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PRODUCT SERIES

22.8-BD Spindle



36-AM Spindle



36-AM-RA Spindle



36-BD Spindle



36-BD-RA Spindle



36-TC Spindle



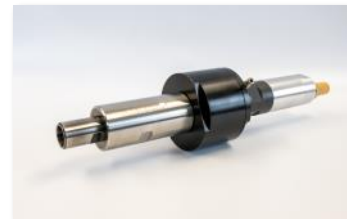
50-AM Spindle



50-BD Spindle



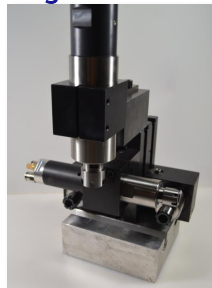
50-TC Spindle



NEMA 23 or 24 Servo



Gang Tool Holders



Legend

AM: Air Motor
BD: Belt Drive
RA: Right Angle
TC: Tool Change

Series 22.8 Belt Driven Spindle

The Series 22.8 cartridge spindle is designed for high speed drilling, cutting, milling and grinding operations using standard ER – 11 collets. Its offers high precision in a subcompact size. It can be used in a wide variety of applications for those tough to reach areas.

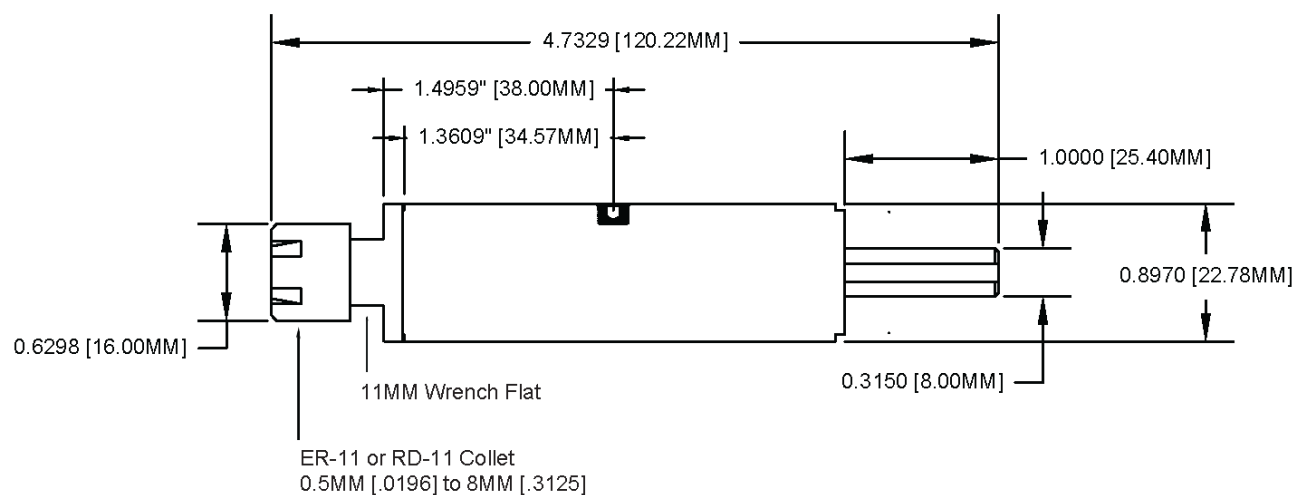
ER 11 COLLET SYSTEM Capacity: 0.5 – 8 mm. (0.019 – 0.3125 in.)

Run-out Spec $\pm .0001$



Dimensions

22.8 Belt Driven Spindle



The 22.8 Belt Drive Spindle is now available with optional pulleys.

- XL Tooth pulley
- Belt Pulley: Flat or Round Belt



Series 36-Air Motor & Belt Driven Spindles

The Series 36 spindle is designed for high speed drilling, cutting and milling operations using standard ER - 16 collets. Its high precision and compact size can be used in a wide variety of OEM machines to secondary CNC operations. The Series 36 air motor is capable of 21,500 RPM with direct drive or lower RPM's with integral planetary gears. Gear train has been designed for long life with needle bearings in-side each gear. The Series 36 design also allows for belt drive configurations which is widely used with conjunction of Servo motors for maximum versatility. All of the series 36 spindles are reversible.

ER 16 COLLET SYSTEM Capacity: 0.5 – 10 mm. (0.019 – 0.3937 in.)

Run-out Spec $\pm .0001$

Series 36 belt Drive Spindle



Series 36 AM Spindle with Air Motor

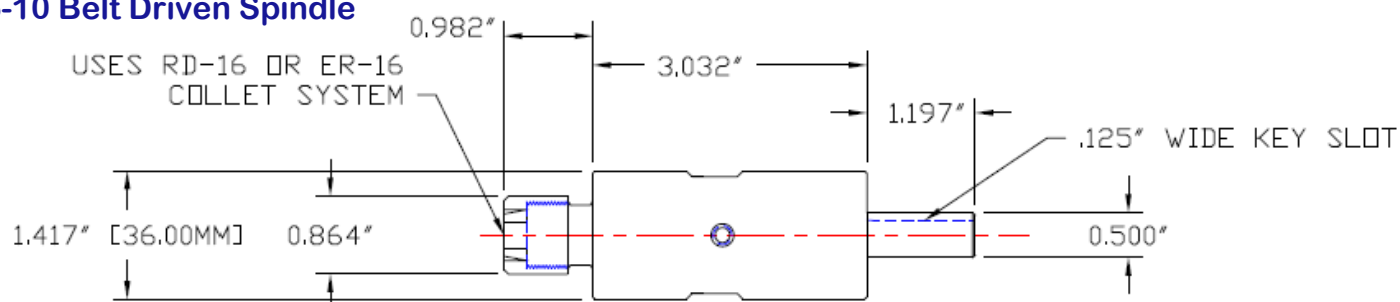
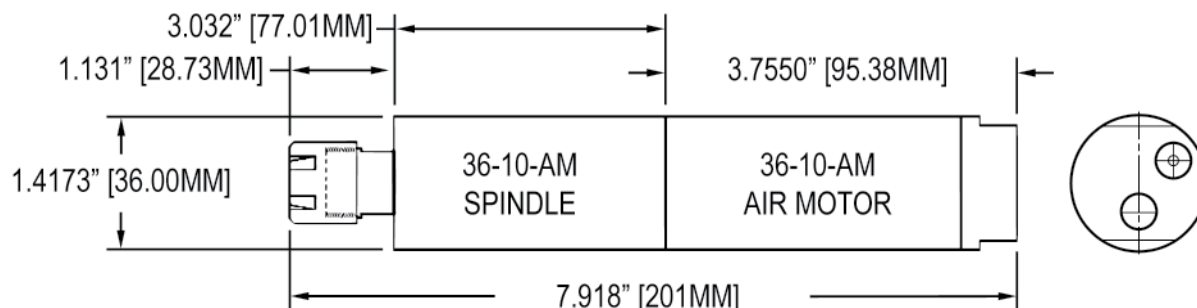


Timing Pulley available for Belt Drive Spindle



**Series 36 Spindle also available with a Series 46 motor.
46mm Motor Options listed on page 11.**

36-10 Air Spindle & Motor



- **Maximum Collet Size: 10mm (.3937)**
- **Optional rear shaft support bearing available for belt drive model**
- **Add 1.200" to length of Air Motor for Series 36-AM-1140 & 36-AM 510**

* Test performed at air pressure 6.3 bar (91psi) Max.

36-AM Performance Specifications

Catalog #		MOTR00007	MOTR00008	MOTR00009	MOTR00010	MOTR00011	MOTR00032	MOTR00021	MOTR00023
Model #		36-10-AM-21500	36-10-AM-5000	36-10-AM-2250	36-10-AM-1140	36-10-AM-510	36-10-AM-REV-13800	36-10-AM-REV-3000	36-10-AM-REV-1350
Rotation		Clockwise	Clockwise	Clockwise	Clockwise	Clockwise	Reversible	Reversible	Reversible
Max Output	KW	0.25	0.25	0.25	0.24	0.24	0.16	0.16	0.16
	HP	0.34	0.34	0.34	0.32	0.32	0.22	0.22	0.22
Speed at Max Output	Rev/Min	9600	2200	1040	535	235	6500	1390	650
Torque at Max Output	Nm	0.25	1.1	2.4	4.3	9.9	0.24	1.1	2.4
	Ft.Lb.	0.18	0.81	1.7	3.2	7.3	0.18	0.81	1.7
Minimum Starting Torque	Nm	0.45	2.0	4.5	8.0	17.0	0.35	1.3	3.0
	Ft.Lb.	0.33	1.5	3.3	5.9	12.5	0.26	0.96	2.2
Free Speed	Rev/Min	21500	5000	2250	1140	510	13800	3000	1350
Air Cons. At Max Output	L/S	5.3	5.3	5.3	5.3	5.3	5.0	5.0	5.0
	CFM	11.2	11.2	11.2	11.2	11.2	10.6	10.6	10.6
Motor Weight	KG	0.55	0.55	0.55	0.75	0.75	0.55	0.55	0.55
	LB	1.21	1.21	1.21	1.75	1.75	1.21	1.21	1.21
Spindle Weight	KG	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
	LB	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Series 36 Right Angle Spindles – Air and Belt Driven

The Series 36 right angle spindle makes it easier to maneuver on the hard to reach operations without sacrificing area space. Like the Series 36 AM the RA configurations capability excel in drilling, cutting, and milling processes for both the air and belt driven spindles. Also equipped with large hardened spiral bevel gears for long life and high torque transmission capability. Air Motor is capable of 14,000 RPM with direct drive or lower RPM's with integral planetary gears. Uses standard ER-16 collets. Air motor can easily be detached from spindle and replaced with another of a different RPM. The Series 36 RA spindle gives a more compact form while increasing valuable torque strength.

ER 16 COLLET SYSTEM Capacity: 0.5 – 10 mm. (0.019 – 0.3937 in.)

Run-out Spec $\pm .0001$

Series 36 Right Angle Air Motor Spindle



Series 36 Right Angle Belt Driven Spindle



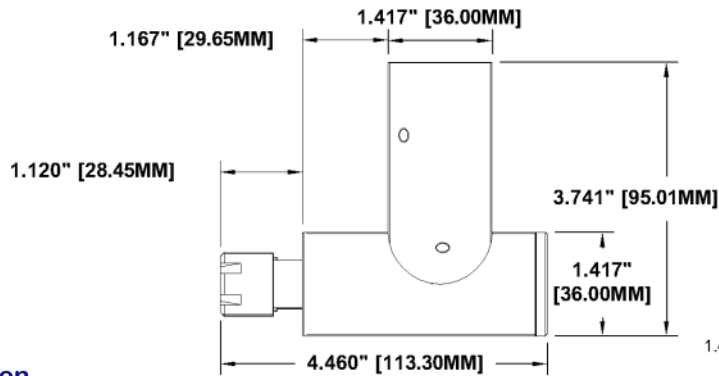
Timing Pulley available
for Belt Drive Spindle



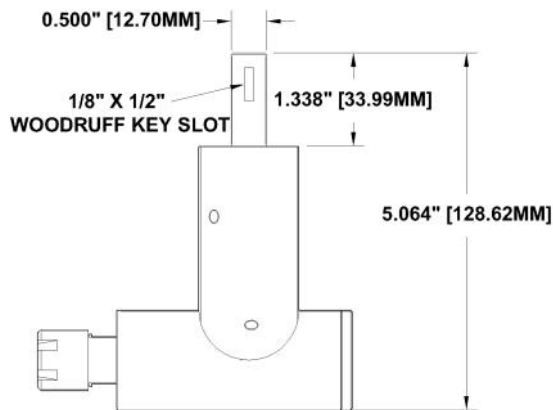
Series 36 RA Spindle also available with a
46mm motor configuration to increase power.
46MM Motor Options on page 11.

Dimensions:

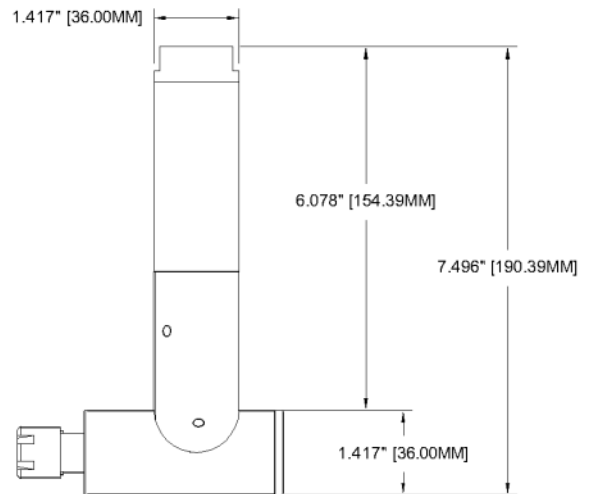
Air Motor Driven



Belt Driven



Spindle With Air Motor



- **Maximum Collet Size: 10mm (.3937)**
- **Add 1.200" to length of Air Motor for Series 36-AM-1140 & 36-AM 510**

** Test performed at air pressure 6.3 bar (91psi) Max.*

36-AM-RA Performance Specifications

Catalog #		MOTR00007	MOTR00008	MOTR00009	MOTR00010	MOTR00011	MOTR00032	MOTR00021	MOTR00023
Model #		36-10-AM-21500	36-10-AM-5000	36-10-AM-2250	36-10-AM-1140	36-10-AM-510	36-10-AM-REV-13800	36-10-AM-REV-3000	36-10-AM-REV-1350
Rotation		Clockwise	Clockwise	Clockwise	Clockwise	Clockwise	Reversible	Reversible	Reversible
Max Out-put	KW	0.25	0.25	0.25	0.24	0.24	0.16	0.16	0.16
	HP	0.34	0.34	0.34	0.32	0.32	0.22	0.22	0.22
Speed at Max Out-put	Rev/Min	6400	1467	693	357	157	4334	927	433
Torque at Max Out-put	Nm	0.35	1.54	3.36	6.02	13.86	0.336	1.54	3.36
	Ft.Lb.	0.252	1.134	2.38	4.48	10.22	0.252	1.134	2.38
Minimum Starting Torque	Nm	0.63	2.8	6.3	11.2	23.8	0.49	1.82	4.2
	Ft.Lb.	0.462	2.1	4.62	8.25	17.5	0.364	1.344	3.08
Free Speed	Rev/Min	14190	3300	1485	752	337	9108	1980	891
Air Cons. At Max Output	L/S	5.3	5.3	5.3	5.3	5.3	5.0	5.0	5.0
	CFM	11.2	11.2	11.2	11.2	11.2	10.6	10.6	10.6
Motor Weight	KG	0.55	0.55	0.55	0.75	0.75	0.55	0.55	0.55
	LB	1.21	1.21	1.21	1.75	1.75	1.21	1.21	1.21
Spindle Weight	KG	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
	LB	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Series 50 – Air Motor and Belt Driven Spindles

The Series 50 – AM & BD spindles provide a heavy duty drive while giving you easy to work with configurations. Providing the ability of more strength and torque makes it for a valuable spindle. The Series 50 – AM & BD spindles have a rugged ball bearing design that is used for the tough and hard to do jobs that need that extra support. The air motor is capable of 21,000 RPM or lower RPM's with integral planetary gears. Uses standard ER 20 collets. The capability of this spindle provides an integral piece of machinery for your tasks in hand.

ER 20 COLLET SYSTEM Capacity: 0.5 – 13MM.

(0.019 – 0.5120 in.)

Run-out Spec \pm .0001

50-BD Belt Driven Spindle with Long and Short Housing



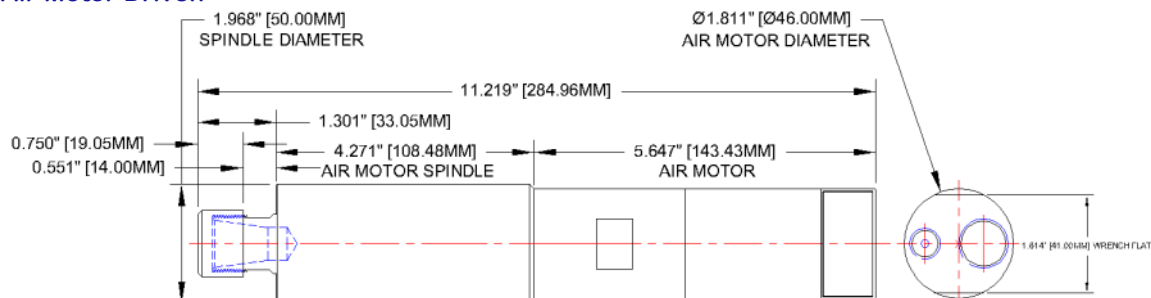
Series 50-AM Spindle with 46mm Air Motor



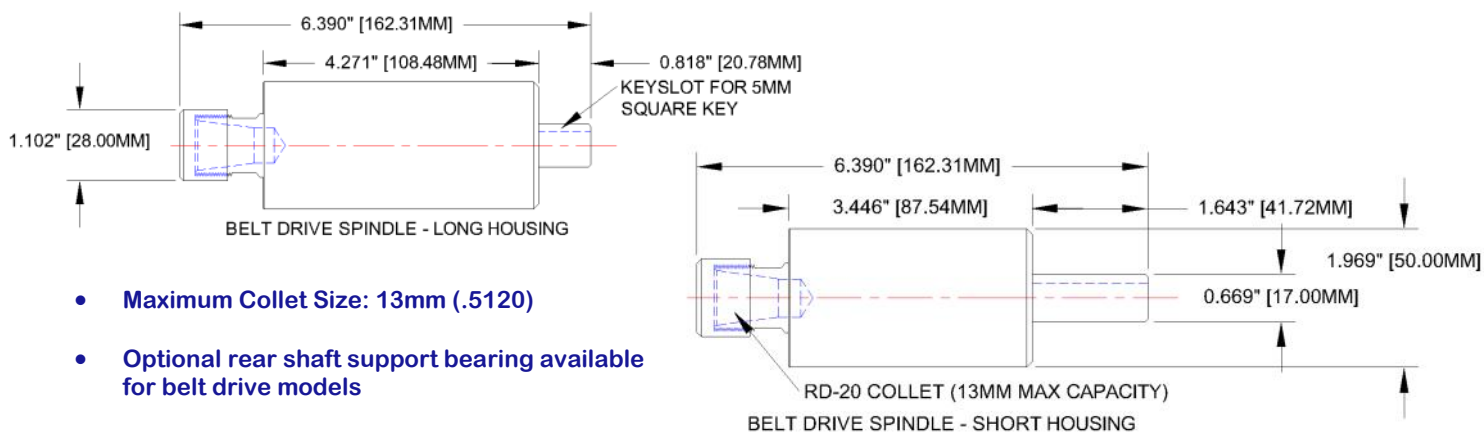
46mm Air Motor

Dimensions:

Series 50-Spindles Air Motor Driven



Series 50-Belt Driven



- **Maximum Collet Size: 13mm (.5120)**
- **Optional rear shaft support bearing available for belt drive models**
- **If using 46MM Motor on 36-RA Spindle multiply torque by 1.5.**

** Test performed at air pressure 6.3 bar (91psi)*

50-AM Performance Specifications

Catalog #		MOTR00037A	MOTR00028A	MOTR00017A	MOTR00029A	MOTR00084A	MOTR00079A
Model #		46-13-AM-21000	46-13-AM-6700	46-13-AM-4200	46-13-AM-2550	46-13-AM-REV-15000	46-13-AM-REV-1100
Rotation		Clockwise	Clockwise	Clockwise	Clockwise	Reversible	Reversible
Max Output	KW	0.84	0.84	0.84	0.84	0.63	0.63
	HP	1.13	1.13	1.13	1.13	0.84	0.84
Speed at Max Output	Rev/Min	10800	3300	2100	1280	8500	590
Torque at Max Output	Nm	0.74	2.4	3.8	6.3	0.71	10.1
	Ft.Lb.	0.55	1.8	2.8	4.6	0.52	7.4
Minimum Starting Torque	Nm	1.2	3.9	6.2	10.0	0.96	13.5
	Ft.Lb.	0.88	2.9	4.6	7.4	0.71	10.0
Free Speed	Rev/Min	21000	6700	4200	2550	15000	1100
Air Cons. At Max Output	L/S	16.5	16.5	16.5	16.5	14.0	14.0
	CFM	35.0	35.0	35.0	35.0	29.7	29.7
Motor Weight	KG	0.55	1.2	1.2	1.2	1.20	1.20
	LB	1.21	2.65	2.65	2.65	2.65	2.65
Spindle Weight	KG	1.14	1.14	1.14	1.14	1.14	1.14
	LB	2.5	2.5	2.5	2.5	2.5	2.5

Series 36–TC Tool Changer

The Series 36 Tool Changer provides the ability to interchange numerous drilling/milling tools while giving you a compact design. Its multi-purpose capability provides cost saving and time efficiency. With the use of an air motor its max capable speed is 21,500 RPM with direct drive as well as lower RPM's if chosen. Gear train has been designed for long life with needle bearings inside each gear. Spindles uses 1C style collets. The belt drive version has a 12mm diameter shaft protruding from the actuator.

1C COLLET SYSTEM Capacity: 0.5 – 6.35 mm. (0.019 – 0.250 in.)

Run-out Spec $\pm .0001$



36-BD-TC Belt Driven Tool Change Spindle and Actuator



1C Collet Tool



36-BD-TC Belt Driven Tool Change Spindle



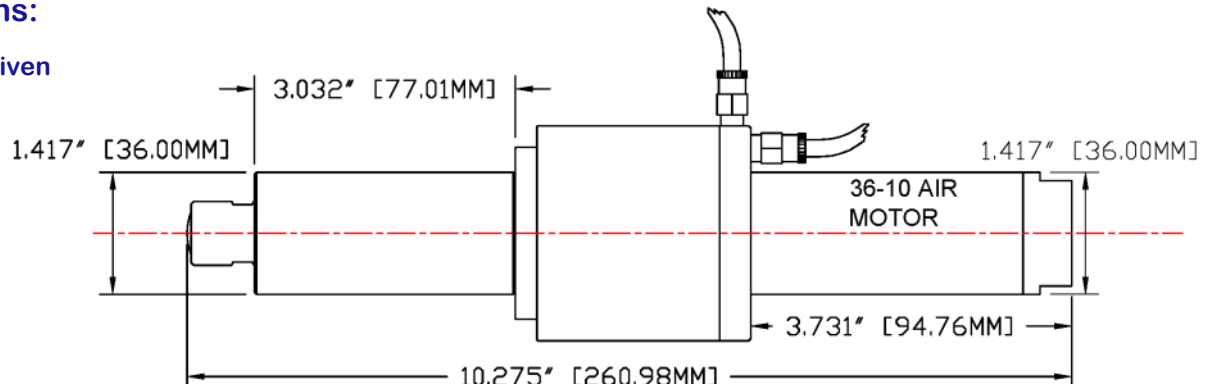
Actuator



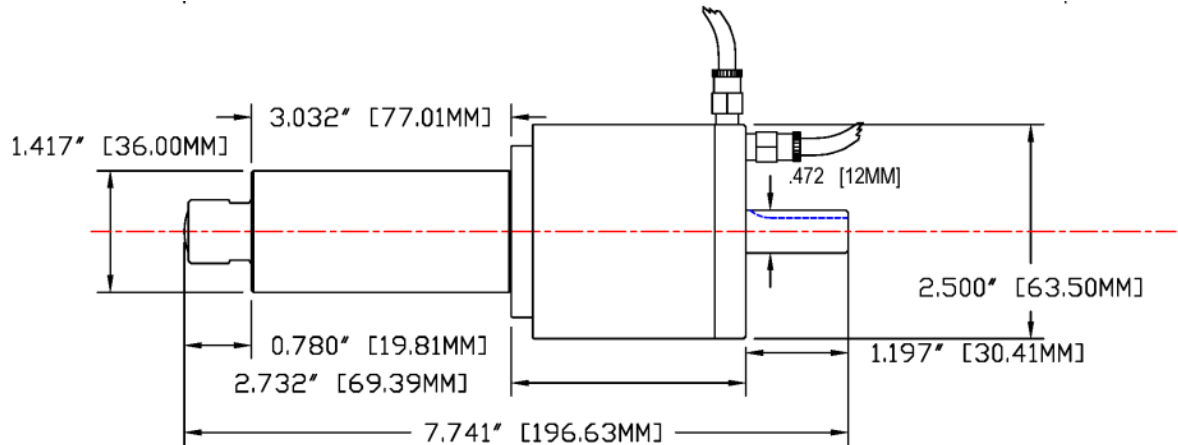
Air Motor Version also Available

Dimensions:

Air Motor Driven



Belt Driven



- Add 1.200" to length of Air Motor for Series 36-AM-TC-1140 & 36-AM-TC-510

** Test performed at air pressure 6.3 bar (91psi)*

36-AM Performance Specifications

Catalog #		MOTR00007	MOTR00008	MOTR00009	MOTR00010	MOTR00011	MOTR00032	MOTR00021	MOTR00023
Model #		36-10-AM-21500	36-10-AM-5000	36-10-AM-2250	36-10-AM-1140	36-10-AM-510	36-10-AM-REV-13800	36-10-AM-REV-3000	36-10-AM-REV-1350
Rotation		Clockwise	Clockwise	Clockwise	Clockwise	Clockwise	Reversible	Reversible	Reversible
Max Out-put	KW	0.25	0.25	0.25	0.24	0.24	0.16	0.16	0.16
	HP	0.34	0.34	0.34	0.32	0.32	0.22	0.22	0.22
Speed at Max Out-put	Rev/Min	9600	2200	1040	535	235	6500	1390	650
Torque at Max Out-put	Nm	0.25	1.1	2.4	4.3	9.9	0.24	1.1	2.4
	Ft.Lb.	0.18	0.81	1.7	3.2	7.3	0.18	0.81	1.7
Minimum Starting Torque	Nm	0.45	2.0	4.5	8.0	17.0	0.35	1.3	3.0
	Ft.Lb.	0.33	1.5	3.3	5.9	12.5	0.26	0.96	2.2
Free Speed	Rev/Min	21500	5000	2250	1140	510	13800	3000	1350
Air Cons. At Max Output	L/S	5.3	5.3	5.3	5.3	5.3	5.0	5.0	5.0
	CFM	11.2	11.2	11.2	11.2	11.2	10.6	10.6	10.6
Motor Weight	KG	0.55	0.55	0.55	0.75	0.75	0.55	0.55	0.55
	LB	1.21	1.21	1.21	1.75	1.75	1.21	1.21	1.21
Spindle Weight	KG	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
	LB	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Series 50–TC Tool Changer

The Series 50 Tool Changer provides the ability to interchange numerous drilling/milling tools for heavy duty applications. The tool changer's large diameter shaft utilizes 3C style collets for high strength and maximum durability. For high speed applications the air motor can provide up to 21,000 RPM when properly equipped. The belt drive version has a 16mm diameter shaft protruding from the actuator. The precision of the Series 50 TC gives an overall ability to provide flexibility while delivering more power, dependability and utmost results.

3C COLLET SYSTEM Capacity: 0.5 – 12.8 mm. (0.019 – 0.500 in.)

Run-out Spec $\pm .0001$



50-BD-TC Tool Change Spindle, Actuator & Servo Motor



Series 50-AM Tool Change Spindle, Actuator & Air Motor



Series 50-AM-TC Spindle



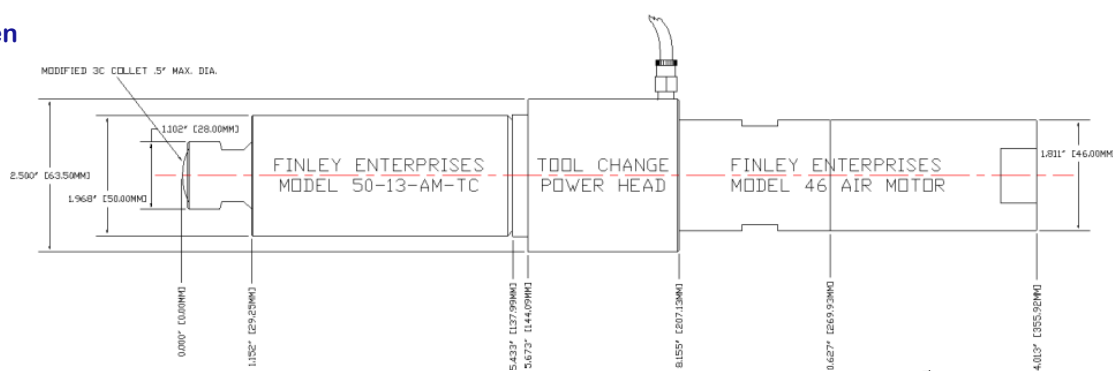
Series 50-AM Actuator



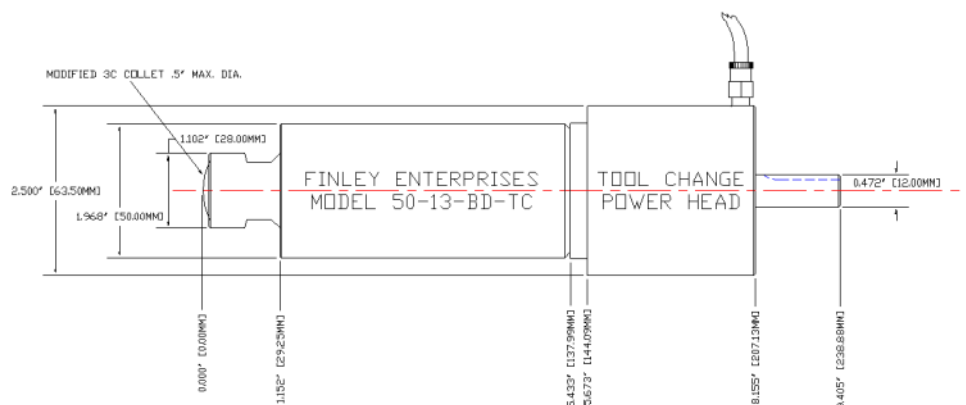
Series 50-AM Air Motor

Dimensions:

Air Motor Driven



Belt Driven



* Test performed at air pressure 6.3 bar (91psi)

50-AM Performance Specifications

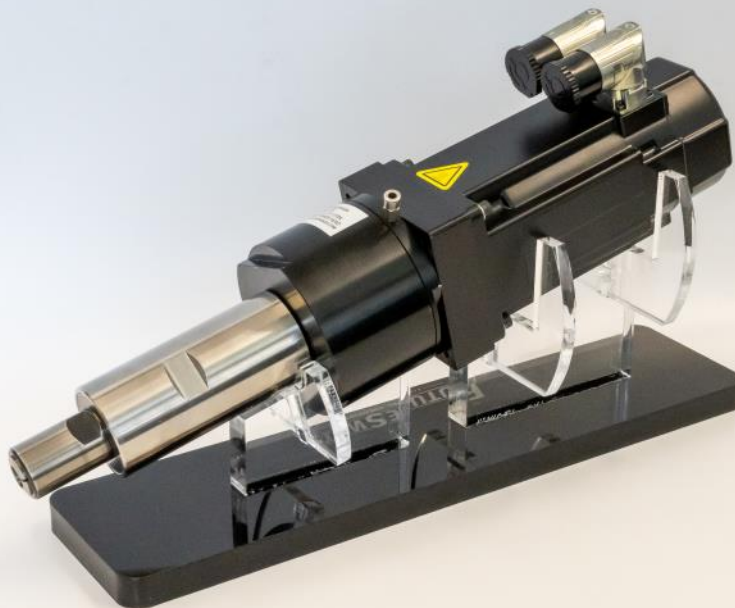
Catalog #		MOTR00037A	MOTR00028A	MOTR00017A	MOTR00029A	MOTR00084A	MOTR00079A
Model #		46-13-AM-21000	46-13-AM-6700	46-13-AM-4200	46-13-AM-2550	46-13-AM-REV-15000	46-13-AM-REV-1100
Rotation		Clockwise	Clockwise	Clockwise	Clockwise	Reversible	Reversible
Max Output	KW	0.84	0.84	0.84	0.84	0.63	0.63
	HP	1.13	1.13	1.13	1.13	0.84	0.84
Speed at Max Output	Rev/Min	10800	3300	2100	1280	8500	590
Torque at Max Output	Nm	0.74	2.4	3.8	6.3	0.71	10.1
	Ft.Lb.	0.55	1.8	2.8	4.6	0.52	7.4
Minimum Starting Torque	Nm	1.2	3.9	6.2	10.0	0.96	13.5
	Ft.Lb.	0.88	2.9	4.6	7.4	0.71	10.0
Free Speed	Rev/Min	21000	6700	4200	2550	15000	1100
Air Cons. At Max Output	L/S	16.5	16.5	16.5	16.5	14.0	14.0
	CFM	35.0	35.0	35.0	35.0	29.7	29.7
Motor Weight	KG	0.55	1.2	1.2	1.2	1.20	1.20
	LB	1.21	2.65	2.65	2.65	2.65	2.65
Spindle Weight	KG	1.14	1.14	1.14	1.14	1.14	1.14
	LB	2.5	2.5	2.5	2.5	2.5	2.5

Servo Motor Spindle Configurations

Our Servo Motor Adapters allow for a direct drive to the spindles for a space saving solution. The direct drive minimizes the power loss due to belts and pulleys. The fully servo controlled spindles are capable of rigid tapping or gear hobbing as well as milling and drilling. The spindles used in the servo configuration are the belt driven series 36-BD and 50-BD models. The adapters can be used with NEMA 23 or 34 servo motors. The servo motor adapters are convenient while still providing overall strength and durability of the Series 36 and 50 spindles.

Finley Precision Spindles can provide many configurations based on custom machining needs. Power & feedback cabling for your servo system is also available. Let our team of engineers find the solution that works for your specific needs.

50-BD-TC Tool Change Spindle, Actuator & Servo Motor



Variety of mounting plates available for servo motors.



Many Servo configuration are available for a variety of setups. Also available on our Right Angle Belt Driven Spindles for those tough to reach places.

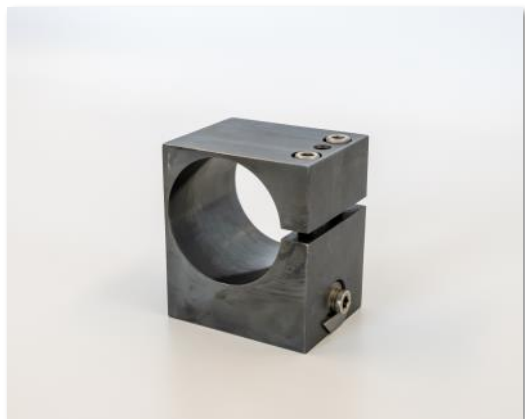
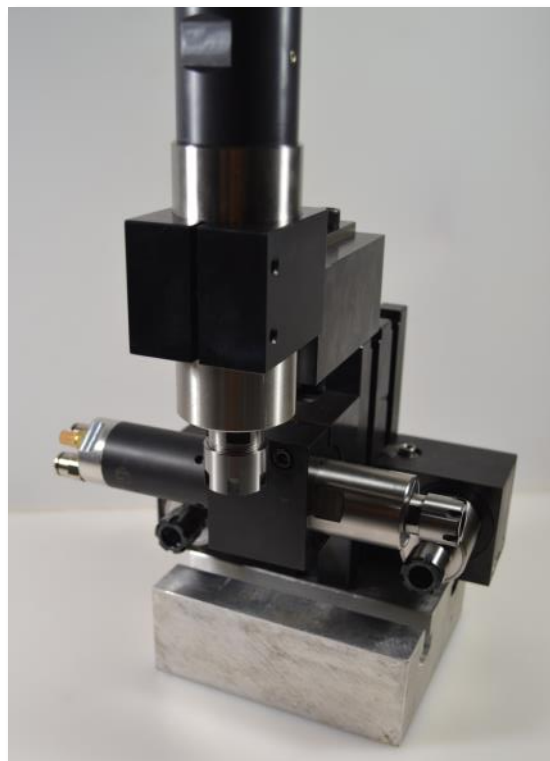


Gang Tool Holder

Gang Tool Mounts vary depending on the setup requested. The holders are uniquely designed for our spindles and can be oriented in multiple ways. The variation of tools in one mount can make the process automated for quicker results.

Our holders use a dovetail design for mounting on a variety of machines.

Call or email today for more information.



Axial & Radial Live Tool Holders



Universal Mounting Post Hardware

Mounting Accessories

Mount for Single 36-10 Spindle



Off-Set Axial & Radial Spindle Mount



Dual Spindle Mounting Block



Mounting Plates for Servo Motors



Many other tools mounting options
are available. Call or Email today!

Collets

Collets provide an easy to use and wide variety of machine tools (drilling, milling, cutting, boring, reaming, etc). By ensuring high quality collets and meeting precision needs we at Finley Precision Spindles will help you assure accuracy on your end result.



ER/RD-16 Collets

ER/RD-16	Drill Size Metric	Drill Size Imperial
M1	.5MM - 1MM	.0197" - .0394"
M2	1MM - 2MM	.0394" - .0787"
M3	2MM - 3MM	.0787" - .1181"
M4	3MM - 4MM	.1181" - .1575"
M5	4MM - 5MM	.1575" - .1968"
M6	5MM - 6MM	.1968" - .2362"
M7	6MM - 7MM	.2363 - .2756"
M8	7MM - 8MM	.2756" - .3150"
M9	8MM - 9MM	.3150" - .3543"
M10	9MM - 10MM	.3543" - .3937"

ER/RD-20 Collet

ER/RD-20	Drill Size Metric	Drill Size Imperial
M2	1MM - 2MM	.0394" - .0787"
M3	2MM - 3MM	.0787" - .1181"
M4	3MM - 4MM	.1181" - .1575"
M5	4MM - 5MM	.1575" - .1968"
M6	5MM - 6MM	.1968" - .2362"
M7	6MM - 7MM	.2363 - .2756"
M8	7MM - 8MM	.2756" - .3150"
M9	8MM - 9MM	.3150" - .3543"
M10	9MM - 10MM	.3543" - .3937"
M11	10MM - 11MM	.3937" - .4331"
M12	11MM - 12MM	.4331" - .4724"
M13	12MM - 13MM	.4724" - .5118"

1C Collet

Size	Drill Size Imperial
1/16"	.0625"
3/32"	.0935"
1/8"	.1250"
3/16"	.1875"
1/4"	.2500"

3C Collet

Size	Drill Size Imperial
1/16"	.0625"
1/8"	.1250"
3/16"	.1875"
1/4"	.2500"
5/16"	.3125"
3/8"	.3750"
7/16"	.4375"
1/2"	.5000"



Collet Accessories

Collet Nut

Collet Nut	Series Use
ER/RD-16	Series 36 Spindle
ER/RD-20	Series 50 Spindle



Collet Hex Nut

Collet Nut	Series Use
ER/RD-16	Series 36 Spindle
ER/RD-20	Series 50 Spindle

Mini Nut Wrench

Collet Nut	Series Use
ER/RD-11	Series 22.8 Spindle
ER/RD-16	Series 36 Spindle
ER/RD-20	Series 50 Spindle



Spanner Open End Wrench

7MM & 22MM Open End Wrench for
Series 36 & 50 Spindles



1C Collet Tool

Collet adjustment tool for standard 1C collets



Pneumatic Accessories



Mufflers for Air Motors

Replacement mufflers available for all 36 & 46 series air motors

Push In Male Connectors

Replacement tubing connectors for all 36 & 46 Series air motors

NPT Reducer Bushings

3/4" & 3/8" NPT Reducer Bushings

NPT Male & Female Street Tee

3/4" & 3/8" NPT Female Street Tee

Air Hose

Variety of sizes and lengths available

Air Hose

Variety of sizes and lengths available

Low Pressure Regulator Kit

Kit contains fitting and mounting bracket, 1/4" Inlet-Outlet for 4MM tubing, 2 meters of poly tubing & fitting to connect to side of spindle

Ball Valve

Ball Valve 3/8" NPT Male x 3/8" OD

Filter Regulator Lubrication Kit

Filter-regulator-lubricator 3/4 NPT with Low Level. Highly recommended to assure long Air Motor life. If someone forgets to fill the Lubricator bowl just one time, it could result in a damaged Air Motor and a production machine that is shut down while the Motor is repairs. Comes with reducer bushings to 3/8" NPT.

Replacement Low Level Oil

Replacement low level oil switch for the above kit

Rotating Air Union

Rotating air union single stage 3/8" NPT Male Inlet to 1/4" NPT Female Outlet

Gague Kit

Kit to measure pressure at Spindle. Includes pressure gauge & fittings for 12MM, 10MM, 8MM, 6MM hoses

Tool Oil

Provides excellent protection against moisture and corrosion of metal parts. Extends air motor life. Excellent ear protection at all speeds. Good low temperature fluidity. Compatible with all systems and seal materials. Extra heavy duty applications.

Pilot Activated Direct Mount

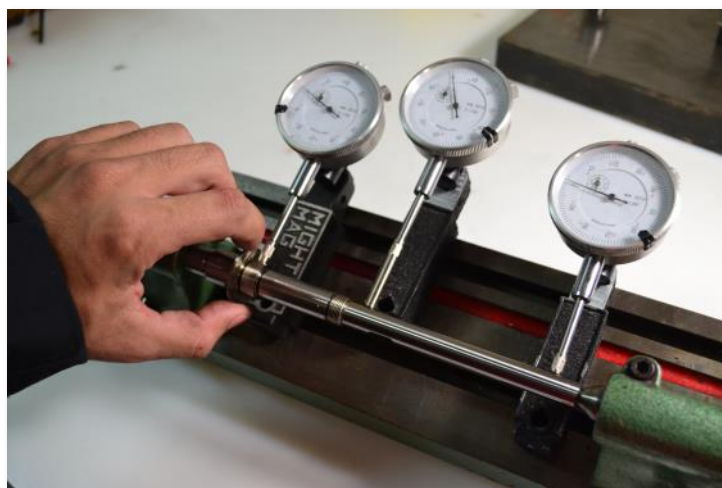
Pilot activated direct mount 3/2 N.C. inline air valve with 3/8" NPT female threads and 24V DC coil with connector & 6 molded cable. Flow Cv is 2.6 operating pressure 29 to 145 psi.

Many other pneumatic accessories are available. Call or Email today!

Repairs

All Finley Precision Spindle products are fully repairable. We understand the importance of keeping your machines running. Therefore, we inspect, evaluate, and quote your repair within 24 hours of receiving it and most repairs are completed in 3-5 business days. Your repaired products will come with a standard 6-month warranty. If it is an emergency, please let us know and we can expedite the repair.

Please contact us for more information.



Finley Precision Spindles was established in 2001 to offer high quality, small precision spindles and accessories at competitive prices. Our Engineering Staff is experienced in multiple manufacturing industries and can help you find a solution that fits your requirements.

Every product is designed for long life and a wide range of functionality. They are presently being used by many Original Equipment Manufacturers" (OEM's) for custom designed machines or tasks that eliminate many secondary operations.

Finley Precision Spindles is now a division of Futureswiss International. Our headquarters is located in Thomaston, CT. At Finley, we are proud to offer durable, high quality, precision spindles, along with first-class service here in the United States. If you need help designing a system please contact us, we would love to help you achieve your goals.

We look forward to doing business with you.

Respectfully yours,

Finley Precision Spindles Team



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