

2-3-3 DID[®] DHA Chain

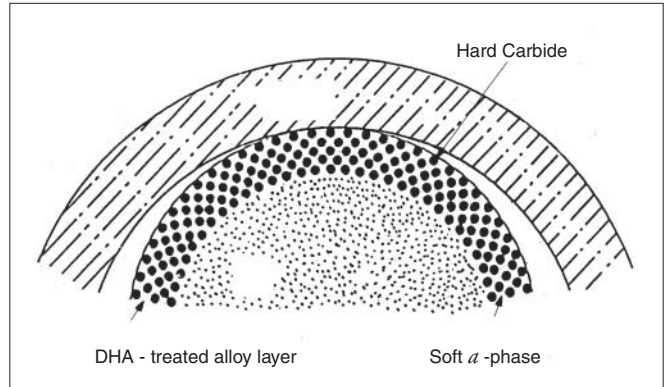


Perfect lubrication extends the life of the chain. However, it is not easy to avoid lubricating oil that is deteriorated by the oxidation of the lubricating oil itself, penetration of wear residue and dust, etc. In such situations, the DHA chain is recommended. Even in such severe environments where hard and fine particles are evident without any lubricating oil at all, the DHA chain shows excellent performance.

TRANSMISSION
ROLLER CHAIN

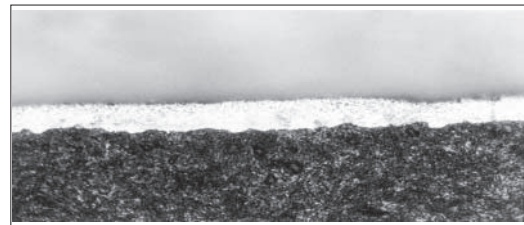
Structure of DHA

DHA refers to a hard layer formed on the surface of a pin. This layer has a very hard chromium carbide surface as illustrated in the top illustration. Excellent performance can be expected even in adverse conditions including the presence of abrasive contaminants. Furthermore, the DHA pins have excellent rust protection on pins. The following table compares the properties of DHA with other surface treatments.



DHA - treated alloy layer

Soft α -phase

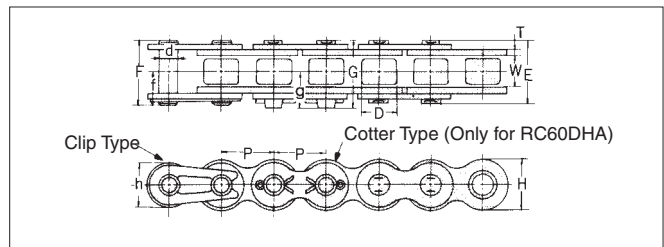


The white layer is a layer produced by DHA treatment, and the black grains visible in the layer are chromium carbide

Comparison of properties

	Carburizing	Nitriding	H-Cr plating	DHA
Contents of layer	High Carbon	Iron Nitride	Chrome	Chrome Carbide
Surface hardness	750~850	750~1,100	900~1,100	1,300~1,500
Practical thickness of treated layer (μ)	100 & over	10 & over	10~100	5~20
Surface hardness lowering temp.($^{\circ}$ F)	392 & over	932 & over	572 & over	1652 & over
Peeling resistance	○	○	×	○
Wear resistance	△	○	○	○

- Excellent
- △ Fair
- × Poor



Dimensions

Chain No. DID	Pitch P	Roller Link Width W	Roller (Bush) Dia. D	Pin						Plate			Avg. Tensile Strength lbs	Max. Allowable Load lbs	Approx. Weight (lbs/ft)
				d	E	F	G	f	g	T	H	h			
				Unit (inch)											
RC25R-DHA	0.250	0.125	0.130	0.091	0.307	0.335	—	0.185	—	0.028	0.232	0.205	990	165	0.087
RC35R-DHA	0.375	0.188	0.200	0.141	0.472	0.516	—	0.287	—	0.049	0.354	0.305	2530	484	0.215
RC41R-DHA	0.500	0.251	0.306	0.141	0.539	0.575	—	0.311	—	0.047	0.378	0.315	2420	528	0.262
RC40R-DHA	0.500	0.313	0.312	0.156	0.650	0.693	—	0.374	—	0.059	0.472	0.409	4290	836	0.422
RC50R-DHA	0.625	0.375	0.400	0.200	0.799	0.862	—	0.457	—	0.079	0.591	0.512	6930	1540	0.711
RC60R-DHA	0.750	0.500	0.469	0.235	1.000	1.059	1.098	0.563	0.594	0.094	0.713	0.614	9900	2090	0.966

Note: Those marked with * indicate bush chain.

Wear resistance of DHA

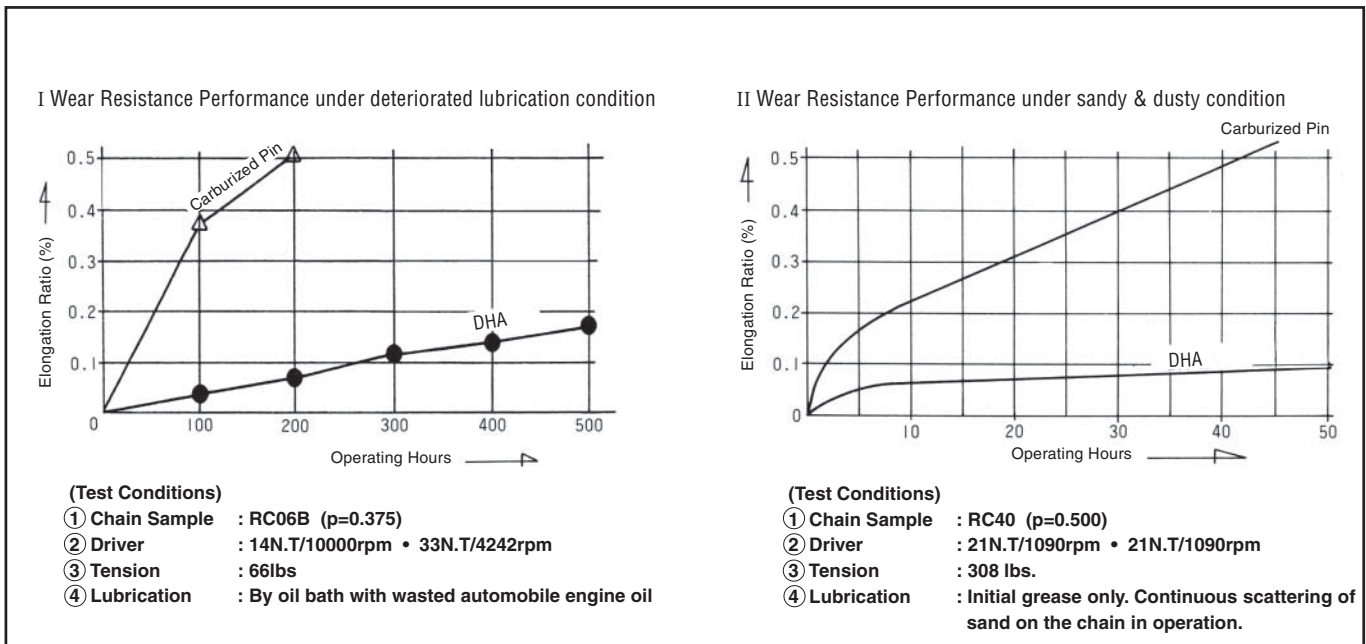
Test results for “wear resistance in a deteriorated lubrication condition” and “wear resistance in a sand dust environment” are shown below. The results show the excellent performance of DHA. Applications where a DHA chain can be effectively used are provided on the right for your reference.

Applications where a DHA chain can be effectively used

An application where soil, sand or dust directly come in contact with the chain (if an O-ring chain can be used in the application, the use of an O-ring chain is more effective).

An application where a chain is lubricated in an oil bath, etc. but where the oil is heavily deteriorated due to the penetration of foreign objects.

Test Results for Wear Resistance Comparison



Design of chain transmission

DHA chain is quite the same as a standard roller chain in strength. So, for selecting a proper DHA chain, refer to “General selection” (P. 91) and “Slow-speed selection” (P. 92). For the maximum horsepower rating, see the table of maximum horsepower ratings for standard roller chain.

Connecting links and offset links

As for the connecting links and offset links of a DHA chain, use those of a standard roller chain. The reason is that while a chain as a whole has many links, the numbers of connecting links and offset links is 1 to 2, therefore their influence on the wear of the entire chain is small.