

DK Conveyor Chain Sprocket

To ensure that a chain conveyor will fully function, correct matching of conveyor chain and sprockets is necessary. For smooth engagement between the chain and sprockets and accurate feeding of the chain, note the following points for the designing of sprockets.

Number of teeth

Generally, smoother and more durable operation is ensured with larger number of teeth and sprockets, so ten or more teeth are recommended.

If the conveyance speed is extremely low (10 m/min or less) under a uniform load, the number of teeth can be decreased down to six.

Tooth form

For accurate and smooth operation of chain conveyors, two types of tooth forms are used depending on the sprocket size: for small sprockets (11 or less teeth) and large sprockets (12 or more teeth).

Processing of tooth form

The tooth form is usually processed by precision gas cutting. When using chains at high speed or at high stop accuracy, etc., specify machined finishing. If you need wear resistance, induction hardening of teeth is recommended.

Material

Name	Description	Applicable conveyor
Welded sheet steel	(Hub) Rolled steel for general structural purposes (SS400)	Continuous flow conveyor, bucket elevator, coil conveyor, pan conveyor, apron conveyor, dust conveyor (roller chain type) etc.
	(Teeth) Carbon steel for machine structural purposes (S43C or S45C)	
Cast steel	Cast high tensile carbon steel (SCC3 etc.)	Large bucket elevator, coil conveyor, dust conveyor (block chain type) etc.
	Cast low manganese steel (SCMn3 etc.)	

- Hardening of teeth : All the driving sprockets are induction-hardened. Driven sprockets are treated to suit respective applications.
- Comparison: Use cast iron sprockets for server service conditions like heavy load and high-temperature. Please note that the cost of cast iron sprockets is higher than the other type, and that the delivery takes longer.

Chemical composition of materials (quoted from JIS)

Material	C	Si	Mn	P	S
SS400	—	—	—	0.050 or less	0.050 or less
S43C	0.40~0.46	0.15~0.35	0.60~0.90	0.030 or less	0.035 or less
S45C	0.42~0.48	0.15~0.35	0.60~0.90	0.030 or less	0.035 or less
SCC3	0.30~0.40	0.30~0.60	0.50~0.80	0.04 or less	0.04 or less
SCMn3	0.30~0.40	0.30~0.60	1.00~1.60	0.04 or less	0.04 or less

Hub dimensions and machining of shaft hole and key slot

Sprocket standard hub dimensions for shaft diameters are listed on P321.

When a plurality of sprockets are used on the same phase, the key slots of the sprockets should be aligned. Specify this when ordering.

The sprockets can be delivered with the shaft holes as prepared. When you finish the shaft holes, refer to the bottoms of teeth.

Shaft diameter and hub dimensions

For "Shaft Diameter and Hub Dimensions", see P321.

[Welded sheet steel sprocket]



[Cast steel sprockets]



[Indication]

