

HKK Chain, with its cold-forged, solid bushings, solid rollers, and specially treated pins and bushings provides a unique advantage over conventional chains. HKK's cold forging method creates a mirror-like finish, allowing all kinetic surfaces to fit together precisely. The pins and bushings are then specially treated to provide less friction and higher corrosion resistance. The result is a smoother running, longer lasting chain with no initial stretch, and better corrosion resistance. Solid rollers and solid bushings are only two of HKK's advanced features.

SOLID BUSHINGS: HKK's cold-forged solid bushings retain their cylindrical inside and outside walls even after side plates are pressed on, resulting in better pin bushing contact for longer chain life (A). Conventional split bushings deform into a barrel shape when side plates are pressed on, leaving only small contact areas between pins and split bushings (B). These small contact areas build more friction and heat, that causes premature wear. Unlike split bushings, HKK solid bushings are shot peened for higher fatigue strength.

SOLID ROLLERS: HKK's cold-forged solid rollers also have extremely cylindrical walls both inside and out for better bushing-roller and roller-sprocket contact. Unlike split rollers, HKK solid rollers are shot peened for greater fatigue strength.

TREATED PINS & BUSHINGS: HKK pins and bushings are specially treated to reduce friction and corrosion in the critical bearing area of the pin and bushings. This treatment will also help increase chain life while running and prevent corrosion during shut down.

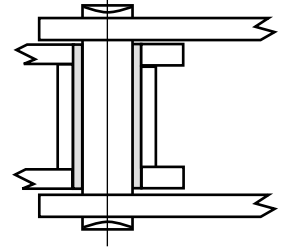
LINK PLATES: HKK link plate center heights are increased for greater fatigue strength and shock resistance (C). The holes of the link plate are double punched. This process provides true 90-degree holes for exact pin-plate, bushing-plate alignment. HKK link plates are also shot peened for greater fatigue strength.

PINS: HKK pins are specially designed for each size of chain. Exclusively selected steel and superior heat treatment provides strength and toughness for higher wear resistance and load capacity. Larger size chain pins are ground after heat treatment to ensure straightness.

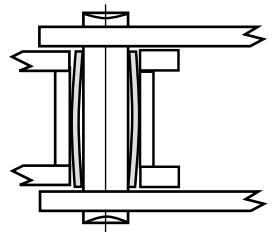
LUBRICATION: HKK chains are pre-lubricated by a hot dipping process that ensures total lubrication of all component parts to prolong chain life.

HEAT TREATMENT: Proper heat treatment of all chain component parts is essential for long chain life. HKK's heat treatment process is done with a technologically advanced furnace specially designed for HKK. Consistently meeting HKK's highest standards of heat treatment, HKK chain has been trusted to be dependable, consistent, and durable.

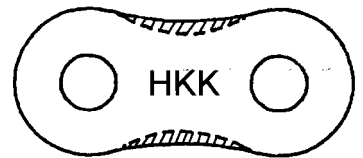
Solid Bushing (A)



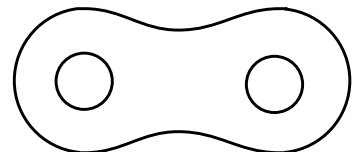
Split Bushing (B)



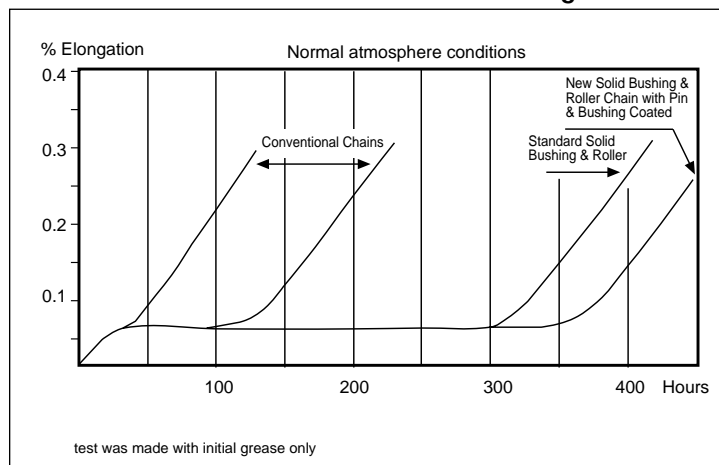
HKK (C)

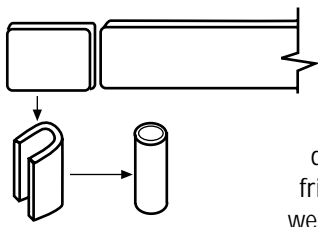


Conventional



HKK Solid Bushing, Solid Roller Chain With New Treated Pin & Bushings

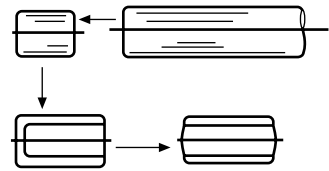




Over the past 85 years there have been very few changes in the design of roller chain. Roller chain has been constructed with side plates, pins, bushings, and rollers. Bushings and rollers have been manufactured by stamping flat steel and curling it into shape. The curled, split bushing tends to deform to a barrel shape when it is assembled with the roller link plates. This deformity results in uneven contact between the pin and bushing. This uneven contact creates friction and wear in the live-bearing area between the pin and bushing. Chain elongates and wears out quickly due to this pin-bushing wear.

Conventional Split Bushing

HKK's solid bushings and solid rollers are cold-forged from steel rod. This cold-forming process allows us to design bushings and rollers that hold a totally cylindrical inside diameter after being assembled into the side plates. The result is complete pin bushing contact, which minimizes elongation caused by friction and uneven wear.



HKK Solid Bushing

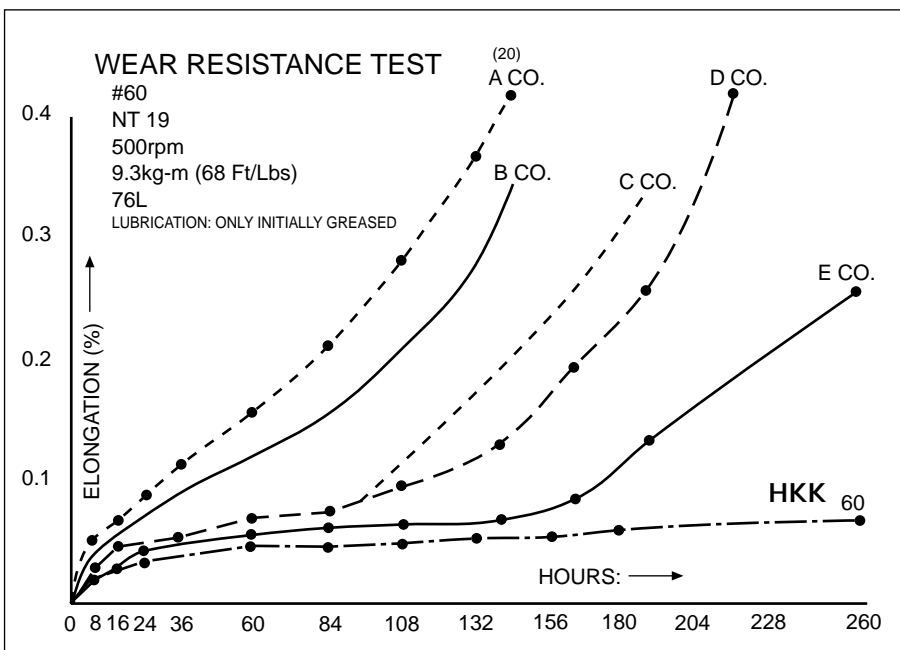
To combat the effects of heavy loads, HKK assembles its roller links with cold-forged solid rollers. Manufactured with the same precision as our solid bushings, the solid rollers also contribute to extended chain life.

This revolutionary cold-forging process results in finely finished inside surfaces, while allowing outside surfaces to be shot-peened for greater fatigue strength. This shot peening process is not possible on split bushings and rollers. Cold-forging also works with the molecular structure (Grain) of the steel running lengthwise in the rollers and bushings thereby increasing fatigue resistance.

HKK cold-forged solid bushing / solid roller chain retains lubrication much longer than standard curled bushing chain. There is less lubricant burn-off because there is less friction and therefore less heat created between the pin and bushing.

In tests conducted at our factory our solid bushing solid roller chain lasted up to 3 times longer than conventional split bushing chains.

HKK offers this cold-forged solid bushing and solid roller advantage as standard on all our ANSI standard transmission and conveyor series, carbon steel and nickel-plated chains. Heavy chains, and nickel-plated chains, and most British standard metric chains also come standard with solid bushings and solid rollers.



HKK stainless steel chain is manufactured with solid rollers. This unique feature minimizes roller distortion under heavy loads. Solid rollers also prevent any foreign matter from building up under the rollers, thereby avoiding rollers splitting and falling off as with conventional split rollers.

HKK's research and development department is constantly searching for new ideas to increase roller chain life. Many new products are currently being tested and supplied. Current research includes corrosion resistance and lube free chains as well as trying to obtain greater chain strength. HKK also specializes in working with new and problem applications.