

WILCO Pressure Die Holder System... Forced High Pressure Lubrication for Wire Drawing

WILCO Pressure Die Holders are a simple to use and very effective wire drawing aid that during the drawing operation force lubricant under high pressure onto the wire surface. Pressure dies establish and maintain a better, more consistent lubricant coating during wire drawing especially when used with WILCO Lubricant Applicators.

The WILCO pressure die approach is based on the familiar double-die concept using standard off the shelf wire drawing dies from your existing stock. The pressure die is just slightly larger in size than the incoming rod or wire (technical information about pressure die sizing is listed separately) which allows the rod or wire to enter the pressure die holder with a good coating of lubricant on the material surface. The material inertia and close pressure die clearance means lubricant is constantly being drawn into the PDH faster than would normally be pulled through the reducing die.

◆ The Benefit... There is high internal pressure generated within the PDH. This pressure forces lubricant onto the material surface and through the reducing die.



- ◆ Easy To Use
- ◆ Practical Design
- ◆ Uses Standard Dies
- ◆ Cost Effective

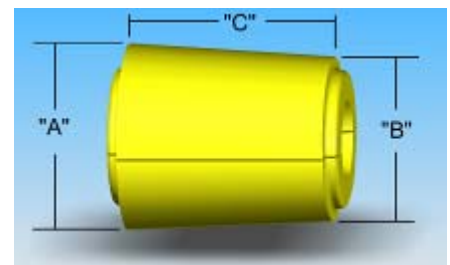
For All Types of Wire Drawing.

Whether processing low carbon, high carbon steel rod or alloys, your operation will benefit from the additional lubricant film applied. WILCO Pressure Die Holders are for use in each and every die box and are especially recommended for use in drawing mechanically descaled wire rod where there is no carrier coating present. The combination of WILCO Mechanical Descaling Equipment with WILCO Lubricant Applicators and WILCO Pressure Die Holders provides a true "systems" approach important to a successful mechanical descaling operation.

A Family of Models.

Five models of WILCO Pressure Die Holders are available---(4) for English "R" type dies and (1) metric---for use with 43mm x 27mm metric dies.

WILCO Pressure Die Holder Dimensions:



Model	R-2	R-5	R-6 / MR-6	R-10
Dimension "A"	1 1/2" (38.1mm)	2 3/16" (55.5mm)	2 3/4" (69.8mm)	4 1/2" (114.3mm)
Dimension "B"	1 9/32" (32.5mm)	2 3/64" (52.0mm)	2 19/32" (65.9mm)	3 15/16" (100.0mm)
Dimension "C"	2 3/16" (55.5mm)	2 3/4" (69.8mm)	3 1/4" (82.5mm)	5 5/8" (142.9mm)

- ◆ Use of pressure dies are a very effective means of increasing and maintaining a more uniform lubricant film throughout the wire drawing process.

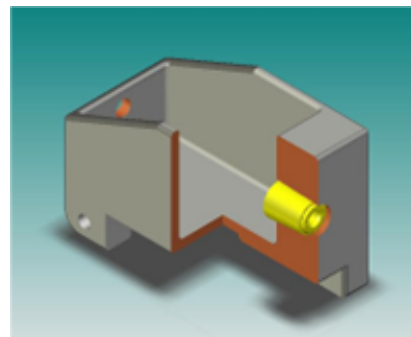
Installing WILCO Pressure Die Holders.

Installing WILCO Pressure Die Holders is easy when using accessories made specifically for WILCO Pressure Die Holders and in some cases your brand of wire drawing machine. The particular holder used depends on the design of the die box as well as special considerations such as water cooling of the PDH that may be desired.

The most important concern is that the Pressure Die Holder be FULLY SUPPORTED over it's entire length to prevent breakage from the high internal pressure generated during operation.

◆ Machine Die Block to Match Taper of Pressure Die Holder:

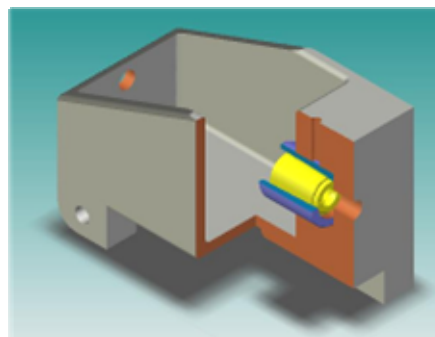
This method may be used if the die block is as thick or thicker than the overall length of the Pressure Die Holder. The die block is machined to match the outside taper of the Pressure Die Holder listed under our [Family of Models](#). The WILCO Pressure Die Holder then fits directly in the tapered bore machined into the die box. Matching tapers mean the PDH quickly locks into the die box yet removes easily with a firm strike on the PDH front face.



◆ Installing WILCO Pressure Die Holder Straight Holding Sleeve:

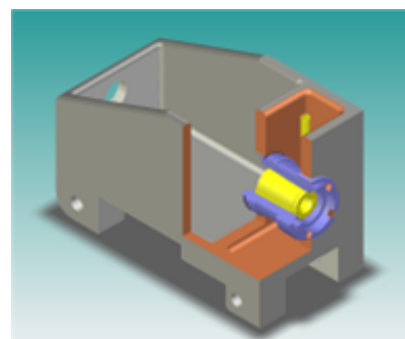
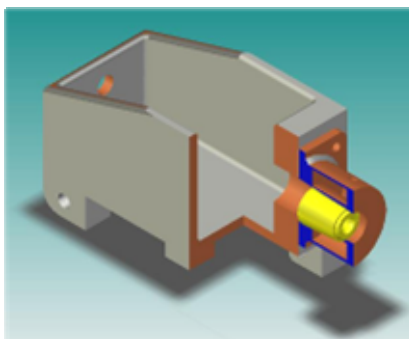
This method is required if the die block is narrower than the overall length of the Pressure Die Holder itself. The Straight Holding Sleeve provides the required full support and may be installed with minimum modification to the die box. A pocket suitable for the particular Straight Sleeve being used is machined into the die block. Sleeve dimensions are listed separately for your information. The mounting sleeve is held in place by a set screw type fastener or, if desired, more permanently through welding.

**A WILCO Trial Collar will allow temporary, short term installation of the PDH/Sleeve assembly with no modification to the die block.



◆ Installing WILCO Water Cooled Receptacles:

WILCO Water Cooled Receptacles are designed to draw heat away from the Pressure Die Holder and are an effective means for establishing consistency in the wire drawing operation. Water circulated around or through the Receptacle will lower and maintain a uniform temperature, important for consistent drawing operation especially when processing alloy or high carbon material. A variety of universal, standard Receptacles are stocked along with more specialized, brand specific Receptacles. Custom Receptacles for your wire drawing machine may be designed by Wire Lab Company as well. Current WILCO Water Cooled Receptacle designs are rectangular slip fit, round threaded, round weld-on, bolt-on and direct replacement screw in.



WILCO Pressure Die Holders – Technical Information.

WILCO Pressure Die Holders are one of the most simple yet effective means for increasing lubrication during the wire drawing process. The most important technical matter is selection of the appropriately sized pressure die based on diameter of the incoming material**.

**Pressure die sizes for wire rod differ from drawn wire.

Selecting Pressure Dies for **ROD**:

Rod Size (inch/mm)	Add for Pressure Die Size ("/mm)
.218 thru .266 (5.5 – 6.7)	.027" (.69)
.267 thru .375 (6.8 – 9.5)	.037" (.94)
.376 thru .500 (9.6 – 12.7)	.050" (1.27)
.501 thru .688 (12.8 – 17.5)	.070" (1.78)
.689 thru .938 (17.6 – 23.8)	.095" (2.41)

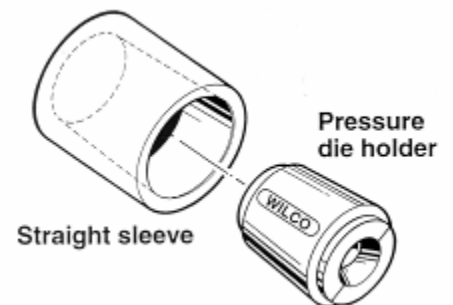
Selecting Pressure Dies for **WIRE**:

Wire Size (inch/mm)	Add for Pressure Die Size ("/mm)
.030 thru .062 (.76 – 1.57)	.002" (.051)
.063 thru .112 (1.58 – 2.84)	.004" (.102)
.113 thru .192 (2.85 – 4.88)	.008" (.203)
.193 thru .320 (4.89 – 8.13)	.014" (.356)
.321 thru .520 (8.14 – 13.21)	.022" (.559)
.521 thru .678 (13.22 – 17.22)	.030" (.762)

◆ Technical Note ◆

A larger pressure die will lower pressure produced the same way a smaller pressure die will increase pressure.

WILCO Die Box Straight Sleeve Dimensions:



Model	R-2	R-5	R-6 / MR-6	R-10
Sleeve Number	PDA-119	PDA-122	PDA-131	PDB-102
Dimensions ("/mm)				
Diameter	2.00 (50.8)	2.75 (69.9)	3.25 (82.6)	5.25 (133.4)
Length	2 ⁷ / ₁₆ (61.9)	3 ¹ / ₄ (82.6)	3 ³ / ₄ (95.3)	6 ¹ / ₄ (158.8)

WILCO Wire Drawing Aids, "The "System".

WILCO Pressure Die Holders are especially effective when used in conjunction with WILCO Lubricant Applicators. Our Lube Applicators require no installation as they simply clamp on the rod or wire and are firmly held in place by spring pressure and the V-Groove Applicator roll profile. As the material is pulled through the Applicator rolls, spring pressure compacts powdered lubricant onto the material surface. The compressed lubricant is then drawn directly into the Pressure Die holder immediately increasing lubrication.

WILCO Lubricant Applicators are one of the simplest, most effective means for maximizing and maintaining lubrication throughout any wire drawing operation where powdered lubricant is being used. and are one of the only means available to add lubricant to the wire surface after the ripper draft. Lubrication level increases immediately once the Applicator is attached to the rod or wire and covered with lubricant.

Two main models of WILCO Lubricant Applicators are available depending on the material diameter being processed.

The Model LA-CW is for use on 7/32" (5.5mm) through 5/8" (16mm).
The Model LA-S is smaller and for use on 7/32" (5.5mm) down to 1/32" (.8mm) material.



The combination of WILCO Lubricant Applicators with WILCO Pressure Die Holders offers wire drawers one of the most straightforward, production proven and cost effective means for making immediate improvements in wire quality and machine productivity.

Pressure Die Holder Accessories.



Tapered Holding Sleeve

Even with a permanent PDH installation you can still use a smaller Holder by stepping up the O.D. with these tapered sleeves.



Combined Step-up Ring

Increase the range of wire diameters produced by using a smaller die series dies in a larger WILCO PDH.



Die Spacer

Used to accurately make up space when using shorter die casings.



Grease Extender

Extends pressure cavity necessary when using greases or thick oils.



3-Die Pressure Die

For very light double-drafting with a single pressure die. Good when making PQ wire.



Trial Collar

Allows temporary use of PDH without modifying die box. Small collar hub fits directly into standard die pocket.

