

---

## WIRE MESH CABLE GRIPS WORKING LOAD AND SAFETY FACTOR CONSIDERATIONS

---

The grips in the catalog have listed Approximate Breaking Strength. The approximate breaking strength of a Remke grip represents an average calculation based on test factors which have been determined from data established from actual testing performed in our engineering laboratories. The actual testing is performed with new grips on metal rods, subject to straight longitudinal tensile loads applied at a uniform rate. Normal manufacturing and test factors can produce a variation of + or - 20% in the approximate breaking strength values listed.

The broad application of Remke Grips on a wide variety of objects requires that adequate safety factors be used to establish a safe working load. The ratio of the listed approximate breaking strength to the normal working load is the safety factor. As an example, a safety factor of ten (10) would then mean the working load is established by dividing the catalog listed approximate breaking strength by ten (10), or it can be stated that the working load is 1/10 of the catalog listed approximate breaking strength.

It is impossible to set a safety factor suitable for all cases as operating conditions are never the same. The load, the speed, the acceleration, the diameter, number of objects gripped, surface of object being gripped, and the attachments used—all of these should be considered, together with the effects of abrasions, corrosion, prior use, or abuse, etc. The user-engineer must consider all the variables of his specific application, as well as possible accident consequences, before selecting the safety factor to be applied. Where the conditions of the application are not well defined or where risk of personnel or property damage is high, a greater safety factor should be utilized.

Any warranty as to quality, performance or fitness for use of grips is always premised on the condition that the published approximate breaking strengths apply only to new, unused grips and that such products are properly stored, handled, used, maintained, and properly inspected from time to time during the period of use.

The factory should be consulted for specific application recommendations where approximate breaking strength and holding are considered critical.

---

## SUPPORT AND PULLING GRIPS ATTACHMENTS

---

### Double Eye Support Grip

Use when cable is vertical and extends past the grip without bending. May be fastened to open hooks within 15° from vertical axis. Double eye allows fully balanced load as long as eyes are equally supported.

### Single Eye Support Grip

Use when cable is vertical, when the cable bends, or where a single attachment eases application.

### Offset Eye Support Grip

Use when offset positioning is necessary.

### Universal Bale Support Grip

Use on continuous structural objects such as pipes or beams. The adjustable bale wraps around the object and self-locks into the bar.

---

## APPLICATION GUIDE FOR WIRE MESH PRODUCTS

---

### Support Grips

General Purpose Standard Supports Grips are used indoors or outdoors to support the weight of cable, metal rods, hose, or tubing in vertical or sloping applications. Specific applications include buildings, poles, excavations, mine shafts, towers, elevators, potheads, terminators or other structures. They assist in absorbing strain and flexure, and resist pullout, flexure, and vibration. They will support cable, rods and tubing with loads up to 600 lbs. for runs up to 100 feet. All support grips will hold more than one cable.

### Materials

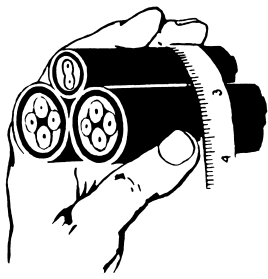
Support grip mesh is made of high grade wire formed into a flexible strand. Standard construction is single weave, double weave is available as custom item. The standard material is tin coated bronze which is non magnetic. Stainless Steel 302 or 304 may be used where high tensile strength of the grip is required or for severe atmospheric conditions. Both of these materials generate only minor heat when exposed to the magnetic field produced by high amperage AC cables. This prevents possible damage to the cable insulation or injury to the user.

### Features/Benefits

- Security-grip supports cable and removes strain from individual conductors.
- Makes connection safe by preventing strain on terminals, eliminating electrical accidents and power failures.
- Eliminates costly downtime and maintenance.
- Easily installed and removed, not requiring any special skill or tool.
- Permits cable to “breathe” (expand or contract) without loss of holding action.
- Instantly relocated or repositioned which saves time and labor.
- Conforms to shape of cable.

### Working Load/Safety Factor

The approximate breaking strength of a Remke grip represents an average calculation based on test factors which have been determined in our engineering labs using NEW grips and metal rods. The broad application of Remke grips request adequate safety factors to be used to establish a SAFE working load. As a rule of thumb the working load may be considered 1/10 of the approximate breaking strength listed in the catalog. Refer to specific catalog pages for more information.



### Grip Size—Multiple Cables

To determine grip size when more than one cable is held in a single grip, measure envelope of cables to be held using a diameter-circumference tape. For oval configuration (or where envelope of cables cannot be measured) please contact factory.

### Closed Mesh

Used where end of cable is available. Grips may be slid along considerable length of cable faster—easier than using split groups.

### Closed Mesh—Double Eye—Single Weave

Use when cable is vertical and extends past the grip without bending. May be fastened to open hooks within 15° from vertical axis. Allows fully balanced load as long as eyes are equally supported.

### Closed Mesh—Single Eye—Single Weave

Use when cable is vertical, when the cable bends, or where a single attachment eases application.

### Double Eye Grips

- Breaking strength listed is for straight uniform load with balanced eye loading. If this condition is not true, rating reduction by at least 50% may be required.
- Maximum angle of eye (from longitudinal centerline of grip) is 15°, actual dimension from cable varies with bail length.
- Do not increase diameter of formed eye.
- Decreasing radius of formed eye is usually not harmful.

### Single Eye Grips

- Single eye is strongest attachment.
- Use when cable bends or where single attachment is desired.
- No unequal loading probe as with double eye type.

### Bus Drop Grips

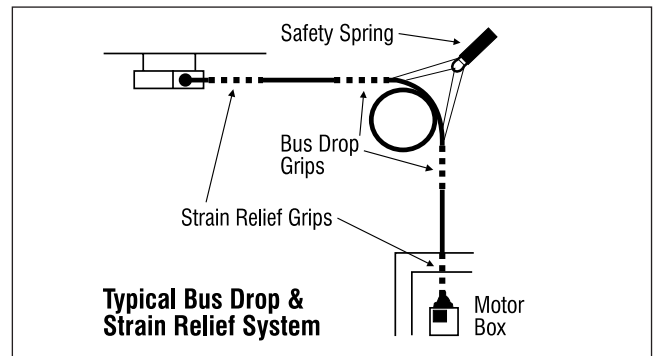
Bus Drop Grips are for indoor use only.

- Support flexible cord or cable when supplying power from an overhead source.
- Designed to support weight of cable, relieve tension and absorb vibration, or flexure.
- Supports the load without damage to the cable.
- Prevent pullouts which can cause accidents, downtime, and loss of production.
- Easy installation.

Bus Drop Grips with Safety Springs can be used to absorb sudden strains caused by accidental hitting, pulling or bending of the cable. They are used primarily where flexible cable connects electrical equipment to bus duct. They are also used to support or restrain air hose and water hose.

Double Bus Drop Grips store excess cable neatly.

Bus Drop Grips with Safety Springs and Strain Relief Grips can provide a complete flexible cord system which adapts to any layout. The Strain Relief Grips relieve the strain on the terminals. The Bus Drop Grips provide positive permanent support which, unlike rigid conduit systems, can be adjusted instantly if equipment is repositioned. Almost any system can be installed quickly even in cases where equipment and bus duct are distantly located or awkwardly positioned.



### Material

The standard mesh material is galvanized steel which has high tensile strength and corrosion resistance (more than adequate for most indoor applications).

Optional stainless steel grips are available.

All Bus Drop Grips are “Wide Range” (to accept more cable per size) with strand equalizers which uniformly distribute compressive force over a large area of the cable for maximum gripping strength with minimum concentration of force without pinching the cable. (Continues on next page.)

## Bus Drop Grips

(Continued from previous page.)

### Features/Benefits

- Few Grips are needed to fit many cable sizes.
- Readily installed, adjusted, repositioned, removed or re-used which saves time and money when relocating plant wiring or machines.
- Easily attached to both open and closed end structures.
- Automatically adjust their gripping to hold the required load.
- No special installer skill or special tools required.
- Increases safety to personnel working in the application area.

### Working Load/Safety Factor

This is an abbreviated version of the more detailed information on catalog page 48. The approximate breaking strength of the Remke grip represents an average calculation based on test factors which have been determined in our engineering labs using NEW grips and metal rods. As a rule of thumb the working load may be considered 1/10 of the approximate breaking strength listed in the catalog. **CAUTION:** The broad application of Remke grips requires adequate safety factors be used to establish a SAFE working load. Refer to specific catalog pages for more information.

**Single Eye Grips** employ a single eye for each attachment to open hooks or other open end structural members. The formed eye tube assures long, trouble-free resistance to wear. Can be used with SAFETY SPRINGS.

**Universal Bale Grips** employ a flexible "universal" bail eye for each attachment around closed-end structures such as pipe, columns or through closed eyes. The universal bail is a secure, self-locking attachment and is reusable. Removal is simple and quick. Can be used with SAFETY SPRINGS.

Safety Springs can be used with either SINGLE EYE or UNIVERSAL BALE GRIPS to relieve sudden tensions exerted on cable system. When used with single eye grip, disassemble drawbar from coil, placing drawbar through eye of grip, then replace drawbar.

## Liqua-Seal® (Mesh) Connectors

Liqua-Seal (Mesh) Connectors prevent pullout and provide strain relief when connecting liquid-tight flexible metal conduit to electrical enclosures.

### Material

The standard mesh design is single weave, corrosion free stainless steel. These mesh grips are available with fittings made of steel (3/8"-1" straight connectors) or ductile iron (1-1/4"-2" straight connectors and all 45° and 90° connectors), with or without insulated throat.

### Features/Benefits

- The mesh exerts a uniformly distributed compressive force over a large area of the conduit for maximum gripping without pinching the conduit.
- An endless weave conforms to the conduit, eliminating wedging or crushing of the conduit at that point.
- Mesh material has high tensile strength and corrosion resistance.
- Readily installed, adjusted, repositioned, removed or reused.
- Automatically adjust their gripping to hold the required load.
- No special installer skills or special tools required.

### Working Load/Safety Factor

(See Wide Range Strain Relief Grips)

## Standard Strain Relief Connector Grips

Standard Strain Relief Connector Grips are used in conduit hubs or knock-outs at the point where the portable electrical cable is to be terminated. They provide an environmental seal against dirt, moisture, coolants, corrosive fumes, etc. and provide strain relief where undue strain on the cable would otherwise cause loosening or pull-out at the individual wire terminals. Primary applications are in the wiring of portable power tools, power centers and bus drop cable systems.

### Material

The Standard mesh design is multi-weave corrosion free stainless steel. These mesh grips are available with fittings made of aluminum in straight, 45° or 90° body design; also with fittings made of steel, stainless steel or nylon in straight body design. All these fittings come with neoprene bushings.

### Features/Benefit

- The mesh exerts a uniformly distributed compressive force over a large area of the cable for maximum gripping without pinching the cable.
- An endless weave conforms to the cable jacket, eliminating wedging or crushing of the cable at that point.
- Mesh material has high tensile strength and corrosion resistance.
- Readily installed, adjusted, repositioned, removed or reused.
- Automatically adjust their gripping to hold the required load.
- No special installer skills or special tools required.

### Working Load/Safety Factor

(see Wide Range Strain Relief Grips)

## Wide Range Strain Relief Grips

Wide Range Strain Relief Grips connect flexible cord or bus drop cable to electrical enclosures and equipment. Designed primarily to prevent pull tension on cable to be transmitted to the joints or terminals. The National Electrical Code requires terminal tension protection. Easily installed. Primary applications are indoors in the wiring of electrical enclosures, such as power boxes, cabinets, panel boards, machine tools, portable power tools, power centers and bus drop cable systems.

They can be used with Bus Drop Grips and Safety Springs to provide a complete flexible cord system that adapts to any layout.

### Material

The standard mesh design is wide range mesh single weave, made of galvanized steel. Gasket seals are made of P.V.C. Available with insulated or non-insulated fittings made of aluminum.

### Features/Benefits

- The mesh exerts a uniformly distributed compressive force over a large area of the cable for maximum gripping without pinching the cable.
- An endless weave conforms to the cable jacket, eliminating wedging or crushing of the cable at that point.
- Mesh material has high tensile strength and corrosion resistance (more than adequate for most indoor applications).
- P.V.C. gasket seals out large dust particles, lint or metal filings and other contaminants from the electrical connections.
- SR series has a male N.P.T. tapered thread and locknut for the 1/2"–2-1/2" thread size. This allows easy attachment to enclosures up to 3/8" thick. An insulated bushing is provided to prevent metal to conductor contact.
- Adjusts to wide range of cable or cord diameters, so fewer grips are needed to fit many cable sizes.
- Readily installed, adjusted, repositioned, removed or reused. Makes relocating plant wiring and machines easy.
- Automatically adjust their gripping to hold the required load.
- No special installer skills or special tools required.

### Working Load/Safety Factor

This is abbreviated version of the more detailed information on catalog page 28. The approximate breaking strength of a Remke grip (as shown in the catalog) represents an average calculation based on test factors which have been determined in our engineering labs using NEW grips and metal rods. As a rule of thumb the working load may be considered 1/10 of the approximate breaking strength listed in the catalog. CAUTION: The broad application of Remke grips requires adequate safety factors be used to establish a SAFE working load. Refer to specific catalog pages for more information.

### Factory Assistance

When factory assistance is required for specific applications, etc., please be prepared to provide all pertinent information:

1. Object to be gripped
2. Material of object to be gripped
3. Environment (temperature, abrasion corrosion)
4. Diameter range
5. Eye length
6. Mesh length
7. Mesh material
8. Length of support
9. Other special conditions