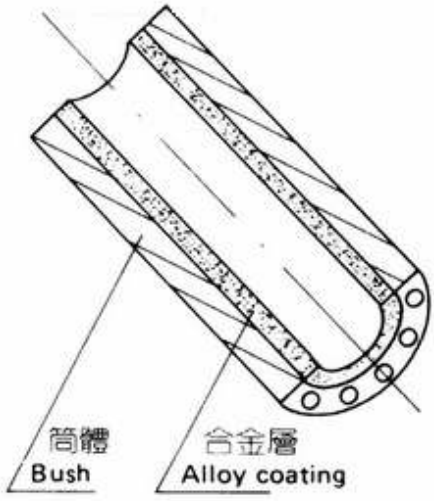
Main material for screw	**Tensile strength (kgf/mm^2)**	**Elastic coefficient (kgf/mm^2)**	**Elongation (%)**	**Weariness (kgf/mm^2)**	**Hardness (HRc)**
38CrMoALA	90	19000	14	30.2	300
Bimetllic material for screw	**Tensile strength (kgf/mm^2)**	**Elastic coefficient (kgf/mm^2)**	**Elongation (%)**	**Weariness (kgf/mm^2)**	**Hardness (HRc)**
Stellite alloy	90	19000	2.5	---	60

For bimetallic barrel:

we have got the ways to make the bimetallic inside of the barrel. The alloy powder put into the barrel and make the alloy melt inside of the barrel under high temperature. Using this way to make the bimetallic barrel, the barrel will have got the compelete bimatellic inside of the barrel 2-3mm thickness.



1. 100% complete bimetallic



Alloy coating's material is Stellite alloy

Bush's material is 38CrMoALA

This kind of bimetallic way, from the top to the end of the barrel is all of the bimetallic. But the cost is very high and need the long time for making.

2. Make the strips inside of the barrel

This kind of the way is same as to make the screw bimatillic.

Make the channel inside of the barrel, then make the alloy powder inside of the channel, then melt the alloy to make the bimetallic strips.

This is the screw channel,

the same way to make the

channel inside the barrel to make the

bimetallic strips.