

Thread Form Punch & Die Button Units

For Type A, B, AB, & C Metal Screws



Dayton Thread Form Punch & Die Button Units offer you a single-step method for punching and forming threads. Dayton Thread Form works by punching the hole, lancing the material, and cutting a helical spiral in the material to form the proper thread helix for the desired type of metal screw. Thread Form creates a complete self-locking fastening system that holds the screws more tightly with metal tension—thereby reducing vibration, cutting assembly costs, and increasing productivity.

Single-step, in-die
process provides
exceptional
holding power.

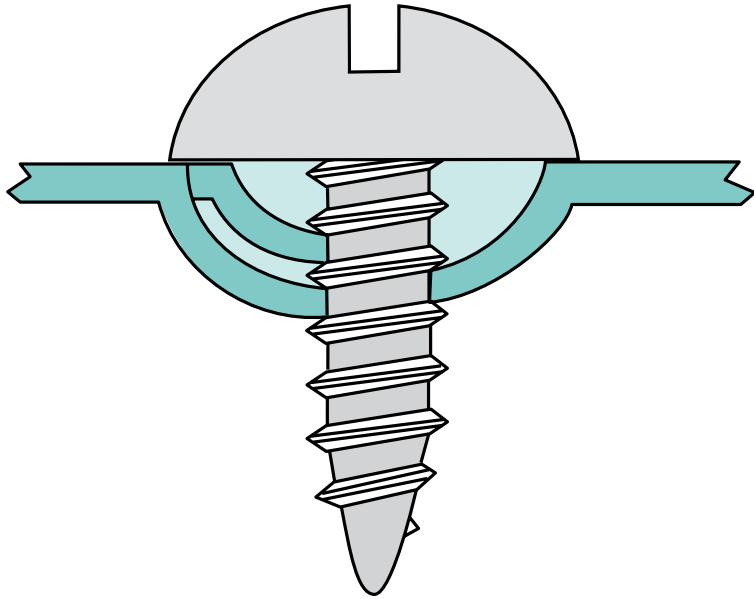
Cost-effective.
Creates superior
self-locking
system.

Form
Threaded
Punch & Die Button Units

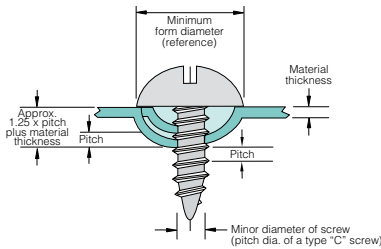


Global leader in
providing fabrication
and stamping solutions

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The Thread Form Punch and Die Button Unit cuts a helical spiral in the metal that matches the thread (helical groove) of the applicable metal screw, as shown above. Use the descriptions and dimensions shown in the drawing below and in the charts to determine the product numbers.



| Thread Size | Material Thickness | Pitch (Ref.) | Max. Minor Dia. Of Screw | Minimum Form Dia. |
|---|--------------------|--------------|--------------------------|-------------------|
| TYPE "A" SCREWS | | | | |
| 6 - 18 | .020 - .030 | .0556 | .102 | .276 |
| 8 - 15 | .025 - .040 | .0667 | .123 | .306 |
| 10 - 12 | .030 - .045 | .0833 | .133 | .352 |
| 12 - 11 | .035 - .054 | .0909 | .162 | .406 |
| 14 - 10 | .038 - .060 | .1000 | .185 | .442 |
| 20 - 9 | .050 - .060 | .1111 | .234 | .556 |
| TYPE "B" AND "A B" SCREWS | | | | |
| 6 - 20 | .020 - .030 | .0500 | .104 | .208 |
| 8 - 18 | .020 - .030 | .0556 | .122 | .296 |
| 10 - 16 | .020 - .030 | .0625 | .141 | .374 |
| 12 - 14 | .030 - .040 | .0714 | .164 | .400 |
| 1/4 - 14 | .030 - .040 | .0714 | .192 | .400 |
| 5/16 - 12 | .030 - .040 | .0833 | .244 | .552 |
| TYPE "C" SCREWS (MACHINE SCREWS) | | | | |
| 6 - 32 | .010 - .020 | .0313 | .118 | .290 |
| 8 - 32 | .010 - .020 | .0313 | .144 | .324 |
| 10 - 24 | .015 - .025 | .0417 | .163 | .370 |
| 10 - 32 | .010 - .020 | .0313 | .170 | .348 |
| 1/4 - 20 | .020 - .030 | .0500 | .218 | .478 |
| 5/16 - 18 | .020 - .030 | .0556 | .276 | .490 |


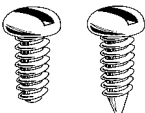

HOW TO ORDER

| Specify: | Qty | Type |
|----------|-----|---------------|
| Example: | 12 | LFS6-18 |
| | 12 | KFP10-12 |
| | 6 | KWX 250 P.104 |

Metric Conversion

All screw sizes are shown in inch dimensions. Most metric sheet metal screws, however, are standard inch sizes converted into millimeter dimensions. If screws cannot be found in metric sizes, the equivalent inch sizes can be used.

Ordering Information

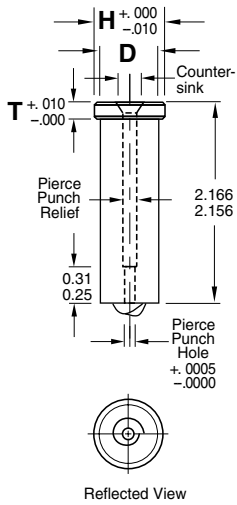
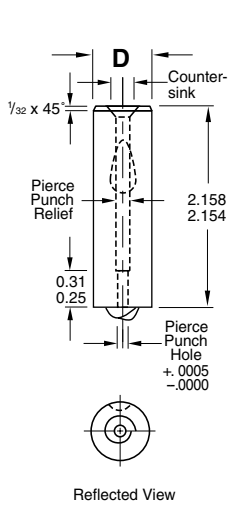
| Screw Type | Screw Size | *Thread Form Set | | Thread Form Punch | | Thread Form Die Button | | Thread Form Pierce Punch | D Dia. |
|---|------------|------------------|------------|-------------------|------------|------------------------|------------|--------------------------|--------|
| | | Ball Lock | Kommerical | Ball Lock | Kommerical | Ball Lock | Kommerical | | |
|  A | 6 - 18 | LFS6-18 | KFS6-18 | LFP6-18 | KFP6-18 | LFM6-18 | KFM6-18 | KWX 250 P.104 | 3/8 |
| | 8 - 15 | LFS8-15 | KFS8-15 | LFP8-15 | KFP8-15 | LFM8-15 | KFM8-15 | KWX 250 P.120 | 1/2 |
| | 10 - 12 | LFS10-12 | KFS10-12 | LFP10-12 | KFP10-12 | LFM10-12 | KFM10-12 | KWX 250 P.128 | 1/2 |
| | 12 - 11 | LFS12-11 | KFS12-11 | LFP12-11 | KFP12-11 | LFM12-11 | KFM12-11 | KWX 250 P.156 | 5/8 |
| | 14 - 10 | LFS14-10 | KFS14-10 | LFP14-10 | KFP14-10 | LFM14-10 | KFM14-10 | KWX 250 P.180 | 5/8 |
| | 20 - 9 | LFS20-9 | KFS20-9 | LFP20-9 | KFP20-9 | LFM20-9 | KFM20-9 | KWX 250 P.231 | 3/4 |
|  B AB | 6 - 20 | LFS6-20 | KFS6-20 | LFP6-20 | KFP6-20 | LFM6-20 | KFM6-20 | KWX 250 P.107 | 3/8 |
| | 8 - 18 | LFS8-18 | KFS8-18 | LFP8-18 | KFP8-18 | LFM8-18 | KFM8-18 | KWX 250 P.120 | 1/2 |
| | 10 - 16 | LFS10-16 | KFS10-16 | LFP10-16 | KFP10-16 | LFM10-16 | KFM10-16 | KWX 250 P.138 | 1/2 |
| | 12 - 14 | LFS12-14 | KFS12-14 | LFP12-14 | KFP12-14 | LFM12-14 | KFM12-14 | KWX 250 P.158 | 5/8 |
| | 1/4 - 14 | LFS1/4-14 | KFS1/4-14 | LFP1/4-14 | KFP1/4-14 | LFM1/4-14 | KFM1/4-14 | KWX 250 P.188 | 5/8 |
| | 5/16 - 12 | LFS5/16-12 | KFS5/16-12 | LFP5/16-12 | KFP5/16-12 | LFM5/16-12 | KFM5/16-12 | KWX 250 P.241 | 3/4 |
|  C | 6 - 32 | LFS6-32 | KFS6-32 | LFP6-32 | KFP6-32 | LFM6-32 | KFM6-32 | KWX 250 P.115 | 3/8 |
| | 8 - 32 | LFS8-32 | KFS8-32 | LFP8-32 | KFP8-32 | LFM8-32 | KFM8-32 | KWX 250 P.141 | 1/2 |
| | 10 - 24 | LFS10-24 | KFS10-24 | LFP10-24 | KFP10-24 | LFM10-24 | KFM10-24 | KWX 250 P.160 | 1/2 |
| | 10 - 32 | LFS10-32 | KFS10-32 | LFP10-32 | KFP10-32 | LFM10-32 | KFM10-32 | KWX 250 P.167 | 5/8 |
| | 1/4 - 20 | LFS1/4-20 | KFS1/4-20 | LFP1/4-20 | KFP1/4-20 | LFM1/4-20 | KFM1/4-20 | KWX 250 P.213 | 5/8 |
| | 5/16 - 18 | LFS5/16-18 | KFS5/16-18 | LFP5/16-18 | KFP5/16-18 | LFM5/16-18 | KFM5/16-18 | KWX 250 P.272 | 3/4 |

*The complete Thread Form Set consists of 1 Form Punch, 1 Pierce Punch, and 1 Die Button. Products can be ordered in sets or as individual parts.

Form Punches

LFP Light Duty Ball Lock

KFP Kommercial

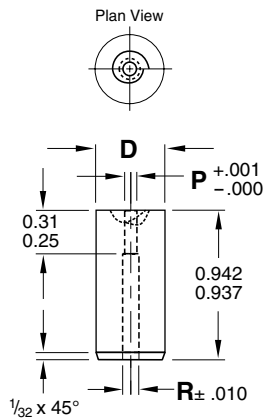
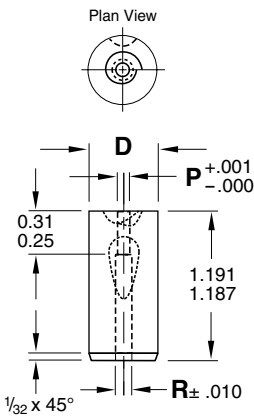


| Ball Lock Shank Dia. D | Press Fit | | Thread Size | Form Punch | | | |
|---------------------------|--------------|-------------|----------------|-------------|-----------|-------------|-------------|
| | Shank Dia. D | Head Dia. H | | Thickness T | Hole Dia. | Relief Dia. | C Sink Dia. |
| .3748/.3746 | .3755/.3752 | 1/2 | 3/16 | 6 - 18 | .1045 | .116 | .188 |
| | | | | 6 - 20 | .1075 | .120 | .193 |
| | | | | 6 - 32 | .1155 | .125 | .208 |
| .4998/.4996 | .5005/.5002 | 5/8 | 3/16 | 8 - 15 | .1205 | .136 | .217 |
| | | | | 8 - 18 | .1205 | .136 | .217 |
| | | | | 8 - 32 | .1415 | .156 | .255 |
| | | | | 10 - 12 | .1285 | .141 | .231 |
| | | | | 10 - 16 | .1385 | .150 | .250 |
| .6248/.6246 | .6255/.6252 | 3/4 | 1/4 | 10 - 24 | .1605 | .172 | .289 |
| | | | | 10 - 32 | .1675 | .187 | .302 |
| | | | | 12 - 11 | .1565 | .166 | .282 |
| | | | | 12 - 14 | .1585 | .170 | .286 |
| | | | | 14 - 10 | .1805 | .191 | .325 |
| | | | | 1/4 - 14 | .1885 | .201 | .340 |
| .7498/.7496 | .7505/.7502 | 7/8 | 1/4 | 1/4 - 20 | .2135 | .234 | .385 |
| | | | | 20 - 9 | .2315 | .242 | .418 |
| | | | | 5/16 - 12 | .2415 | .250 | .436 |
| | | | | 5/16 - 18 | .2725 | .281 | .492 |

Die Buttons

LFM Light Duty Ball Lock

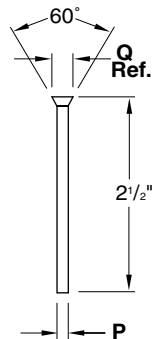
KFM Kommercial



| Ball Lock Dia. D | Kommerical Dia. D | Thread Size | P Dia. | R Dia. |
|---------------------|----------------------|----------------|-----------|-----------|
| .3748/.3746 | .3758/.3755 | 6 - 18 | .108 | .141 |
| | | 6 - 20 | .111 | .141 |
| | | 6 - 32 | .118 | .136 |
| .4998/.4996 | .5008/.5005 | 8 - 15 | .125 | .166 |
| | | 8 - 18 | .125 | .166 |
| | | 8 - 32 | .144 | .156 |
| | | 10 - 12 | .134 | .173 |
| | | 10 - 16 | .142 | .173 |
| | | 10 - 24 | .164 | .177 |
| .6248/.6246 | .6264/.6260 | 10 - 32 | .171 | .188 |
| | | 12 - 11 | .162 | .196 |
| | | 12 - 14 | .162 | .196 |
| | | 14 - 10 | .187 | .228 |
| | | 1/4 - 14 | .192 | .228 |
| | | 1/4 - 20 | .218 | .234 |
| .7498/.7496 | .7514/.7510 | 20 - 9 | .238 | .281 |
| | | 5/16 - 12 | .245 | .281 |
| | | 5/16 - 18 | .277 | .290 |

Pierce Punches

KWX

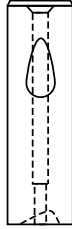


| Thread Size | Pierce Punch | |
|----------------|--------------|--------|
| | P Dia. | Q Dia. |
| 6 - 18 | .104 | .188 |
| 6 - 20 | .107 | .193 |
| 6 - 32 | .115 | .208 |
| 8 - 15 | .120 | .217 |
| 8 - 18 | .120 | .217 |
| 8 - 32 | .141 | .255 |
| 10 - 12 | .128 | .231 |
| 10 - 16 | .138 | .250 |
| 10 - 24 | .160 | .289 |
| 10 - 32 | .167 | .302 |
| 12 - 11 | .156 | .282 |
| 12 - 14 | .158 | .286 |
| 14 - 10 | .180 | .325 |
| 1/4 - 14 | .188 | .340 |
| 1/4 - 20 | .213 | .385 |
| 20 - 9 | .231 | .418 |
| 5/16 - 12 | .241 | .436 |
| 5/16 - 18 | .272 | .492 |

Options

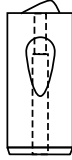
Inverted Form

For design flexibility, an inverted form is available. Simply specify "Inverted Form" on your order.



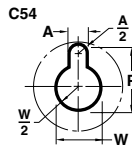
Material Thickness

If thicker material is used, the area can be coined in a previous station in the die to thin the material. Coining hardens the material, and affects tool life.



Applications of 200,000+

For larger runs, it is recommended that a keyhole shape be punched in a previous station. The keyhole shaped insert eliminates the wear created from the lance during the forming operation.

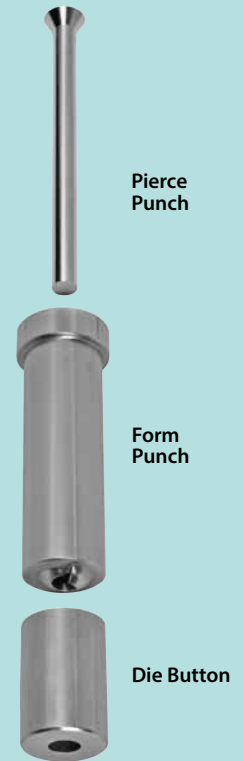


A Dayton Progress C54 standard punch and die button shape is used. The table below shows the keyhole dimensions and the die button clearance for each of the thread sizes. For additional information on dimensions and tolerances, refer to the Dayton Progress Ball Lock and Kommercial catalogs—both available on line.

| Screw Size | P | W | A | *Die Button Clearance |
|------------|------|------|------|-----------------------|
| 6 - 18 | .190 | .104 | .030 | 0.003 |
| 8 - 15 | .213 | .120 | .032 | 0.004 |
| 10 - 12 | .240 | .128 | .035 | 0.005 |
| 12 - 11 | .281 | .156 | .036 | 0.005 |
| 14 - 10 | .311 | .180 | .038 | 0.006 |
| 20 - 9 | .396 | .231 | .040 | 0.006 |
| 6 - 20 | .175 | .107 | .030 | 0.003 |
| 8 - 18 | .208 | .120 | .030 | 0.003 |
| 10 - 16 | .256 | .138 | .031 | 0.003 |
| 12 - 14 | .279 | .158 | .033 | 0.003 |
| 1/4 - 14 | .315 | .188 | .033 | 0.003 |
| 5/16 - 12 | .397 | .241 | .035 | 0.003 |
| 6 - 32 | .203 | .115 | .028 | 0.003 |
| 8 - 32 | .233 | .141 | .028 | 0.003 |
| 10 - 24 | .265 | .160 | .030 | 0.003 |
| 10 - 32 | .258 | .167 | .028 | 0.003 |
| 1/4 - 20 | .346 | .213 | .030 | 0.004 |
| 5/16 - 18 | .413 | .272 | .030 | 0.004 |

* Clearances shown are based on 5% per side of the recommended stock thickness for the screw size listed. For other thickness, see the chart at the top of p. 2.

Thread Form Punch & Die Button Units



Dayton Thread Form Punch & Die Button Units (available in sets or as individual parts) offer you a single-step, in-die method for punching and forming threads. Dayton Thread Form Units offer many features and benefits over regular hole-tapping systems:

- Fast and easy method for creating a self-locking fastener
- Utilizes metal tension to lock screws in place
- Provides excellent holding power against vibration
- Eliminates the risk of cross-threading
- Finished part utilizes single screw in assembly—eliminates the need for bolts
- Cuts assembly costs, increases productivity
- Wide range of applications



Commitment to Quality & Customer Satisfaction

Dayton Lamina is a leading manufacturer of tool, die and mold components for the metal-working and plastics industries. As a customer-focused, world-class supplier of choice, we provide the brands, product breadth, distribution network and technical support for all your metal forming needs.

Our goal is to give our customers the most innovative and value-added products and services.



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