



Thread Injector High Performance Threadmills Technical Information

- RedLine Thread Injector High Performance Threadmills are geared for top performance in a variety of different materials
- Designed to cut internal and external threads for greater versatility.
- With our free cutting geometry and AlTiN coating, you can count on RedLine threadmills to give you high performance, and long tool life at an extremely attractive price.
- Thread Injector High Performance Threadmills found on pages 342, 344-346 & 348.



Threadmills Speeds & Feeds

Material	Grades	SFM	Threadmill Diameter (IPT)									
			1/16 (.0625)	1/8 (.1250)	3/16 (.1875)	1/4 (.2500)	5/16 (.3125)	3/8 (.3750)	1/2 (.5000)	5/8 (.6250)	3/4 (.7500)	
P - Steels												
High Strength Tool Steel	A2, D2, P20, H11, H13, S2, O1	250-400	.00015-.00030	.00030-.00060	.00050-.00100	.00080-.00150	.00100-.00200	.00150-.00250	.00200-.00300	.00300-.00400	.00350-.00500	
Low Carbon	A36, 12L14, 12L15, 1005, 1018, 1020, 1108-1119, 1213-1215, 1513-1518, 4012, 5015, 9310	350-500	.00020-.00040	.00050-.00100	.00100-.00150	.00150-.00250	.00200-.00300	.00300-.00450	.00350-.00550	.00500-.00700	.00600-.00800	
Medium Carbon	1040-1095, 1140-1151, 1330-1345, 1520-1572, 4023-4063, 4120-4161, 4330-4340, 4620-4640, 8620-8660, 8740-8750, 6150, 51000, 52100	300-450	.00020-.00040	.00050-.00100	.00100-.00150	.00150-.00250	.00200-.00300	.00300-.00450	.00350-.00550	.00500-.00700	.00600-.00800	
M - Stainless Steels												
Austenitic	301-304L, 310, 316L, 321, 347	100-250	.00015-.00025	.00025-.00055	.00050-.00100	.00080-.00150	.00100-.00200	.00150-.00250	.00200-.00300	.00300-.00400	.00350-.00500	
Martensitic	403, 410, 416, 420, 430, 431, 440	150-250	.00020-.00030	.00040-.00080	.00060-.00100	.00100-.00150	.00150-.00200	.00150-.00300	.00200-.00350	.00300-.00400	.00300-.00400	
Precipitation Hardening	12/8, 15/5, 17/4, AM-350/355/363, PH13-8MO, PH14-8/MO	100-250	.00015-.00025	.00025-.00055	.00050-.00100	.00080-.00150	.00100-.00200	.00150-.00250	.00200-.00300	.00300-.00400	.00350-.00500	
K - Cast Irons												
Ductile	A536, J434, 60-40-18	200-300	.00025-.00035	.00030-.00060	.00050-.00100	.00080-.00150	.00100-.00200	.00150-.00250	.00200-.00300	.00300-.00400	.00300-.00500	
Gray	A48, A436, A319, Class 20, G4000	250-350	.00025-.00035	.00040-.00080	.00070-.00130	.00070-.00130	.00150-.00200	.00200-.00300	.00200-.00400	.00300-.00500	.00400-.00600	
Malleable	A220, A602, J158	200-300	.00025-.00035	.00030-.00060	.00050-.00100	.00080-.00150	.00100-.00200	.00150-.00250	.00200-.00300	.00300-.00400	.00300-.00500	
N - Non-Ferrous												
Aluminum Alloys	2014, 2024, 6061, 7075	800-1400	.00020-.00040	.00050-.00100	.00100-.00150	.00150-.00250	.00200-.00300	.00300-.00450	.00350-.00550	.00500-.00700	.00600-.01000	
Aluminum High Silicon	A380, A390	475-750	.00015-.00022	.00035-.00040	.00075-.00080	.00100-.00200	.00150-.00250	.00180-.00280	.00200-.00300	.00280-.00310	.00350-.00500	
Brass/Bronze	Aluminum Bronze, Low Silicon Bronze	550-800	.00020-.00050	.00050-.00100	.00100-.00150	.00150-.00250	.00200-.00300	.00300-.00450	.00350-.00550	.00500-.00700	.00600-.01000	
Composites	G-10, Fiberglass, Graphite, Graphite Epoxy, Plastics	800-1400	.00030-.00050	.00050-.00100	.00100-.00150	.00150-.00250	.00200-.00300	.00300-.00450	.00350-.00550	.00500-.00700	.00600-.01000	
Copper		450-1000	.00025-.00035	.00030-.00060	.00050-.00100	.00080-.00150	.00100-.00200	.00150-.00250	.00200-.00300	.00300-.00400	.00350-.00500	
Magnesium		800-1400	.00030-.00050	.00050-.00100	.00100-.00150	.00150-.00250	.00200-.00300	.00300-.00450	.00350-.00550	.00500-.00700	.00600-.01000	
S - High Temp Alloys												
Cobalt Base	Stellite, HS-21, Haynes 25/188, X40, L605	50-90	.00015-.00025	.00020-.00050	.00030-.00050	.00040-.00060	.00060-.00090	.00080-.00150	.00100-.00200	.00140-.00280	.00180-.00300	
Iron Base	Incoloy 800-802, Multimet N-155, Timkin 16-25-6, Carpenter 22-b3	50-90	.00015-.00025	.00020-.00050	.00030-.00050	.00040-.00060	.00060-.00090	.00080-.00150	.00100-.00200	.00140-.00280	.00180-.00300	
Nickel Base	Inconel 625/718, Inco 700, 713C, 718, Monel 400-401, 404, K401, Rene, Rene 41 & 95 Hastelloy, Waspology, Udimet 500 & 700	60-100	.00020-.00030	.00030-.00060	.00050-.00100	.00080-.00150	.00100-.00200	.00150-.00250	.00150-.00250	.00200-.00300	.00250-.00400	
Titanium	Commercially Pure, 6Al-4V, ASTM 1/2/3, 6Al-25N-4Zr-2Mo-Si, Ti-8Al-1Mo, Ti-8Al-4Mo	80-150	.00020-.00050	.00030-.00060	.00050-.00100	.00080-.00150	.00100-.00200	.00150-.00250	.00150-.00250	.00250-.00350	.00300-.00450	

NOTE: Speeds and Feeds listed are estimated and will vary by application.

Threadmill Calculation Formulas

Feedrate Adjustment	$\frac{(\text{Thread Major Diameter}) - (\text{Threadmill Diameter})}{(\text{Thread Major Diameter})} \times \text{Linear Feedrate}$
RPM	$\frac{3.8}{(\text{Threadmill Diameter})} \times \text{SFM}$
Linear IPM	$(\text{Inches per Tooth}) \times (\text{Number of Flutes}) \times \text{RPM}$



Thread Injector High Performance End or Side Coolant Threadmills Technical Information

- RedLine Thread Injector High Performance Coolant Fed Threadmills are geared for top performance in a variety of different materials
- Coolant Fed Threadmills found on pages 343, 347 & 349.

End or Side Coolant Threadmills Speeds & Feeds

Material	Grades	SFM	Threadmill Diameter (IPT)									
			1/16 (.0625)	1/8 (.1250)	3/16 (.1875)	1/4 (.2500)	5/16 (.3125)	3/8 (.3750)	1/2 (.5000)	5/8 (.6250)	3/4 (.7500)	
P - Steels												
High Strength Tool Steel	A2, D2, P20, H11, H13, S2, 01	400	.0001	.0001	.0001	.0002	.0004	.0010	.0012	.0015	.0020	
Low Carbon	A36, 12L14, 12L15, 1005, 1018, 1020, 1108-1119, 1213-1215, 1513-1518, 4012, 5015, 9310	600	.0025	.0030	.0030	.0040	.0050	.0050	.0060	.0060	.0060	
Medium Carbon	1040-1095, 1140-1151, 1330-1345, 1520-1572, 4023-4063, 4120-4161, 4330-4340, 4620-4640, 8620-8660, 8740-8750, 6150, 51000, 52100	525-575	.0010	.0003-.0010	.0003-.0030	.0005-.0020	.0006-.0030	.0007-.0030	.0010-.0040	.0015-.0040	.0015-.0040	
M - Stainless Steels												
Austenitic	301-304L, 310, 316L, 321, 347	525	.0008	.0010	.0010	.0015	.0015	.0020	.0030	.0030	.0040	
Martensitic	403, 410, 416, 420, 430, 431, 440	550	.0008	.0010	.0010	.0015	.0015	.0020	.0030	.0030	.0040	
Precipitation Hardening	12/8, 15/5, 17/4, AM-350/355/363, PH13-8MO, PH14-8/MO	300	.0008	.0010	.0010	.0010	.0015	.0015	.0020	.0020	.0020	
K - Cast Irons												
Ductile	A536, J434, 60-40-18	600	.0010	.0010	.0015	.0015	.0020	.0030	.0040	.0040	.0040	
Gray	A48, A436, A319, Class 20, G4000	600	.0010	.0010	.0015	.0015	.0020	.0030	.0040	.0040	.0040	
Malleable	A220, A602, J158	600	.0010	.0010	.0015	.0015	.0020	.0030	.0040	.0040	.0040	
N - Non-Ferrous												
Aluminum Alloys	2014, 2024, 6061, 7075	1700	.0015	.0020	.0020	.0030	.0030	.0040	.0050	.0050	.0050	
Aluminum High Silicon	A380, A390	450	.0004	.0005	.0010	.0015	.0020	.0020	.0025	.0030	.0050	
Brass/Bronze	Aluminum Bronze, Low Silicon Bronze	1700	.0010	.0020	.0020	.0030	.0030	.0040	.0050	.0050	.0050	
Composites	G-10, Fiberglass, Graphite, Graphite Epoxy, Plastics	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Copper		1000	.0004	.0004	.0005	.0006	.0006	.0008	.0010	.0012	.0012	
Magnesium		1000	.0004	.0010	.0010	.0020	.0020	.0020	.0030	.0050	.0050	
S - High Temp Alloys												
Cobalt Base	Stellite, HS-21, Haynes 25/188, X40, L605	150	.0001	.0002	.0004	.0005	.0005	.0007	.0008	.0010	.0012	
Iron Base	Incoloy 800-802, Multmet N-155, Timkin 16-25-6, Carpenter 22-b3	150	.0001	.0002	.0004	.0005	.0005	.0007	.0008	.0010	.0012	
Nickel Base	Inconel 625/718, Inco 700, 713C, 718, Monel 400-401, 404, K401, Rene, Rene 41 & 95 Hastelloy, Waspoloy, Udimet 500 & 700	120	.0005	.0005	.0005	.0010	.0010	.0015	.0020	.0020	.0020	
Titanium	Commercially Pure, 6Al-4V, ASTM 1/2/3, 6Al-25N-4Zr-2Mo-Si, Ti-8Al-1Mo, Ti-8Al-4Mo	100	.0005	.0005	.0005	.0010	.0010	.0015	.0020	.0020	.0020	

NOTE: Speeds and Feeds listed are estimated and will vary by application.



Thread Injector High Performance Single Profile Threadmills Technical Information

- RedLine Thread Injector High Performance Single Profile Threadmills are geared for top performance in a variety of different materials
- Single Profile Threadmills found on page 350.



Single Profile Threadmills Speeds & Feeds

Material	Grades	SFM	Threadmill Diameter (IPT)									
			1/16	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	
			(.0625)	(.1250)	(.1875)	(.2500)	(.3125)	(.3750)	(.5000)	(.0625)	(.7500)	
P - Steels												
High Strength Tool Steel	A2, D2, P20, H11, H13, S2, 01	300	.0001	.0001	.0001	.0002	.0004	.0010	.0012	.0015	.0020	
Low Carbon	A36, 12L14, 12L15, 1005, 1018, 1020, 1108-1119, 1213-1215, 1513-1518, 4012, 5015, 9310	450	.0025	.0030	.0030	.0040	.0050	.0050	.0060	.0060	.0060	
Medium Carbon	1040-1095, 1140-1151, 1330-1345, 1520-1572, 4023-4063, 4120-4161, 4330-4340, 4620-4640, 8620-8660, 8740-8750, 6150, 51000, 52100	395-430	.0010	.0003-.0010	.0003-.0030	.0005-.0020	.0006-.0030	.0007-.0030	.0010-.0040	.0015-.0040	.0015-.0040	
M - Stainless Steels												
Austenitic	301-304L, 310, 316L, 321, 347	395	.0008	.0010	.0010	.0015	.0015	.0020	.0030	.0030	.0040	
Martensitic	403, 410, 416, 420, 430, 431, 440	415	.0008	.0010	.0010	.0015	.0015	.0020	.0030	.0030	.0040	
Precipitation Hardening	12/8, 15/5, 17/4, AM-350/355/363, PH13-8MO, PH14-8/MO	225	.0008	.0010	.0010	.0010	.0015	.0015	.0020	.0020	.0020	
K - Cast Irons												
Ductile	A536, J434, 60-40-18	450	.0010	.0010	.0015	.0015	.0020	.0030	.0040	.0040	.0040	
Gray	A48, A436, A319, Class 20, G4000	450	.0010	.0010	.0015	.0015	.0020	.0030	.0040	.0040	.0040	
Malleable	A220, A602, J158	450	.0010	.0010	.0015	.0015	.0020	.0030	.0040	.0040	.0040	
N - Non-Ferrous												
Aluminum Alloys	2014, 2024, 6061, 7075	1275	.0015	.0020	.0020	.0030	.0030	.0040	.0050	.0050	.0050	
Aluminum High Silicon	A380, A390	335	.0004	.0005	.0010	.0015	.0020	.0020	.0025	.0030	.0050	
Brass/Bronze	Aluminum Bronze, Low Silicon Bronze	1275	.0010	.0020	.0020	.0030	.0030	.0040	.0050	.0050	.0050	
Composites	G-10, Fiberglass, Graphite, Graphite Epoxy, Plastics	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Copper		750	.0004	.0004	.0005	.0006	.0006	.0008	.0010	.0012	.0012	
Magnesium		750	.0004	.0010	.0010	.0020	.0020	.0020	.0030	.0050	.0050	
S - High Temp Alloys												
Cobalt Base	Stellite, HS-21, Haynes 25/188, X40, L605	115	.0001	.0002	.0004	.0005	.0005	.0007	.0008	.0010	.0012	
Iron Base	Incoloy 800-802, Multmet N-155, Timkin 16-25-6, Carpenter 22-b3	115	.0001	.0002	.0004	.0005	.0005	.0007	.0008	.0010	.0012	
Nickel Base	Inconel 625/718, Inco 700, 713C, 718, Monel 400-401, 404, K401, Rene, Rene 41 & 95 Hastelloy, Waspoly, Udimet 500 & 700	90	.0005	.0005	.0005	.0010	.0010	.0015	.0020	.0020	.0020	
Titanium	Commercially Pure, 6Al-4V, ASTM 1/2/3, 6Al-25N-4Zr-2Mo-Si, Ti-8Al-1Mo, Ti-8Al-4Mo	75	.0005	.0005	.0005	.0010	.0010	.0015	.0020	.0020	.0020	

NOTE: Speeds and Feeds listed are estimated and will vary by application.



Thread Injector High Performance 3 Form Threadmills Technical Information

- RedLine Thread Injector High Performance 3 Form Threadmills are geared for top performance in a variety of different materials
- 3 Form Threadmills are found on pages 351-352.

3 Form Threadmills Speeds & Feeds

Material	Grades	SFM	Threadmill Diameter (IPT)									
			1/16	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	
			(.0625)	(.1250)	(.1875)	(.2500)	(.3125)	(.3750)	(.5000)	(.0625)	(.7500)	
P - Steels												
High Strength Tool Steel	A2, D2, P20, H11, H13, S2, 01	300	.0001	.0001	.0001	.0002	.0004	.0010	.0012	.0015	.0020	
Low Carbon	A36, 12L14, 12L15, 1005, 1018, 1020, 1108-1119, 1213-1215, 1513-1518, 4012, 5015, 9310	450	.0025	.0030	.0030	.0040	.0050	.0050	.0060	.0060	.0060	
Medium Carbon	1040-1095, 1140-1151, 1330-1345, 1520-1572, 4023-4063, 4120-4161, 4330-4340, 4620-4640, 8620-8660, 8740-8750, 6150, 51000, 52100	395-430	.0010	.0003-.0010	.0003-.0030	.0005-.0020	.0006-.0030	.0007-.0030	.0010-.0040	.0015-.0040	.0015-.0040	
M - Stainless Steels												
Austenitic	301-304L, 310, 316L, 321, 347	395	.0008	.0010	.0010	.0015	.0015	.0020	.0030	.0030	.0040	
Martensitic	403, 410, 416, 420, 430, 431, 440	415	.0008	.0010	.0010	.0015	.0015	.0020	.0030	.0030	.0040	
Precipitation Hardening	12/8, 15/5, 17/4, AM-350/355/363, PH13-8MO, PH14-8/MO	225	.0008	.0010	.0010	.0010	.0015	.0015	.0020	.0020	.0020	
K - Cast Irons												
Ductile	A536, J434, 60-40-18	450	.0010	.0010	.0015	.0015	.0020	.0030	.0040	.0040	.0040	
Gray	A48, A436, A319, Class 20, G4000	450	.0010	.0010	.0015	.0015	.0020	.0030	.0040	.0040	.0040	
Malleable	A220, A602, J158	450	.0010	.0010	.0015	.0015	.0020	.0030	.0040	.0040	.0040	
N - Non-Ferrous												
Aluminum Alloys	2014, 2024, 6061, 7075	1275	.0015	.0020	.0020	.0030	.0030	.0040	.0050	.0050	.0050	
Aluminum High Silicon	A380, A390	335	.0004	.0005	.0010	.0015	.0020	.0020	.0025	.0030	.0050	
Brass/Bronze	Aluminum Bronze, Low Silicon Bronze	1275	.0010	.0020	.0020	.0030	.0030	.0040	.0050	.0050	.0050	
Composites	G-10, Fiberglass, Graphite, Graphite Epoxy, Plastics	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Copper		750	.0004	.0004	.0005	.0006	.0006	.0008	.0010	.0012	.0012	
Magnesium		750	.0004	.0010	.0010	.0020	.0020	.0020	.0030	.0050	.0050	
S - High Temp Alloys												
Cobalt Base	Stellite, HS-21, Haynes 25/188, X40, L605	115	.0001	.0002	.0004	.0005	.0005	.0007	.0008	.0010	.0012	
Iron Base	Incoloy 800-802, Multmet N-155, Timkin 16-25-6, Carpenter 22-b3	115	.0001	.0002	.0004	.0005	.0005	.0007	.0008	.0010	.0012	
Nickel Base	Inconel 625/718, Inco 700, 713C, 718, Monel 400-401, 404, K401, Rene, Rene 41 & 95 Hastelloy, Waspoloy, Udimet 500 & 700	90	.0005	.0005	.0005	.0010	.0010	.0015	.0020	.0020	.0020	
Titanium	Commercially Pure, 6Al-4V, ASTM 1/2/3, 6Al-25N-4Zr-2Mo-Si, Ti-8Al-1Mo, Ti-8Al-4Mo	75	.0005	.0005	.0005	.0010	.0010	.0015	.0020	.0020	.0020	

NOTE: Speeds and Feeds listed are estimated and will vary by application.