THREAD ROLLING SOLUTIONS

A GUIDE TO THREAD ROLLING BASICS AND THREAD ROLLING STYLES

CJWINTER
A Brinkman International Group, Inc. Company

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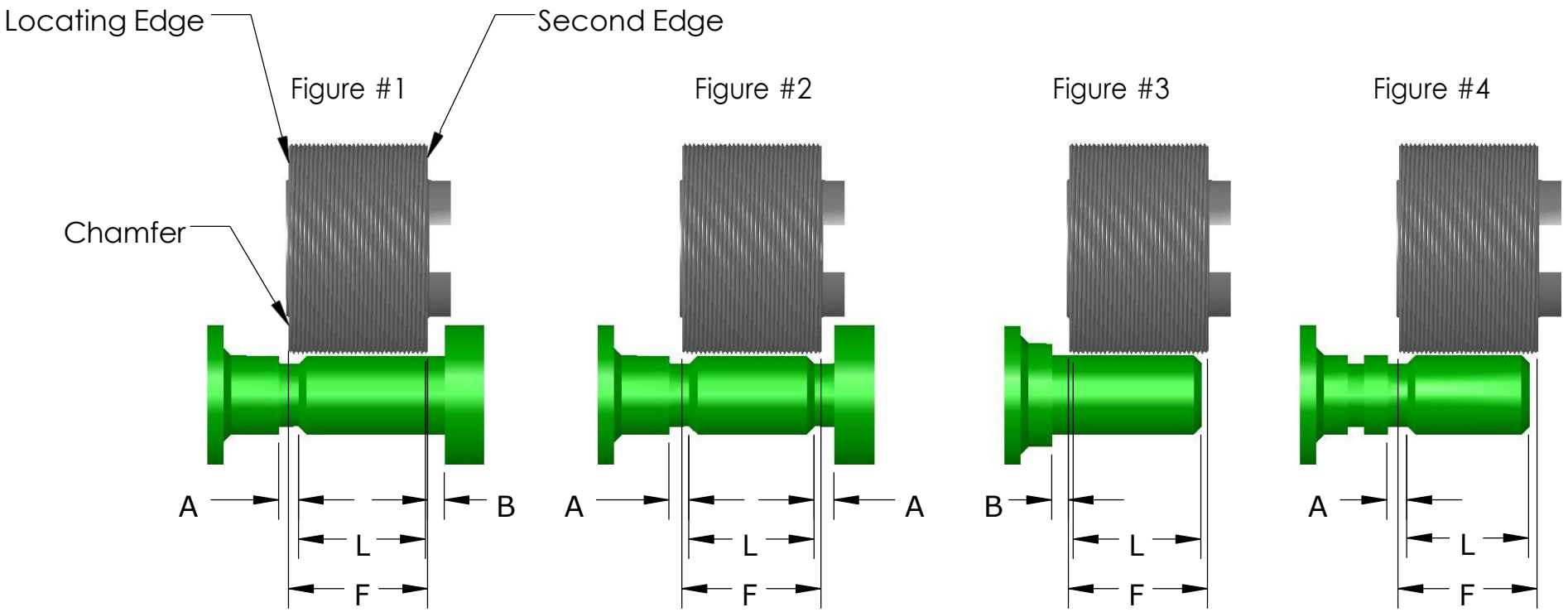
How to Determine the Correct Working Face

1. Figures 1 through 4 are intended to help you calculate the working face "F" for various thread rolling applications, and how to position the roll properly.

2. The working face (or "F" dimension) of the thread roll must always be greater than the length of the thread that needs to be rolled. The general rule is to allow the thread to overhang each end of the blank by at least 1 ¼ threads (root to root or crest to crest = 1 thread).



A = Chamfer Side
B = Shoulder Side
L = Length of Rolled Thread P = Pitch (1÷TPI)

Figure #1 and #3 - F=(2.25xP)+L
Figure #2 and #4 - F=(2.50xP)+L
A=1.50xP B=1.25xP

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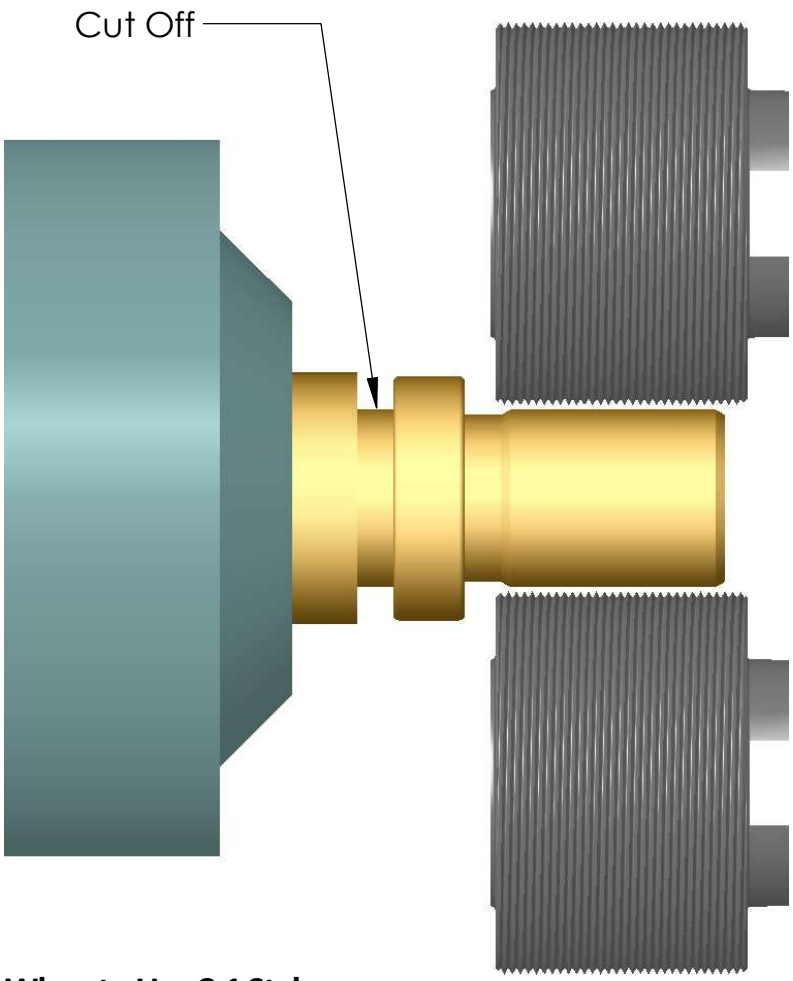
Type C-1

Rolls for Straight Threads



C-1 Standard Workface					
Winter		**Reed**		**Salvo**	
Model	**Std. W.F.**	**Model**	**Std. W.F.**	**Model**	**Std. W.F.**
125-SA	0.552	B-5	0.500	CBL	0.812
134-SA	0.625	B-8	0.500	BBL	1.062
141-SA	0.875	B-10 (500-G2A)	0.625	DBL	1.312
151-SA	0.875	B-13 (750-G2A)	0.875	**Fette**	
160-SA	1.530	B-18 (1000-G2A)	1.125	**Model**	**Std. W.F.**
162/163-SA	1.265	B-36	1.125	T12	0.610
170-SA	1.530	**Detroit**		T18	0.846
172/173-SA	1.265	**Model**	**Std. W.F.**	T27	1.220
Davenport		76000 (0-375)	0.468	T42	1.594
Model	**Std. W.F.**	76100 (6-625)	0.625	T120	0.610
1421-SA	0.625	76200 (10-750)	0.812	T160	0.725
1431-SA	0.625	76300 (30-1000)	0.812	T120	0.610
1448-SA	0.625	76400 (25-1125)	1.062	T220	1.024
Landis				T1	0.610
Model	**Std. W.F.**			T2	0.728
14GA	0.625			T3	0.846
18GA	0.844			T4	1.024
20GA	1.000			T5	1.22
22GA	1.375				
24GA	1.500				

When to Use C-1 Style

1) Rolling on outboard end of work.
2) Standard Working Face is satisfactory for length of thread to be rolled.
3) Position of attachment in relation to collet is not important.
4) Sufficient clearance is available on either side of working face.

Standard: Working face as listed above.

Optional: Special bevels, machined breakouts, bronze bushings, left-handed threads, multiple leads.

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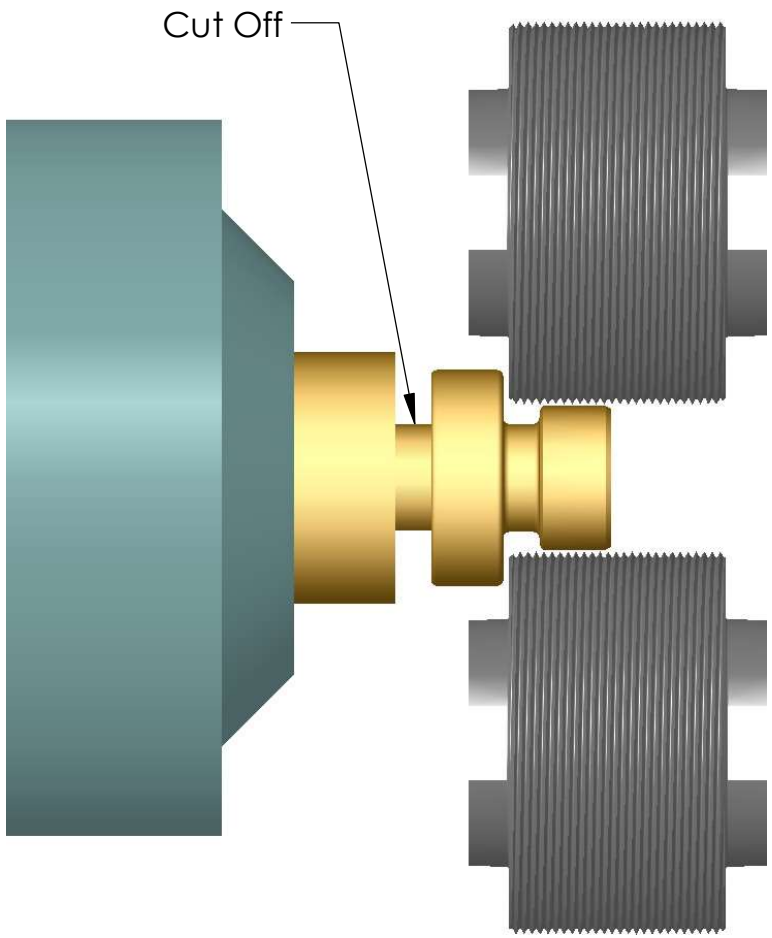
Type CR-1

Rolls for Straight Threads



CR-1 Standard Workface					
Winter		**Landis**		**Detroit**	
Model	**Std. W.F.**	**Model**	**Std. W.F.**	**Model**	**Std. W.F.**
125-SA	0.480	14GA	0.500	76000 (0-375)	0.344
134-SA	0.500	18GA	0.750	76100 (6-625)	0.500
141-SA	0.750	20GA	0.813	76200 (10-750)	0.688
151-SA	0.750	22GA	1.000	76300 (30-1000)	0.688
160-SA	1.417	24GA	1.250	76400 (25-1125)	0.938
162/163-SA	1.135	**Reed**			
170-SA	1.417	**Model**	**Std. W.F.**		
172/173-SA	1.135	B-5	---		
Davenport		B-8	0.437	**Salvo**	
Model	**Std. W.F.**	B-10 (500-G2A)	0.500	**Model**	**Std. W.F.**
1421-SA	0.500	B-13 (750-G2A)	0.750	CBL	0.750
1431-SA	0.500	B-18 (1000-G2A)	1.000	BBL	0.937
1448-SA	0.500	B-36	1.000	DBL	1.187

When to Use CR-1 Style

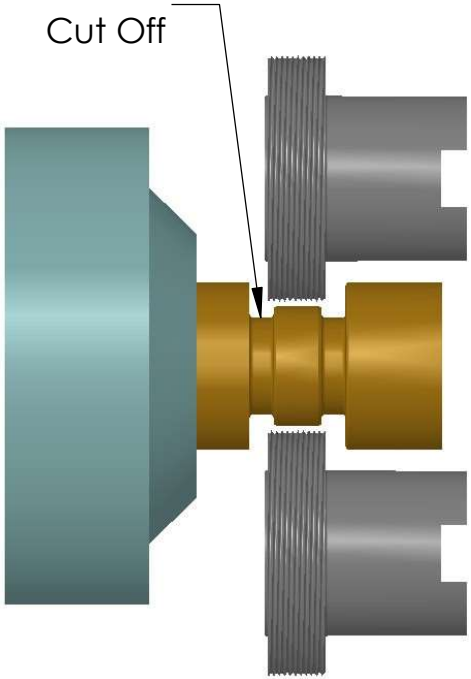
1) Length of thread on part to be reversed (doubling) production from each pair of rolls).

Refer to page 2 for determining working face length.

Standard: Double drive slots; working face as listed above.

Optional: Special bevels, machined breakouts, bronze bushings, left-handed threads, multiple leads.

Type C-2
Rolls for Straight Threads

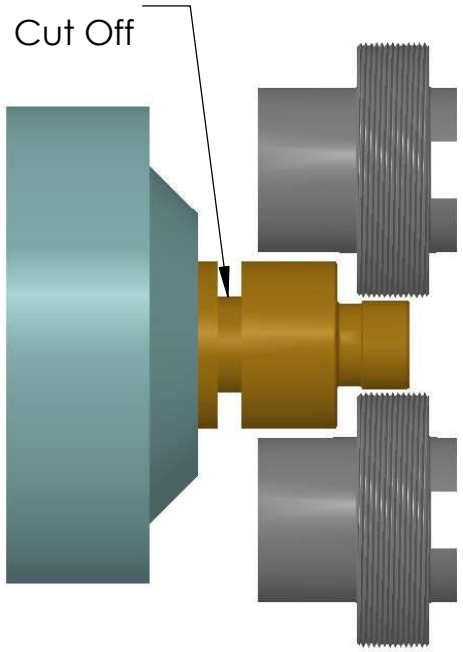


When to Use C-2 Style

1) Rolling threads behind a shoulder at cut-off end.
2) Narrow width required due to part configuration.
3) Attachment to be positioned as close to collet as possible.

Optional: Special bevels, machined breakouts, bronze bushings, double drive slots, left-handed threads, multiple leads.

Type C-3
Rolls for Straight Threads



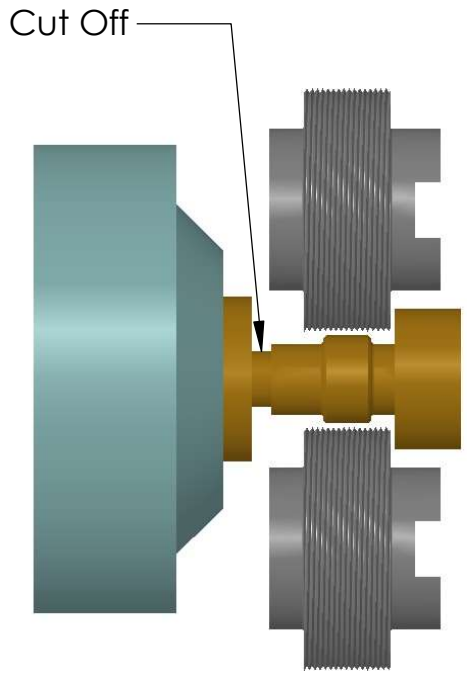
When to Use C-3 Style

1) Rolling threads behind a shoulder at cut-off end.
2) Narrow width required due to part configuration.
3) Attachment to be positioned as close to collet as possible.

Optional: Special bevels, machined breakouts, bronze bushings, double drive slots, left-handed threads, multiple leads.

Working face must be specified when ordering C-2 or C-3 Style.
Refer to page 2 for determining working face length.

Type C-4
Rolls for Straight Threads



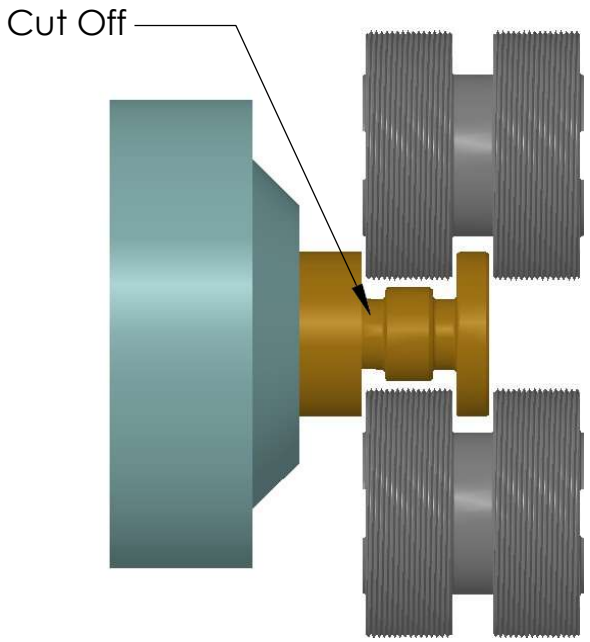
Working face must be specified when ordering C-4 Style as well as the length of hub opposite the drive slot.

When to Use C-4 Style

1) It is important to maintain position of attachment on the cross slide.
2) Need to maintain the position of the cut-off end of the part relative to the collet

Optional: Special bevels, machined breakouts, bronze bushings, double drive slots, left-handed threads, multiple leads.

Type DR-5
Rolls for Straight Threads



Working face must be specified when ordering DR-5 Style as well as groove diameter and/or stock diameter. Please provide part print for CJWinter to design – free service.

When to Use DR-5 Style

1) When rolling two threads of the same diameter and pitch which are separated by a shoulder
2) Rolling behind a shoulder where length of thread permits rolls to be reversed (doubling production of 1 pair of rolls).

Standard: Recessed double drive slots.
Optional: Special bevels, machined breakouts, bronze bushings, left-handed threads, multiple leads.

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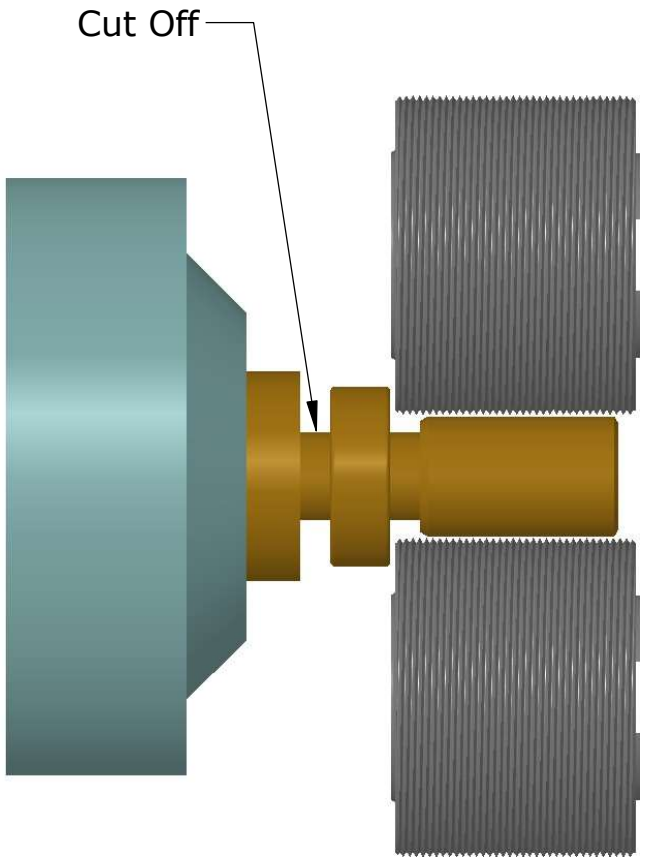
Type D-1

Rolls for Straight Threads



D-1 Standard Workface

Winter		Reed		Detroit	
Model	**Std. W.F.**	**Model**	**Std. W.F.**	**Model**	**Std. W.F.**
125-SA	.636*	B-5	---	76000 (0-375)	0.593
134-SA	.750*	B-8	0.560	76100 (6-625)	0.750
141-SA	1.000*	B-10 (500-G2A)	0.750	76200 (10-750)	0.938
151-SA	1.000*	B-13 (750-G2A)	1.000	76300 (30-1000)	0.938
160-SA	1.656*	B-18 (1000-G2A)	1.250	76400 (25-1125)	1.188
162/163-SA	1.395*	B-36	1.250		
170-SA	1.656*	**Salvo**			
172/173-SA	1.395*	**Model**	**Std. W.F.**		
Davenport		CBL	0.937		
Model	**Std. W.F.**	BBL	1.187		
1421-SA	.750*	DBL	1.437		
1431-SA	.750*				
1448-SA	.750*				

* Gear Guard must be removed when installing

When to Use D-1 Style

1) Working face of rolls with standard hubs is not sufficient for length of thread required.

Refer to page 2 for determining working face length.

Standard: Recessed drive slot, extended standard working face as listed above.

Optional: Special bevels, machined breakouts, bronze bushings, left-handed threads, multiple leads.

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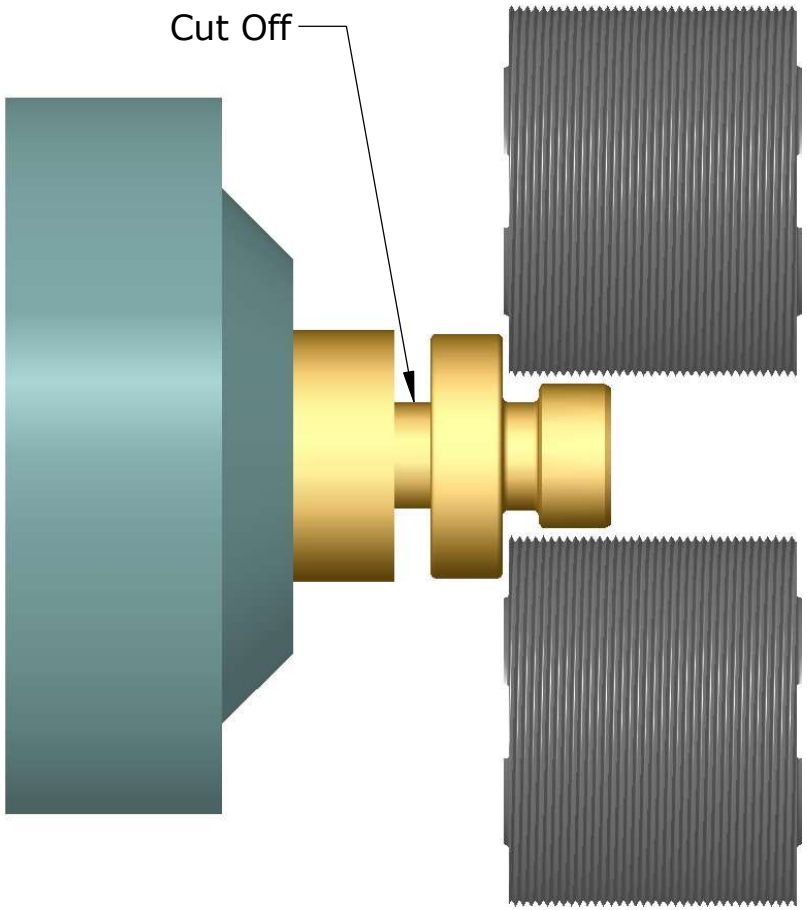
Type DR-1

Rolls for Straight Threads



DR-1 Standard Workface

Winter		Reed		Detroit	
Model	**Std. W.F.**	**Model**	**Std. W.F.**	**Model**	**Std. W.F.**
125-SA	0.636*	B-5	---	76000 (0-375)	0.593
134-SA	0.750*	B-8	0.560	76100 (6-625)	0.750
141-SA	1.000*	B-10 (500-G2A)	0.750	76200 (10-750)	0.938
151-SA	1.000*	B-13 (750-G2A)	1.000	76300 (30-1000)	0.938
160-SA	1.656*	B-18 (1000-G2A)	1.250	76400 (25-1125)	1.188
162/163-SA	1.395*	B-36	1.250		
170-SA	1.656*	**Salvo**			
172/173-SA	1.395*	**Model**	**Std. W.F.**		
Davenport		CBL	0.937		
Model	**Std. W.F.**	BBL	1.187		
1421-SA	0.750*	DBL	1.437		
1431-SA	0.750*				
1448-SA	0.750*				

* Gear Guard must be removed when installing

When to Use DR-1 Style

1) Length of thread on part permits rolls to be reversed (doubling production on 1 pair of rolls).

Refer to page 2 for determining working face length.

Standard: Recessed drive slots, working face as listed above.

Optional: Special bevels, machined breakouts, bronze bushings, left-handed threads, multiple leads.

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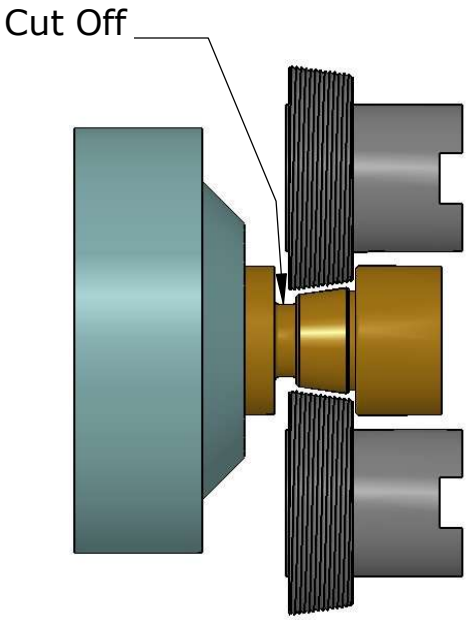
Type K-2

Rolls for Taper Pipe Threads

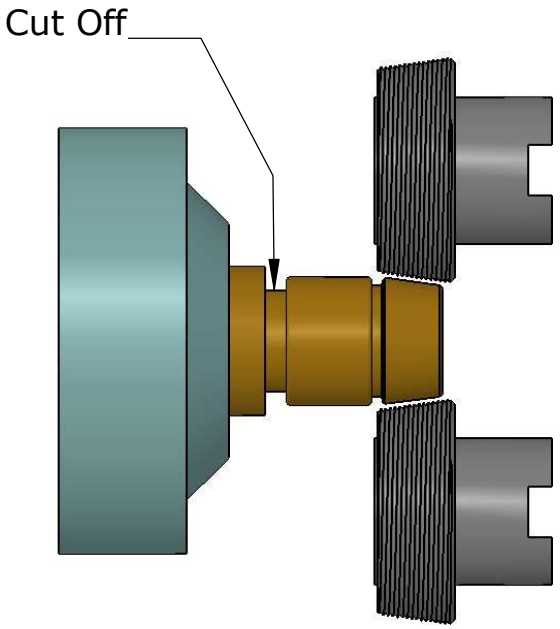


When to use K-2 Style

1) Rolling taper pipe threads with small end of work towards the collet.

Type Q-2

Rolls for Taper Pipe Threads



When to use Q-2 Style

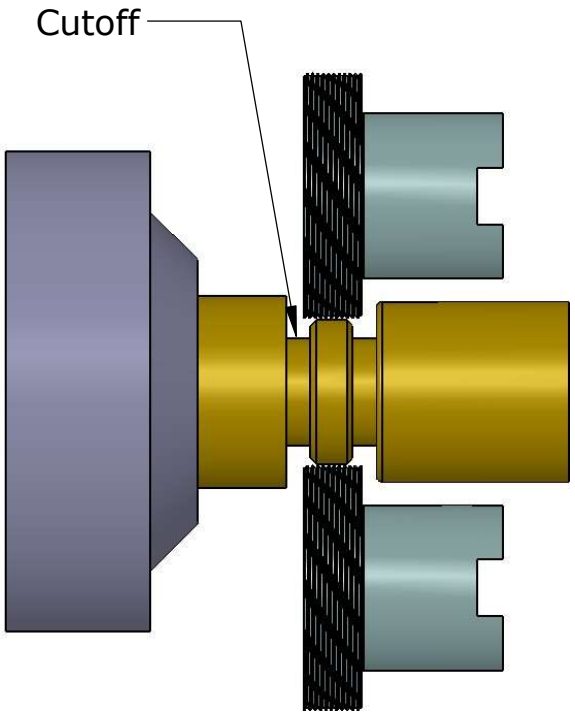
1) Rolling taper pipe threads with small end of work away from collet.

Standard: NPT or NPTF as specified 45° Chamfer, working face as listed in table.
Standard Taper Angle: 1° 47'
Optional: Special working face, bronze bushings.

K-2 and Q-2 Standard Working Face

1/16	- 27 NPT/NPTF	0.375	3/4	- 14 NPT/NPTF	0.724
1/8	- 27 NPT/NPTF	0.375	1	- 11 1/2 NPT/NPTF	0.900
1/4	- 18 NPT/NPTF	0.562	1 1/4	- 11 1/2 NPT/NPTF	0.924
3/8	- 18 NPT/NPTF	0.562	1 1/2	- 11 1/2 NPT/NPTF	0.941
1/2	- 14 NPT/NPTF	0.712			

Type H-2
Rolls for Straight Threads



When to Use H-2 Style

1) Using a Reed B-5 attachment.

2) Requires being within 1/8" of collet face.

Standard: Counterbored roll rather than hub at collet side, bronze bushing.

Working face must be specified with ordering H-2 Style.
Refer to page 2 for determining working face length.

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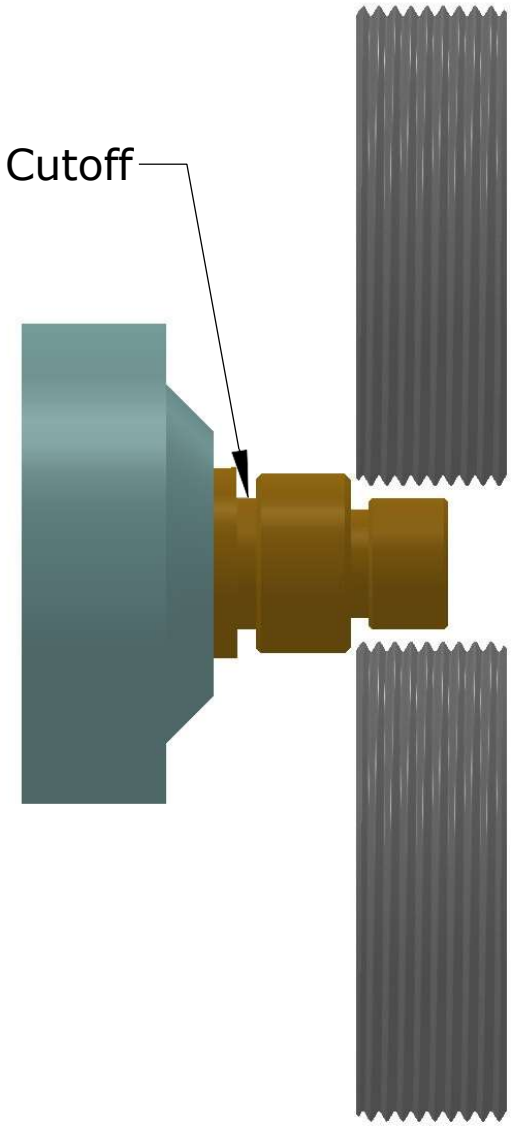

Type OBR-1

Quick Change Thread Rolls for Straight Threads

When to use OBR-1 Style

1) Using outboard style attachment.

2) Length of thread on part permits rolls to be reversed (Doubling production on 1 pair of rolls).

OBR-1 Standard Working Face

Model	WF
145-OB	.625
165-OB	.787

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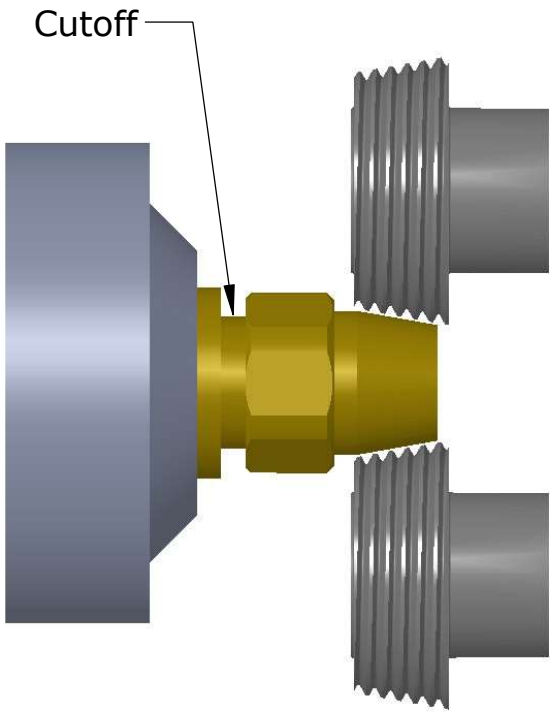
Type OBRQ-2

Quick Change for Taper Pipe Threads



When to Use OBR-Q-2 Style

1) Using outboard style attachment

2) Rolling taper pipe threads with small end of work away from collet

Standard: NPT or NPT as specified working face listed

Optional: Special working face

OB Standard Working Face			
1/16-27	.375	3/8-18	.562
1/8-27	.375	1/2-14	.712
1/4-18	.562	3/4-14	.724

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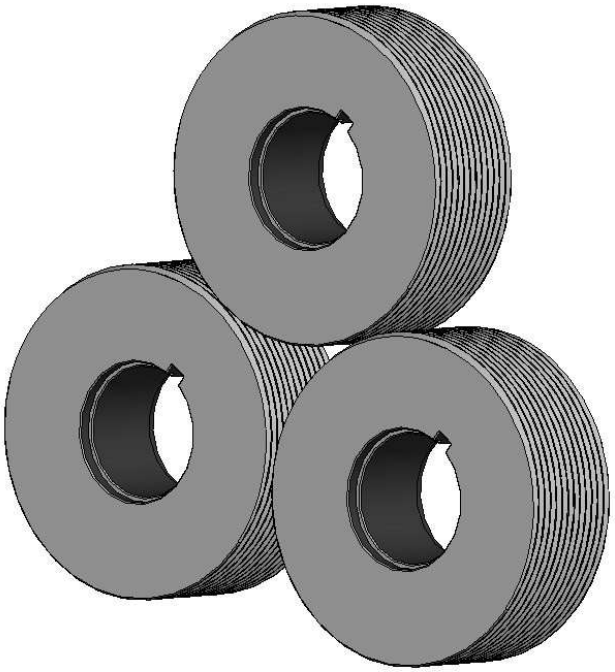
Overhung Die Holders 3-Die Cylindrical Rolling Machine

- Straight Threads - Keyway -



Overhung Die Holder for A22 and A23
10C
20C
30C
50C
90C
120C
220C

* Rolls also available for other machine sizes not listed

Standard: 30° Chamfer from axis.

Optional: 45° or 60° chamfer machined breakout, left-hand thread, multiple leads.

Width of holder must be specified when ordering.
Refer to page 2 for determining working face length

Example: 30 (Holder) C (Key Type) 10 (Width in increments of 1/8)

30C10 → 1/8 x 10 = 1.25 wide

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Overhung Die Holders 3-Die Cylindrical Rolling Machine

- Tapered Threads - Keyway -

Overhung Die Holder for A22 and A23
10C
20C
30C
50C
90C
120C
220C *

Roll also available for other machine sizes not listed

Standard: 30° Chamfer from axis.

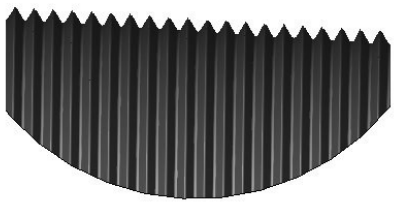
Optional: 45° or 60° chamfer machined breakout, left hand thread, multiple leads.

Width of holder must be specified when ordering.

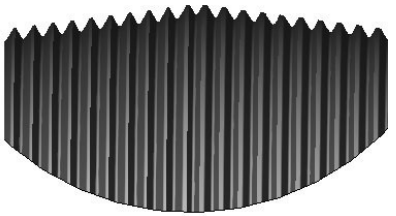
Example: 30 C 10
Holder Key Type Width in increments of 1/8
30C10 → 1/8 x 10 = 1.25 wide

Styles

Single Taper



Double Taper (Reversible)



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Double Support Die Holders
3-Die Cylindrical Rolling Machine

- Straight Threads - Spline -

Double Support Die Holders for A22 and A23
1B
2B
3B
9B

*Rolls also available for other machine sizes not listed

Standard: 30° Chamfer from axis.

Optional: 45° or 60° chamfer machined breakout, left hand thread, multiple leads.

Width of holder must be specified when ordering.

Example: 30 B 10
Holder Key Type Width in increments of 1/8
30B10 → 1/8 x 10 = 1.25 wide

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Double Support Die Holders
3-Die Cylindrical Rolling Machine

- Tapered Threads - Spline -

Double Support Die Holders for A22 and A23
1B
2B
3B
9B

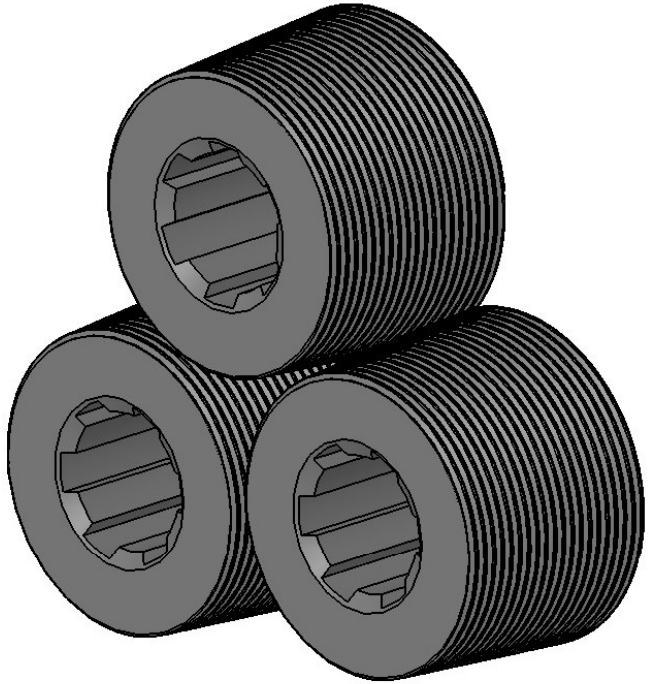
*Rolls also available for other machine sizes not listed

Standard: 30° Chamfer from axis.

Optional: 45° or 60° chamfer machined breakout, left hand thread, multiple leads.

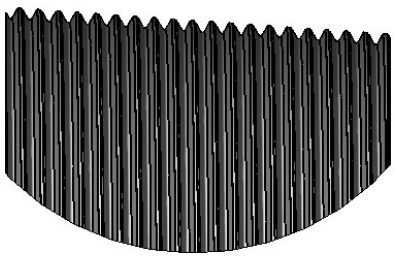
Width of holder must be specified when ordering.

Example: 30 B 10
Holder Key Type Width in increments of 1/8
30B10 → 1/8 x 10 = 1.25 wide

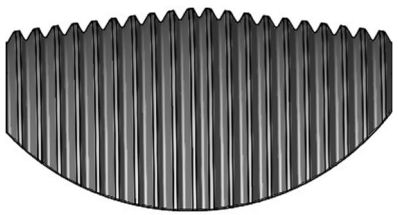


Styles

Single Taper



Double Taper (Reversible)



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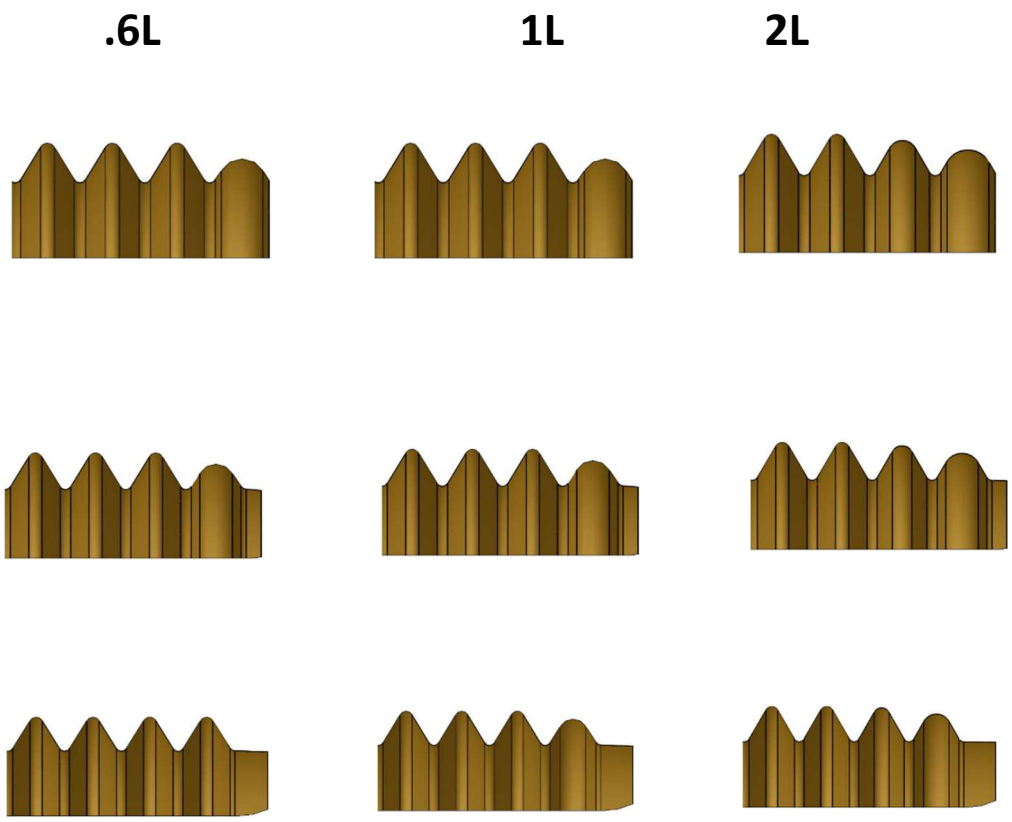
Axial Thread/Knurl Rolling Dies

Axial Holders

HOLDER	OAL
Winter 189	.3932
Winter 190	.5900
Winter 191	.7872
Winter 192	1.00, 1.25, 2.00
Winter 193	.7862
Winter 194	.9840
Fette 01	.3190
Fette 1	.5900
Fette 2	.7862
Fette 3	.9840
Fette 4	1.1797
Geometric 7/16	.5900
Geometric 5/8	.7862
Geometric 7/8	.9840
Landis 3-1/2 TRSB	.7500
Landis 5 TRSB	.7500
Landis 10 TRSB	1.2500

* Contact CJWinter if Holder is not listed



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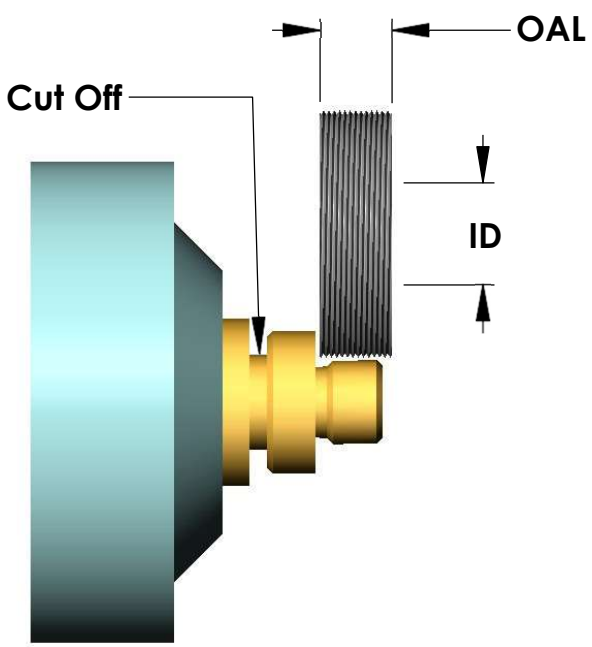
Type F-1

Rolls for Straight Threads

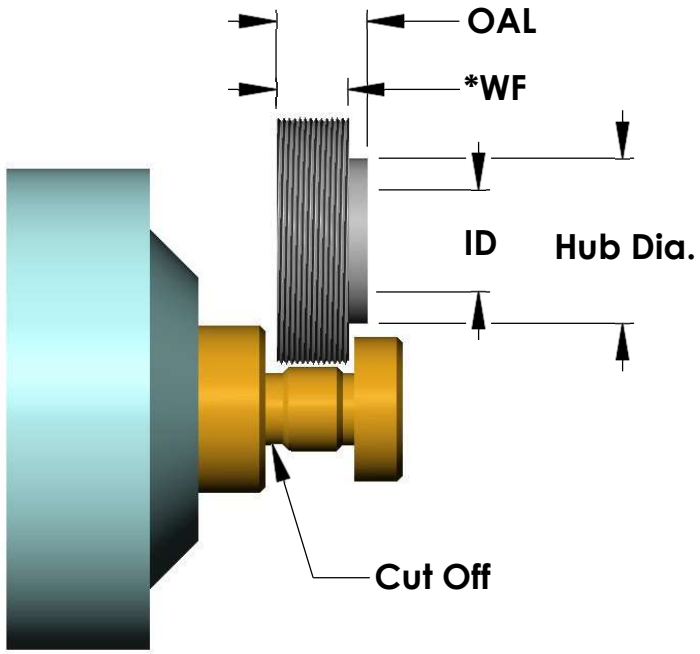


When to use F-1 Style:

1) Standard working face of roll is satisfactory for the length of thread to be rolled.

Type F-2

Rolls for Straight Threads



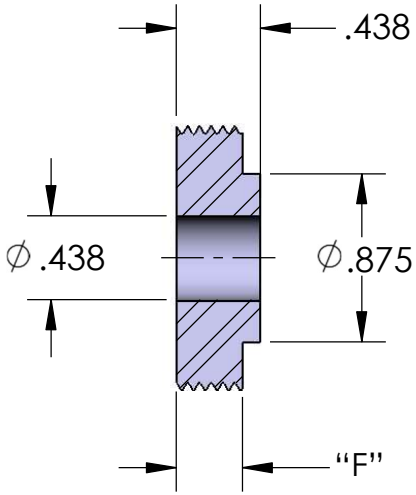
When to use F-2 Style:

1) Narrow width required due to part configuration.

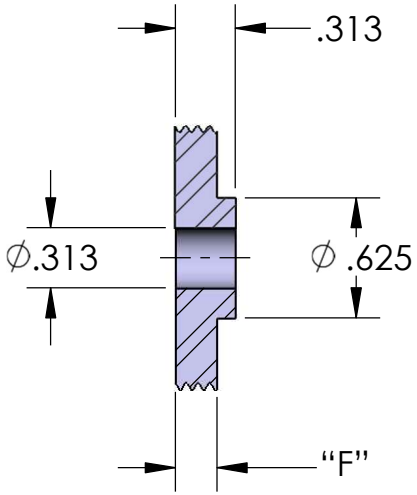
*Working Face must be specified when ordering F-2 Style.
Refer to page 2 for determining working face length

Model	F-1-44	F-1-54	F-1-66	F-1-86	F-1-88	F-1-108	F-1-1210	F-2-44	F-2-54	F-2-66	F-2-86	F-2-88	F-2-108	F-2-1210
O.A.L.	.250	.3125	.375	.500	.500	.625	.750	.250	.3125	.375	.500	.500	.625	.750
ID	.250	.250	.375	.375	.500	.500	.625	.250	.250	.375	.375	.500	.500	.625

Davenport Single Roll Holders



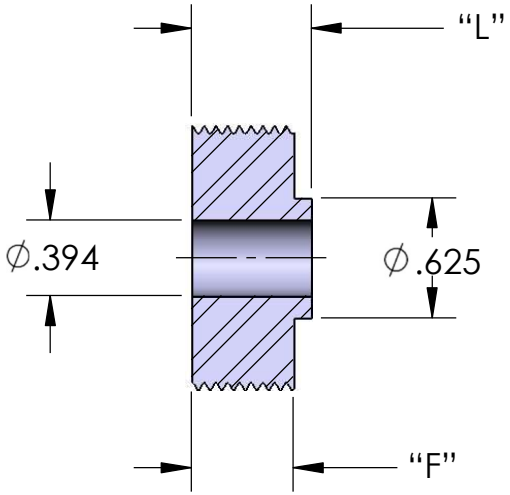
Type E 2727



Type E-2910

Davenport Double Roll Holders

(Rolls Supplied as Pairs)



Type E-2903

Standard: Dimensions as shown.

Working face "F" must be specified when ordering this style.
Refer to page 2 for determining correct working face length

"E" Style Rolls

FETTE E SERIES

Holder	STD. Work Face
E08	.4560
E10	.7712
E13	.9675
E16	1.1650
E23	1.3615

*Due to the nature of these rolls, consult factory for price and delivery.

Thread size and work face required upon ordering.
Refer to page 2 for determining working face length.