

# Oilless Wear Plate [Overview]

## Slide Components



Sankyo's wear plates for press tooling are manufactured with an appropriate pattern of embedded special solid lubricant on metal base plates.

Its function is that the base plate supports load and that the embedded special solid lubricant provides self-lubrication. It provides excellent durability without lubrication under harsh conditions.

### ■ Features

- (1) The wear plates can be used without lubrication. A lubricating system can be completely abolished, assembly time can be reduced, oil pollution can be eliminated, environment can be maintained clean and costs can be reduced.
- (2) The wear plates are excellent in "friction resistance" and "self-lubrication". There is no "scoring" or "seizure" under harsh conditions.
- (3) Various standard part sizes are available, considering design standard of customer.

### ■ Types of Wear Plates

Material		Thickness	Catalog No.	Features	Page
Base Metal	Oiless Type				
FC250	Graphite	20	<b>SESF</b>	Excellent sliding performance at low load and medium speed.	<b>P.103</b>
			<b>SESFT</b>		<b>P.103</b>
SS400 Base plate	Copper powder sintering	20	<b>SOX</b>	Excellent sliding performance at low/medium load and medium speed. With the sintered layer using copper based powder and graphite, occurrence of seizure is very limited.	<b>P.105</b>
			<b>SOXT</b>		<b>P.105</b>
S45C Base plate		10	<b>TWX</b>		<b>P.109</b>
			<b>TWXT</b>		<b>P.111</b>
Copper alloy	Graphite	20	<b>SESW</b>	Excellent sliding performance at high load and low speed.	<b>P.113</b>
			<b>SESWT</b>		<b>P.113</b>
		10	<b>TWP</b>	Excellent in load resistance and wear resistance. Good performance is shown in reciprocating and frequent starts and stops.	<b>P.115</b>
			<b>TWPT</b>		<b>P.115</b>
	5	<b>UWP</b>		<b>P.117</b>	
S45C	Graphite	20	<b>FRP</b>	Since the surface hardness is HRC40 or more, it is excellent in wear resistance.	<b>P.119</b>
SKS3			<b>TSP</b>	Since the surface hardness is HRC58 or more, it is exceptional in wear resistance.	<b>P.121</b>

### ■ Sliding Characteristics (Lubricating condition : No lubrication)

Wear Plate	Mating Material	Hardened Surface with HRC25 or More			Heat Treated Steel or FC Casting Less than HRC25			Raw Material (SS400)		
		P surface pressure N/mm <sup>2</sup>	V sliding speed m/min	PV value	P surface pressure N/mm <sup>2</sup>	V sliding speed m/min	PV value	P surface pressure N/mm <sup>2</sup>	V sliding speed m/min	PV value
FC Type		5	10	30	5	10	30	5	10	30
Sintered Type		50	30	100	25	30	60	25	30	50
Bronze Type		100	15	150	50	15	150	25	15	150

PV value (N/mm<sup>2</sup>·m/min)

⚠ Values in the table are when the ambient temperature is 100°C or less.

### ■ For Operation

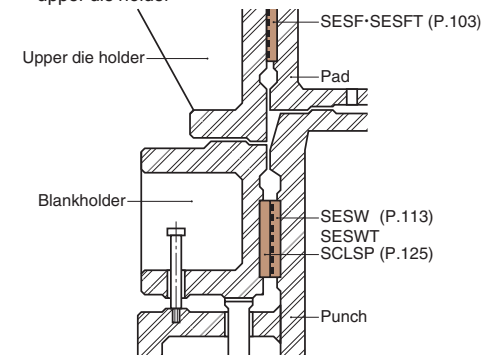
- (1) The sliding surface becomes black or black gray after operation due to the film of special solid lubricant. This is normal, do not remove film by wiping.
- (2) When dies are in use, make sure that there is no foreign matter such as metal chips or dirt on the sliding surface.
- (3) Apply a small amount of lubricant for initial lubrication in die spotting.
- (4) When a die is reused after storage for a long time, the sliding surface may have rust. Clean the sliding surface and apply lubricant to the surface.
- (5) If products are additionally machined, do not damage the surface. Chamfer corners so that sharp edges or burrs are not present.
- (6) There may be insufficient fastening force with the bolts due to an unbalanced load, which may result in failure of the bolts. It is highly recommended that the wear plate is backed up.

### ■ WHAT NEEDS TO BE TAKEN INTO CONSIDERATION FOR ADDITIONAL MACHINING ON SINTERED PLATES:

- (1) When adjusting the thickness of the plate, please machine on the back surface only.
- (2) As the sintered surface is weaker against shocks than casted steel surface, please be mindful so sintered surface does not get damaged.
- (3) If the sintered surface must be machined, it should be done within a Ra1.6 surface finish as the life of this product depends on the surface finish. Also, be mindful to inspect the surface so there are no sharp edges or burrs at the corners.
- (4) Always make sure that there are no metal chips and/or debris on the sintered surface after machining the product.
- (5) There will always be small porosity in the sintered surface, even after the product gets well-machined, as it's mentioned in the "Product Quality" section. Please consult us regarding our quality standard with the porosity level of the sintered surface of this product. If the size of the porosity you are experiencing is within the standard, there should not be any problems. If you are not sure of the level of the porosity you are experiencing, please contact us.
- (6) Lubricant is present in the sintered material. If lubricant is lost due to machining, add lubricant to the product. Addition of lubricant should be done with No. 32 industrial lubricant for 24 hours prior to use.
- (7) Please put some lithium-based grease on the sliding surface during assembly or after maintenance for initial start-up.

### ■ Application Example

1.Example of use for sliding surfaces between punch and blankholder, and between pad and upper die holder



A set of SESW and SCLSP can achieve a high PV value with good durability.

2.Example used as heel blocks when guide posts are used.

