



# TUNGSTEN CARBIDE ROLLS



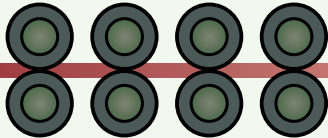
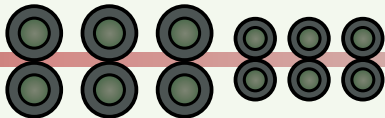
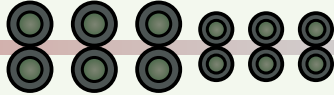
# Various standard grade and customized grade available

## Grade Specification

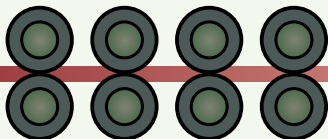
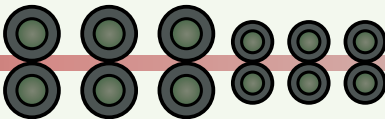
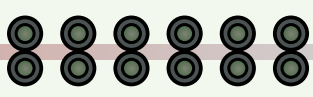
Grade	Chemical Property(%)		Density (g/cm <sup>3</sup> )	Hardness		TRS (kg/mm <sup>2</sup> )
	WC	Binder		HRA	HV	
IR101	84.5	15.5	13.87	84.3-86.3	850-1,010	250
IR102	83.5	16.5	13.76	84.0-86.0	830-990	250
IR103	86.5	13.5	14.04	85.4-87.4	930-1,140	250
IR104	83.5	16.5	13.75	84.1-86.1	840-990	250
IR105	81.0	19.0	13.60	82.7-84.7	765-880	250
IR106	80.5	19.5	13.51	82.4-84.4	750-860	250
IR201	77.5	22.5	13.24	82.2-84.2	740-850	260
IR202	76.0	24.0	13.12	81.6-83.6	710-810	260
IR203	73.0	27.0	12.88	79.6-81.6	635-710	270
IR301	70.5	29.5	12.69	78.8-80.8	605-680	270
IR302	69.0	31.5	12.57	77.8-79.8	570-640	270
IR303	68.0	32.0	12.50	77.7-79.7	565-638	280

## Grade applications for Rolling Mills

### ► For Wire rod and Steel bar

Intermediate Stands	Pre-finishing Stands	Finishing Stands(Block mills)
		
DCI, HSS Roll	DCI, HSS, TC Roll (IR201 ~ IR203)	TC Roll (IR101 ~ IR106)

### ► For Reinforcing Bar

Roughing Stands	Intermediate Stands	Finishing Stands
		
DCI Roll	DCI, HSS, TC Roll (IR201 ~ IR203)	TC Roll (IR301 ~ 303, IR301C)



# Excellent resistance to wear and thermal fatigue

Grade	Application
IR 101 ~ 106	Finishing Stand for Wire Rod (Mono Block) Intermediate Stand for wire rod
IR 201 ~ 203	Intermediate Stand for wire rod Pre-finishing Stand for Defomed Bar
IR 301 ~ 303	Finishing Stand for Defomed Bar Finishing Stand for Flat Bar

*\* Tailor-made grades available to meet customer's specific requirements*

*\*Sufficient cooling capacity is essential to reduce roll ring's thermal fatigue and stress which cause crack and damage in roll rings*

*\*Temperature is recommended to be below 20~30°C(40°C max)*

*\*Pressure of cooling water is recommended to be 5~6bar*

*\*Cooling water is jetted in a radial direction and at least half of the roll circumference is cooled by spray jets with a water volume around 30-50m<sup>3</sup> 3/h per caliber*



## **ILJIN Composite Roll**

Clamping type : Hydraulic Clamping System

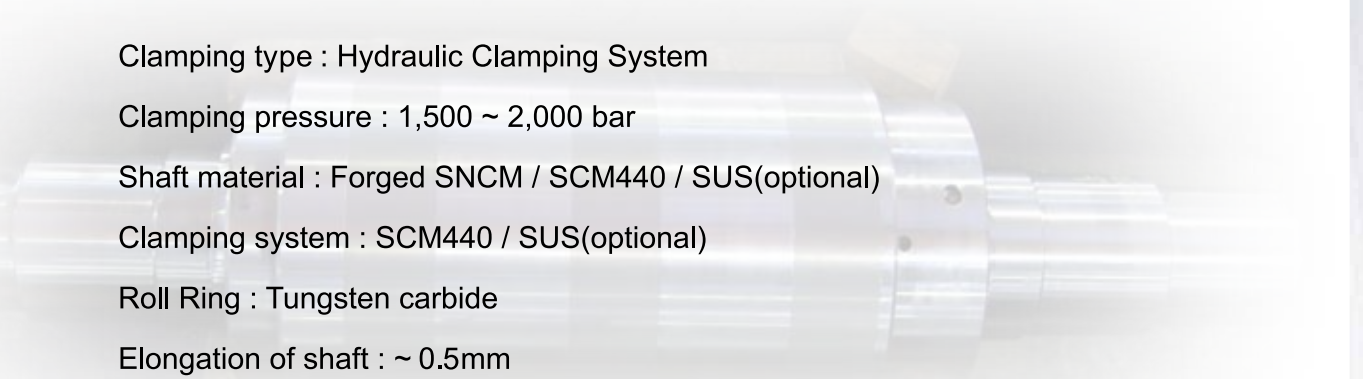
Clamping pressure : 1,500 ~ 2,000 bar

Shaft material : Forged SNCM / SCM440 / SUS(optional)

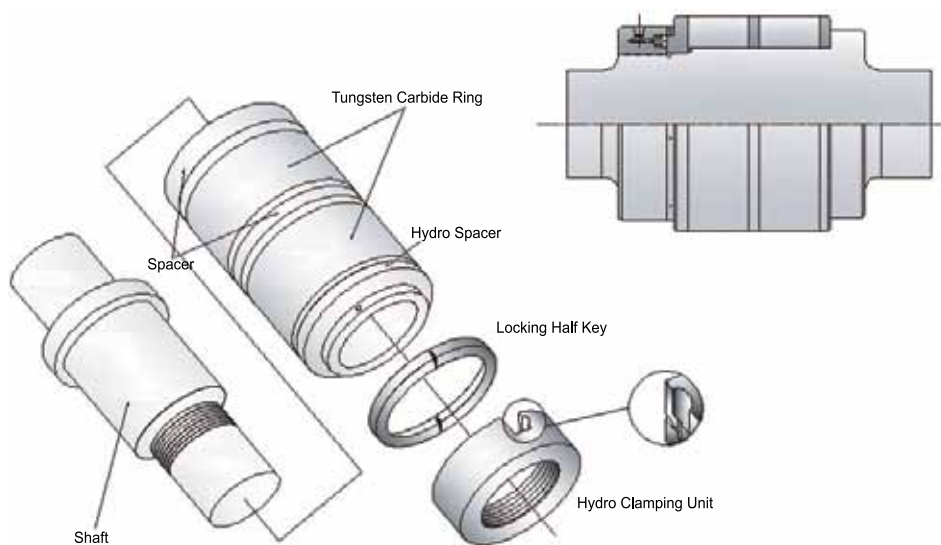
Clamping system : SCM440 / SUS(optional)

Roll Ring : Tungsten carbide

Elongation of shaft : ~ 0.5mm



## **Composition of clamping system**



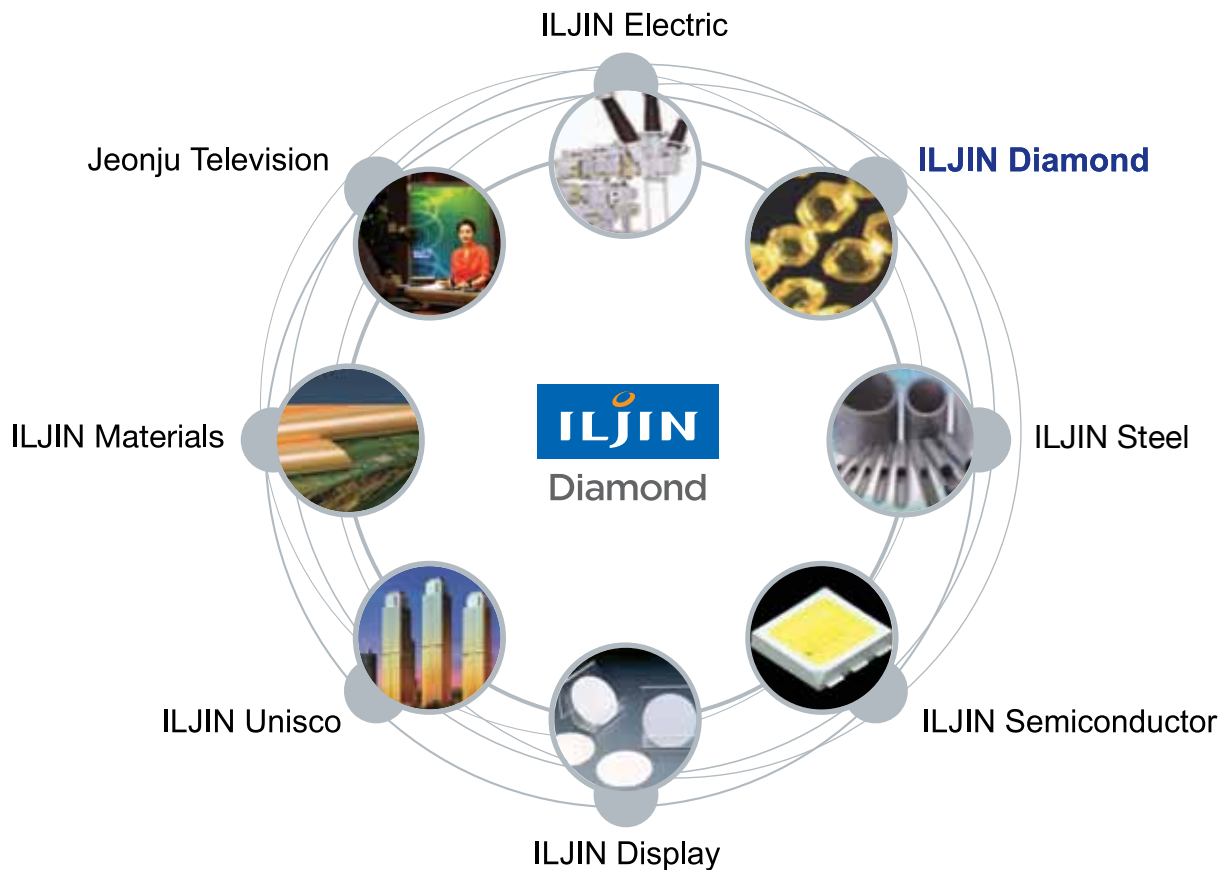
# About ILJIN GROUP

## Overview



Establishment	January 22, 1967
Head Office	Dohwa-dong, Mapo-gu, Seoul
Sales	Approx. \$2.5 Billion
Overseas Network	ILJIN USA, ILJIN CHINA, ILJIN EUROPE, ILJIN JAPAN
Employees	5,000

## Affiliated Companies



# Quality Control

□ Implementing Strict Quality Management System

□ Certificated by Quality Assurance Standard (ISO9001)  
And Environmental Management Standard (ISO14001)

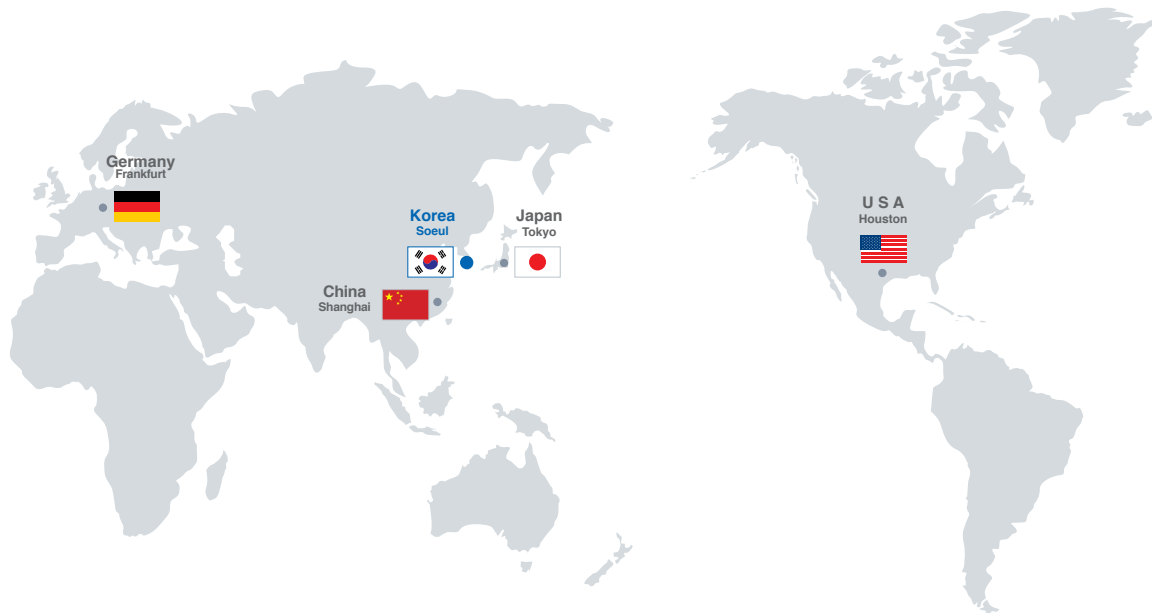


## Sales Network

### KOREA

Headquarters 5F, ILJIN Building 50-1, Dohwa-dong, Mapo-gu, Seoul, Korea  
TEL : +82-2-707-9086 FAX : +82-2-707-9378

Plant 614-2, Oryu-Ri, Daeso-Myun, Eumsung-Gun, Chungcheongbuk-Do,  
369-820, Korea



North America **U.S.A**  
ILJIN USA Inc.  
652 N. Sam Houston Parkway E. Suite 140, Houston, TX77060 USA  
TEL : +1-281-448-5111 FAX : +1-281-448-5114

Europe **Germany**  
ILJIN EUROPE GmbH.  
Mergenthaler Allee 23/25, 65760 Eschborn, Germany  
TEL : +49-6196-88759-0 FAX : +49-6196-88759-20

East/Asia Pacific **JAPAN**  
ILJIN JAPAN Co., Ltd.  
Bejita Bldg. 4F, 2-7-7 Shibadaimon, Minato-ku, Tokyo, 105-0012 Japan  
TEL : +81-3-5405-2820 FAX : +81-3-5405-3577

**CHINA**  
ILJIN CHINA Co., Ltd.  
3F-C, Baona B/D(LP Tower) No.25, Xianfeng ST., Shanghai, China, 201103  
TEL : +86-21-61268711 FAX : +86-21-61268713



[www.iljindiamond.com](http://www.iljindiamond.com)