

785-392-3017 FAX: 785-392-2845 www.huyett.com

Huyett is a manufacturer, importer, and master distributor of non-threaded fasteners and is located in Minneapolis, Kansas. Besides pins, the firm has an extensive line of retaining rings; keystock, bright bars, and shaft keys; flat washers, shims, and spacers; grease fittings and lubrication equipment; O-rings and seals; and bronze bushings. The firm has a machine shop and special order manufacturing capability that extends across nearly all of its product lines.

An extensive engineering, design, information services, and graphics department provides a plethora of customer support activities including field technical training; troubleshooting; product and package design and development; and sales support. The firm has its own in-house and dedicated advertising agency, and it maintains a state-of-the-art Tech Center, complete with multi-media capability.

Please contact us at sales@huyett.com with any technical question, regardless of commodity.

| ITEM | COMMON NAMES | APPLICABLE STANDARDS | FABRICATION | HOW TO IDENTIFY | COMMON USES | COMMENTS |
|---|---|---|--|---|--|--|
| | Cornpicker Pin; Flat Head Pin; Hitch Pin | SAE standards, with specific call-outs to length. Subject to interpretation. DIN 1434 | Turn or cold head a blank. Cross Drilling. Countersink may apply. | Nominal diameter x length of pin from beneath the head to end of pin. The hole is located one diameter from the end of pin. | Agricultural and power equipment, where there are non- precise movements. Used in moving linkages as a fulcrum or pivot, with low cost and quick disconnect feature. | Be careful of effective length versus total length; head diameter; and special hardness or materials. Use with bridge pin (a.k.a hitch pin clip) or cotter pin. |
| HH + + + HD CL + HL + + HD 45' + + + + D 45' + + + + D 45' + + + + D + + + - + + + + + + + + + + + + | SAE Clevis Pin; Clevis Pin. | No specific known SAE number, just a recited "SAE Standard." The standard is more of a guideline than a specification. | Turn or cold head a blank. Cross Drilling. Countersink is mandatory. End chamfer is mandatory. | Standard nominal sizing based on diameter, as in "SAE Clevis Pin, Half Inch." Length is established in standard. | Agricultural and power equipment, where there are nonprecise movements. Used in moving linkages as a fulcrum or pivot, with low cost and quick disconnect feature. | The SAE is an effort to develop common sizes, so as to reduce the number of clevis pins designed and in circulation. |
| $ \begin{bmatrix} & & & \\ & & & & \\ & & & \\ & & & \\ & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ &$ | Grooved Pin; Grooved Clevis. | None known, other than for groove dimensions, to match mating E-Clip. | Turned complete in one CNC operation; or cold headed, and then grooved in a secondary operation. | Nominal diameter x length of pin from beneath the head to end of pin. The groove is located based on no particular science or known standards. | Used in similar applications as clevis pins. Advantage of grooved design is better lateral resistance and more precise effective length control. | Usually higher cost than standard clevis. Installation requires a special tool. |



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| ADJUSTABLE CLEVIS | Universal Clevis; Muli-Grip Clevis. | None known. There are multiple designs in existence, with varying number of holes and hole sizes. | Turn or cold head a blank. Cross Drilling. Countersink may apply. | Nominal Diamater x Length of Pin, count the number of holes. | Good aftermarket part where the user is not certain of length requirement. Also used for applications where adjustment is needed. | Holes are typically 1/4" apart and should be aligned linearly. Some users cut off excess length after installation. |
| | Buttonhead; Truss Head; Flat Head Rivets | ASME B18.8.1 for up to 7/16" diameter. ASME B18.8.2 for diameters greater than 7/16". | Cold Head. In highly specialized applications, parts may be turned. | Head Design x Nominal Diameter x Length Beneath the Head | Mostly original equipment. Used for permanent jointing, at a lower cost than threaded, but without the torquing powers. | Application specific. |
| $ \begin{bmatrix} $ | Detent Clevis Pin | None known. | Turned or cold headed. Drilled for detent cavity. Detent ball installation using hydraulic press. | Nominal Diameter x Length from Beneath Head to End of Pin | Used in applications where frequent reusability or adjustment is needed. Low lateral torque, so generally lighter duty. | Two detent designs possible Buna seal, considered cheaper, but low heat, versus metal spring, more expensive. |
| | Hitch Pin. Trailer Pin. | None known. | Shear or saw cut to length. Drill hole or turn groove. Bend. | Nominal Diamater x Effective Length. Effective Length is measured from "Bend" to edge of hole. | As a hitch pin in lighter duty trailers. The bend is an economical method to realize a handle, and end stop. | Bent pins with holes are generally more common than those with grooves, because holed versions are sturdier. Use with bridge pin, cotter pin, or hairpin. |



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| | Clevis Pin; Yoke Pin; Hydraulic Pin; Cylinder Pin | None known. | Turn. If with holes, cross drill holes. May be headed in certain applications. | Nominal Diameter x Grip Length (distance between grooves or holes). | Tend to be larger diameter than clevis pins, and therefore heavier duty. Use where access from both sides is needed. Lots of agriculture, power equipment; and construction applications. | Three typical designs: with holes, with grooves, with both. Grooved with e-clips have better lateral holding power. Use with hair pins, bridge pins, or cotter pins. |
| V EL V V EL | Snapper Pin; Wire Lock Pin; Clik-Pin; Lynch Pin; Lok Pin; Retainer Pin | None known. | Cold forging of the pin; wire forming of the loop; hand assembly. | Nominal Diameter x Effective Length, Single vs. Double Wire. Square loop vs. rounded loop. | Three point attachments on tractors and turf equipment. Moorings for sails, canvass, tarps, and grommeted covers. Best for frequent removal applications. | Single wire was designed to lower cost, but because of popularity, such cost savings is not evident. |
| TABLOCK PIN | Snapper Pin; Wire Lock Pin; Clik-Pin; Lynch Pin; Lok Pin; Retainer Pin | None known. | Cold forging of the pin; wire forming of the loop; hand assembly. | Nominal Diameter x Effective Length, Single vs. Double Wire. Square loop vs. rounded loop. | Three point attachments on tractors and turf equipment. Moorings for sails, canvass, tarps, and grommeted covers. Best for frequent removal applications. | Single wire was designed to lower cost, but because of popularity, such cost savings is not evident. Tab allows ease of removal versus standard Snapper Pin. |
| | Tractor Pin; Snap Pin; Three Point Pin; Lock Pin | None known. | Cold forging of the pin; weldment of a collar for HD version; wire forming of the loop; hand assembly. | Nominal Diameter x Effective Length, Standard vs. Heavy Duty. | Heavy duty Ag and industrial attachments, where the extra protrusion of the wire spring loop does not interfere. | Wire is coiled to allow lateral play for heavier duty stretching of wire lock mechanism. For HD version, the welded collar acts as a stop for heavy duty applications. Pin shaft is grooved to mate with wire assembly for added strength. |



COMMON **APPLICABLE** HOW TO COMMON ITEM FABRICATION COMMENTS IDENTIFY NAMES **STANDARDS** USES Lighter duty Ag. Typical problems More constrained with three point pins are workmanship or wire length means that lynch pins are incorrect effective Hot forging of the Nominal Diameter x Snap Pin; Self-Locking None known. DIN used for retaining, length. Lynch pins can pin; formation of the Pin; Clik Pin; Lok Pin 11023 in Europe. Effective Length. versus as a pivot or be supplied with chain wire; hand assembly. lock mechanism. and cotter for fixed Nearly always used on attachment (so one rounds, but squares does not drop in the are available. LYNCH snow). Cold forging; weldment of collar; Use with bridge pin. Trailers, especially cross drilling; wire Nominal Diameter light duty commercial Numerous design style Trailer Pin; formation of the and agricultural. sand types. Loose None known. x Effective Length, **Red Handles** handles; assembly; Use where frequent fitting, thus designs Handle shape. heat treatment; disconnect is needed. are interchangeable. dipping of handle where applied. HITCH Ball protrusion, detent pressure. and Canvas and sailing Turning or forging spring design are Cotterless Pin; Fast applications, where Pin; Ring Grip Pin; of pin; cross drilling Nominal Diameter x leading causes of quick disconnect and None known. Quick Release Pins; failure. Detent is best detent pilot; Effective Length. lighter duty retention assembly. designed with metal Faspins is acceptable. spring, versus Buna, for hot environments. DETENT Locating and tool and die applications, High Profile; Faspin; Turning of pin shaft; Available with many Quick Release Pin; centerless grinding Style x Nominal where precision and handle types. Hole Aircraft Pin: Push of shaft: installation reuse is needed. None known. Diameter; x Effective receptacles, lanyards, Button Pin: Positive Aircraft ground and accessories are of interior works: Length. Lock Pin equipment and available. assembly. military. **SELF LOCKING**



COMMON COMMON APPLICABLE HOW TO ITEM FABRICATION COMMENTS NAMES **STANDARDS IDENTIFY** USES Most common Simple attachment problems are end of pins with design, head design, holes. Common or burrs. Extended ASME B18.8.1; MS Style x Nominal in agricultural and prong is most Diameter; x Effective Cotter Keys; Wire Pin Wire formation. 24665; MS 9245; DIN outdoor power common, with square 94; ASME B18.8.6 Length. equipment, where cut available. Head simple design is design of metric is desired. more rounded than **COTTER PIN** ANSI. Cotter pins are not Use in castellated heat treated, so that nuts, where cotter ASME B18.8.1; MS Style x Nominal material endures Hammerlock: Castle is used as a locking 24665; MS 9245; DIN Diameter; x Effective stress when bent, so Wire formation. Nut Cotter; Castle Key mechanism. End is 94: ASME B18.8.6 Lenath. that form is retained. intended to "pound" versus returning like a into place. spring. **HAMMERLOCK COTTER** PIN Use in heavier duty Requires screwdriver Style x Nominal applications. Limited Wire formation, and or driver of wedge Self Locking Cotter None known. Diameter: x Effective size range of just two after installation into then assembly. diameters (5/16" and Length. hole. 3/8"). WEDGEFAST Light duty and special applications. Part is Style x Nominal Special use, but part is Single Action Cotter; Wire formation. Diameter; x Effective driven into hole and sold into the market None known. Self Locking Cotter Pin Length. humped design at end with some regularity. "self locks" the part. **CLINCH PIN**



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|---------------------------------------|--|-------------------------|--|--|--|--|
| L L L L L L L L L L L L L L L L L L L | Hitch Pin Clips; Hairpin Cotters; Cotter Keys | None known. | Wire formation. Part requires more specialized tooling. Heat treatment for spring tempering. | Very difficult. Silhouettes are best. Otherwise, Western Wire number; manufacturer number; or use nominal wire diameter and total length, as a start. | Heavier duty and more specialized retention of clevis pins and hitch pins, or any pin that uses a hole for attachment. | Easier to remove and reuse than a cotter pin, and more heavy duty. Ring-like end serves as a handle for hand removal and installation. Identification is most challenging. |
| | Hairpin Clips; Hitch Pin Clips; Retaining Pin | None known. | Wire formation. Part requires more specialized tooling. Heat treatment for spring tempering. | Very difficult. Silhouettes are best. Otherwise, Western Wire number; manufacturer number; or use nominal wire diameter and total length, as a start. | Medium duty and more specialized retention of clevis pins and hitch pins, or any pin that uses a groove for attachment. | Not as heavy duty or precise as an e-clip or snap ring. More common with use on headless pins. |
| DOUBLE LOOP | Bridge Pin, Ring Pin | None known. | Wire formation. Part requires more specialized tooling. Heat treatment for spring tempering. | More common internationally. Very difficult. See Bridge Pins above. | Heavier duty and more specialized retention of clevis pins and hitch pins, or any pin that uses a hole for attachment. | Double loop is deemed heavier duty, and arguably in very high use applications would last longer over time. Fewer sizes available. |
| GRIP CLIP | Twist Clip. Self Locking Pin | None known. | Wire formation. Part requires more specialized tooling. Heat treatment for spring tempering. | Only four common sizes available. Identify by Nominal Wire Diameter x Nominal Length. | Twist mechanism is more complicated and some users have difficulty, versus slip on style for standard bridge pin. Install into hole and twist to lock. Light to medium duty. | With all bridge pins, there is a range of shaft diameters available for use in the "gap" of the middle hump. That is one means to ID the correct part for the application. |



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|---|-------------------------------|-------------------------|--|---|--|--|
| BOW TIE COTTER | Double Bridge Pin; Bow Tie | None known. | Wire formation. Part requires more specialized tooling. Heat treatment for spring tempering. | Only eight common sizes available. Identify by Nominal Wire Diameter x Nominal Length. | Use like a bridge pin. Product advantage is access can be made from both sides, and the part stays on better than a regular bridge pin. | Security in retention appears to be a greater and more popular product feature than dual access. |
| T T T T T T T T T T T T T T T T T T T | Rue Ring; | None known. | Wire formation. Part requires more specialized tooling. Heat treatment for spring tempering. | Eleven common sizes available. Identify by Nominal Wire Diameter x Nominal Length. | Heavier duty versions use a heavier gauge wire. Slip part over end of pin, and ring portion slides down to meet hole position. Part is encircled for greater retention. | Prong can be bent over to provide a nearly immovable lock feature. |
| D D D D D D D D D D D D D D D D D D D | Cotter Ring | None known. | Wire formation. Part requires more specialized tooling. Heat treatment for spring tempering. | Wire Diameter x Outside Diameter. | Lighter duty, for use as a retainer of parts with a hole for assembly. | Uses a round wire cross section. |
| RT W SPLIT RING | Key Ring, Circle Ring | None known. | Wire formation. Part requires more specialized tooling. Heat treatment for spring tempering. | Wire Diameter x Inside Diameter. Best to have Outside Diameter when trying to identify. | Heavier Duty, for use as a handle for removal. | Uses a heavier duty half-round wire cross sections, which enhances threading through the hole of mating part. |



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|--|--|--|---|--|--|---|
| | Clip Style Retaining Pin; Diaper Pin; Wire Tension Pin | None known. | Wire formation. Part requires more specialized tooling. Heat treatment for spring tempering. | Wire Diameter x Effective Length. | Used in gates, on hitch pins, or in more permanent locations. Large size makes less convenient in many industrial applications. | Coiled version is heavy duty, far more common, and far more reliable. Sometimes used with a lanyard for permanent attachment to mating part. |
| Image: state | Crimp Ring Retainers; Snap Ring; Pinch Ring; Clinch Ring | None known. | Stamped part. | Sized for a standard retaining ring groove, thus size is identified by the shaft the part is applied onto. | A "reusable clip", used on grooved shafts, where removal and reuse is a consideration using common pliers. | More common on original equipment. Design is somewhat dated. |
| | Expansion Pin; Spring Pin; Tension Pin; Split Pin | ASME B18.8.2; DIN 1481; ISO 8752; ASME B18.8.4 | Roll formed, heat treated. 400 series stainless can be tempered to a much higher strength, but are magnetic, which can "stick" in the hole. 302 is non-magnetic, lower strength, and has better corrosion resistance. Passivation brightens SS parts and reduces user false perception that part is not stainless. | Nominal Diameter x Nominal Length. | Parts are larger than hole, so after installation, tension hold in place. Low cost and versatile pin used in all sectors. Removable and reusable. Problems stem in workmanship (rolled edges do not meet or are too close), and in material. | Problems with metric parts. International (ISO) standards are different than ASME standards. ASME parts have smaller slot, for less nesting; and are made from imperial-sized nominal strip. Parts are cheaper and perform better than DIN ISO counterpart, but makes ID and sale of metric parts challenging. |
| | Spiral Pins; Expansion Pin; Tension Pin | ASME B18.8.2; ISO 8750; ISO 8748 | Roll formed, heat treated. 400 series stainless can be tempered to a much higher strength, but are magnetic, which can "stick" in the hole. 302 is non-magnetic, lower strength, and has better corrosion resistance. Passivation brightens SS parts and reduces user false perception that part is not stainless. | Light Duty; Medium (Standard) Duty; Heavy Duty; Nominal Diameter x Nominal Length. The "duty" is driven by material thickness, which affects outside diameter. | Parts work similar as slotted pins, but because of coil action, parts perform better in out of round holes, and are less susceptible to vibration. | DIN standards are consistent here. The two DIN standards apply to standard duty versus heavy duty. |



COMMON **APPLICABLE** HOW TO COMMON ITEM FABRICATION COMMENTS USES NAMES **STANDARDS IDENTIFY** Parts are turned and Nominal Diameter Mostly original grooves are swaged. equipment. Used in x Nominal Length; Numerous designs. a process that disrupts define form. The place of a dowel or Metric designs the surface of the pin. ASME B18.8.2; DIN form is determined rolled pin (Type A); are different than without removing DrivLok Pin 1469; 1470; 1471; material. The swage or as a handle (Type imperial, and are by the location of 1472; 1473; 1474; 1475 marks are driven into the E); a pivot point (Type more common in the grooves and the hole, creating tension presence of pilots and C), or spring anchor Europe. and force for holding the other features. (Type G). part in place. **GROOVED PIN** Precision anchor or Nominal Diameter pivot often used in Measurement of OD Turning or cold ASME B18.8.2; MS x Nominal Length; locating or joining is difficult. Must forming for blank; 16555;MS 16556; DIN define tolerance. precision parts. use micrometer heat-treat: precision Lock Pins; Straight Pin Common in tooling and readings can 7 (unhardened); DIN Parts are sized based centerless grinding. ~ 4° - 16' 6325 (hardened); ISO on application. and fixtures. Parts be affected by Parts may be fine relative humidity and 8734 Standard is slightly should be pressed and blanked also. oversized. not impact driven into temperature. the hole. **DOWEL PIN** Precision anchor or Internal threads Turning or cold pivot often used in assist in part removal forming for blank; locating or joining after installation. thread cutting; heat precision parts. ASME B18.8.2; DIN Nominal Diameter x Other special designs Pull Dowel treat; precision Common in tooling of dowel pins are 7979D (pull out) Nominal Length. centerless grinding. and fixtures. Parts available, including Parts may be fine should be pressed and vented, grooved, and blanked also. not impact driven into fluted. the hole. **PULL DOWEL PIN** There is a precision Nominal Diameter x Low torque class versus ASME B18.8.2; MS Nominal Length; The positioning and commercial classes. 24692; AN 386; DIN locking. Often found Nominal Diameter Turning; thread rolling Precision class are Taper Pin 1; DIN 7977 (external is called out as a on printing presses. (if threaded) ground parts. Taper thread): DIN 7978 number, that is Mostly used in original is 1/4" per foot, or (internally threaded) equipment. Declining used to signify the .0208333 rate of dimension. popularity. reduction in diameter. **TAPERED PIN**