

TANGENTIAL Thread Rolling System

Our RT Tangential system is interchangeable with the Fette style tangential thread rolling system. They will fit into your existing machine tool holders and take the same rolls you are currently using:

RT10 = T12 RT20 = T18 RT30 = T27

By using lathe type machine tools with automatic, power infeed as with controlled or hydraulic automatics, hydraulically operated copy lathe, NC/CNC lathes, etc., it is now possible to feed from the side of the part and obtain all of the advantages of the rolling method. RSVP tangential type rolling attachments are especially suited to produce the following threads and profiles:

- Thread rolled behind a shoulder
- Extremely short thread lengths
- Threads with a very short runout (approx. 1/2 - 1 x pitch)
- Tapered threads
- Straight knurls DIN 82
- Burnishing
- Forming

The component must rotate for this application. RSVP tangential side rolling attachments are available in 3 sizes covering a wide range of diameters. It is recommended that the largest rolling attachment that can be adapted on the machine always be used, thereby offering the advantage that the entire work range of the machine can be utilized. Longer threads, maximum component shoulder diameters, and a higher efficiency of the rolling attachment will be attained that way.

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TANGENTIAL Side Thread Rolling Attachments, Type RT 10, RT 20 & RT 30

RSVP tangential side rolling attachments were originally developed to roll threads behind a shoulder. The process requires the rolls to be plunged, at a controlled rate, into the rotating component. Tangential side rolling attachments may be mounted in any machine tool having a cross slide or turret with a controlled feed stroke. The attachment is mounted in a holder that has been designed for a specific machine tool. There must be clearance between the attachment and machine tool, as well as between the arms of the attachment and any shoulder on the component.

**For left-hand threads, the same attachment can be used as for right-hand threads.
Left-hand threads require left-hand rolls.**

RSVP - Tangential side rolling attachments, Type RT, have a capacity range to 64 mm / 2.52".

Capacity ranges are shown in the adjoining table.

The thread length including thread runout can not exceed the width of the roll. For shorter threads, rolls can be supplied with a recess for additional clearance. Roll width must be specified.

Also attachments with smaller construction numbers are suitable in the same work range, there are exceptions.



Fig. 1: Tangential Side Thread Rolling Attachments, Type RT

Capacity Range

Cylindrical Threads					
Type		Major Diameter min.	min. max.	max. Pitch width TPI	Roll max. ¹⁾
RT10 up to work No. 66	mm	1.6	14	1.5	15.5
	inch	1/6	9/16	16	0.6102
RT20 up to work No. 548	mm	2	30	2	21.5
	inch	5/64	1 3/16	12	0.8465
RT30 up to work No. 467	mm	2	42	2.5	31
	inch	5/64	1 5/8	10	1.2205

Tapered Threads			
Type	Standard	min.	max.
RT10 Up to work No 66	DIN 158	M 6 x 1 taper	M 14 x 1.5 taper
	DIN 2999	G 1/16 - 28	G 1/4 - 19
	DIN 3858	G 1/8 - 28	G 1/4 - 19
	ANSIB1.20.1	1/16-27NPT(NPTF)	1/4-18NPT(NPTF)
RT20 up to work No 548	DIN 158	M 6 x 1 taper	M 30 x 1.5 taper
	DIN 2999	G 1/16 - 28	G 3/4 - 14
	DIN 3858	G 1/8 - 28	G 3/4 - 14
	ANSIB1.20.1	1/16-27NPT(NPTF)	1/2-14NPT(NPTF)
RT30 up to work No. 467	DIN 158	M 6 x 1 taper	M 42 x 2 taper
	DIN 2999	G 1/16 - 28	G 1 1/4 - 11
	DIN 3858	G 1/8 - 28	G 1 1/4 - 11
	ANSI B 1.20.1	1/6 - 27 NPT (NPTF)	1 -11.5 NPT (NPTF)

Tolerances for Shoulder dia. and cam rise.

With metric (DIN 458) and Whitworth (DIN 2999, DIN 3858) profiles the shoulder dia. and cam rise with cylindrical threads are dimensionally identical, NPT - and NPTF (ANSI B 1.20.1) threads.



Tangential Head Adapter

TANGENTIAL Thread Rolls & Setting Gauges

Thread rolls

One set of rolls is needed for each thread size. One set has two different rolls. They are marked with the number 1 and 2. The rolls have a defined position on the rolling attachment. The rolling attachments are marked on the front end, with the number 1 on the upper side and number 2 on the lower side. The roll number 1 has to be mounted where the number 1 is marked on the attachment. It is imperative that the roll is mounted with the marked number looking towards the outside of the attachment. The same has to be done with roll number 2. Both marked numbers have to look to the outer side of the attachment.

Spindle direction may be right or left handed the component must rotate in the same direction of the arrow on the roll that contacts the component first.

The marking in the roll consists of the thread size, attachment size, code number, roll width, roll style and EDP number.

Roll-Key-Code:

(Example for M 22 x 2.5 on attachment Type RT30)

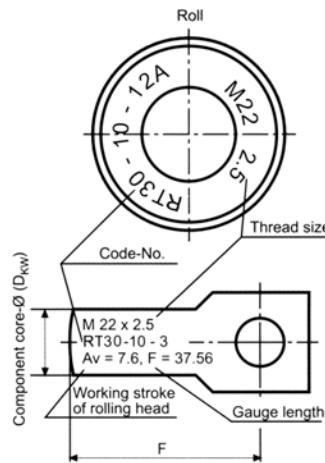
Attachment size	RT30 - 10 - 12 A	A not for max. roll width
Serial No.		Roll style
Max. width rolls		
T 12 = 15.5 mm/0.61"		
T 18 = 21.5 mm/0.846"		
T 27 = 31 mm/1.22"		
T 42 = 40.5 mm/1.594"		

Setting Gauges-Key-Code:

(Example for M 22 x 2.5 on attachment Type RT30)

Attachment size	RT30 - 10 - 3	Number of starts on the roll
Serial No.		

Please check when using the setting gauge, that the marking of attachment size and serial code number are identical to the marking of attachment size and serial code no. on the rolls.



Standard roll width design

Head

Head	Roll Widths (mm)/inch									
	RT10	4	6	8	10	12	14	15.5		
RT10	0.157	0.236	0.315	0.394	0.472	0.551	0.61			
RT20	-	6	8	10	12	14	16	18	21.5	
	-	0.236	0.315	0.394	0.472	0.551	0.63	0.709	21.5	
RT30	-	-	8	10	12	14	16	18	20	22
	-	-	0.315	0.394	0.472	0.551	0.63	0.709	0.787	0.866
										24
										26
										28
										31
										1.024
										1.102
										1.22

It is recommended to order the roll widths in the dimensions shown. Special requirements upon request.

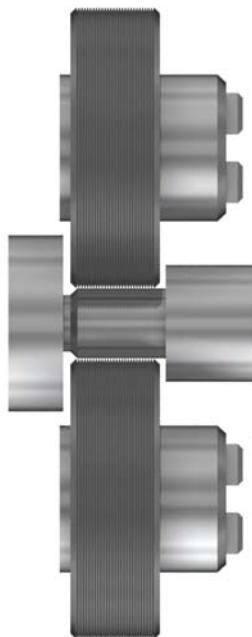
TANGENTIAL Design Of Rolls

Depending on the type of component, rolls of various design configurations can be used (normally design "A" is used). The maximum roll runout on each side can be about 1 x pitch, or in the case of multiple start threads about 1 x lead. The width of rolls must therefore be at least 2 x pitch longer than the effective thread length on the component.

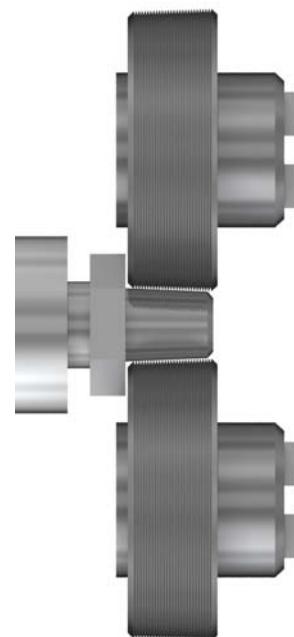
If the roll width is unimportant (Example: journal portion in front, or in front of a shoulder diameter) it would be advisable to indicate the minimum and the maximum width of the roll, as it would facilitate delivery from stock. The tangential side rolling attachment can also be used with its wide arm side pointing towards the spindle.

One set of rolls and one setting gauge are required for every size of thread to be rolled. The first two number groups need to be the same.

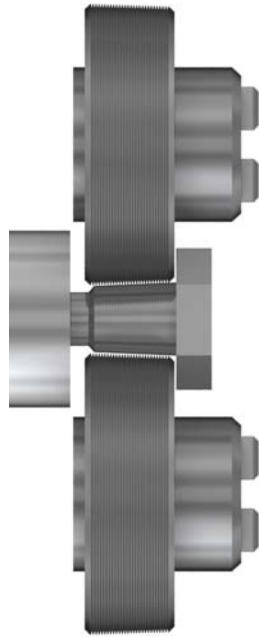
Example of roll width and styles for tapered & parallel type threads



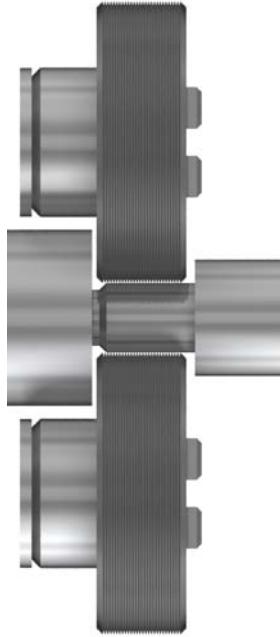
Parallel Rolls - Type A



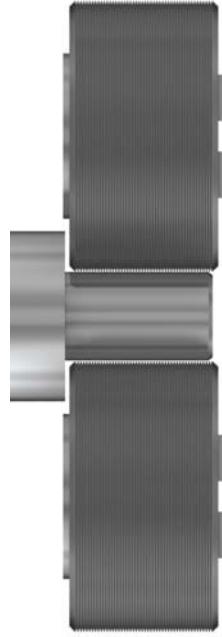
Taper Rolls - Type AV



Taper Rolls - Type A

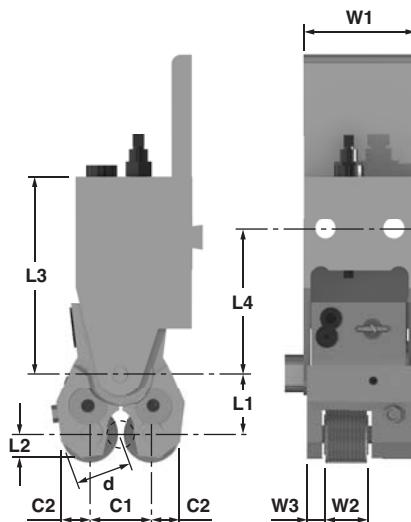


Parallel Rolls - Type B



Parallel Rolls - Type F

RT-10 Tangential Side Thread Rolling Attachment

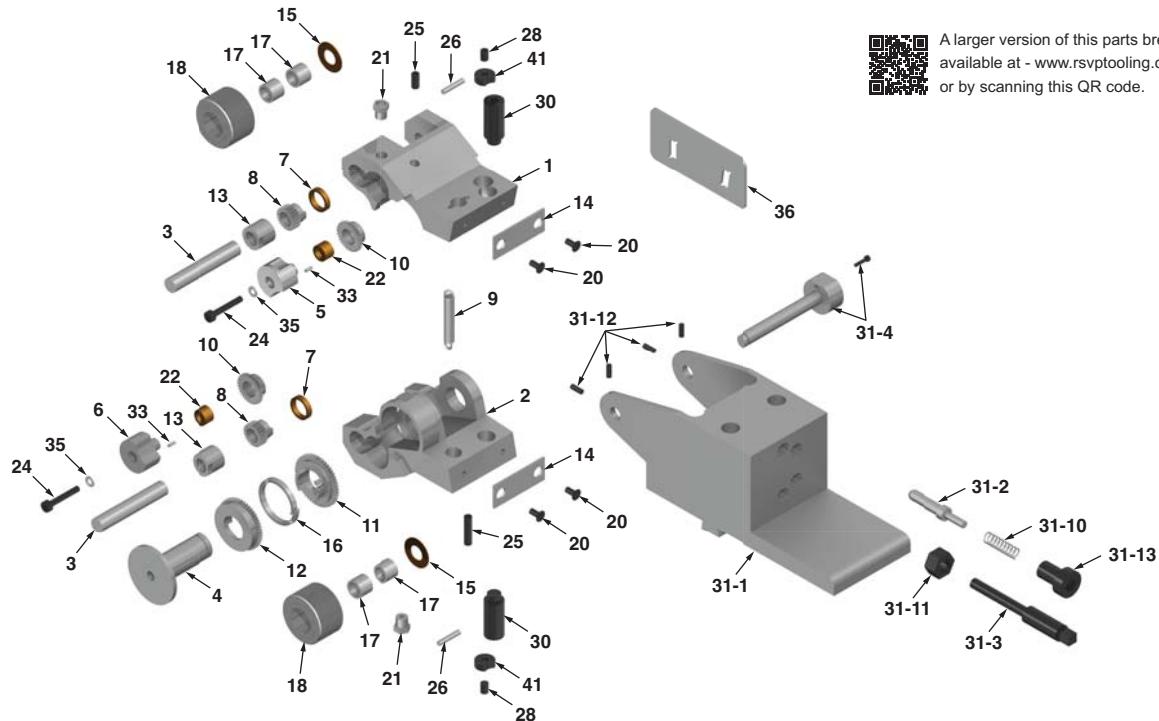


D_{max} = max. shoulder diameter
 A_v = Operating feed
 Dimensions above refer to cross slide mounted holder.
 Dimensions for other tool holder are adapted to the respective machine.

Rolling Attachment		RT10
W1 mm/inch		43 / 1.693
W2 mm/inch		15.5 / 0.61
W3 mm/inch		7.2 / 0.283
L1 mm / Inch min./max.		23.2 / 0.913
		27.6 / 1.087
L2 mm/inch		10 / 0.394
L3 mm/inch		80 / 3.15
C1 mm/inch min./max.		26.5 / 1.043
C2 mm/inch		40 / 1.575
d mm/inch max.		14/0.551
L4		31.5 / 1.24
Weight Approx. (kg)		70 / 2.756
Rolling Attachment		0.65
Rolling Attachment Holder		0.75
Thread rolls (1 set = 2 pieces)		0.17
Setting gauge		0.05
Total		1.62

For left hand threads, the same rolling attachment can be used as for right hand threads. Left hand threads require left hand rolls.

Component Parts Breakdown



A larger version of this parts breakdown is available at - www.rsvptooling.com/prints.html or by scanning this QR code.

Item #	EDP	Description	Qty
1	10-001	Upper Arm	1**
2	10-002	Lower Arm	1
3	10-003	Shaft	2
4	10-004	Center Shaft	1
5	10-005	Bushing	1
6	10-006	Bushing	1
7	10-007	Bearing Bushing	2
8	10-008	Pinion	2
9	10-009	Tension Spring	1
10	10-010	Gear w/Bushing	2
11	10-011	Gear (assy w/12 & 16 only)	0**
12	10-012	Gear w/Coil Spring	1
13	10-013	Carbide Bushing	2
14	10-014	Plate	2

Item #	EDP	Description	Qty
15	10-015	Thrust Washer	2
16	10-016	Coil spring (assy w/11 & 12)	1
17	10-017	Bushing	4
20	10-020	Flat Head Scr.	4
21	10-021	Grease Nipple	2
22	10-022	Bearing Bushing	2
24	10-024	Cap Screw	2
25	10-025	Cap Screw	2
26	10-026	Straight Pin	2
27	10-027	Set Screw	1
28	10-028	Set Screw	2
30	10-030	Adj. Set Screw	2
31	10-031	Attachment Holder Complete	1▼
31-1	10-031-1	Housing	1▼

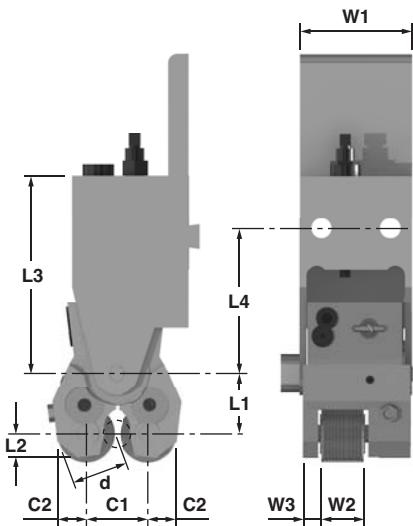
Item #	EDP	Description	Qty
31-2	10-031-2	Spring Loded Bolt	1
31-3	10-031-3	Stop Bolt	1
31-4A	10-031-4A	Bolt	1
31-4B	10-031-4B	Bolt	1
31-10	10-031-10	Thrust Spring	1
31-11	10-031-11	Hex Nut	1
31-12	10-031-12	Set Screw	2
31-13	10-031-13	Cap Screw	1
32	10-032	Setting Gauge	1▼
33	10-033	Slotted Pin	2
35	10-035	Schnorr Clip	2
36	10-036	Sheet Metal Gauge	1
41	10-041	Lock Washer	2

Sold as an assembly only

"(#1 & #2 Arm Assy) (#11,12 & 16 gear w/Coil Spring Assy)"

▼ Per Application

RT-20 Tangential Side Thread Rolling Attachment

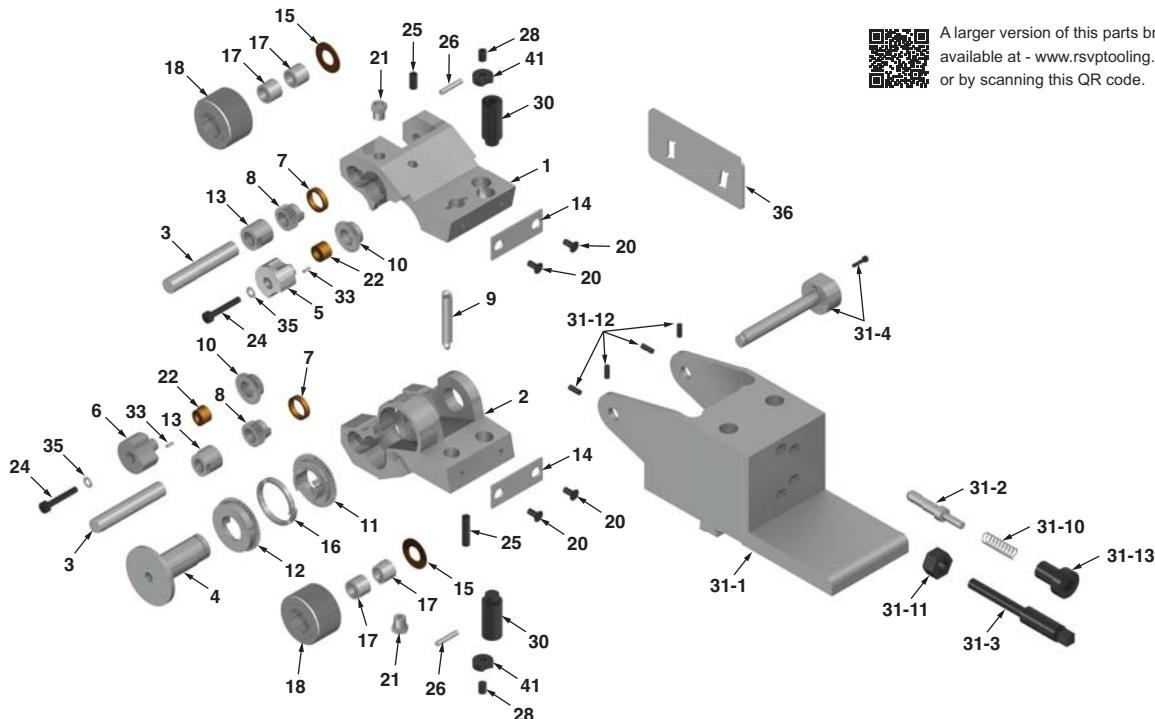


Dmax = max. shoulder diameter
Av = Operating feed
Dimensions above refer to cross slide mounted holder.
Dimensions for other tool holder are adapted to the respective machine.

Rolling Attachment		RT20
W1 mm/inch		58 / 2.283
W2 mm/inch		21.5 / 0.846
W3 mm/inch		11.1 / 0.437
L1 mm/Inch min./max.		30.1 / 1.185 37.8 / 1.488
L2 mm/inch		14 / 0.551
L3 mm/inch		100 / 3.937
C1 mm/inch min./max.		40.5 / 1.594
C2 mm/inch		61 / 2.402
d mm/inch max.		19.8/0.78
L4		44 / 1.732 97.5 / 3.839
Weight Approx. (kg)	Rolling Attachment	1.7
	Rolling Attachment Holder	2.4
	Thread rolls (1 set = 2 pieces)	0.45
	Setting gauge	0.1
	Total	4.65

For left hand threads, the same rolling attachment can be used as for right hand threads. Left hand threads require left hand rolls.

Component Parts Breakdown



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Item #	EDP	Description	Qty
1	20-001	Upper Arm	1**
2	20-002	Lower Arm	1
3	20-003	Shaft	2
4	20-004	Center Shaft	1
5	20-005	Bushing	1
6	20-006	Bushing	1
7	20-007	Bearing Bushing	2
8	20-008	Pinion	2
9	20-009	Tension Spring	1
10	20-010	Gear w/Bushing	2
11	20-011	Gear (assy w/12 & 16 only)	0**
12	20-012	Gear w/Coil Spring	1
13	20-013	Carbide Bushing	2
14	20-014	Plate	2

Item #	EDP	Description	Qty
15	20-015	Thrust Washer	2
16	20-016	Coil spring (assy w/11 & 12)	1
17	20-017	Bushing	4
20	20-020	Flat Head Scr.	4
21	20-021	Grease Nipple	2
22	20-022	Bearing Bushing	2
24	20-024	Cap Screw	2
25	20-025	Cap Screw	2
26	20-026	Straight Pin	2
27	20-027	Set Screw	1
28	20-028	Set Screw	2
30	20-030	Adj. Set Screw	2
31	20-031	Attachment Holder Complete	1▼
31-1	20-031-1	Housing	1▼

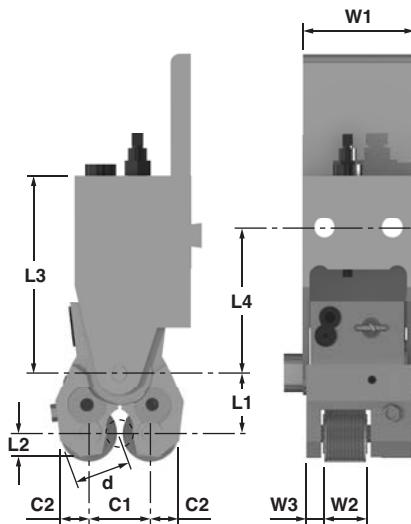
Item #	EDP	Description	Qty
31-2	20-031-2	Spring Loded Bolt	1
31-3	20-031-3	Stop Bolt	1
31-4A	20-031-4A	Bolt	1
31-4B	20-031-4B	Bolt	1
31-10	20-031-10	Thrust Spring	1
31-11	20-031-11	Hex Nut	1
31-12	20-031-12	Set Screw	2
31-13	20-031-13	Cap Screw	1
32	20-032	Setting Gauge	1▼
33	20-033	Slotted Pin	2
35	20-035	Schnorr Clip	2
36	20-036	Sheet Metal Gauge	1
41	20-041	Lock Washer	2

Sold as an assembly only

"(#1 & #2 Arm Assy) (#11,12 & 16 gear w/Coil Spring Assy)"

▼ Per Application

RT-30 Tangential Side Thread Rolling Attachment

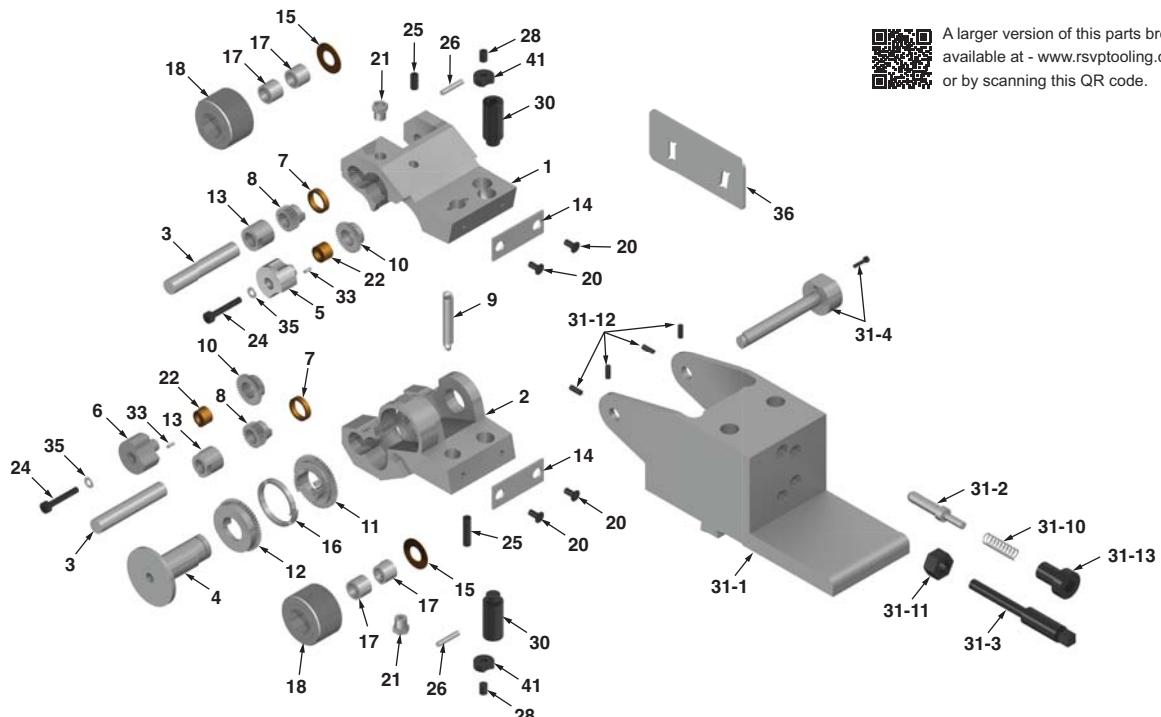


Dmax = max. shoulder diameter
Av = Operating feed
Dimensions above refer to cross slide mounted holder.
Dimensions for other tool holder are adapted to the respective machine.

Rolling Attachment		RT30
W1 mm/inch		83 / 3.268
W2 mm/inch		31 / 1.22
W3 mm/inch		15.8 / 0.622
L1 mm/ Inch min./max.		43.1 / 1.697 53.5 / 2.106
L2 mm/inch		20 / 0.787
L3 mm/inch		124 / 4.882
C1 mm/inch min./max.		59.5 / 2.343 87 / 3.425
C2 mm/inch		28/1.102
d mm/inch max.		63 / 2.48
L4		140 / 5.512
Weight Approx. (kg)	Rolling Attachment	4.9
	Rolling Attachment Holder	4.2
	Thread rolls (1 set = 2 pieces)	1.4
	Setting gauge	0.2
	Total	10.7

For left hand threads, the same rolling attachment can be used as for right hand threads. Left hand threads require left hand rolls.

Component Parts Breakdown



A larger version of this parts breakdown is available at www.rsvptooling.com/prints.html or by scanning this QR code.

Item #	EDP	Description	Qty
1	30-001	Upper Arm	1**
2	30-002	Lower Arm	1
3	30-003	Shaft	2
4	30-004	Center Shaft	1
5	30-005	Bushing	1
6	30-006	Bushing	1
7	30-007	Bearing Bushing	2
8	30-008	Pinion	2
9	30-009	Tension Spring	1
10	30-010	Gear w/Bushing	2
11	30-011	Gear (assy w/12 & 16 only)	0**
12	30-012	Gear w/Coil Spring	1
13	30-013	Carbide Bushing	2
14	30-014	Plate	2

Item #	EDP	Description	Qty
15	30-015	Thrust Washer	2
16	30-016	Coil spring (assy w/11 & 12)	1
17	30-017	Bushing	4
20	30-020	Flat Head Scr.	4
21	30-021	Grease Nipple	2
22	30-022	Bearing Bushing	2
24	30-024	Cap Screw	2
25	30-025	Cap Screw	2
26	30-026	Straight Pin	2
27	30-027	Set Screw	1
28	30-028	Set Screw	2
30	30-030	Adj. Set Screw	2
31	30-031	Attachment Holder Complete	1▼
31-1	30-031-1	Housing	1▼

Item #	EDP	Description	Qty
31-2	30-031-2	Spring Loded Bolt	1
31-3	30-031-3	Stop Bolt	1
31-4A	30-031-4A	Bolt	1
31-4B	30-031-4B	Bolt	1
31-10	30-031-10	Thrust Spring	1
31-11	30-031-11	Hex Nut	1
31-12	30-031-12	Set Screw	2
31-13	30-031-13	Cap Screw	1
32	30-032	Setting Gauge	1▼
33	30-033	Slotted Pin	2
35	30-035	Schnorr Clip	2
36	30-036	Sheet Metal Gauge	1
41	30-041	Lock Washer	2

Sold as an assembly only

"(#1 & #2 Arm Assy) (#11,12 & 16 gear w/Coil Spring Assy)"

▼ Per Application

TANGENTIAL Thread Rolls

Unified Threads			
Thread Size	RT10	RT20	RT30
2-56 UNC	X	X	
2-64 UNF	X	X	
3-48 UNC	X	X	
3-56 UNF	X	X	
4-40 UNC	X	X	
4-48 UNF	X	X	
5-40 UNC	X	X	
5-44 UNF	X	X	
6-32 UNC	X	X	
6-40 UNF	X	X	
8-32 UNC	X	X	
10-24 UNC	X	X	
10-32 UNF	X	X	
12-24 UNC	X	X	
12-28 UNF	X	X	
12-32 UNEF	S	S	
1/4-20 UNC	X	X	X
1/4-28 UNF	X	X	X
1/4-32 UNEF	S	S	S
5/16-18 UNC	X	X	X
5/16-24 UNF	X	X	X
5/16-32 UNEF	S	S	S
3/8-16 UNC	X	X	X
3/8-24 UNF	X	X	X
3/8-32 UNEF	S	S	S
7/16-14 UNC		X	X
7/16-20 UNF	X	X	X
7/16-28 UNEF	S	S	S
1/2-13 UNC	X	X	
1/2-20 UNF	X	X	X
1/2-28 UNEF	S	S	S
9/16-12 UNC		X	X
9/16-18UNF	X	X	X
9/16-24 UNEF	S	S	S
5/8-11 UNC			X
5/8-18 UNF		X	X
5/8-24 UNEF		S	S
1 1/16-24 UNEF		S	S
3/4-10UNC		X	X
3/4-16 UNF		X	X
3/4-20 UNEF		X	X
13/16-20 UNEF		S	S
7/8-14 UNF		X	X
7/8-20 UNEF		X	X
15/16-20 UNEF		S	S
1-12UNF		X	X
1-20 UNEF		X	X
1-1/16-18 UNEF		S	S
1-1/8-12 UNF		X	X
1-1/8-18 UNEF		S	S
1-3/16-18 UNEF		S	S
NPT/NPTF Threads			
1/16-27	X	X	X
1/8-27	X	X	X
1/4-18		X	X
3/8-18		X	X
1/2-14		X	X
3/4-14		X	X
1-11.5			X
1-1/4-11.5			X

Standard Rolls For
Rolling Heads "X" Indicates Standard
For Designed Head Size "S" Indicates Special

Standard Roll Widths

RT10 Rolls Available In: 4MM, 6MM, 8MM, 10MM, 12MM, 14MM, 15.5MM

RT20 Rolls Available In: 6MM, 8MM, 10MM, 12MM,
14MM, 16MM, 18MM, 21.5MM

RT30 Rolls Available In: 8MM, 10MM, 12MM, 14MM, 16MM, 18MM,
20MM, 22MM, 24MM, 26MM, 28MM, 30MM

Thread Rolls Are Interchangeable With:
RT10 with **T12** **RT20** with **T18** **RT30** with **T27**

Metric Threads			
Thread Size	RT10	RT20	RT30
M2 X 0.4	X		
M2.2 X 0.45	X		
M2.5 X 0.45	X		
M3 X 0.5	X	X	
M3.5 X 0.5	X	X	
M4 X 0.7	X	X	
M5 X 0.8	X	X	
M5 X 0.5	S	S	
M6 X 1	X	X	X
M6 X 0.75	S	S	S
M6 X 0.5	S	S	S
M8 X 1.25	X	X	X
M8 X 1.25	X	X	X
M8 X 0.75	S	S	S
M8 X 0.5	S	S	S
M10 X 1.5	X	X	X
M10 X 1.25	X	X	X
M10 X 1	X	X	X
M10 X 0.75	S	S	S
M12 X 1.75		X	X
M12 X 1.5	X	X	X
M12 X 1.25	X	X	X
M12 X 1	X	X	X
M14 X 2		X	X
M14 X 1.5	X	X	X
M14 X 1.25	X	X	X
M14 X 1	X	X	X
M16 X 2		X	X
M16 X 1.5		X	X
M16 X 1.5		X	X
M16 X 1		X	X
M18 X 2		X	X
M18 X 1.5		X	X
M18 X 1.5		X	X
M20 X 2		X	X
M20 X 1.5		X	X
M20 X 1		X	X
M22 X 2		X	X
M22 X 1.5		X	X
M22 X 1		X	X
M24 X 2		X	X
M24 X 1.5		X	X
M24 X 1		X	X
M26 X 1.5		X	X
M27 X 2		X	X
M27 X 1.5		X	X
M28 X 1.5		X	X
M30 X 2		X	X
M30 X 1.5		X	X
M33 X 2			X
M33 X 1.5			X
M35 X 1.5			X
M36 X 2			X
M36 X 1.5			X
M39 X 2			X
M39 X 1.5			X
M40 X 1.5			X
M42 X 2			X
M42 X 1.5			X
Whitworth Pipe Parallel			
G1/8-28	X	X	X
G1/4-19	X	X	X
G3/8-19		X	X
G1/2-14		X	X
G5/8-14		X	X
G3/4-14		X	X
G7/8-14			X
G1-11			X
G1-1/8-11			X
G1-1/4-11			X

TANGENTIAL We Make Other Rolls To Fit Most Heads

RSVP's Tangential Thread Rolling Head rolls are designed to offer:

- Better performance
- Increased productivity by reducing set up times
- Better threading efficiency.

RSVP's Tangential system is interchangeable with the Fette style tangential thread rolling system. We can manufacture custom and standard rolls to fit into your existing tangential holders such as Reed, Winter, and Salvo style rolls.

When ordering or requesting a quotation on thread rolls the following information should be provided.

1 Type of roll

- C-1, C-2, F1-ff ect.
- Working face or hub dimension when applicable.
- Die prints when possible.

2. Attachment or machine size and type.

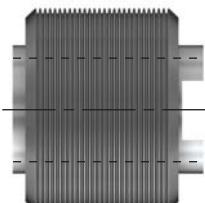
3. Part details

- Thread size.
- Length of thread.
- Position and size of shoulder on part if applicable.

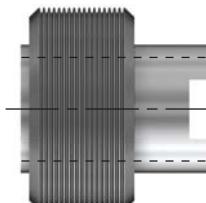
Thread rolls are also available for three die machines and can be made for a wide variety of specialty machines.

Contact RSCVP Tooling for further assistance in placing your custom or standard Tangential thread roll order.

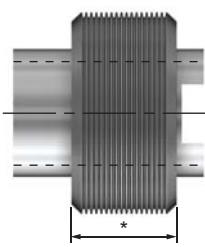
Thread Rolls For Standard Attachments (Two Dies/Set)



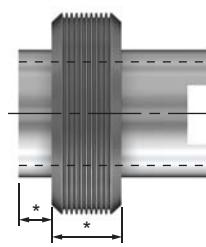
C-1



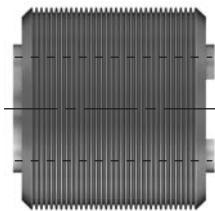
C-2



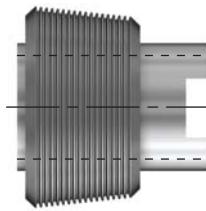
C-3



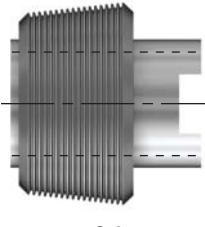
C-4



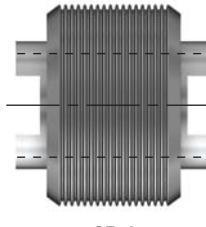
D-1



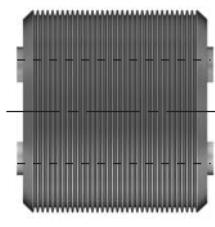
K-2



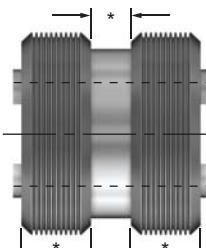
Q-2



CR-1

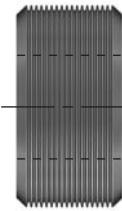


DR-1

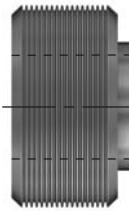


DR-5

Bump Type Thread Rolls (Single Roll)



F1 Style
Full Width
Work Face



F2 Style
Variable
Work Face



Y2 Style
Pipe Rolls

Size	Workface
1/8-27	.357
1/4-18	.541
3/8-18	.547
1/2-14	.712
3/4-14	.724

Other workfaces may be provided - as requested.

* Dimensions must be supplied by the customer.