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## Being a pioneer

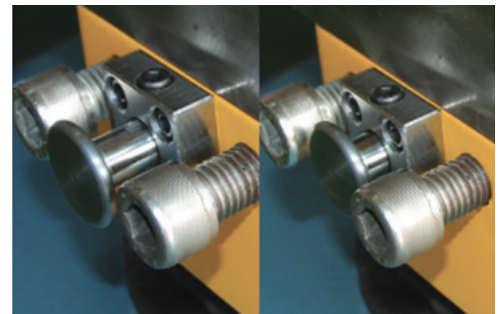
### WIROP® Smart Press

Wirop® is the first one in the industry to develop Smart Press with HMI (Human machine interface) in 2008. The interface is easy visualizing. It displays functional blocks and makes the swaging operation as simple. The HMI provides comprehensive information required by the operator. It artificially assists the swaging operation as well.



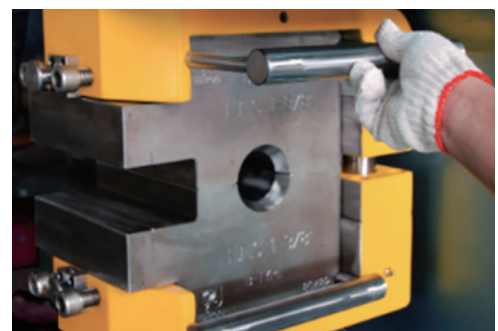
### WIROP® Spring Lock Die Fitters

Spring-Lock Die Fitters® allows the operator to fit the Die with a few steps of simple procedures. It was the firstly developed by WIROP INDUSTRIAL CO., LTD. and was established to the industry in 2005.



### WIROP® U Bar Die Fitters

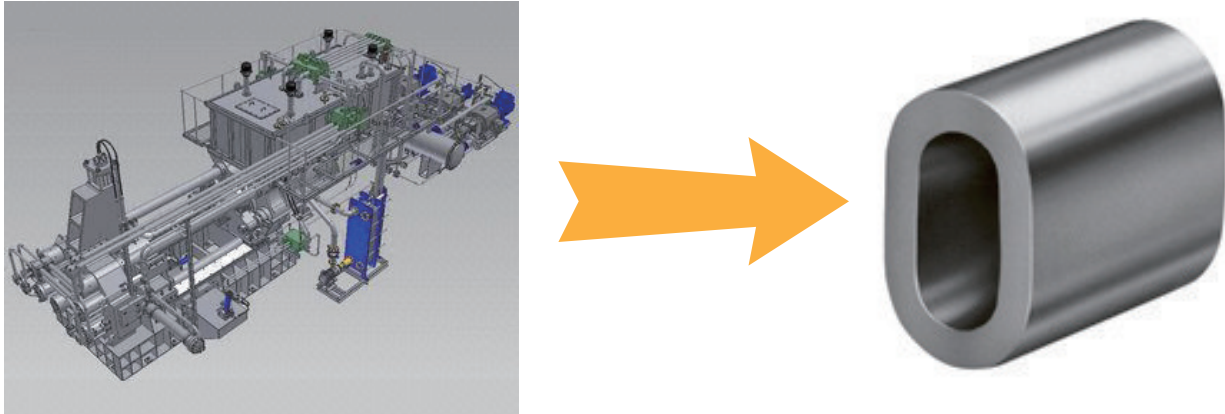
U-bar Die Fitter® was originally developed and introduced to the market in 2006 by WIROP INDUSTRIAL CO., LTD. It is the state of art technology which solves the problems of traditional Bolt-locking system. It has the advantages of quick installation, highly improved die alignment and easy maintenance.





## Wirop Industrial Co., Ltd. has been extruding seamless ferrule tubes since 2018.

"Machines and production line are custom tailored to suit the rigging industry."



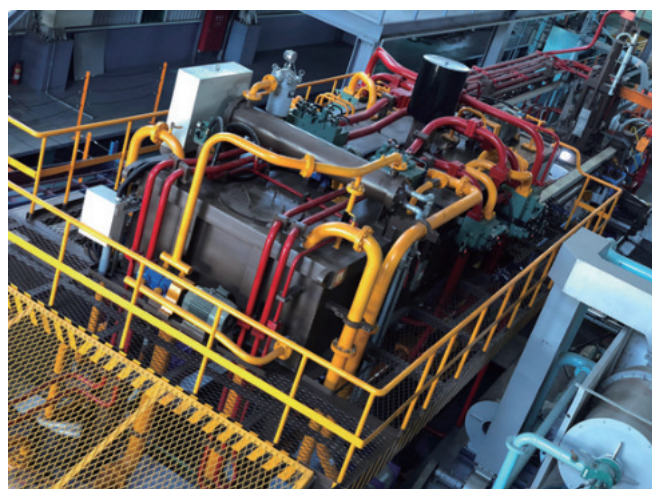
It is well known that Wirop Industrial Co., Ltd. (Wirop) has been serving the industry since 1979. Wirop has found its own aluminum plant in year 2018. This has set a new mile stone in the history of wire rope fabrication business. Wirop has become the first system provider in this industry to set up its own aluminum extrusion plant and specialized in ferrules manufacturing.

Wirop Aluminum department is a multi-functionally developed sector, including development, production, technical consulting and technical service. The production team focuses on seamless tubes profile, and the aluminum alloy utilized in 5000 series.

The sector is designed and established by the Wirop talented engineering team. Wirop has been serving in the field of aluminum ferrule development for over forty years. During this period, the engineering team has been involved with the development of standard EN 13411-3 ferrules, Japanese specification, duplex, and form C. Multi-scaled research has been conducted ranging from crystal structure to material strength and the final dimension in high precision.

Our research and development activities are mainly focus on advancing our manufacturing process, product development and automation, including providing customers with innovation, high valued-added products. The extrusion machines and production lines are tailored to the wire rope ferrule specific requirements.

Wirop aluminum sector is never satisfied with where we are. We are continually evolving and adapting to both market changes and customers' needs, ensuring us to stay one step ahead with secured opportunities and partnership achieved.



# History

**FEB. 1979**

Wirop Industrial Co., Ltd. rose founding in southern Taiwan. Making the first swaging machine and dies in Taiwan.

**AUG. 1983**

Established the first production line of container seals.

**FEB. 1985**

Company was relocating to Fongshan, Kaohsiung.

**DEC. 1991**

Start co-operation with Germany.

**MAR. 1992**

Established the production line for Tibles and structural cables.

**SEP. 1993**

Our high quality products and the excellence in exporting business were proudly being awarded the Golden Dragon Awards for excellence recognition.

**APR. 1997**

Our excellence in quality products was proudly being awarded the Golden Global Award.

**JUN. 1997**

The beginning of Pingtung plant operation and had the quality approval of ISO 9002.

**JUN. 1998**

The Lloyd's Register Quality Assurance awarded.

**OCT. 1999**

Wirop Industrial Co., Ltd. has become a member of AWRF.



**JAN. 2000**

Co-operating with Japan SEC. Establishing the production line of SEEE pre-tension system, Tibles, and structural cables.

**OCT. 2002**

Production of the first 3000T Hydraulic Swaging Machine.

**SEP. 2004**

Production of 2000T Horizontal Tension Testing Bench with overall length 100 mtrs.

**APR. 2005**

Kaohsiung expansion plant began operation.

**JUN. 2005**

Complete testing and production of Flemish Eye Steel Sleeves #6”.

**OCT. 2005**

Formal testing on Vertical Dynamic Testing Bench.

**FEB. 2006**

Enhance the product quality by the production of Flemish Eye Steel Sleeves wholly inside Wirop.

**SEP. 2007**

Production of the first 4000T Hydraulic Swaging Machine.

**OCT. 2009**

The lab has proudly certified by TAF (Taiwan Accreditation Foundation, conforms to ISO/IEC 17025).

**JUN. 2012**

Wirop Industrial Co., Ltd. has serviced more than one thousand clients in over 80 countries.

**SEP. 2013**

Complete production of 3000T Horizontal Tension Testing Bench with overall length 109 mtrs.

**NOV. 2014**

New factory completed for pre-tension products and seal business.

**SEP. 2015**

Complete production of 3000T Horizontal Tension Testing Bench with overall length 100 mtrs.

**JAN. 2016**

New subsidiary company for European marketing, Wirop Europe GmbH, is established.

**JAN. 2016**

Opening ceremony of new facility (named Chainson Industrial Co, Ltd.) for structural cable department is held on 20 January 2016.

**APR. 2017**

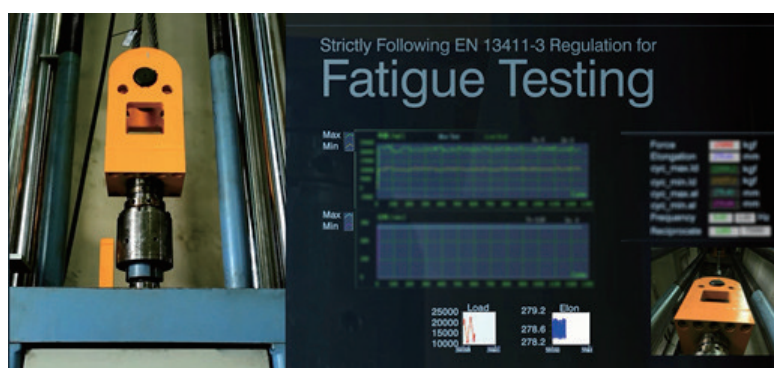
Establishment of Wirop smart load monitoring products.

## Research and Development

- ▶ WIROP® Research and Development team is equipped with a lab proudly certified by TAF (Taiwan Accreditation Foundation, conforms to ISO/IEC 17025).
- ▶ WIROP® has been recognized by the Lloyd's Register Quality Assurance, the certificate of Quality Management System. We adopt modern and efficient 3D simulation and FEM analysis to minimize errors and produce a stable solution.



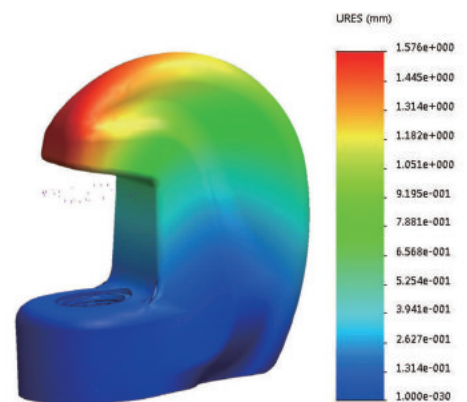
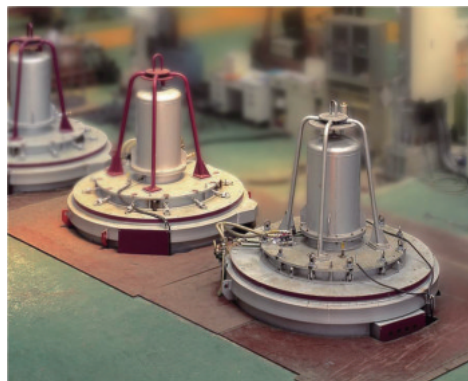
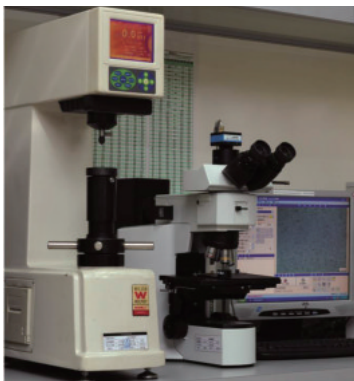
- ▶ Our lab has equipped with testing benches: (1) Dynamic fatigue vertical 100T testing machine. (2) 10T/100T/750T/1600T.
- ▶ Dedicating efforts to technical innovations for providing the needs of wire rope fabricators.





## Quality Assurance

- ▶ “Only the paranoid survive.” Wirop Industrial Co., Ltd. has implemented extremely strict quality control into practice at every stage of manufacturing process. The quality control is approved by ISO 9001:2008.
- ▶ Detailed testing on products and equipment before dispatch and shipping. Insure product quality through every stage of the manufacturing process.
- ▶ Crystal inspection on Carbon Steel and Aluminum Sample.
- ▶ Strictly follow EN 13411-3 standard. Setting 15%~30% of minimum load capacity and testing the dynamic endurance on sleeves and wire ropes in 75,000 times. Record the maximum breaking load according to EN 13411-3 standard.
- ▶ Testing bridge cables and container seals according to customer’s request.

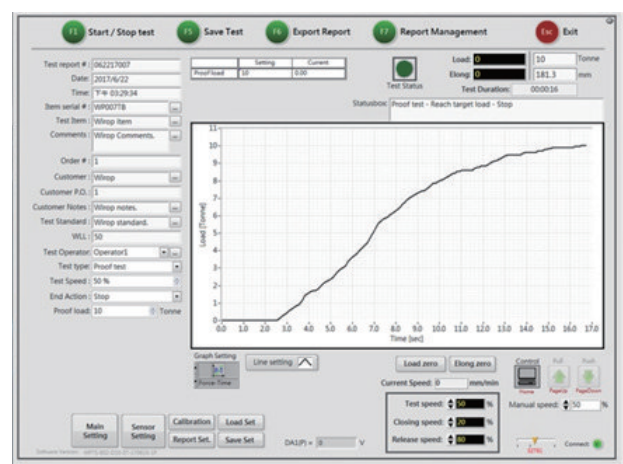


## Service

Most importantly, we retain favorable customer feedbacks and recognition both at home and abroad. From product development to content marketing to sales to customer service, we respect customers’ needs and wants. We are proud of ourselves in servicing our customers and those of the industry.

### We offer:

1. Inspection and calibration of test machines.
2. Calibration of smart load monitoring products.
3. On-site offers and troubleshooting.
4. Software upgrades and repairs.
5. Repair works of electrical parts and hydraulic units.
6. Customized testing software designs, upgrades and changes.
7. Technical support via TeamViewer.
8. Order tracing and in-time shipment.



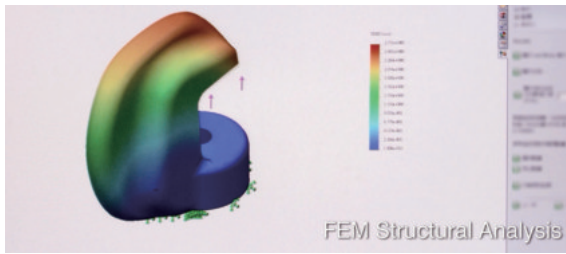
# WIROP® Swaging Machines

WIROP® is striving to provide the highest quality of swaging machines in the industry. Longer service life of swaging machine is a cost effective and time efficient solution.

- ▶ Till now, WIROP® has **over 38 years** of experience and leading knowledge in wire rope swaging technology.
- ▶ Continuous development of WIROP® Swaging Machines produces not only reliable machines, but also very silent ones (**operating noise is less than 70 dBA**) to make the work less stressful.
- ▶ User-friendly PLC electric control.
- ▶ Equipped with two-stage power hydraulic system with up-down cylinder action controlled by solenoid valves. **The swaging speed is faster.**
- ▶ Equipped with AUTOMATIC/MANUAL selection, force setting device, adjustable stroke, emergency shut off switch and a foot-level switch.
- ▶ The dial on the machine automatically sets the correct hydraulic pressure according to the sleeve or ferrule size, eliminating the possibility of under or over swaging.
- ▶ The distance between the die openings can be manually adjusted, **reducing the waiting time for the dies to fully open or close.**
- ▶ The swager can be operated by foot or by hand.
- ▶ **The die holder system allows easy and rapid interchangeability.**
- ▶ **Extra large swaging space** allows easy swaging operation for larger sling.
- ▶ Automatic Shut Down when all the buttons are not used in 15 minutes, for working safety purpose.







All of the bodies are made of one piece high strength casting alloy steel.

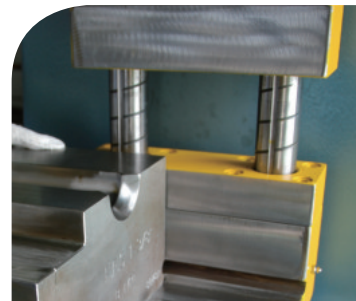


**Pressure Control Knob** allows the operator to select the correct pressure to swage the sleeve and eliminates the possibility of over or under swaging.



Industry Exclusive 3 Modes of Operation :

**MANU** = Manual  
**AUTO** = Automatic---①  
**A.R.** = Auto Return---②



**Pillar Die Holder Guides on the Die Holder** allows for free range of motion while eliminating stress points and rotation between the dies and die holder.



**Return Line Filter** with status indicator will indicate when filter cleaning is required, which can save the environment.



**Die Alignment Rods** are easy to use and keep dies in place during swaging process.



**Durable Spring Pins** lock the dies in place and allow for easy installation.

#### ① **AUTO switch:**

Allows swaging of sleeves automatically to pre-fixed settings. Ideal for swaging aluminum ferrules.

#### ② **AUTO RETURN switch:**

Allows the dies to move up when pressing the “UP” foot pedal and moves down automatically when released. This allows faster and more efficient swaging of carbon steel sleeves.

# C-Frame Hydraulic Swaging Machines (80T-1300T)

The special design for the C-frame structure (one column body) allows **fast access and more efficient swaging**, allowing the rigger easy operation and free movement with the sling around the swaging area. All of the bodies are made of one piece of casting alloy steel.

## 80 ton C-Frame Hydraulic Swaging Machine

► Item No. **WP-80C**

### Product Specification

Column	1	Loaded speed (mm/s)	7.0
Max. pressure capacity (MT)	80	Reversing speed (mm/s)	8.3
Power supply (HP)	7.5	Operating height (mm)	1140
Max. oil pressure (kgf/cm <sup>2</sup> )	250	Dimensions L x W x H (mm)	1000 x 700 x 1690
Max. piston stroke (mm)	58	Approx. weight (KG)	760
Unloaded speed (mm/s)	7.0		

### CAPACITY

Aluminum ferrules (one / multi-stage)	#10 / #12
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⚠ WIROP® reserves the right to change specifications.



## 150 ton C-Frame Hydraulic Swaging Machine

► Item No. **WP-150C**

### Product Specification

Column	1	Loaded speed (mm/s)	3.6
Max. pressure capacity (MT)	150	Reversing speed (mm/s)	33.9
Power supply (HP)	5	Operating height (mm)	1130
Max. oil pressure (kgf/cm <sup>2</sup> )	300	Dimensions L x W x H (mm)	1200 x 560 x 1600
Max. piston stroke (mm)	55	Approx. weight (KG)	1080
Unloaded speed (mm/s)	25.4		

### CAPACITY

Aluminum ferrules (one / multi-stage)	#16 / #20	Swage sockets	
		Full shank	#3/8"
Flemish eye steel sleeves	#3/4"	Progressive	#1/2"

⚠ WIROP® reserves the right to change specifications.





## 300 ton C-Frame Hydraulic Swaging Machine

► Item No. **WP-300C**

### Product Specification

Column	1	Loaded speed (mm/s)	1.7
Max. pressure capacity (MT)	315	Reversing speed (mm/s)	14.5
Power supply (HP)	7.5	Operating height (mm)	1240
Max. oil pressure (kgf/cm <sup>2</sup> )	300	Dimensions L x W x H (mm)	1200 x 600 x 1900
Max. piston stroke (mm)	70	Approx. weight (KG)	2330
Unloaded speed (mm/s)	11.7		

### CAPACITY

Aluminum ferrules (one / multi-stage)	#26 / #32	Swage sockets	
		Full shank	#5/8"
Flemish eye steel sleeves	#1-1/8"	Progressive	#3/4"

⚠ WIROP® reserves the right to change specifications.



## 600 ton C-Frame Hydraulic Swaging Machine

► Item No. **WP-600C**

### Product Specification

Column	1	Loaded speed (mm/s)	2.3
Max. pressure capacity (MT)	605	Reversing speed (mm/s)	17
Power supply (HP)	15	Operating height (mm)	1340
Max. oil pressure (kgf/cm <sup>2</sup> )	300	Dimensions L x W x H (mm)	1740 x 800 x 2100
Max. piston stroke (mm)	85	Approx. weight (KG)	5550
Unloaded speed (mm/s)	13.2		

### CAPACITY

Aluminum ferrules	Flemish eye steel sleeves		Swage sockets
One stage : #36	Conventional	#1-3/4"	Full Shank : #7/8"
Multi-stage : #42	FFS	#1-1/2"	Progressive : #1-1/4"

⚠ WIROP® reserves the right to change specifications.



1000 ton C-Frame Hydraulic Swaging Machine

Item No. **WP-1000C**

Product Specification

Column	1
Max. pressure capacity (MT)	1051
Power supply (HP)	20
Max. oil pressure (kgf/cm²)	300
Max. piston stroke (mm)	100
Unloaded speed (mm/s)	9.8
Loaded speed (mm/s)	1.9
Reversing speed (mm/s)	12.5
Operating height (mm)	1100
Dimensions L x W x H (mm)	2840 x 950 x 2100
Approx. weight (KG)	12000

CAPACITY

Aluminum ferrules (one / multi-stage)	#48 / #54
Flemish eye steel sleeves	#2-1/2"
Swage sockets	
Full shank	#1"
Progressive	#1-1/2"

⚠️ WIROP® reserves the right to change specifications.





## 1300 ton C-Frame Hydraulic Swaging Machine

► Item No. **WP-1300C****Product Specification**

Column	1
Max. pressure capacity (MT)	1325
Power supply (HP)	25
Max. oil pressure (kgf/cm <sup>2</sup> )	300
Max. piston stroke (mm)	120
Unloaded speed (mm/s)	8.1
Loaded speed (mm/s)	1.2
Reversing speed (mm/s)	12.4
Operating height (mm)	1250
Dimensions L x W x H (mm)	3550 x 1070 x 2300
Approx. weight (KG)	14200

**CAPACITY**

Aluminum ferrules (one / multi-stage)	#58 / #S66
Flemish eye steel sleeves	#3-1/4"
Swage sockets	
Full shank	#1-1/8"
Progressive	#2"

⚠ WIROP® reserves the right to change specifications.



# Two-Column Hydraulic Swaging Machines (300T-6000T)

The H-frame structure (two-column type) for large-capacity force allows fast, easy access for **more efficient swage work on larger slings.**

All of the bodies are made of one piece of casting alloy steel.

## 300 ton Two-Column Type Hydraulic Swaging Machine

► Item No. **WP-300H**

### Product Specification

Column	2	Loaded speed (mm/s)	1.7
Max. pressure capacity (MT)	315	Reversing speed (mm/s)	14.5
Power supply (HP)	7.5	Operating height (mm)	1240
Max. oil pressure (kgf/cm²)	300	Dimensions L x W x H (mm)	1300 x 600 x 1600
Max. piston stroke (mm)	70	Approx. weight (KG)	1490
Unloaded speed (mm/s)	11.7		

### CAPACITY

Aluminum ferrules (one / multi-stage)	#26 / #32	Swage sockets	
		Full shank	#5/8"
Flemish eye steel sleeves	#1-1/8"	Progressive	#3/4"

⚠ WIROP® reserves the right to change specifications.



## 600 ton Two-Column Type Hydraulic Swaging Machine

► Item No. **WP-600H**

### Product Specification

Column	2	Loaded speed (mm/s)	2.3
Max. pressure capacity (MT)	605	Reversing speed (mm/s)	17
Power supply (HP)	15	Operating height (mm)	1340
Max. oil pressure (kgf/cm²)	300	Dimensions L x W x H (mm)	1530 x 750 x 1650
Max. piston stroke (mm)	85	Approx. weight (KG)	3280
Unloaded speed (mm/s)	13.2		

### CAPACITY

Aluminum ferrules	Flemish eye steel sleeves		Swage sockets
One stage : #36	Conventional	#1-3/4"	Full Shank : #7/8"
Multi-stage : #42	FFS	#1-1/2"	Progressive : #1-1/4"

⚠ WIROP® reserves the right to change specifications.



## 1000 ton Two-Column Type Hydraulic Swaging Machine

► Item No. **WP-1000****Product Specification**

Column	2
Max. pressure capacity (MT)	1051
Power supply (HP)	20
Max. oil pressure (kgf/cm <sup>2</sup> )	300
Max. piston stroke (mm)	100
Unloaded speed (mm/s)	9.8
Loaded speed (mm/s)	1.9
Reversing speed (mm/s)	12.5
Operating height (mm)	1100
Dimensions L x W x H (mm)	2000x 950 x 1950
Approx. weight (KG)	7200

**CAPACITY**

Aluminum ferrules (one / multi-stage)	#48 / #54
Flemish eye steel sleeves	#2-1/2"
Swage sockets	
Full shank	#1"
Progressive	#1-1/2"

⚠ WIROP® reserves the right to change specifications.

## 1500 ton Two-Column Type Hydraulic Swaging Machine

► Item No. **WP-1500****Product Specification**

Column	2
Max. pressure capacity (MT)	1500
Power supply (HP)	25
Max. oil pressure (kgf/cm <sup>2</sup> )	300
Max. piston stroke (mm)	130
Unloaded speed (mm/s)	8.8
Loaded speed (mm/s)	1.35
Reversing speed (mm/s)	12.2
Operating height (mm)	1250
Dimensions L x W x H (mm)	2350x 1035 x 2250
Approx. weight (KG)	11000

**CAPACITY**

Aluminum ferrules (one / multi-stage)	#S62 / #S68
Flemish eye steel sleeves	#3-1/2"
Swage sockets	
Full shank	#1-1/4"
Progressive	#2"

⚠ WIROP® reserves the right to change specifications.



2000 ton Two-Column Type Hydraulic Swaging Machine

Item No. **WP-2000**

Product Specification

Column	2
Max. pressure capacity (MT)	2029
Power supply (HP)	30
Max. oil pressure (kgf/cm <sup>2</sup> )	300
Max. piston stroke (mm)	160
Unloaded speed (mm/s)	8.9
Loaded speed (mm/s)	1.8
Reversing speed (mm/s)	11
Operating height (mm)	1560
Dimensions L x W x H (mm)	2700x 1340 x 2350
Approx. weight (KG)	18500

CAPACITY

Aluminum ferrules (one / multi-stage)	#S68 / #S78
Flemish eye steel sleeves	#4"
Swage sockets	
Full shank	#1-1/2"
Progressive	#2-1/4"

⚠ WIROP® reserves the right to change specifications.



3000 ton Two-Column Type Hydraulic Swaging Machine

Item No. **WP-3000**

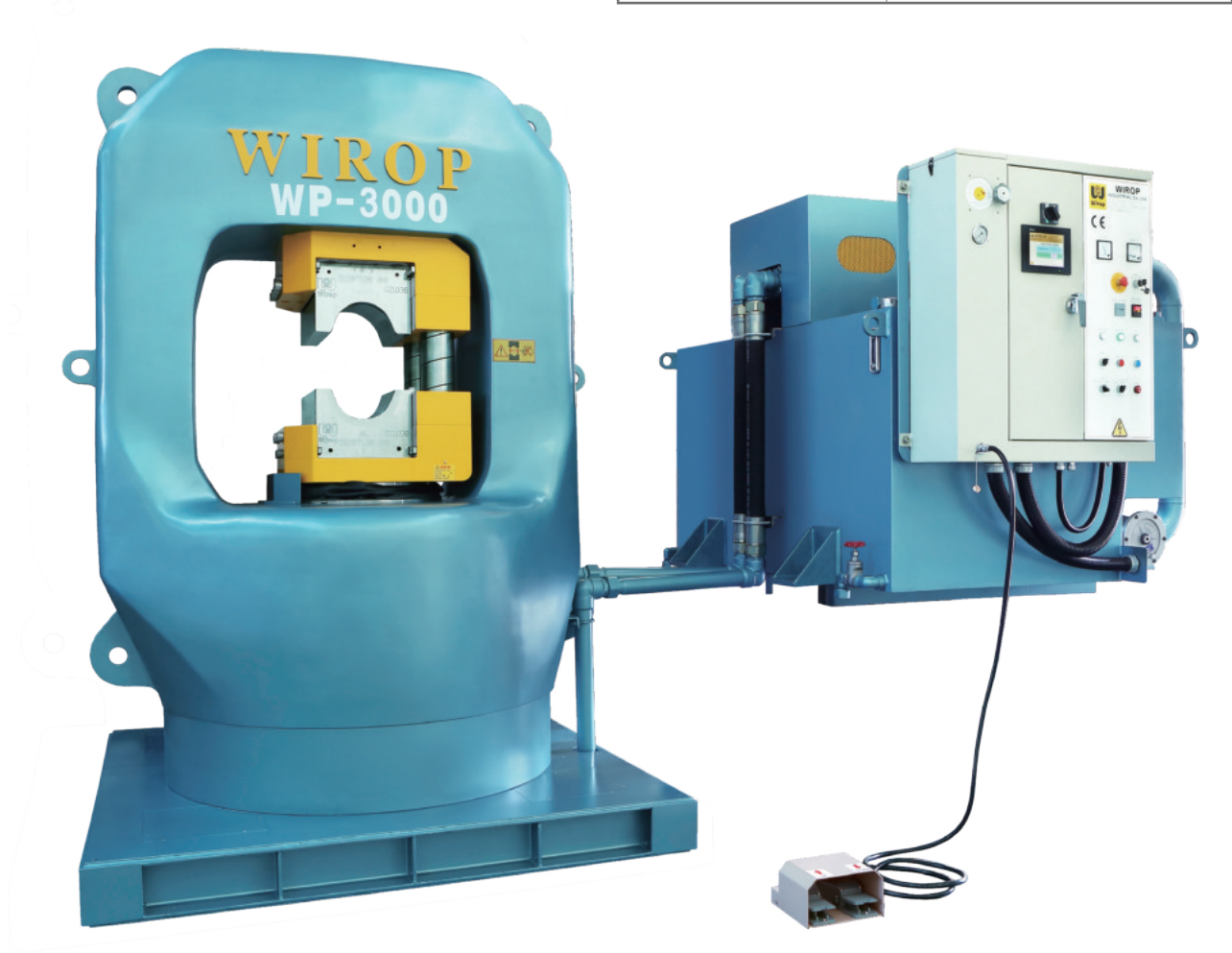
Product Specification

Column	2		
Max. pressure capacity (MT)	3057		
Power supply (HP)	75		
Voltage (V)	380/220 or as required		
Max. oil pressure (kgf/cm²)	300		
Max. piston stroke (mm)	200		
Reversing speed (mm/s)	10		
Operating height (mm)	1680		
3 Pumps for Transitional Speed			
Unloaded Speed (mm/s)	8		
Loaded Speed 1 (mm/s)	4.8		
Loaded Speed 2 (mm/s)	1.4		
Dimensions L x W x H (mm)		Approx. weight (kgs)	
Main body	2100 x 1750 x 3110	Main body	26000
Hydraulic system	2050 x 1980 x 1900	Hydraulic system	3000

CAPACITY

Aluminum ferrules (one / multi-stage)	#S78 / #S96	Swage sockets	
Flemish eye steel sleeves	#5"	Full shank	#2"
		Progressive	#2-1/2" (Max. size available)

⚠️ WIROP® reserves the right to change specifications.



4700 ton Two-Column Type Hydraulic Swaging Machine

Item No. **WP-4700**

Product Specification

3 Pumps for Transitional Speed		Dimensions L x W x H (mm)	
Unloaded Speed (mm/s)	60HZ: 6.6 50HZ: 5.5	Main body	2300 x 2300 x 3450
		Hydraulic system	2050 x 1980 x 1900
Loaded Speed 1 (mm/s)	60HZ: 2.7 50HZ: 2.3	Approx. weight (kgs)	
		Main body	39500
Loaded Speed 2 (mm/s)	60HZ: 0.88 50HZ: 0.74	Hydraulic system	3200
		Column	
Reversing speed (mm/s)	60HZ: 8.2 50HZ: 6.9	Column	2
		Max. pressure capacity (MT)	4700
		Power supply (HP)	75
		Voltage (V)	380/220 or as required
		Max. oil pressure (kgf/cm²)	350
		Max. piston stroke (mm)	260
		Operating height (mm)	1680

CAPACITY

Aluminum ferrules(one / multi-stage)	#S102 / #S128 (Max. size available)	Swage sockets	
Flemish eye steel sleeves	#6-1/2" (Max. size available)	Full shank	#2-1/2" (Max. size available)
		Progressive	#2-1/2" (Max. size available)

WIROP® reserves the right to change specifications.





6000 ton Two-Column Type Hydraulic Swaging Machine

Item No. **WP-6000**

Product Specification

3 Pumps for Transitional Speed		Dimensions L x W x H (mm)	
Unloaded Speed (mm/s)	60HZ: 5.6	Main body	2240 x 2733 x 4145
	50HZ: 4.7	Hydraulic system	2050 x 1980 x 1900
Loaded Speed 1 (mm/s)	60HZ: 2.6	Approx. weight (kgs)	
	50HZ: 2.2	Main body	52535
Loaded Speed 2 (mm/s)	60HZ: 0.9	Hydraulic system	4010
	50HZ: 0.75	Column	
Reversing speed (mm/s)	60HZ:7.5	Max. pressure capacity (MT)	6000 MT (6600 US tons)
	50HZ:6.3	Power supply (HP)	100
		Voltage (V)	380/220 or as required
		Max. oil pressure (kgf/cm²)	350
		Max. piston stroke (mm)	320
		Operating height (mm)	2315

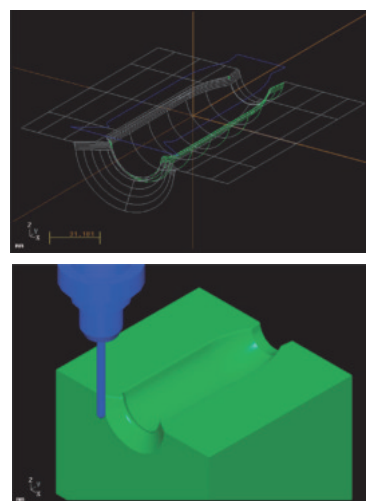
CAPACITY

Aluminum ferrules(one / multi-stage)	#S116 / #S128 and bigger size (Max. size available)	Swage sockets	
		Full shank	#2-1/2" (Max. size available)
Flemish eye steel sleeves	#6-1/2" (Max. size available)	Progressive	#2-1/2" (Max. size available)

WIROP® reserves the right to change specifications.



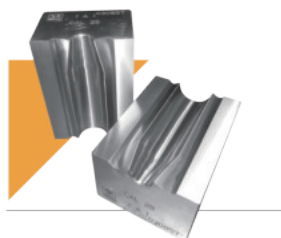
## Die System



- ▶ **WIROP® Dies are designed to feature efficiency, durability and user-friendly.**
- ▶ Swaging dies are CNC machined, ground and polished and use hardened and tempered tool steel to guarantee long service life.
- ▶ **The die design is simple and effective to maximize interchangeability and provide rapid, easy installation.**
- ▶ Special dies made to fit other brands of swaging machine are also available.



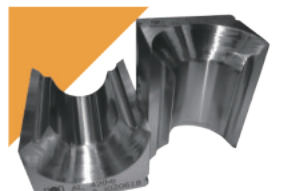
**Dies for Flemish Eye  
Steel Sleeves Swaging**



**Dies for EN13411-3  
Form C (DIN 3093)  
Aluminum Ferrules Swaging**



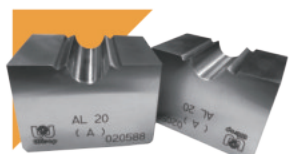
**Dies for Forged Swage  
Socket Swaging**



**Dies for Multi-Stage Swaging**



**Die Adapters**



**Dies for EN13411-3  
Form A (DIN 3093)  
Aluminum Ferrules Swaging**



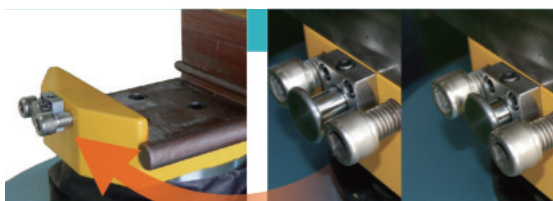
**Dies for FFS  
(Fast Flemish Swage System)  
Swaging**

For more detail of the FFS dies usage  
please visit our website:  
<http://www.wirop.com.tw>

**Custom-made dies are available  
for other brands of  
swaging machines.**



### Die holder - Spring lock type

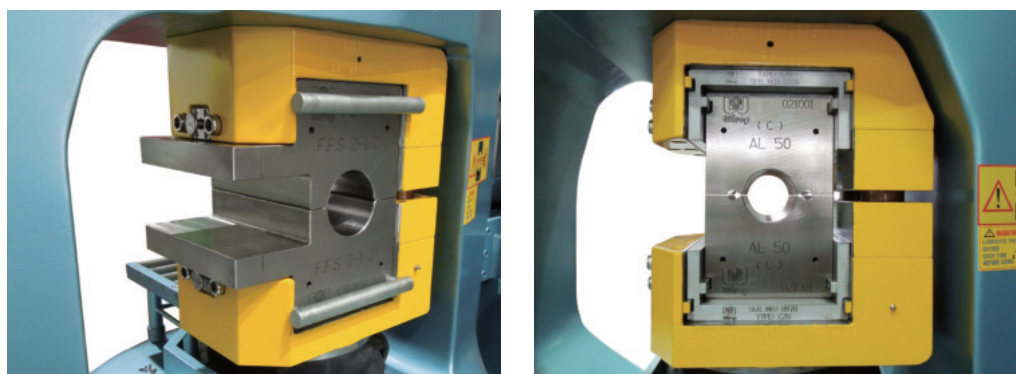


### Die holder – Bolt lock type



- ▶ WIROP® Die Holder ensures safety installation of the dies to the machine and simplifies die exchange process.
- ▶ Spring Lock Type: Specially designed for WIROP® swaging machines, allows fast and efficient installation.
- ▶ Bolt Lock Type: Specially designed for fitting other brands of swaging machines.

### Die Adapters



- ▶ WIROP® Die Adapters act as an intermediary between the die holder and the smaller die in larger machine.
- ▶ Die adapters made to fit other brands of swaging machines are also available.

### WIROP® Die Lubricant

- ▶ Special formula for aluminum and steel fittings.
- ▶ Minimizes friction to allow swaging fitting to “flow” while pressing.
- ▶ Helps to produce higher quality surface finish on swage fitting.
- ▶ Maximizes life of dies by minimizing wear while swaging.
- ▶ Extremely Low Coefficient of Friction For High Pressure Applications.



For more details of WIROP® Die Lubricant, please visit our website: <http://www.wirop.com.tw/>



# WIROP® Smart Press

## Die Installation Sensor

Ensures proper installation of the die to prevent damage to the press, die holders and dies.



## Features

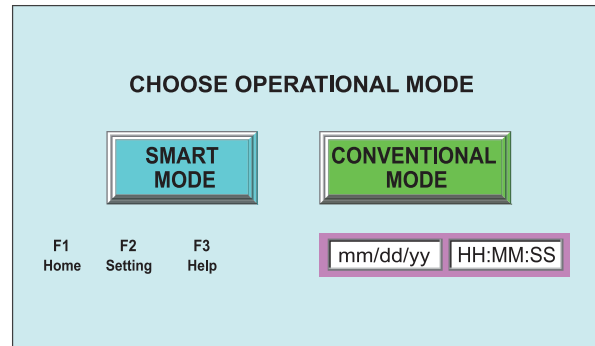
- ▶ Featuring the latest Radio Frequency Identification (RFID) technology and computer controlled machinery.
- ▶ **Guides selection of correct dies and pressure.**
- ▶ Signals warning alerts in case of hydraulic oil overheating, incorrect operating pressure and improper die installation.
- ▶ Constantly monitor the parameters of the oil temperature and pressure.
- ▶ **User friendly human-machine interface (HMI) makes parameter setting, operation and monitoring work very simple.**
- ▶ Ensures correct operation of the machine, hence extending service life of the dies and swaging machine.



## Operation Modes

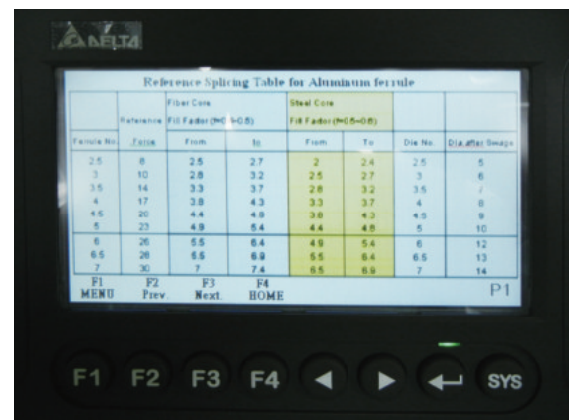
**Smart Mode** detects die size installed in the die holder and automatically sets swaging pressure.

**Conventional Mode** allows the swaging pressure to be set manually if dies are not equipped with RFID chips. Temperature and die installation sensors are still active to provide additional safety.



## Built-in Help

Swaging information such as splicing tables, recommended swaging methods and the operation manual is stored in the PLC's memory.

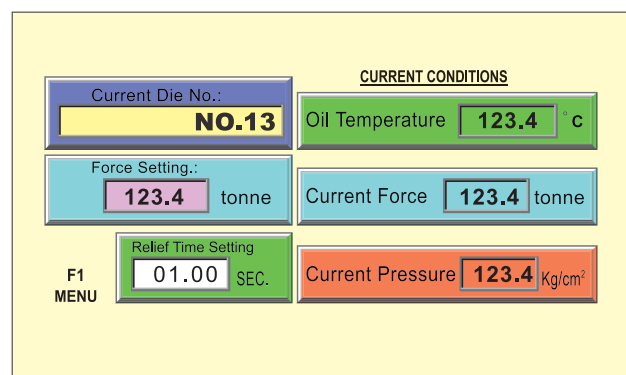
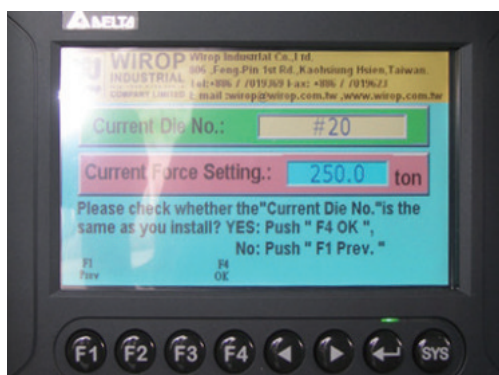


## Sensor

**Die Number Sensor** detects which die is installed in the machine and adjusts pressure accordingly.

**Pressure Sensor** detects the amount of hydraulic pressure is being exerted and stops the machine at the set pressure, and warns if the operating pressure is over loaded.

**Oil Temperature Sensor** warns if the oil temperature exceeds the normal operating range.

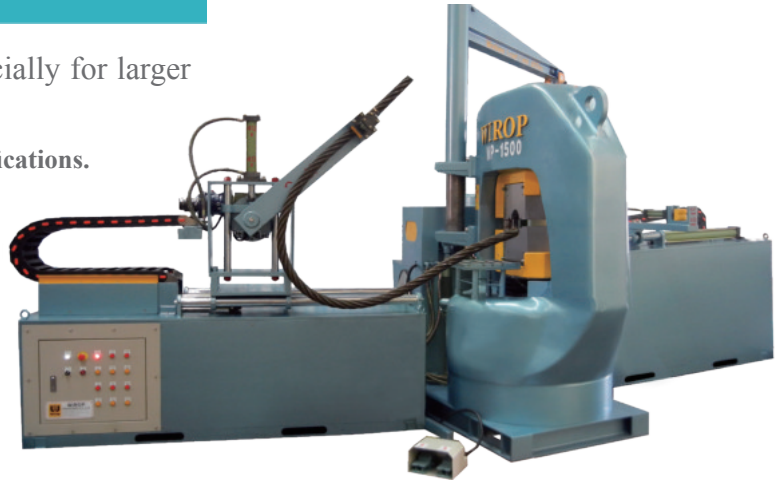


## Upgrades of Swaging Machines

### Rigging Arm

Easily for making wire rope sling especially for larger size slings.

⚠️ WIROP® reserves the right to change specifications.



### Lifting Arm

Easily lift and set dies into suitable place for larger capacity of swaging machines.

Efficiently use the hoist and magnet lifter of your choice.

⚠️ WIROP® reserves the right to change specifications.



### Dies Feeding Device

Easily move and storage the larger size of dies for swaging.

⚠️ WIROP® reserves the right to change specifications.



Move the heavy Dies



Dies storage



## Table Swagers

- Designed for mass production to swage the fittings of small sizes wire rope or aircraft cable.
- Fast and easy operation.
- Adjustable stroke.
- Auto-return, adjustable force setting device.
- Easy-to-read indicator of force settings.

Model	WP-40HT	WP-80HT
Maximum capacity (MT)	46	89
Wire rope diameter (mm)	1~8	1~10
Power supply (HP)	5	7.5
Forward speed (mm/s)	7.6	6.2
Reversing speed (mm/s)	10	7.3
Dimensions, L x W x H (mm)	600 x 800 x 1430	1000 x 700 x 1700
Approx. weight (KG)	500	800

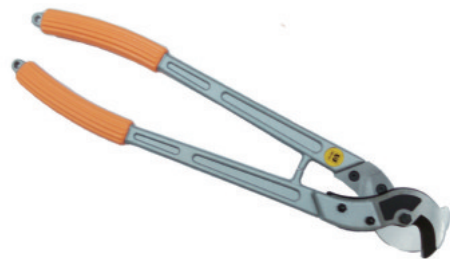


⚠ WIROP® reserves the right to change specifications.

## Portable Wire Rope Cutters

Model	WB-10C
For wire rope cutting diameter (mm)	1~10
Dimensions L x W x H (mm)	600 x 150 x 50
Approx. weight (KG)	2

⚠ WIROP® reserves the right to change specifications.



Model	WB-25C	WB-35C
Max. capacity (MT)	10	20
For wire rope cutting diameter (mm)	8~20	8~32
Dimensions L x W x H (mm) (NOT including pump)	265x75x82	345x102x165
Approx. weight (KG) (NOT including pump)	3	9

⚠ WIROP® reserves the right to change specifications.



# Portable Tools

## Portable Presses

Portable hand operating press for outdoor use.

Model	WH-15C
Max. capacity (MT)	15
For wire rope diameter (mm)	1~5
Dimensions L x W x H (mm)	540 x 165 x 75 Case: 600 x 245 x 105
Approx. weight (KG)	5.7 Case: 2.8



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Model	WH-30C
Max. capacity (MT)	30
For wire rope diameter (mm)	1~8
Dimensions L x W x H (mm) (NOT including pump)	200x250x540
Approx. weight (KG) (NOT including pump)	39



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Model	WH-20P	WH-30P	WH-50P
Max. capacity (MT)	20	30	50
For wire rope diameter (mm)	1~6	1~8	1~10
Dimensions L x W x H (mm) (NOT including pump)	85 x 103 x 265	120 x 155 x 355	150 x 200 x 400
Approx. weight (KG) (NOT including pump)	4.5	15	26



⚠️ WIROP® reserves the right to change specifications.

## Portable Hydraulic Pump

The voltage could be changed upon request.

Model	WP-P700
Max. oil pressure ( kgf/cm <sup>2</sup> )	700
Power supply (HP)	1
Voltage (V)	220V, 50HZ, Single Phase
Dimensions L x W x H (mm)	175x250x406
Approx. weight (KG)	24



⚠️ WIROP® reserves the right to change specifications.

For more details of portable presses, cutters and tools, please visit our website : <http://www.wirop.com.tw/>

## Test Benches and Customized Design



At WIROP®, quality begins in our Research and Development. Our engineers are equipped with cutting edge technology to assist them in the design process. Through the use of 3D engineering software and real-world experience, our engineers create innovative designs and perform analysis on those designs to better understand their functionality before the first plate of steel is ever cut. Our engineers are committed to providing the highest quality tensile testing machines in the industry.

Through our design processes, we are able to offer you the option of selecting from one of our many standard models, or provide you a customized testing machine to fit your specific needs.

Since our first testing machine was developed in 1985, we have been designing testing equipment to meet our customers' every need. Whether your testing machines are horizontal or vertical, for pre-stretch or special testing, WIROP® has the knowledge and experience that you can rely on for many years to come.





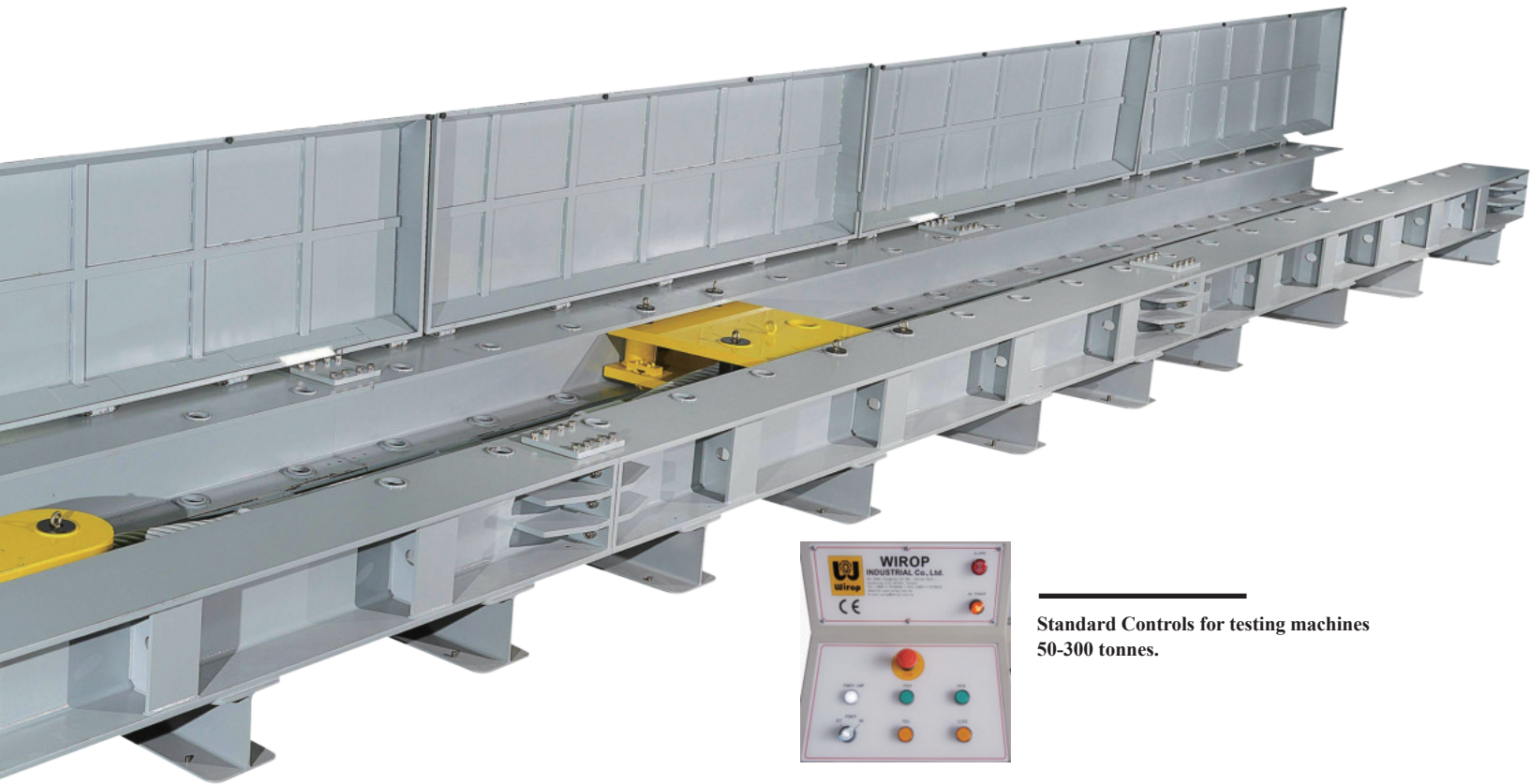
## General Features

- ▶ Special design for tensile testing of long materials, such as wire rope, fiber rope, chain and so on.
- ▶ Fully enclosed frame structure is assembled together from a few parts, allowing easy assembly and relocation as well as increasing length of test bench. The structure can be taken apart in sections for easy transport.
- ▶ Fixed solid steel plates at the base of test benches are guarded with automatic protection cover to prevent fragments of test specimen dislodging during testing. Fully enclosed hydraulically operated auto protection cover (guard) for ultimate safety.
- ▶ A variety of testing selection: proof test, break test, hold test and cycle test.
- ▶ Elongation measurement.
- ▶ Accuracy of  $\pm$  % is achieved between 10% to 100% of the load cell value. For less than 10% of the secondary load cell ( optional ) value, accuracy of  $\pm$  1% is also achieved. All load cells are calibrated to ASTM E-4 or ISO 7500.
- ▶ User friendly operating system. It is designed to easily and efficiently translate the operator's commands for the control.
- ▶ All Wirop Test Benches come with computer and printer with operator friendly software. Wirop testing software offers the operator the ability to enter as much or as little information as needed to perform a test. For fast, fully automatic testing, the operator can simply choose the type of test, set the load limit and start to test.
- ▶ Testing speed is adjustable by software.
- ▶ Various comparison curves: Load-Elongation, Load-Time, and Elongation-Time.



## Control System

- ▶ Designed to easily and efficiently translate the operator's commands to the hydraulic power unit and ensure precise loading.
- ▶ Ergonomic Work Area to place your work orders, all the computer equipment, controls and paperwork in one place to reduce clutter.
- ▶ Self Contained Unit is separated from the hydraulic power unit; allow the user to achieve optimum vantage point, lower noise, and a separate control room.
- ▶ Intuitive buttons on manual control are clearly labeled and organized for easy control the pump pressure, protection covers, and position of the crosshead.



Standard Controls for testing machines  
50-300 tonnes.



Standard Controls for testing machines  
500-1000 tonnes.



Emergency Stop and Alarm Buzzer  
allow the user to stop all hydraulic  
movements in an emergency during  
testing.

⚠ Larger testing machines' controls are customized according to the user's testing requirements.

# Main Screen

## 1. Main Navigation Buttons:

Large buttons to access the main functions of the software. Hotkeys are assigned to the Start/Stop function and other critical functions on the machine for quick keyboard control.

## 2. Information Inputs:

Test report information, item descriptions, customer information, and order information are automatically populated, selected from lists, or manually entered.

## 3. Test Settings:

These settings control the load, hold time, test speed, proof load factor and end action during tests. Depending on the test type, the available options will change.

## 4. Setting Controls:

Test report, load cell, calibration, and initial setup settings are available to easily tailor the testing on the test bed and help trouble-shoot problems should they arise.

## 5. Speed Control:

These settings control the overall speed of the test machine when testing. The test speed % setting controls how fast the machine will operate while loading. As the load approaches the set load, the closing speed % setting reduces the speed in order to precisely hit the target load.

## 6. Sensor Zero Controls:

Sensor zero controls with hotkeys allows the operator to zero a load or elongation reading based on what their test method describes. Zeroing before testing ensures accurate data recording.

## 7. Auto / Manual Select:

Auto and manual selection and push and pull controls allow the user to let the software control the loading, or take control themselves for specialized testing.

## 8. Graph Options:

Graph Setting allows different display options on line chart such as: Options Force/Time, Elongation/Time, Force/Elongation, and others that prove useful for testing lifting gear. The operator can also change zoom level, color, graph style and line thickness.

## 9. Line Chart:

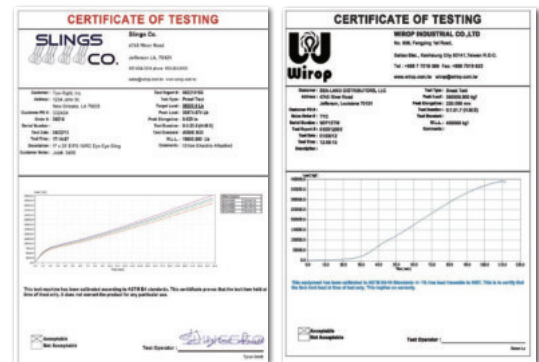
Easy to read line chart that automatically calculates and presents information during the entire test. The line chart appears on test reports.

## 10. Load / Time / Elongation Display:

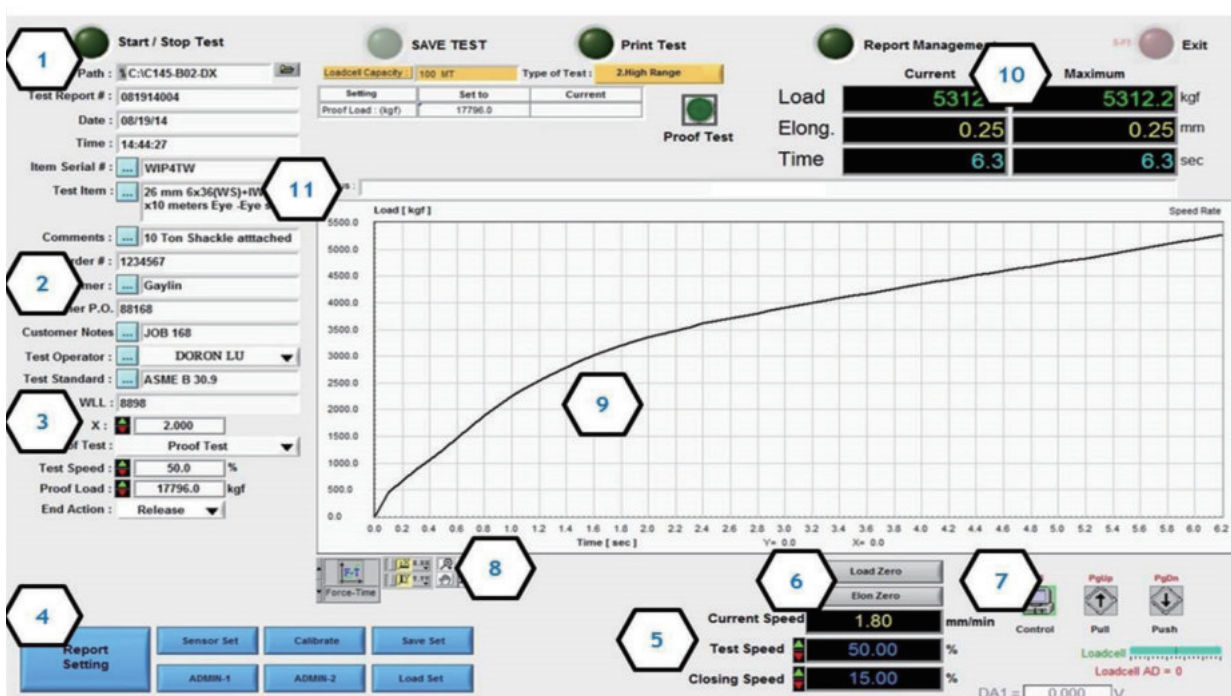
Displays the current and maximum load, elongation, and time. The units of measurement are adjustable in the settings portion of the software.

## 11. Auto-Incrementing Serial Number:

The serial number field can have increment automatically, or be set manually to provide both speed and flexibility when testing.



▲ Multiple curves in one plot printing are available.



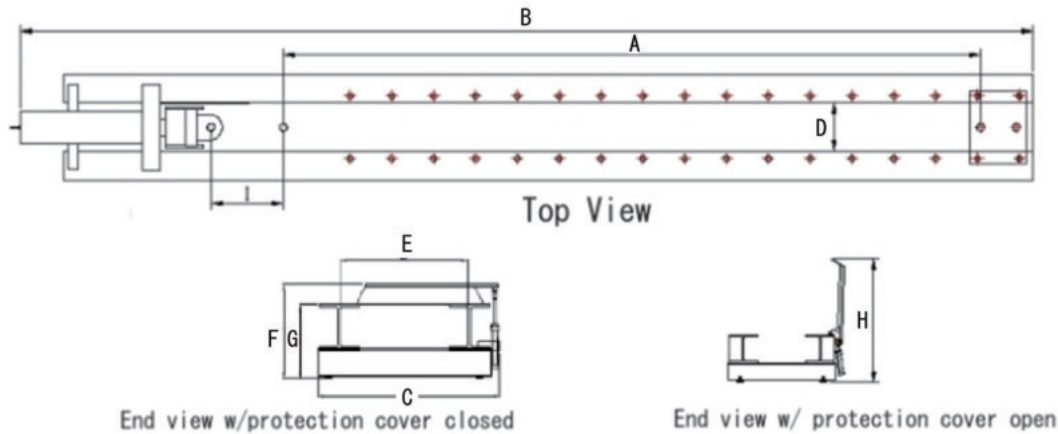




Standard Tension Type (Capacity: 50MT ~ 300MT)

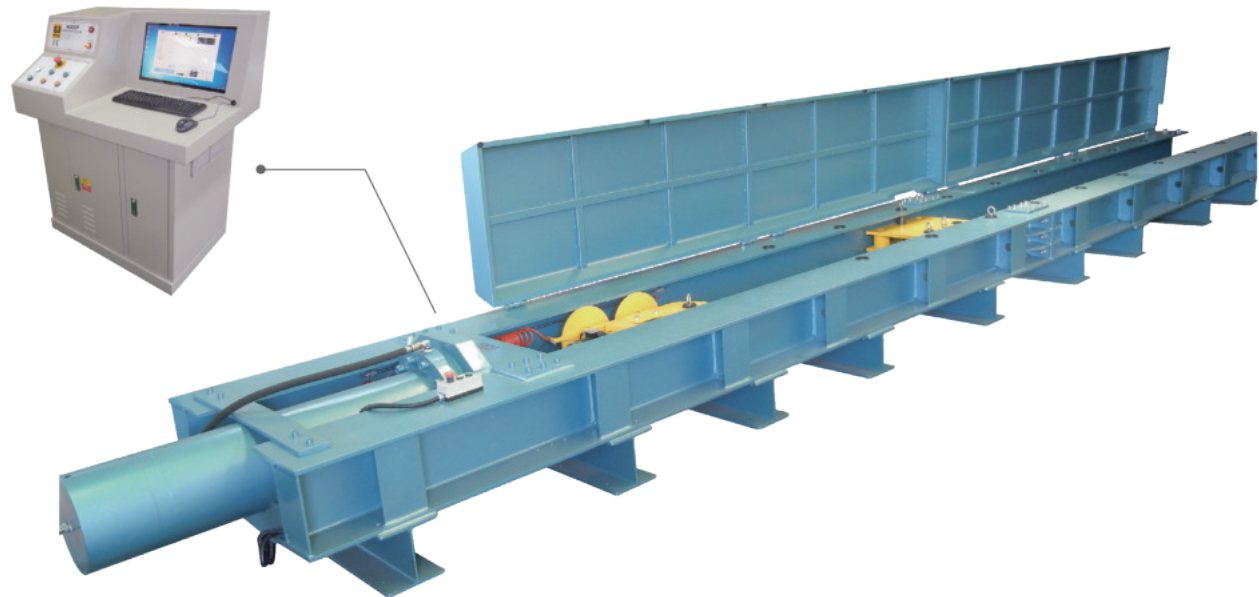
Tension type test bench is Wirop’s most popular design. It is configured so that the load cell used in tension type and is placed between the crosshead and cylinder. This design is compact, very user accessible and uses the least components while ensuring the load cell measures force properly. Tension type test bench does not require foundation anchoring unless the overall length is over 30 meters.

Standard Tension Type Specifications:



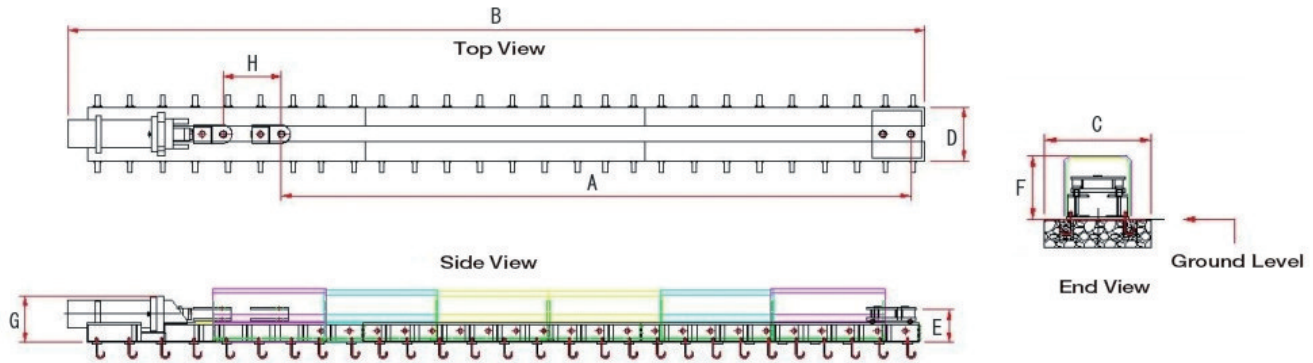
Model		WPT-50	WPT-100	WPT-150	WPT-200	WPT-300
Capacity – metric tons		50	100	150	200	300
Units of measurement		Metric (mm)	Metric (mm)	Metric (mm)	Metric (mm)	Metric (mm)
Useful testing length	A	7565	12550	12220	12220	11930
Overall length (approx.)	B	11517	17240	17260	17390	17490
Overall width (including protection cover)	C	1340	1400	1700	1700	1724
Channel width	D	610	560	695	695	760
Max. testing width	E	740	898	1082	1082	960
Overall height (including protection cover)	F	684	840	895	895	925
Overall height (not including protection cover)	G	528	630	685	685	711
Overall height (protection cover open fully)	H	1420	1600	1800	1800	1850
Standard stroke	I	1000	1250	1250	1250	1250
Extra standard length section		5500	5500	5500	5500	5500

⚠️ WIROP® reserves the right to change specifications.



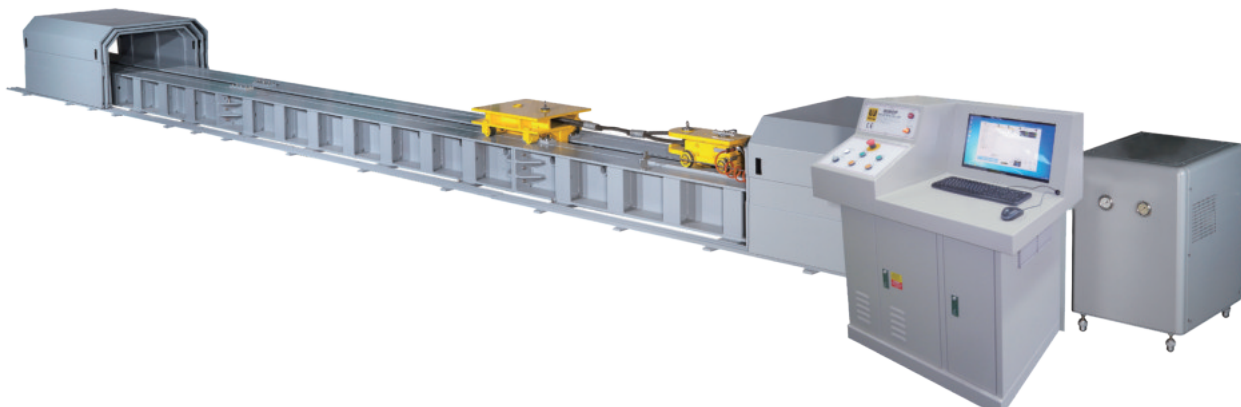
## RAM ON TOP Type (Capacity: 50MT~300MT)

Ram On Top type test bench is Wirop's special design for spreader beam or wider specimen testing. Its open space design allows the test for specimen without width limit, and very convenient to the operator to mount the test specimen on the machine. Ram On Top type test bench requires foundation anchoring.



Model		WPT-50ROT	WPT-100ROT	WPT-150ROT	WPT-200ROT	WPT-300ROT
Capacity – metric tons		50	100	150	200	300
Units of measurement		Metric (mm)	Metric (mm)	Metric (mm)	Metric (mm)	Metric (mm)
Useful testing length	A	9000	12000	12000	12000	12000
Overall length (approx.)	B	12900	16700	16700	16850	17250
Overall width (including protection cover)	C	1360	1680	1680	1680	1890
Overall width (not including protection cover)	D	800	960	960	960	1150
Max. testing width		No limit	No limit	No limit	No limit	No limit
Operation height	E	630	750	780	780	840
Overall height (including protection cover)	F	950	1230	1230	1230	1300
Overall height (not including protection cover)	G	770	970	990	990	1080
Standard stroke	H	1000	1250	1250	1250	1250
Extra standard length section		5500	5500	5500	5500	5500
Anchoring		Required	Required	Required	Required	Required

⚠️ WIROP® reserves the right to change specifications.

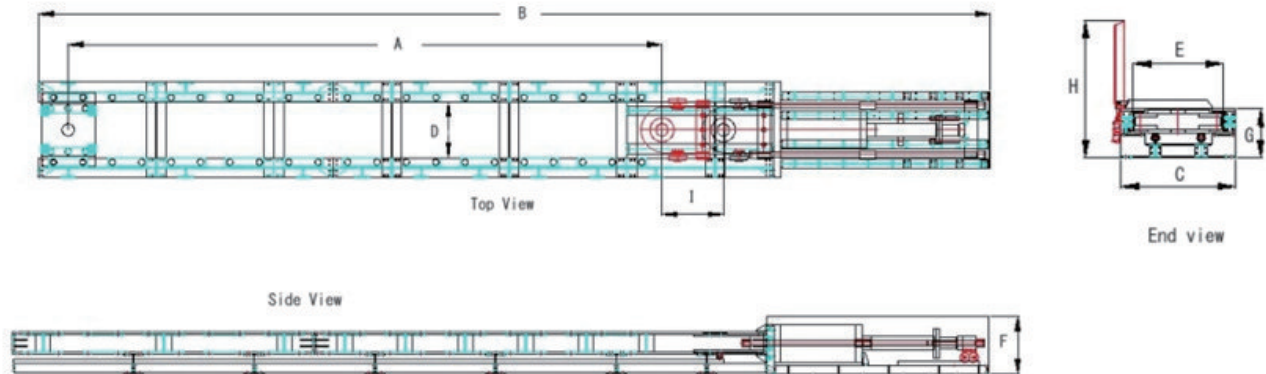




PUSH-ON-PULL Type (Capacity: 500MT~1,000MT)

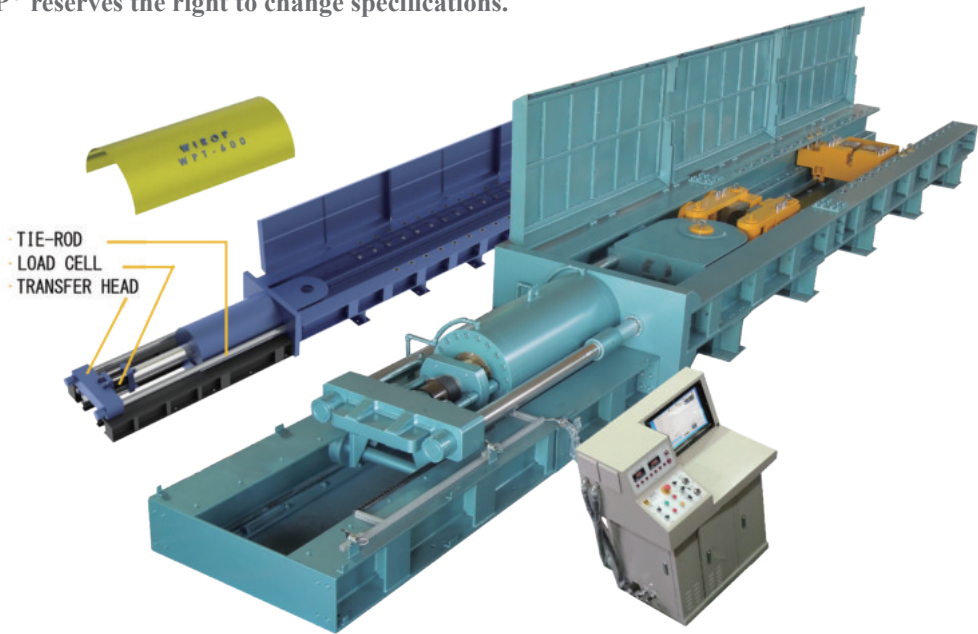
Push-on-Pull design is allowed for proper ASTM E-4 calibration even over 450MT (1 million pounds), enhanced load cell protection, and quicker ram return speeds. The load cell is used in compression type and is placed between the transfer head and the cylinder. Tie-rods then connect the transfer head to the cross head. This design is easier to put the master compression load cell for calibration.

PUSH-ON-PULL Type Specifications:



Model		WPT-500	WPT-600	WPT-800
Capacity – metric tons		500	600	800
Units of measurement		Metric (mm)	Metric (mm)	Metric (mm)
Useful testing length	A	12000	12000	12000
Overall length (approx.)	B	19410	20300	20700
Overall width (not including protection cover)	C	1958	1958	2100
Channel width	D	1144	1150	1244
Max. testing width	E	1534	1531	1641
Overall height (with protection cover closed)	F	1156	1156	1285
Overall height (not including protection cover)	G	828	828	852
Overall height (protection cover open fully)	H	2338	2350	2475
Standard stroke	I	1250	1250	1250
Extra standard length section		5400	5400	5400

⚠️ WIROP® reserves the right to change specifications.



### TWO-Cylinder Push Type (Capacity: 1,000 MT ~ 3000 MT and above)

Two-Cylinder Push type test benches are Wirop's largest machines. They use two load cells in compression type, located between the crosshead and the end of each cylinder.

Two-Cylinder push type test benches feature a wide tubular frame for easy placement of large test specimens with heavy equipment. They can be placed above ground, or in an engineered concrete pit to accommodate customer needs. A tensioned trolley can also be added at the customer's request for testing high elongation products.

#### 3000 ton test bench



⚠️ WIROP® reserves the right to change specifications.

## Customized Design Test Machines

At Wirop, you will be partnering with an engineering team which has an exceptional and professional knowledge of designing customized test machines. With over 40 years of experience in the test machine business, you are guaranteed to find a customized design to fit your every need. In this section, we have highlighted just a few of our previous designs and how those designs were beneficial to end users.

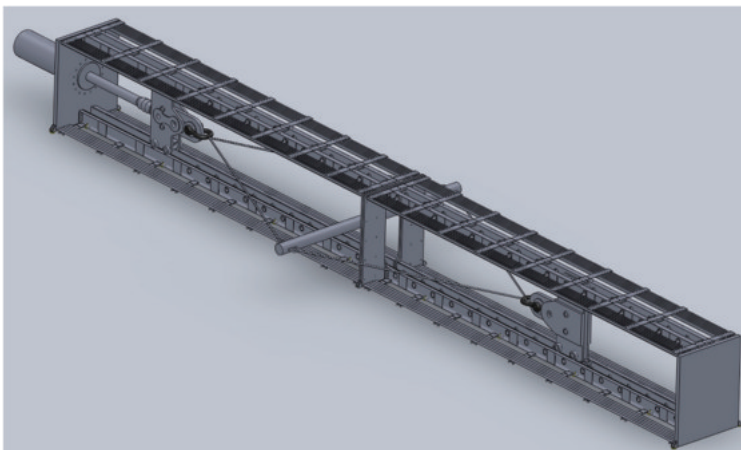
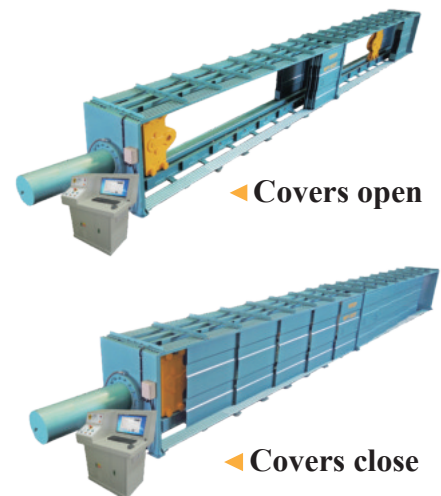
### Dual Cylinder Horizontal Tensile Test Machine

- ▶ Equipped with two cylinders. Secondary cylinder mounted on top of the side frame rail at an ideal working height.
- ▶ Main cylinder covers a range from 10-100%, while secondary cylinder covers range from 1-10%. You are guaranteed to achieve the range from 1% to 100% with accuracy within +/- 1%.



### Side Access Horizontal Tensile Test Machine

- ▶ The design offers the operator limitless horizontal testing area, ideal for testing spreader bars, lifting beams or any wide-bodies.
- ▶ With ground level open side access, operators can take advantage of easy loading of larger or cumbersome testing specimen.
- ▶ Available for capacities ranging up to 300 tones.

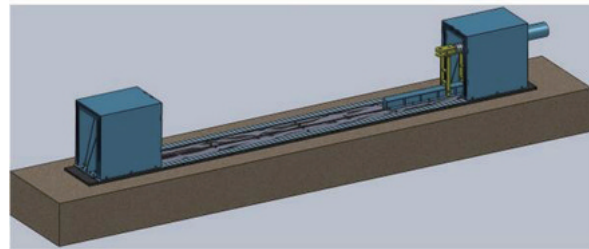
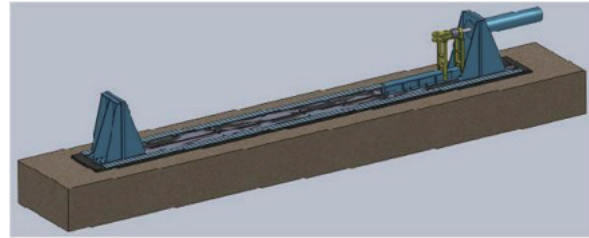
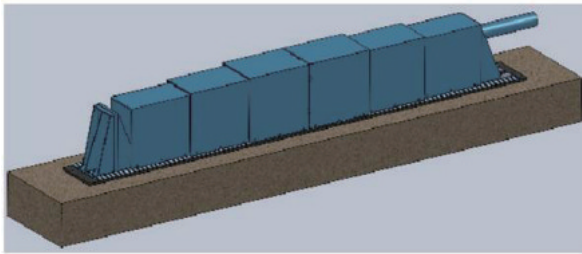


◀ Spreader bar testing



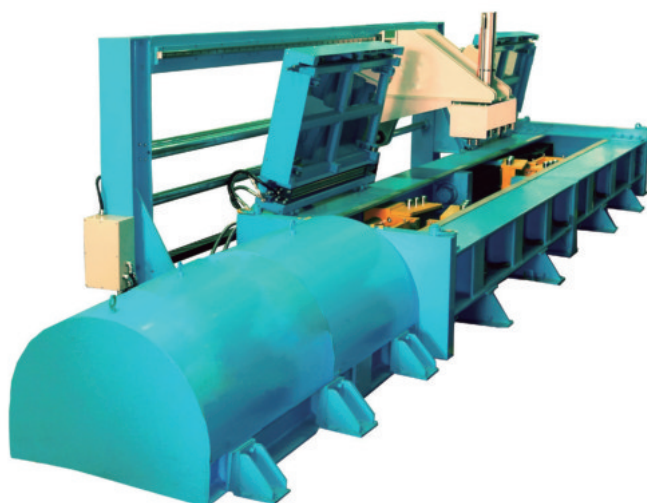
### Open Top Horizontal Tensile Test Machine

- ▶ The design offers larger testing space. No limit in width and height of testing specimen.
- ▶ With open space in between, operators can take advantage of easy loading of larger or cumbersome testing specimen.



### Horizontal Tension Testing Bench with Extensometer

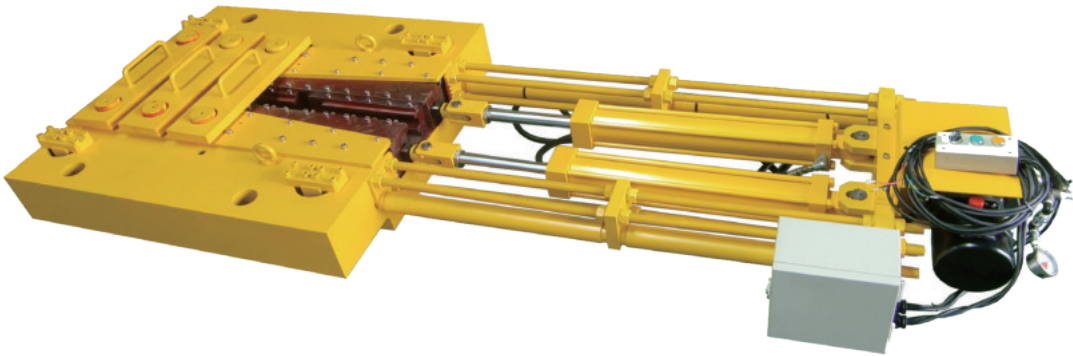
- ▶ The design offers the operator to do the simulation test and measure the detailed elastic modulus. Ideal for testing wire ropes, bridge cables and special cables.
- ▶ Available for capacities from 50 tonnes metric tons to 1,500 metric tons.



# Accessories of Test Benches

## WIROP® Wire Rope Grip

- ▶ The moveable trolley grip allows the grip to be pinned into the frame at any position.
- ▶ End Bed Design and Break Test Grips are also available upon request.
- ▶ Includes individual hydraulic power unit for operating hydraulic rams.
- ▶ Lightweight support plates for easy installation.
- ▶ Wire Rope Grip capacity: 60% of the minimum breaking load of EIPS wire rope for the size liner installed in the grip.



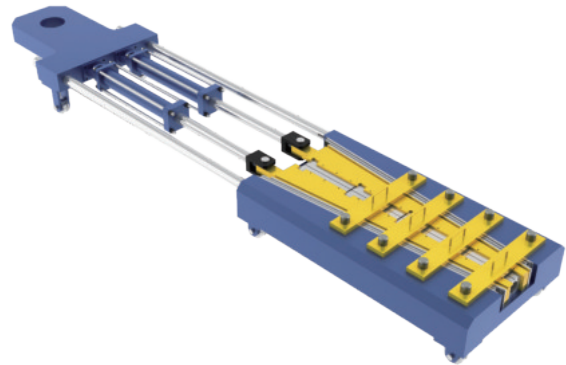
### Standard Sizes for WIROP® Wire Rope Grip, Chain Grips and Chain Adapters:

Model	WPRG-38	WPRG-50	WPRG-64	WPRG-76	WPRG-88
Max. wire rope size (inch)	#1-1/2"	#2"	#2-1/2"	#3"	#3-1/2"
# of sets included	10	11	13	14	16
Liner sizes included (inch)	#3/8"	#1/2"	#1/2"	#5/8"	#5/8"
	#1/2"	#5/8"	#5/8"	#3/4"	#3/4"
	#5/8"	#3/4"	#3/4"	#7/8"	#7/8"
	#3/4"	#7/8"	#7/8"	#1"	#1"
	#7/8"	#1"	#1"	#1-1/8"	#1-1/8"
	#1"	#1-1/8"	#1-1/8"	#1-1/4"	#1-1/4"
	#1-1/8"	#1-1/4"	#1-1/4"	#1-3/8"	#1-3/8"
	#1-1/4"	#1-3/8"	#1-3/8"	#1-1/2"	#1-1/2"
	#1-3/8"	#1-1/2"	#1-1/2"	#1-3/4"	#1-3/4"
	#1-1/2"	#1-3/4"	#1-3/4"	#2"	#2"
		#2"	#2"	#2-1/4"	#2-1/4"
			#2-1/4"	#2-1/2"	#2-1/2"
			#2-1/2"	#2-3/4"	#2-3/4"
				#3"	#3"
					#3-1/4"
					#3-1/2"

⚠ WIROP® reserves the right to change specifications.

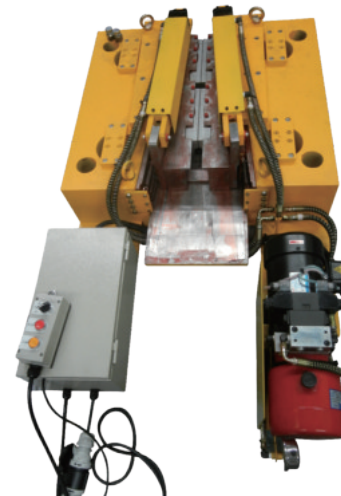
### WIROP® Wire Rope Grip : Rear-Pin Design

- ▶ Specially designed for **pre-stretch double grip** applications.
- ▶ **Quick and easy installation** by pin the grip into the crosshead for testing or pre-stretch long lengths of wire rope.
- ▶ Also **available for 2-Cylinder Push test beds**.



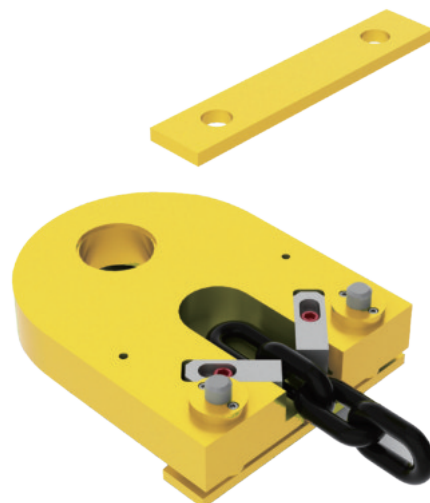
### WIROP® Wire Rope Grip : Rams-On-Top Design

- ▶ **Specially designed to fit wire rope up to 1-1/2 inches.**
- ▶ Allows a much shorter package, quicker loading and unloading.



### WIROP® Chain Grips / Chain Adapters

- ▶ Specially designed to test up to **grade 100 chain** in sizes ranging.
- ▶ Available for various testing jobs and **breaking test**.
- ▶ **Allows flexible accommodation on different chain sizes.**
- ▶ Larger sizes of chain grips and adapters are available upon request.





# Annealing and Tapering Machines

- ▶ Three models for the maximum wire rope diameter 26, 36 and 44mm.
- ▶ Easy operation: After tensioning the wire rope and the current is applied, red annealing occurs. By slowly turning the hand wheel, **a special designed device will twist and pull apart the wire rope at the same time to make sure the ends are twisted and tapered.**
- ▶ Allows annealing and tapering different sizes of wire rope by adjusting the distance between the machine chucks.
- ▶ Unique design for grips to secure the wire rope properly.
- ▶ Optional Accessories: Suction device.

MODEL	WPAC-26	WPAC-36	WPAC-44
Capacity (mm)	6~26	12~36	16~44
Operating height (mm)	805	805	805
Overall height (mm)	1780	1900	1900
Length (mm)	980	1350	1350
Handle width (mm)	790	1000	1000
Approx. weight (KG)	570	870	900
Capacity of transformer (KVA)	15	30	50
Adjustable current range (A/V)	10~30/380	14~90/380	20~140/380
Voltage	220/380V single phase (or as request)		

⚠ WIROP® reserves the right to change specifications.



# Wire Rope Shaftless Winding Machines

(for use with wooden & steel reels only)

- ▶ Easy loading and unloading.
- ▶ User friendly operation control.
- ▶ Motorized opening /closing of axles with mechanical torque limiters (by hydraulic cylinders).
- ▶ Motorized lifting and lowering of axles to fit appropriate reels (by hydraulic cylinders).
- ▶ Adjustable winding speed and the direction of rotations (Forward or Reverse) can be switched.
- ▶ The system has a braked control in the winding process to avoid over coiling.
- ▶ Equipped with a wireless remote control box.

Model	WPRC-3500	WPRC-4500	WPRC-8000
Power supply (HP)	15HP/4P	15HP/4P	25HP/4P
Outside diameter of reels (mm)	500 ~ 1500	500 ~ 1700	500 ~ 2100
Width of reels (mm)	400 ~ 1500	400 ~ 1500	400 ~ 1700
Drum weight with wire rope wound on (KG)	3500	4500	8000
Inner reel hole diameter (stepped up type) (mm)	30 ~ 90	30 ~ 90	30 ~ 90
Adjustable speed (RPM)	0 ~ 40	0 ~ 40	0 ~ 25
Oil tank capacity (litre)	330	350	400
Dimensions W x L x H (mm) (not including accessories)	2600 x 3000 x 1200	2800 x 3000 x 1200	2800 x 3500 x 1350

⚠ WIROP® reserves the right to change specifications.



# Recoiling Machines

WPRC-500

- ▶ **Designed for the recoiling of coil and reel.**
- ▶ User friendly control panel for easy operation.
- ▶ Two modes of operation: Manual / Automatic.
- ▶ Adjustable re-coiling speed (Max. speed, RPM).
- ▶ The direction of rotations (Forward or Reverse) can be switched.
- ▶ Equipped with a wireless remote control box.

Model	WPRC-500
Power supply (HP)	3
Coil capacity (KG)	500
Max. coil size, O.D x W (mm)	860 x 410
Reel capacity (KG)	2000
Max. reel size, O.D x W (mm)	1500 x 1100
Max. speed (RPM)	20
Dimensions W x L x H (mm)	2050 x 2550 x 1960
Axle diameter for wooden reel	70mm

⚠ WIROP® reserves the right to change specifications.

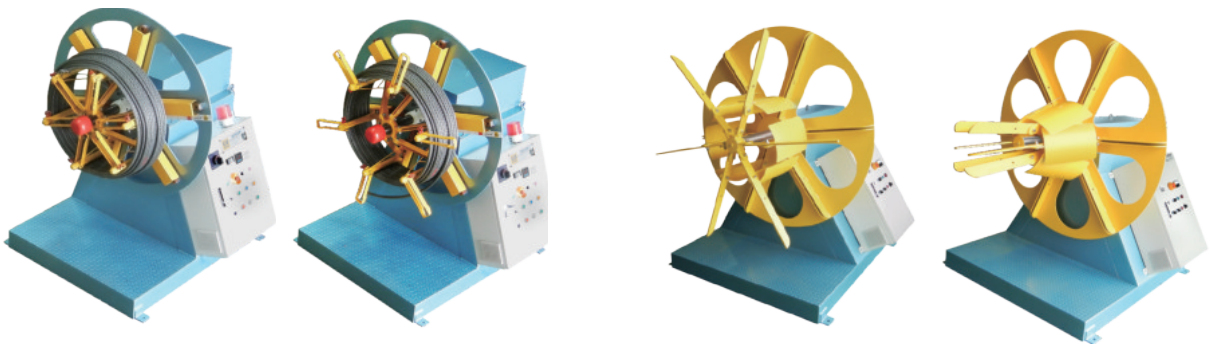


WPRC-700 / WPRC-800

- ▶ User friendly control panel for easy operation.
- ▶ Two modes of operation: Manual / Automatic.
- ▶ Adjustable re-coiling speed (Max. speed, RPM).
- ▶ The direction of rotations (Forward or Reverse) can be switched.
- ▶ Equipped with a wireless remote control box.

Model	WPRC-700	WPRC-800
Power supply (HP)	3	5
Coil capacity (KG)	700	800
Max. coil size, O.D x W (mm)	1300 x 300	1500 x 450
Max. speed (RPM)	30	30
Dimensions W x L x H (mm)	1500 x 1400 x 1900	2080 x 1650 x 1700

⚠ WIROP® reserves the right to change specifications.



WARC-700

WARC-800



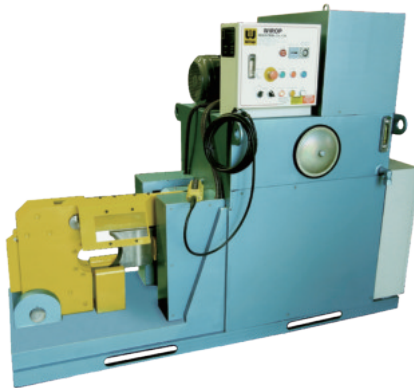
# Hydraulic Wire Rope Cutting Machines

- ▶ **Special design for heavy duty cutting.**
- ▶ Changeable blades for small size cutting.
- ▶ Easy operation and maintenance.

WPCM-50



WPCM-80



WPCM-100



MODEL	WPCM-50	WPCM-80	WPCM-100
Power supply (HP)	5HP/4P	5HP/4P	7.5HP/6P
Wire rope cutting capacities (mm / inch)	50mm / 2"	76mm / 3"	102mm / 4"
Cutting speed (mm/s)	4 mm/s	4 mm/s	4 mm/s
Oil tank capacity (litre)	150	170	175
Dimensions W x L x H (mm)	760 x 1150 x 1050	900 x 1400 x 1300	1050 x 2080 x 1750

⚠ WIROP® reserves the right to change specifications.

# Automatic Measuring and Cutting Machines

- ▶ **Including 5 ton power free pay off turn table for placement of supply wire rope.**
- ▶ Driving device with a brake.
- ▶ Meter measuring device, accuracy +/-0.5%.
- ▶ Equipped with a powered hydraulic cutter.
- ▶ 4.5 Meters Stand for cutting wire rope. Longer stand upon request is available.
- ▶ Electronic control by PLC system with a touching screen to set the length and number to cut.
- ▶ **Capacity from 5mm to 28mm.**
- ▶ Custom-made wire rope measuring options are available.

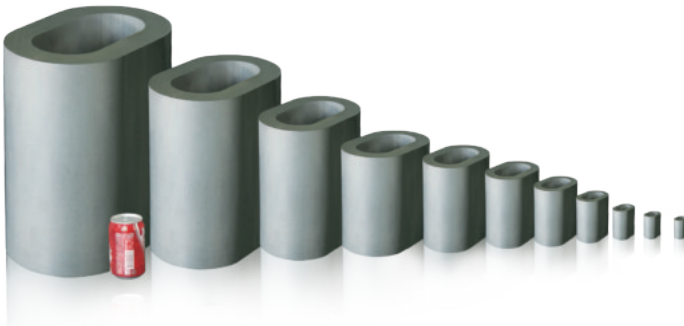
⚠ WIROP® reserves the right to change specifications.



# Ferrules, Sleeves and Swaging Products

WIROP® OFFERS A FULL RANGE OF HIGH QUALITY SWAGING PRODUCTS.

- ▶ Conical (Form C) aluminum ferrules
- ▶ Duplex oval steel sleeves
- ▶ Steel swage buttons
- ▶ Stainless steel one-piece sleeves
- ▶ Stainless steel two-piece sleeves
- ▶ Copper ferrules
- ▶ Forged swage sockets : open and closed type
- ▶ Swage thread stud ends



**Aluminum Ferrules : #1 ~ #S128**



**Flemish Eye Steel Sleeves : 1/4" ~ 6 "**

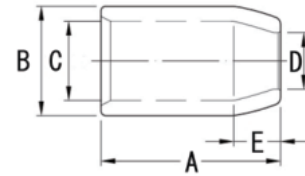


# Flemish Eye Steel Sleeves

**WIROP® is striving to manufacture the best swaging steel sleeves in the world.**

- ▶ Crystal inspection on carbon steel sample.
- ▶ Exact in-house forging, heat treatment, and sand blasting process.
- ▶ Test dynamic endurance on Flemish eye steel sleeves sample 75,000 times and record maximum breaking load. Strictly follow EN 13411-3 standard.
- ▶ Batch code on each steel sleeve for traceability.
- ▶ Sustained improvement on manufacturing sleeves. Galvanized and self-colored sleeves are available.

**W902**



Art No.	For wire rope size	N.W. per 100pcs	Dimensions					Max. O.D. after swage (inch)
	(inch)	(KG)	A (inch)	B (inch)	D (inch)	E (inch)	C (inch)	
W902-006	1/4	2.27	1.00	0.66	0.31	0.28	0.47	0.57
W902-008	5/16	7.20	1.50	0.91	0.38	0.44	0.62	0.75
W902-010	3/8	6.36	1.50	0.91	0.47	0.39	0.66	0.75
W902-011	7/16	15.00	2.00	1.22	0.53	0.65	0.85	1.01
W902-013	1/2	13.00	2.00	1.22	0.63	0.56	0.91	1.01
W902-014	9/16	29.00	2.75	1.47	0.70	0.63	1.03	1.24
W902-016	5/8	26.00	2.75	1.47	0.75	0.63	1.09	1.24
W902-019	3/4	40.00	3.19	1.72	0.91	0.84	1.28	1.46
W902-022	7/8	60.00	3.56	2.03	1.03	1.00	1.53	1.68
W902-026	1	89.00	4.00	2.28	1.16	1.13	1.72	1.93
W902-028	1-1/8	118.00	4.80	2.50	1.28	1.25	1.94	2.13
W902-032	1-1/4	161.00	5.19	2.78	1.44	1.41	2.16	2.32
W902-035	1-3/8	192.00	5.81	3.00	1.56	1.56	2.38	2.52
W902-038	1-1/2	227.00	6.25	3.25	1.69	1.69	2.63	2.71
W902-045	1-3/4	366.00	7.25	3.84	1.94	1.97	3.13	3.10
W902-050	2	514.00	8.50	4.38	2.25	2.25	3.63	3.56
W902-057	2-1/4	879.00	9.56	5.03	2.50	2.53	4.03	4.12
W902-064	2-1/2	1068.00	10.50	5.50	2.75	2.81	4.50	4.50
W902-070	2-3/4	1271.00	11.50	5.75	3.00	3.09	4.75	4.70
W902-076	3	1335.00	12.00	6.00	3.25	3.38	5.00	4.96
W902-082	3-1/4	1650.00	13.00	6.50	3.86	3.54	5.43	5.37
W902-089	3-1/2	2106.00	14.00	7.00	3.88	3.94	5.84	5.77
W902-095	3-3/4	2497.00	15.00	7.50	4.06	4.25	6.31	6.23
W902-100	4	3087.00	16.00	8.13	4.38	4.50	6.81	6.69
W902-115	4-1/2	4540.00	18.00	9.13	4.88	5.06	7.66	7.45
W902-130	5	7200.00	20.00	10.52	5.50	5.63	8.73	8.65
W902-140	5-1/2	9150.00	22.00	11.22	6.05	6.22	9.17	9.20
W902-150	6	12300.00	24.00	12.54	6.50	6.75	10.20	10.40

⚠ Recommend to use 6x19, 6x25, 6x29, 6x37 IPS or XIP (EIP), XXIP (EEIP), RRL, FC or IWRC wire rope. If using any other type of construction or grade of wire rope, break load testing upon termination is recommended to examine the correct and adequate swaging process.

⚠ WIROP® does not recommend a "Texas Tuck" style termination with WIROP® Flemish Eye Steel Sleeves.



# Aluminum Ferrules

WIROP® is striving to manufacture the high quality aluminum ferrules from #1 to #S128.

Specifications are according to the standard of EN13411-3 (DIN3093).

- ▶ Manufactured as per EN13411-3 (DIN 3093) standard from the size of #2.5 to #60.
- ▶ Innovators for "S"-type Aluminum ferrules from the size of #S62 to #S128.
- ▶ WIROP® "S"-type Aluminum ferrules have been proven the high quality by sample testing via TAF lab, third party and end users.
- ▶ Gaylin International Pte Ltd. has done the testing on 21 Oct. 2010 and the testing result has been qualified.
- ▶ Rigorous manufacture, checking, testing and quality control of each Aluminum ferrule of WIROP.

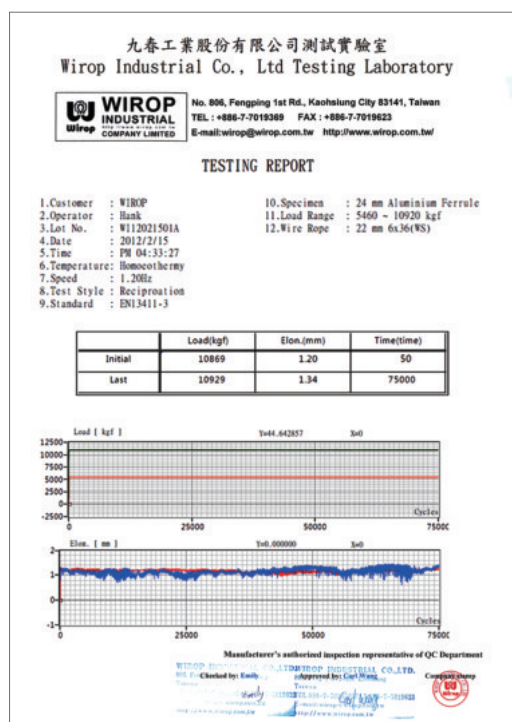
## 1. The production and quality control of each ferrule:

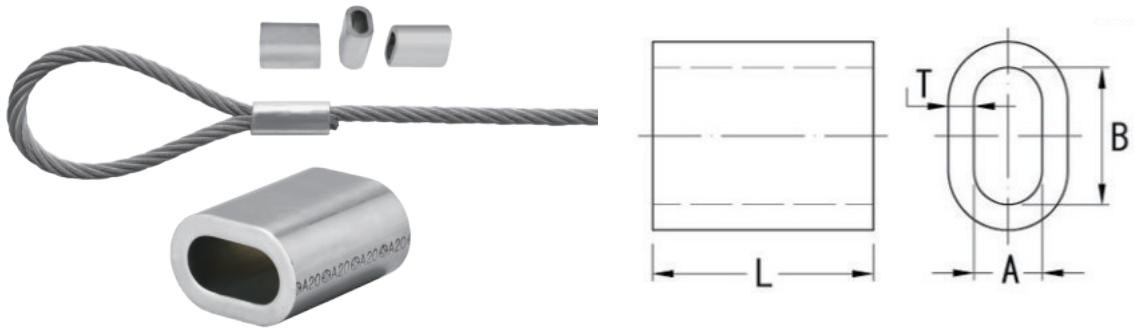
All WIROP® aluminum ferrules are made of seamless aluminum tube, which are strictly following the material composition and mechanical properties requirement as per EN13411-3 (DIN 3093) standard.

## 2. Random samples have been passed 75,000 cycles of fatigue test:

We completed the fatigue tests by an in-line tensile fatigue machine. The tests shall consist of a cyclic force from 15 % to 30 % of the minimum breaking force of the rope for 75,000 cycles. After that, the destructive test should be carried out and the rope should be passed 85% of the minimum breaking load of rope specifications.

During the above rigorous testing on WIROP® ferrule products, can keep providing our customers a steady and high quality ferrules for the wire rope industry.



**W901**

Art No.	Ferrule code	Dimensions				N.W. per 1000pcs (KG)
		A (mm)	B (mm)	T (mm)	L (mm)	
▼W901-001	1	1.20	2.40	0.65	5.00	0.094
▼W901-1P5	1.5	1.70	3.40	0.75	6.00	0.211
▼W901-002	2	2.20	4.40	0.85	7.00	0.375
W901-2P5	2.5	2.70	5.40	1.05	9.00	0.499
W901-003	3	3.30	6.60	1.25	11.00	0.843
W901-3P5	3.5	3.80	7.60	1.50	13.00	1.32
W901-004	4	4.40	8.80	1.70	14.00	1.81
W901-4P5	4.5	4.90	9.80	1.90	16.00	2.61
W901-005	5	5.50	11.00	2.10	18.00	3.57
W901-006	6	6.60	13.20	2.50	21.00	5.86
W901-6P5	6.5	7.20	14.40	2.70	23.00	7.55
W901-007	7	7.80	15.60	2.90	25.00	9.50
W901-008	8	8.80	17.60	3.30	28.00	13.70
W901-009	9	9.90	19.80	3.70	32.00	19.80
W901-010	10	10.90	21.80	4.10	35.00	26.40
W901-011	11	12.10	24.20	4.50	39.00	35.80
W901-012	12	13.20	26.40	4.90	42.00	45.80
W901-013	13	14.20	28.40	5.40	46.00	59.70
W901-014	14	15.30	30.60	5.80	49.00	73.50
W901-016	16	17.50	35.00	6.70	56.00	111.00
W901-018	18	19.60	39.20	7.60	63.00	156.00
W901-020	20	21.70	43.40	8.40	70.00	217.00
W901-022	22	24.30	48.60	9.20	77.00	292.00
W901-024	24	26.40	52.80	10.00	84.00	376.00
W901-026	26	28.50	57.00	10.90	91.00	481.00
W901-028	28	31.00	62.00	11.70	98.00	603.00
W901-030	30	33.10	66.20	12.50	105.00	739.00
W901-032	32	35.20	70.40	13.40	112.00	897.00
W901-034	34	37.80	75.60	14.20	119.00	1077.00
W901-036	36	39.80	79.60	15.00	126.00	1275.00
W901-038	38	41.90	83.80	15.80	133.00	1503.00
W901-040	40	44.00	88.00	16.60	140.00	1734.00
▼W901-042	42	46.20	92.40	17.50	147.00	2024.00
W901-044	44	48.40	96.80	18.30	154.00	2314.00
▼W901-046	46	50.60	101.20	19.20	161.00	2662.00
W901-048	48	52.80	105.60	20.00	168.00	3010.00
▼W901-050	50	55.00	110.00	20.80	175.00	3412.00
W901-052	52	57.20	114.40	21.60	182.00	3813.00
▼W901-054	54	59.40	118.80	22.50	189.00	4293.00
W901-056	56	61.60	123.20	23.30	196.00	4772.00
▼W901-058	58	63.80	127.60	24.20	203.00	5326.00
W901-060	60	66.00	132.00	25.00	210.00	5880.00

⚠ Swaging is finished in one step. Turn the ferrule 90 degrees and swage again is NOT recommended.

⚠ WIROP® reserves the right to change specifications.

▼ Sizes not mentioned in the standard of EN 13411-3 (DIN 3093) and other sizes up to #S128 are also available.

## WIROP® “S”-type Aluminum ferrules

A selection of the correct ferrule when matching the wire rope is to take into account of:

- ▶ Measured rope diameter.
- ▶ Rope type (and core).
- ▶ Nominal metallic cross-sectional area factor of rope.

▼ Art No.	Ferrule code	Fiber core fill factor (f = 0.4 ~ 0.5)		Steel core fill factor (f = 0.5 ~ 0.6)		Die No.	Dia. after swage	Unit: mm
		From	To	From	To			Tolerance (Dia. after swage)
W901-062	S62	60.6	63	58.4	61.3	S62/T60	120	+2.3 - 0
W901-064	S64	63.1	64.5	61.4	63.3	S64/T62	124	“
W901-066	S66	64.6	66.5	63.4	65.3	S66/T64	128	“
W901-068	S68	66.6	68.5	65.4	67.3	S68/T66	132	+2.5 - 0
W901-070	S70	68.6	70.5	67.4	69.3	S70/T68	136	“
W901-074	S74	72.6	74.74	71.4	73.3	S74/T72	144	“
W901-078	S78	76.6	79	75.4	77.3	S78/T76	152	“
W901-084	S84	82	85.5	80	83.5	S84/T82	164	+2.8 - 0
W901-090	S90	88	91.5	85	89.5	S90/T88	176	“
W901-096	S96	94	97.5	91	95.5	S96/T94	188	+3.0 - 0
W901-102	S102	98	104	96	101.5	S102/T100	200	“
W901-116	S116	116	123	114	120	S116/T114	230	“
W901-128	S128	127	134	125	131	S128/T126	254	“

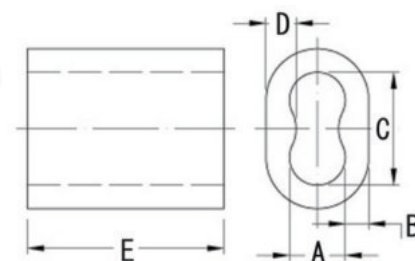
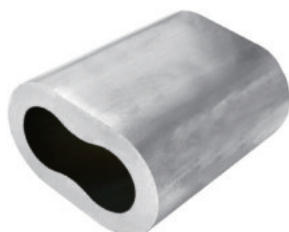
⚠ Swaging is finished in one step. Turn the ferrule 90 degrees and swage again is NOT recommended.

⚠ WIROP® reserves the right to change specifications.

⚠ ▼ Sizes not mentioned in the standard of EN 13411-3 (DIN 3093) and other sizes up to #S128 are also available.

## Japanese Standard Aluminum Ferrules

### W901W Japanese



Art No.	Ferrule code	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
W901W-006	6	7.00	3.20	13.80	3.80	24.00
W901W-008	8	9.40	4.00	18.60	4.70	32.00
W901W-009	9	10.22	4.40	20.70	4.90	36.00
W901W-010	10	11.60	4.60	23.00	5.20	40.00
W901W-012	12	13.62	5.51	27.60	6.35	48.00
W901W-014	14	15.89	5.66	32.20	6.80	56.00
W901W-016	16	18.16	6.53	36.80	7.91	64.00
W901W-018	18	20.43	7.11	41.40	9.54	72.00
W901W-020	20	23.10	7.70	46.00	9.20	80.00
W901W-022	22	25.40	8.30	50.60	10.00	88.00
W901W-024	24	27.80	8.90	55.30	10.90	96.00
W901W-026	26	29.90	10.70	59.80	12.90	104.00
W901W-028	28	32.20	11.30	64.40	13.60	112.00
W901W-030	30	34.50	11.80	69.00	14.30	120.00
W901W-032	32	36.80	12.50	73.60	15.20	128.00

⚠ Swaging is finished in one step. Turn the ferrule 90 degrees and swage again is NOT recommended.

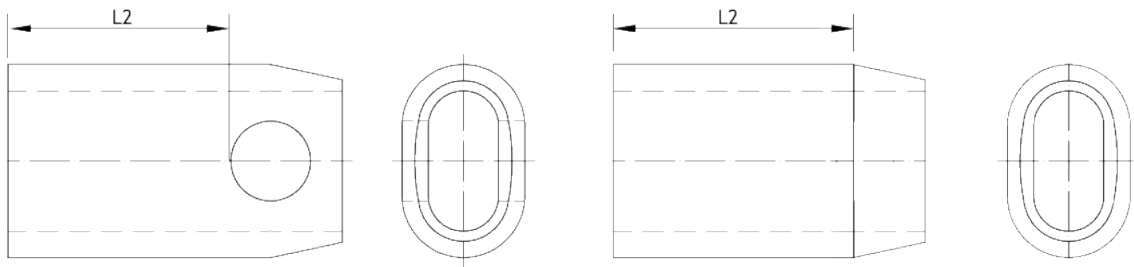
⚠ WIROP® reserves the right to change specifications.



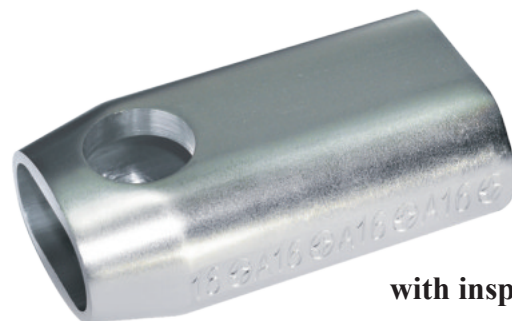
## EN 13411-3 Form C Aluminum Ferrules

- ▶ The inspection hole guarantees control of the correct inserted length of wire rope before and after swaging.
- ▶ Recommended to be swaged with conical dies for EN13411-3 Form C (DIN 3093) aluminum ferrules.
- ▶ Larger ferrule sizes and ferrules without inspection hole are available upon request.

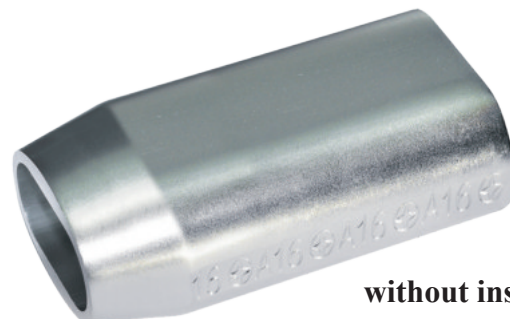
### W901C



Art No.	Ferrule code	L2 (mm)
W901C-008	8	28
W901C-009	9	32
W901C-010	10	35
W901C-011	11	39
W901C-012	12	42
W901C-013	13	46
W901C-014	14	49
W901C-016	16	56
W901C-018	18	63
W901C-020	20	70
W901C-022	22	77
W901C-024	24	84
W901C-026	26	91
W901C-028	28	98
W901C-030	30	105
W901C-032	32	112
W901C-034	34	119
W901C-036	36	126
W901C-038	38	133
W901C-040	40	140



with inspection hole



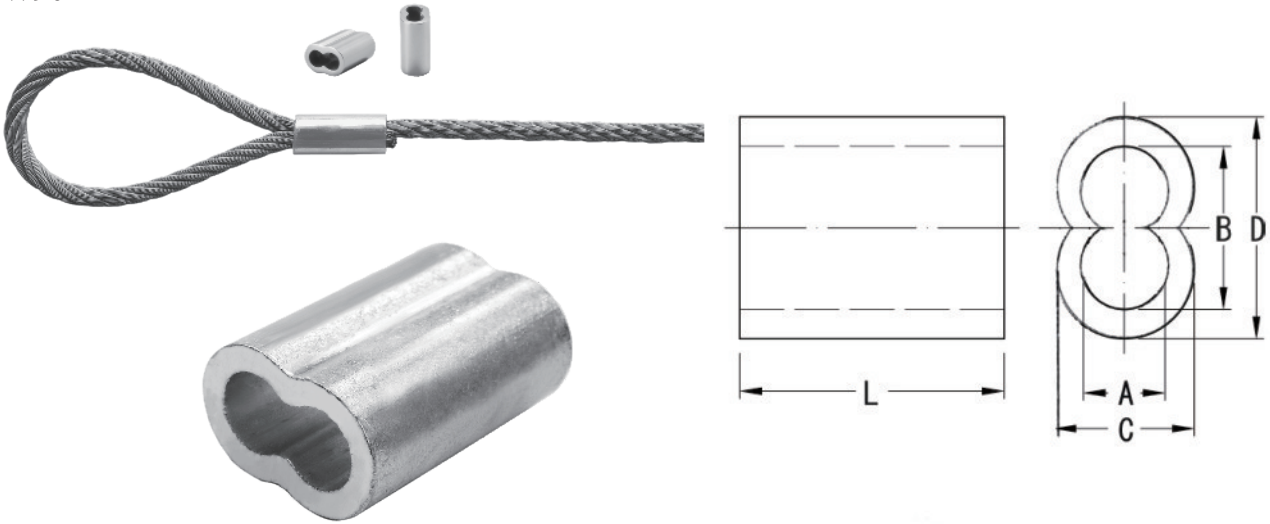
without inspection hole

⚠ Swaging is finished in one step. Turn the ferrule 90 degrees and swage again is NOT recommended.

# Duplex Aluminum Ferrules

► The larger sizes of Duplex Aluminum Ferrules are available on request.

## W901D



Art No.	Ferrule code	A	B	C	D	L	Max. O.D. after swage	N.W. per 1000pcs
	(inch)	(inch)	(inch)	(inch)	(inch)	(inch)	(inch)	(KG)
W901D-1P2	3/64	1/16	1/8	9/64	3/64	3/8	9/64	0.32
W901D-1P6	1/16	5/64	5/32	11/64	1/4	3/8	3/16	0.454
W901D-002	5/64	3/32	3/16	13/64	5/16	3/8	15/64	0.726
W901D-2P4	3/32	1/8	1/4	9/32	13/32	1/2	9/32	1.362
W901D-3P2	1/8	5/32	5/16	11/32	1/2	5/8	5/16	2.996
W901D-004	5/32	3/16	3/8	3/8	9/16	11/16	3/8	3.995
W901D-4P8	3/16	7/32	7/16	7/16	21/32	1	7/16	7.264
W901D-6P4	1/4	9/32	9/16	17/32	13/16	1-1/8	9/16	12.71
W901D-7P9	5/16	3/8	23/32	11/16	1-1/32	1-1/4	11/16	20.88

⚠ WIROP® reserves the right to change specifications.

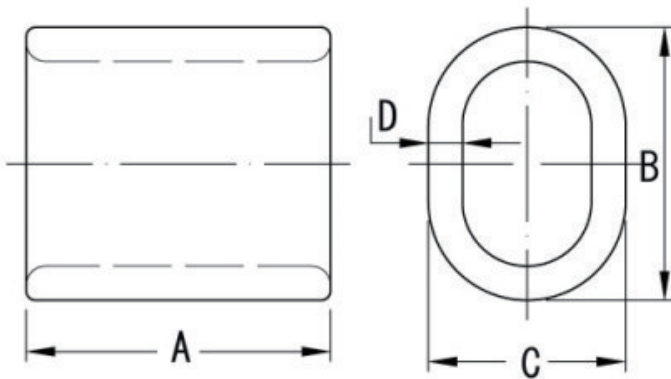
Art No.	Ferrule code	A	B	C	D	L	Max. O.D. after swage	N.W. per 1000pcs
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(KG)
W901D-1P2	1.2	1.59	3.18	3.6	5.2	9.5	3.5	0.32
W901D-1P6	1.6	1.98	3.97	4.4	6.4	9.5	4.7	0.454
W901D-002	2	2.38	4.76	5.2	7.9	9.5	5.8	0.726
W901D-2P4	2.4	3.18	6.35	7.1	10.3	12.7	7.1	1.362
W901D-3P2	3.2	3.97	7.94	8.7	12.7	16	7.8	2.996
W901D-004	4	5	9.9	9	14	17.46	9.6	3.995
W901D-4P8	4.8	5.56	11.11	11.11	16.7	25	11.2	7.264
W901D-6P4	6.4	7.14	14.29	13.5	20.6	28	14.2	12.71
W901D-7P9	7.9	9.53	19.05	17.5	26.2	32	17.5	20.88

⚠ WIROP® reserves the right to change specifications.

## Duplex Oval Steel Sleeves

- ▶ Non-tapered.
- ▶ For turn-back loop.
- ▶ Specially processed low carbon steel.
- ▶ Note: Duplex oval steel sleeves are recommended for using with 6x19 or 6x37, IPS or XIP (EIP), FC or IWRC wire rope.

### W903



Art No.	Rope size (inch)	N.W. per 100pcs (LB)	A (inch)	B (inch)	C (inch)	D (inch)	Max. O.D. after swage (inch)
W903-008	5/16	17	1.25	1.08	0.81	0.19	0.77
W903-010	3/8	13	1.25	1.12	0.81	0.14	0.77
W903-011	7/16	31	1.63	1.41	1.02	0.19	1.03
W903-013	1/2	27	1.63	1.44	1.02	0.16	1.03
W903-014	9/16	63	2.25	1.72	1.23	0.23	1.29
W903-016	5/8	54	2.25	1.84	1.28	0.20	1.29
W903-019	3/4	90	2.63	2.16	1.52	0.23	1.55
W903-022	7/8	126	2.88	2.50	1.75	0.27	1.80
W903-025	1	187	3.06	2.84	2.00	0.33	2.05
W903-032	1-1/4	384	4.06	3.50	2.50	0.38	2.56

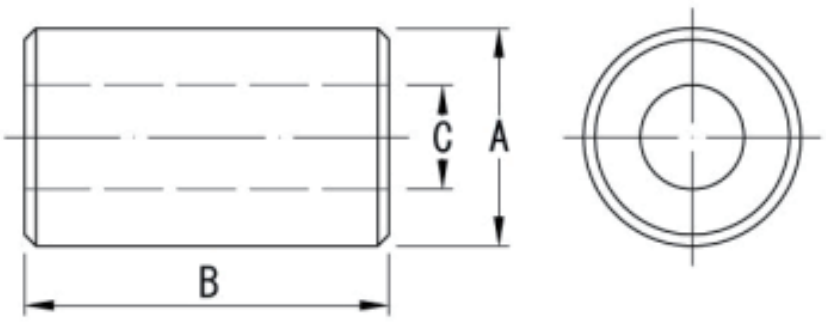
⚠ Recommend to use 6x19, 6x25, 6x29, 6x37 IPS or XIP (EIP), FC or IWRC wire rope. If using any other type of construction or grade of wire rope, break load testing upon termination is recommended to examine the correct and adequate swaging process.



# Steel Swage Buttons

► Specially processed low carbon steel. Recommended use with 6x19, 6x25, 6x29, 6x37 IPS or XIP (EIP), FC or IWRC wire rope.

## W903Y



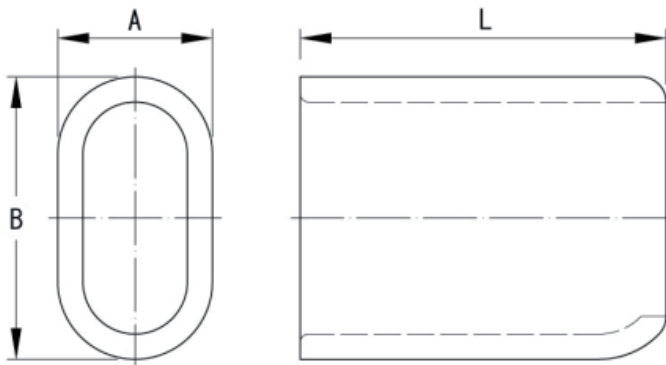
Art No.	Rope size (inch)	N.W. per 100pcs (LB)	A (inch)	B (inch)	C (inch)	Max. O.D. after swage (inch)
W903Y-003	1/8	2	0.44	0.50	0.14	0.40
W903Y-005	3/16	4	0.56	0.70	0.20	0.52
W903Y-006	1/4	8	0.63	1.06	0.30	0.58
W903Y-008	5/16	16	0.88	1.13	0.36	0.77
W903Y-010	3/8	15	0.88	1.48	0.42	0.77
W903Y-011	7/16	30	1.13	1.63	0.48	1.03
W903Y-013	1/2	50	1.31	1.89	0.55	1.16
W903Y-014	9/16	70	1.44	2.02	0.61	1.29
W903Y-016	5/8	100	1.56	2.42	0.67	1.42
W903Y-019	3/4	131	1.69	2.73	0.79	1.55
W903Y-022	7/8	220	2.00	3.27	0.94	1.80
W903Y-025	1	310	2.25	3.67	1.06	2.05
W903Y-028	1-1/8	450	2.56	4.05	1.19	2.30
W903Y-032	1-1/4	650	2.81	4.58	1.33	2.56

⚠ Recommend to use 6x19, 6x25, 6x29, 6x37 IPS or XIP (EIP), FC or IWRC wire rope. If using any other type of construction or grade of wire rope, break load testing upon termination is recommended to examine the correct and adequate swaging process.

## Stainless Steel One - Piece Sleeves

► The quickest and simplest solution to form strong swaged turn-back eyes in wire rope.

### W9041



Art No.	Ferrule code (inch)	Weight/pc (LB)	L	A	B	After swage	
			Before swage				
			Length (inch)	Width (inch)	Height (inch)	Length (inch)	DIA. (inch)
W9041-006	1/4	0.03	7/8	9/16	3/4	1	0.53
W9041-008	5/16	0.18	1-19/32	25/32	1-1/8	1-9/16	0.76
W9041-010	3/8	0.14	1-23/32	13/16	1-1/8	1-7/8	0.76
W9041-011	7/16	0.35	2-1/32	1-1/32	1-7/16	1-15/16	1.01
W9041-013	1/2	0.31	2	1	1-7/16	2-1/4	1.01
W9041-014	9/16	0.60	2-1/4	1-3/16	1-3/4	2-1/2	1.27
W9041-016	5/8	0.60	2-3/8	1-1/4	1-13/16	2-5/8	1.27
W9041-019	3/4	1.00	3-1/16	1-7/16	2-1/8	3-3/8	1.53
W9041-022	7/8	1.50	3-1/4	3-3/8	2-1/2	3-3/4	1.76
W9041-025	1	2.00	3-3/4	1-7/8	2-7/8	3-13/16	2.04

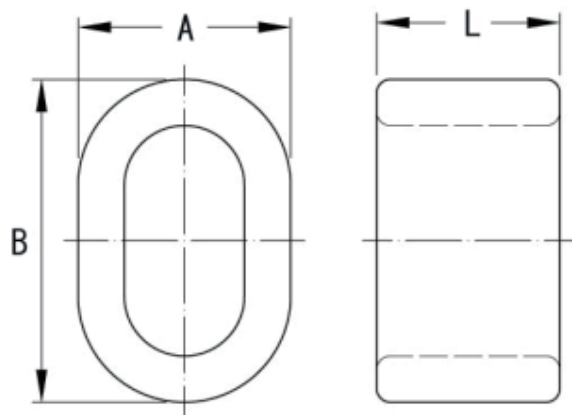
⚠ Recommend to use 6x19, 6x25, 6x29, 6x37 IPS or XIP (EIP), FC or IWRC wire rope. If using any other type of construction or grade of wire rope, break load testing upon termination is recommended to examine the correct and adequate swaging process.

⚠ Swaging is finished in one step. Turn the ferrule 90 degrees and swage again is NOT recommended.

# Stainless Steel Two - Piece Sleeves

► The quickest and simplest solution to form strong swaged turn-back eyes in wire rope.

## W9042



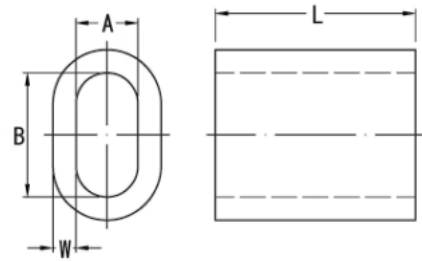
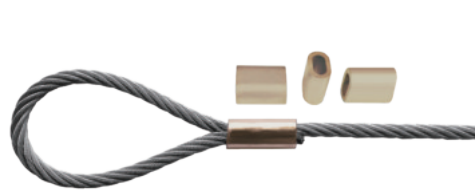
Art No.	Ferrule code (inch)	Weight/pc (LB)	L	A	B	After swage	
			Before swage				
			Length (inch)	Width (inch)	Height (inch)	Length (inch)	DIA. (inch)
W9042-013	1/2	0.20	1-1/16	15/16	1-3/8	1-1/8	1.01
W9042-014	9/16	0.31	1-1/4	1-3/16	1-11/16	1-7/16	1.27
W9042-016	5/8	0.30	1-1/16	1-13/16	1-13/16	1-3/16	1.27
W9042-019	3/4	0.50	1-3/16	1-3/8	2-1/8	1-7/16	1.53
W9042-022	7/8	0.70	1-3/8	1-3/4	2-1/2	1-5/8	1.76
W9042-025	1	1.00	1-9/16	1-13/16	2-3/4	1-13/16	2.04
W9042-028	1-1/8	1.50	1-7/8	2	3-3/16	2-1/8	2.26
W9042-032	1-1/4	2.00	2-1/8	2-3/8	3-3/8	2-1/2	2.51
W9042-035	1-3/8	2.00	2-1/8	2-5/16	3-9/16	2-1/2	2.51
W9042-038	1-1/2	2.00	2-1/4	2-1/2	3-7/8	2-5/8	2.70
W9042-042	1-5/8	3.00	2-3/8	2-13/16	4-5/16	2-3/4	3.08
W9042-045	1-3/4	3.30	2-1/2	2-13/16	4-7/16	2-7/8	3.08
W9042-050	2	4.30	2-7/8	3-3/16	5	3-1/4	3.52
W9042-057	2-1/4	6.50	3-1/8	3-3/4	5-11/16	3-5/8	4.02
W9042-064	2-1/2	7.50	3-1/8	4	6-3/8	3-5/8	4.39

- ⚠ Recommend to use 6x19, 6x25, 6x29, 6x37 IPS or XIP (EIP), FC or IWRC wire rope. If using any other type of construction or grade of wire rope, break load testing upon termination is recommended to examine the correct and adequate swaging process.
- ⚠ Swaging is finished in one step. Turn the ferrule 90 degrees and swage again is NOT recommended.



## Copper Ferrules

### W905

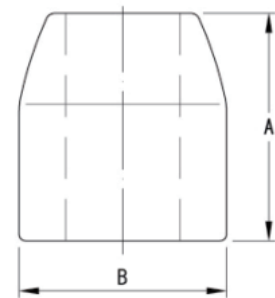


Art No.	Ferrule code	A (mm)	B (mm)	W (mm)	L (mm)
W905-001	1	1.20	2.40	0.65	5
W905-1P5	1.5	1.70	3.40	0.75	6
W905-002	2	2.20	4.40	0.85	7
W905-2P5	2.5	2.70	5.40	1.05	9
W905-003	3	3.30	6.60	1.25	11
W905-3P5	3.5	3.80	7.60	1.50	13
W905-004	4	4.40	8.80	1.70	14
W905-4P5	4.5	4.90	9.80	1.90	16
W905-005	5	5.50	11.00	2.10	18
W905-006	6	6.60	13.20	2.50	21
W905-6P5	6.5	7.20	14.40	2.70	23
W905-007	7	7.80	15.60	2.90	25
W905-008	8	8.80	17.60	3.30	28
W905-009	9	9.90	19.80	3.70	32
W905-010	10	10.90	21.80	4.10	35
W905-011	11	12.10	24.20	4.50	39
W905-012	12	13.20	26.40	4.90	42
W905-013	13	14.20	28.40	5.40	46
W905-014	14	15.30	30.60	5.80	49
W905-016	16	17.50	35.00	6.70	56
W905-018	18	19.60	39.20	7.60	63
W905-020	20	21.70	43.40	8.40	70
W905-022	22	24.30	48.60	9.20	77
W905-024	24	26.40	52.80	10.00	84

## Choker Ferrules

► Special processed low carbon steel.

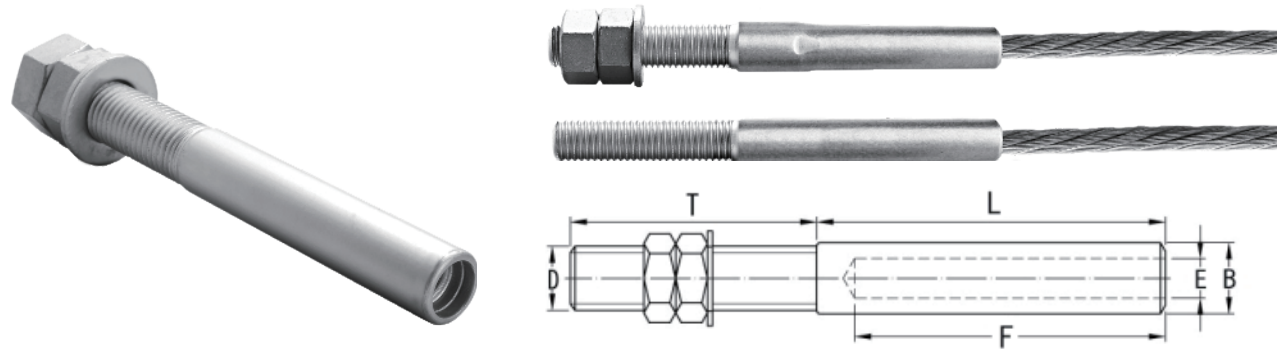
### W903C



Art No.	Rope size (inch)	Before swage		After swage		Weight/pc (LB)
		A (inch)	B (inch)	A (inch)	B (inch)	
W903C-010	3/8	1-3/8	1-1/4	1-11/16	1.08	0.33
W903C-011	7/16	1-3/8	1-1/4	1-11/16	1.08	0.33
W903C-013	1/2	1-3/8	1-1/4	1-11/16	1.08	0.33
W903C-016	5/8	2	1-9/16	2-1/4	1.45	0.80
W903C-019	3/4	2-1/4	1-3/4	2-1/2	1.61	1.10

# Swage Thread Stud Ends

## W908



Art No.	Rope size (inch)	B (inch)	E (inch)	F (inch)	L (inch)	T* (inch)	D*	Max. O.D. after swage
W908-006	1/4	0.50	0.27	2.13	2.48	1.97	M12	0.46
W908-008	5/16	0.77	0.34	3.19	3.54	2.36	M16 x 2.0	0.71
W908-010	3/8	0.77	0.41	3.19	3.54	2.36	M20 x 2.5	0.71
W908-011	7/16	0.98	0.48	4.25	4.69	3.15	M20 x 2.5	0.91
W908-013	1/2	0.98	0.55	4.25	4.69	3.15	M24 x 3.0	0.91
W908-014	9/16	1.25	0.61	5.28	5.87	3.94	M24 x 3.0	1.16
W908-016	5/8	1.25	0.67	5.28	5.87	3.94	M27 x 3.0	1.16
W908-019	3/4	1.55	0.80	6.38	7.24	5.91	M30 x 3.5	1.42
W908-022	7/8	1.70	0.94	7.44	8.35	5.91	M39 x 4.0	1.55
W908-026	1	1.98	1.06	8.46	9.61	6.30	M42 x 4.5	1.80
W908-028	1-1/8	2.25	1.19	9.53	10.75	7.09	M48 x 5.0	2.05
W908-032	1-1/4	2.53	1.33	10.63	11.73	7.09	M56 x 5.5	2.30
W908-036	1-3/8	2.80	1.45	11.63	12.87	7.87	M60 x 5.5	2.56
W908-038	1-1/2	3.08	1.58	12.72	13.98	9.06	M64 x 6.0	2.81
W908-045	1-3/4	3.39	1.86	14.88	16.22	9.84	M70 x 6.0	3.06
W908-050	2	3.94	2.13	16.97	18.86	11.81	M80 x 6.0	3.56
W908-057	2-1/4	4.45	2.36	19.29	20.98	11.81	M90 x 6.0	4.02

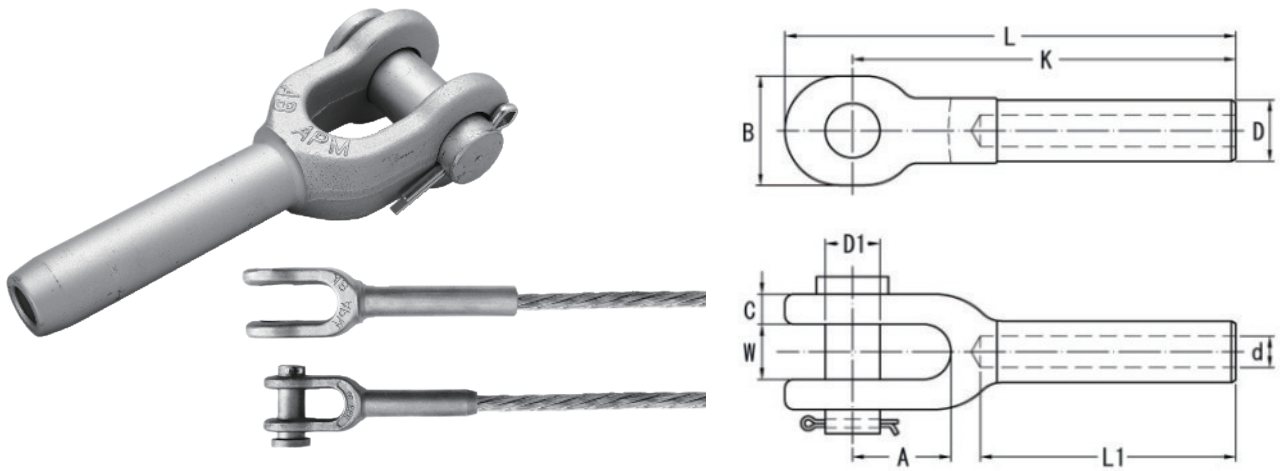
- ⚠ T\*: The thread length can be altered upon request.
- ⚠ D\*: The N.C.N.F. and left hand metric thread of swage thread stud ends are available upon request.
- ⚠ Stainless steel swage thread stud ends are available upon request.

- ▶ Swage sockets are forged from special bar, quality carbon steel with its hardness controlled by spheroidized finest annealing.
- ▶ Sockets have an efficiency rating of 100% based on the catalog strength of wire rope if sockets are under properly application.
- ▶ Swage Sockets are recommended for use with 6x19, 6x37, IPS or EIP, EEIP, RRL, or IWRC wire rope.
- ▶ Destructive testing or Proof Load testing the terminations is recommended before using any swage sockets with any other type of lay or construction or grade of wire rope. All should be documented to prove the adequacy of assembly in accordance with ASME (ANSI) B30.9 standard.

⚠ **General descriptions for W909 and W910 series only.**

## Forged Open Swage Sockets

### W909

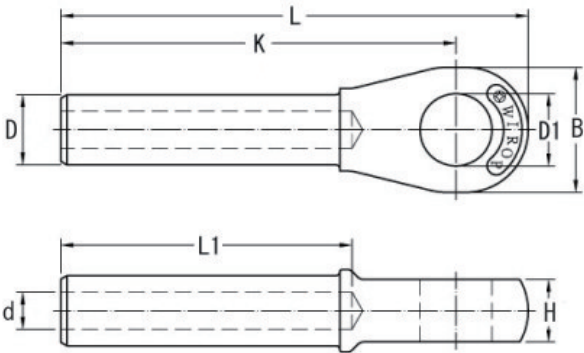


Art No.	Rope size (inch)	Dimensions (inch)										Max. O.D. after swage	Weight/pc (LB)
		L	D	B	D1	d	L1	W	K	C	A		
W909-006	1/4	4.80	0.50	1.38	0.69	0.27	2.17	0.67	4.02	0.35	1.50	0.46	0.7
W909-008	5/16	6.26	0.77	1.65	0.81	0.34	3.15	0.79	5.31	0.47	1.77	0.71	1.5
W909-010	3/8	6.26	0.77	1.65	0.81	0.41	3.15	0.79	5.31	0.47	1.77	0.71	1.3
W909-011	7/16	7.83	0.98	2.00	1.00	0.48	4.33	1.00	6.85	0.55	1.96	0.91	2.4
W909-013	1/2	7.83	0.98	2.00	1.00	0.55	4.33	1.00	6.85	0.55	1.96	0.91	2.6
W909-014	9/16	9.45	1.25	2.36	1.19	0.62	5.31	1.22	8.27	0.68	2.25	1.16	5.3
W909-016	5/8	9.45	1.25	2.36	1.19	0.67	5.31	1.22	8.27	0.68	2.25	1.16	5.1
W909-019	3/4	11.61	1.55	2.75	1.38	0.82	6.34	1.50	10.07	0.79	2.75	1.42	8.8
W909-022	7/8	13.39	1.70	3.15	1.63	0.94	7.44	1.77	11.81	0.94	3.23	1.55	13
W909-026	1	15.55	1.98	3.94	2.00	1.06	8.50	2.00	13.58	1.02	3.86	1.80	20.2
W909-028	1-1/8	17.40	2.25	4.06	2.20	1.19	9.37	2.25	15.08	1.19	4.26	2.05	28.2
W909-032	1-1/4	19.06	2.53	4.45	2.50	1.33	10.59	2.48	16.50	1.34	4.72	2.30	39.2
W909-036	1-3/8	21.02	2.80	5.00	2.50	1.45	11.69	2.52	18.23	1.38	5.20	2.56	48
W909-038	1-1/2	22.88	3.08	5.51	2.75	1.61	12.40	3.00	19.75	1.69	5.75	2.81	63.6
W909-045	1-3/4	26.53	3.39	6.70	3.50	1.86	14.88	3.50	23.00	2.11	6.75	3.06	96.8
W909-050	2	31.44	3.94	8.00	3.75	2.11	16.96	4.00	26.88	2.37	8.00	3.56	160.8



# Forged Closed Swage Sockets

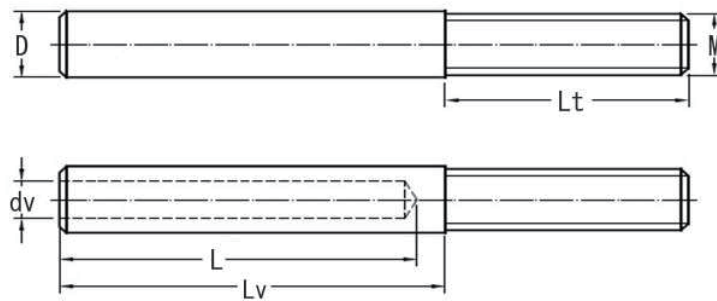
W910



Art No.	Dimensions (inch)									Max. O.D. after swage	Weight/pc (LB)
	Rope size (inch)	L	D	B	D1	d	L1	H	K		
W910-006	1/4	4.33	0.50	1.38	0.75	0.27	2.13	0.50	3.50	0.46	0.4
W910-008	5/16	5.50	0.77	1.63	0.89	0.34	3.15	0.67	4.50	0.71	0.73
W910-010	3/8	5.50	0.77	1.63	0.89	0.41	3.15	0.67	4.50	0.71	0.7
W910-011	7/16	6.93	0.98	2.00	1.06	0.48	4.25	0.89	5.75	0.91	1.3
W910-013	1/2	6.93	0.98	2.00	1.06	0.55	4.25	0.89	5.75	0.91	1.5
W910-014	9/16	8.70	1.25	2.40	1.26	0.62	5.31	1.14	7.28	1.16	2.9
W910-016	5/8	8.70	1.25	2.40	1.26	0.67	5.31	1.14	7.28	1.16	3.1
W910-019	3/4	10.20	1.55	2.87	1.44	0.82	6.38	1.31	8.54	1.42	5.1
W910-022	7/8	11.97	1.70	3.11	1.70	0.94	7.44	1.50	10.16	1.55	6.8
W910-026	1	13.46	1.98	3.62	2.05	1.06	8.50	1.77	11.54	1.80	10.6
W910-028	1-1/8	15.04	2.25	4.02	2.32	1.19	9.57	2.00	12.72	2.05	14.7
W910-032	1-1/4	16.97	2.53	4.50	2.56	1.33	10.63	2.25	14.33	2.30	21.6
W910-036	1-3/8	18.70	2.80	5.00	2.56	1.45	11.69	2.25	15.83	2.56	28.6
W910-038	1-1/2	20.12	3.08	5.50	2.81	1.61	12.75	2.52	17.01	2.81	38.1
W910-045	1-3/4	23.54	3.39	6.26	3.54	1.86	14.88	3.00	20.00	3.06	52.8
W910-050	2	27.64	3.94	7.24	3.82	2.13	17.01	3.27	23.00	3.56	89.1

# Stainless (SUS 316) Swage Thread Stud Ends

W908S

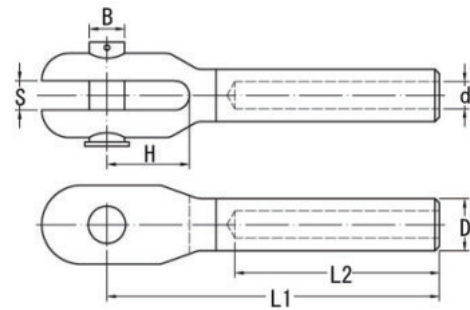
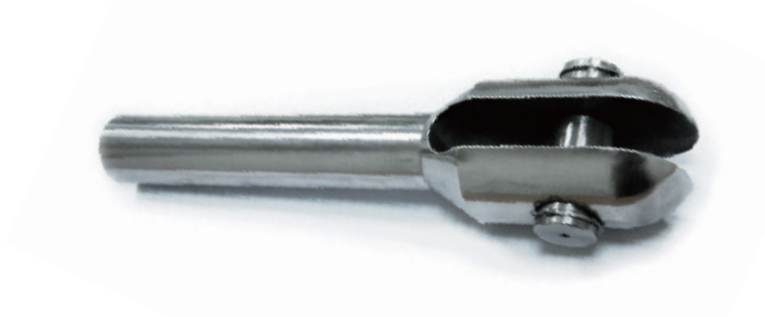


Art No.	Rope size (mm)	L <sub>v</sub> (mm)	L <sub>t</sub> (mm)	L (mm)	D (mm)	dv (mm)	M (mm)
W908S-003	3	35	30	28	7	3.4	5
W908S-004	4	45	30	37	9	4.4	6
W908S-005	5	55	40	45	10	5.5	8
W908S-006	6	63	50	54	13	6.8	12
W908S-008	8	90	60	81	20	8.8	16
W908S-010	10	90	60	81	20	10.6	20
W908S-012	12	120	80	108	25	13	24
W908S-014	14	150	100	134	32	15	24
W908S-016	16	150	100	134	32	17.2	27
W908S-018	18	170	140	155	38	19.3	30
W908S-020	20	190	140	170	40	21.3	36
W908S-022	22	212	150	189	44	23.4	39
W908S-024	24	230	150	205	48	25.5	39
W908S-026	26	244	160	215	50	27.6	42
W908S-028	28	270	180	242	58	30	48
W908S-030	30	285	180	255	63	32	52
W908S-032	32	297	180	270	65	34	56
W908S-034	34	325	200	295	72	36.1	60
W908S-036	36	340	220	315	78	38.3	64

⚠ WIROP® reserves the right to change specifications.

# Stainless (SUS 316) Open Swage Sockets

## W909S

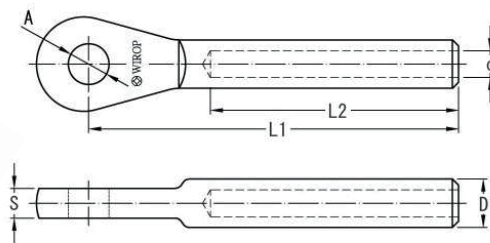


Art No.	Rope size (mm)	d (mm)	D (mm)	S (mm)	H (mm)	L1 (mm)	L2 (mm)	B (mm)	Max. O.D. after swage
W909S-003	3	3.3	6.3	5	10	67	38	6.5	5.5
W909S-004	4	4.3	7.5	6	10	76	45	8.5	6.3
W909S-005	5	5.3	9.0	8	11	85	52	12	7.9
W909S-006	6	6.3	12.5	10	14	108	63	12.5	11.1
W909S-008	8	8.3	16.0	12	21	146	80	14.5	14.2
W909S-010	10	10.5	17.8	14	26	153	90	16	16
W909S-012	12	12.5	21.3	16	40	195	130	19.5	18.9

⚠ WIROP® reserves the right to change specifications.

# Stainless (SUS 316) Closed Swage Sockets

## W910S



Art No.	Rope size (mm)	d (mm)	D (mm)	S (mm)	L1 (mm)	L2 (mm)	A (mm)	Max. O.D. after swage
W910S-003	3	3.5	6.3	4	55	38	6.5	5.5
W910S-004	4	4.3	7.5	5	65	45	8.5	6.3
W910S-005	5	5.3	9.0	7	84	52	12.0	7.9
W910S-006	6	6.3	12.5	8	104	63	12.5	11.1
W910S-008	8	8.3	16.0	10	124	80	14.5	14.2
W910S-010	10	10.5	17.8	12	144	90	16.0	16
W910S-012	12	12.5	21.3	14	168	130	19.5	18.9

⚠ WIROP® reserves the right to change specifications.

⚠ Recommend to use 6x19, 6x25, 6x29, 6x37 IPS or XIP (EIP), FC or IWRC wire rope. If using any other type of construction or grade of wire rope, break load testing upon termination is recommended to examine the correct and adequate swaging process.

⚠ In accordance with ASME (ANSI) B30.9, all slings terminated with swage sockets shall be proof load tested\*.

⚠ Maximum Proof Load shall not exceed 50% of XXIP rope catalog breaking strength.