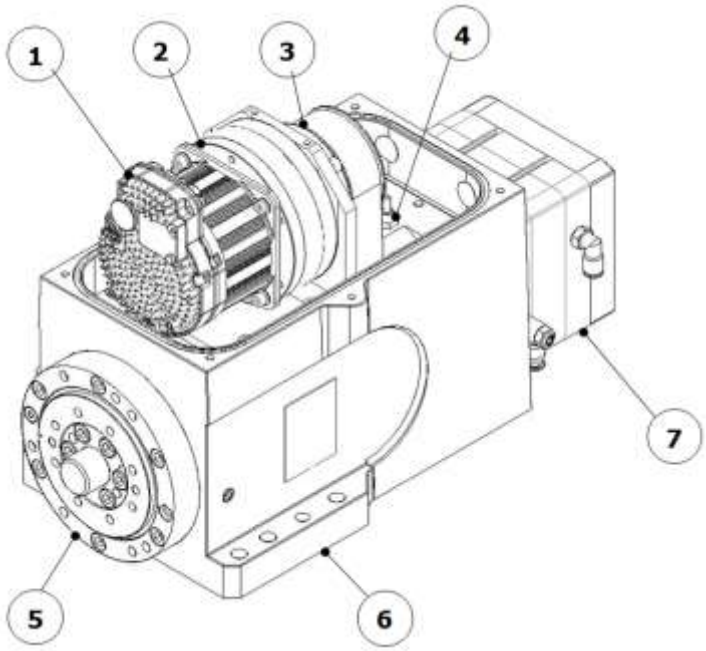
TRAK Machine Tools
Southwestern Industries, Inc.

TRAK CNC Turret Specifications – 8 Station



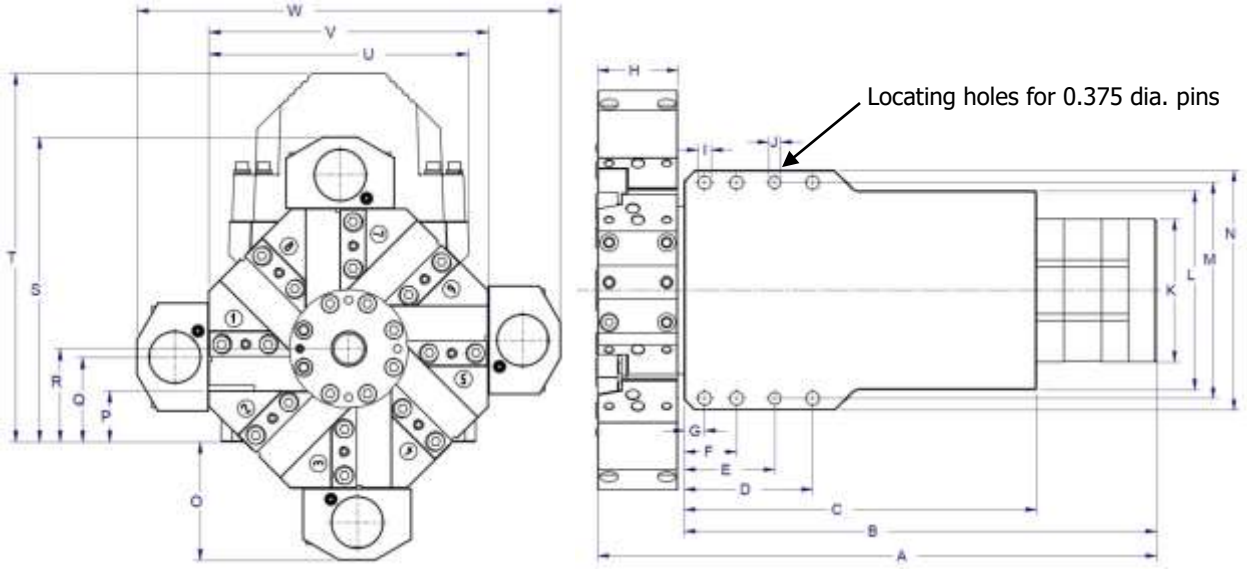
Specifications

- **Servo Motor** – High-performance, very rugged DC brushless servo, thermally protected. (A different motor from Delta is used on the RLX.)
- **Heavy Duty Reducer** – Capable of handling impact loads 5X its rating, over 1000 times.
- **Belt Drive** – Isolates impact loads from the reducer during accidental tool crashes.
- **Absolute Position Encoder** – Guarantees correct tool position every time, non-contact. (Not applicable to RLX turret.)
- **Coupling –** 3-piece Hirth design, high stiffness and accuracy, no movement during index.
- **Main Body –** Thick wall cast iron, provides excellent vibration dampening during cutting.
- **Clamp Cylinder –** Clamps with 1275 lbs of clamping force (@ 90 psi air supply), allows coupling to skip teeth during accidental tool crash without causing damage to the unit itself.

Technical Specifications

Description		Units	¾" (20 mm) disks	1" (25 mm) disks
Weight of Turret with Disk		lbs (kg)	98 (44.5)	110 (50)
Max. Moment of Inertia of Tooling		lb-in^2 (kg-m^2)	1700 (0.50)	2250 (0.66)
Max. Weight Carried by the Disk		lbs (kg)	75 (34)	100 (45.5)
Max. Unbalanced Torque		ft-lbs (N-m)	21 (28.5)	28 (38)
Max. Square Shank Tool Holder		in (mm)	0.75 (20)	1.00 (25)
Max. Boring Bar Diameter		in (mm)	1.25 (32)	1.50 (40)
Index Time Including Locking	45°	sec	1.4	1.4
	90°	sec	1.8	1.8
	135°	sec	2.2	2.2
	180°	sec	2.6	2.6

Overall Dimensions



Disk Size	A	B	C	D	E	F	G	H	I	J	K	L
¾" (in)	17.21	14.75	11.000	4.000	2.813	1.625	.625	2.250	.422	.376	4.469	6.213
20 (mm)	437.2	374.7	279.4	101.6	71.5	41.3	15.9	57.2	10.72	9.55	113.5	157.8
1" (in)	17.46	14.75	11.000	4.000	2.813	1.625	.625	2.500	.422	.376	4.469	6.213
25 (mm)	443.5	374.7	279.4	101.6	71.5	41.3	15.9	63.5	10.72	9.55	113.5	157.8

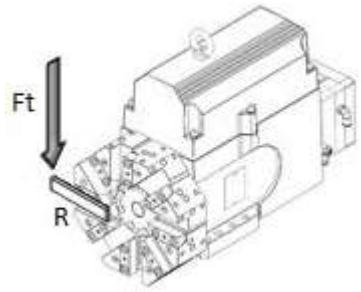
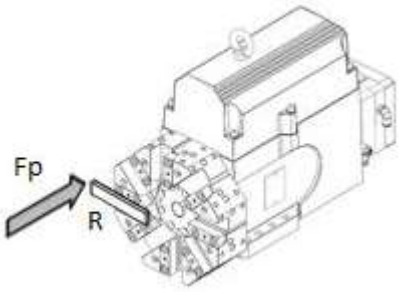
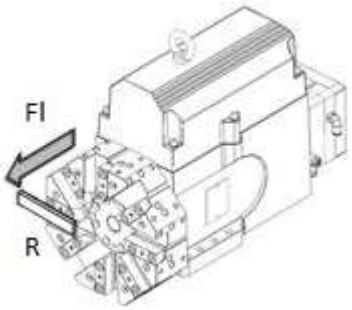
Disk Size	M	N	O	P	Q	R	S	T	U	V	W
¾" (in)	6.750	7.500	2.375	1.750	2.500	2.750	7.875	10.875	7.000	6.500	10.250
20 (mm)	171.45	190.5	60.3	44.5	64.45*	69.9	200.0	276.2	177.8	165.1	260.4
1" (in)	6.750	7.500	3.500	1.500	2.500	2.750	9.000	10.875	7.875	8.250	12.500
25 (mm)	171.45	190.5	88.9	38.1	63.10*	69.9	228.6	276.2	200.0	209.6	317.5

* **Caution!** Indicated tool center line dimension "Q" is different on Imperial and Metric units. Therefore, the Imperial and Metric units require different Riser Blocks to properly align Turret tool center line with the lathe Spindle center line.

Power Requirements

- **Electrical Power** – Turret runs on 220-volt 3 phase power. The additional power is built into the FLA for the machine.
- **Compressed Air** – 3/8" min. supply line, 80 psi pressure, 1.5 CFM (11 SCFM) min. flow.
  *Air should be clean and dry.

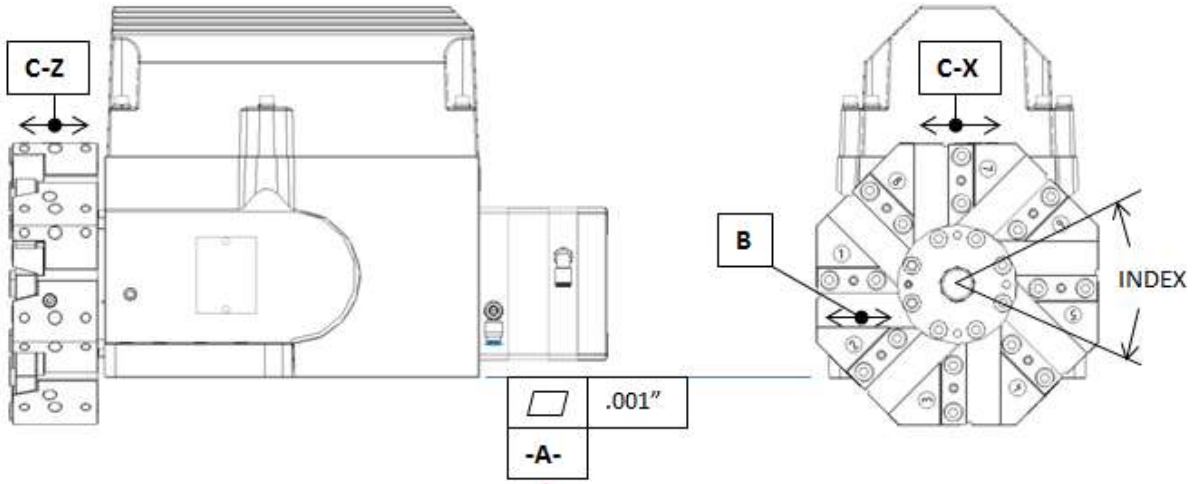
Maximum Loading Capacity

		¾”(20 mm) and 1”(25 mm) ft-lbs (N-m)
Max. Tangential Torque		(Ft x R) 670 (908)
Max. Axial Tilting Torque (push)		(Fp x R) 1100 (1500)
Max. Axial Tilting Torque (lift)		(Fl x R) 500 (678)

Notes

- Ft, Fp, and Fl – Arrows represent forces and the directions at which they are applied.
- R – Represents the distance from the center of the indexer to where the force is applied.

Accuracy Specifications



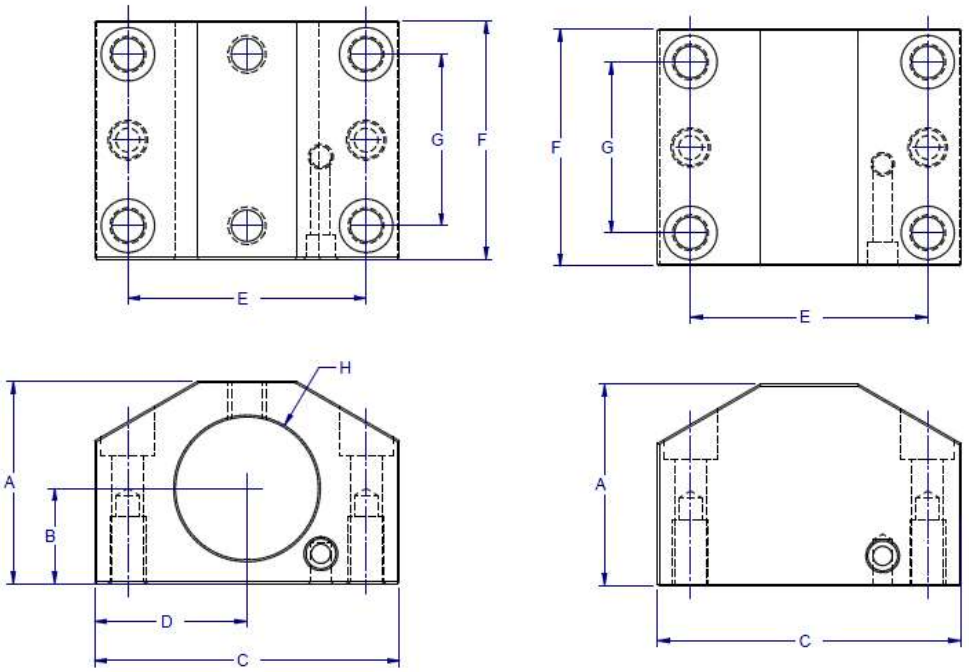
- INDEX Position Repeatability (for same location) +/- 2 arcsec
- INDEX Position Accuracy (for any location) +/- 6 arcsec

REFERENCED TO DATUM SUFRACE A	TOLERANCE in (mm)
Surface B	+/-0.001", (+/- 0.025)
Surface C - X Direction	+/- 0.0008", (+/- 0.020)
Surface C - Z Direction	+/- 0.0008", (+/- 0.020)
Boring Bar Squareness	+/- 0.0005" per 1", (+/- 0.013 per 25.4)
Tool Height Tolerance – Measured from Datum A to Surface B	+/- 0.003" (+/- 0.076)
Boring Bar Height Tolerance – Measured from Datum A to Centerline of Boring Holder	+/- 0.003" (+/- 0.076)
Boring Bar Maximum Taper	0.003"/6" (0.076/152.4)

SWI Turret Advantages

- Cost
- Performance
- Durability
- Support

Tool Holder Data



Assembly Part Number	Units	A	B	C	D	E	F	G	H
28555-3/4	in	1.88	.875	2.500	1.250	1.860	2.25	1.750	1.250 H7
28555-1-BLK	in	1.88	-	2.500	-	1.860	2.25	1.750	-
28555-20	mm	47.8	22.23	63.5	32.70	47.24	57.2	44.45	32.00 H7
28556-1	in	2.12	1.000	3.20	1.600	2.500	2.500	1.800	1.500 H7
28556-1-BLK	in	2.12	-	3.20	-	2.500	2.500	1.800	-
28556-25	mm	53.8	25.40	81.3	40.23	63.50	63.5	45.72	40.00 H7

Maximum Swing with CNC Turret Installed and Door Closed

Lathe	Max Swing with TRAK CNC Turret
1630	12″
1845 – ¾″	17.5″
1845 – 1″	14″
2470	22″

Note – We gained about 3″ of swing on the 1630 lathe using our new turret as compared to the Dorian.