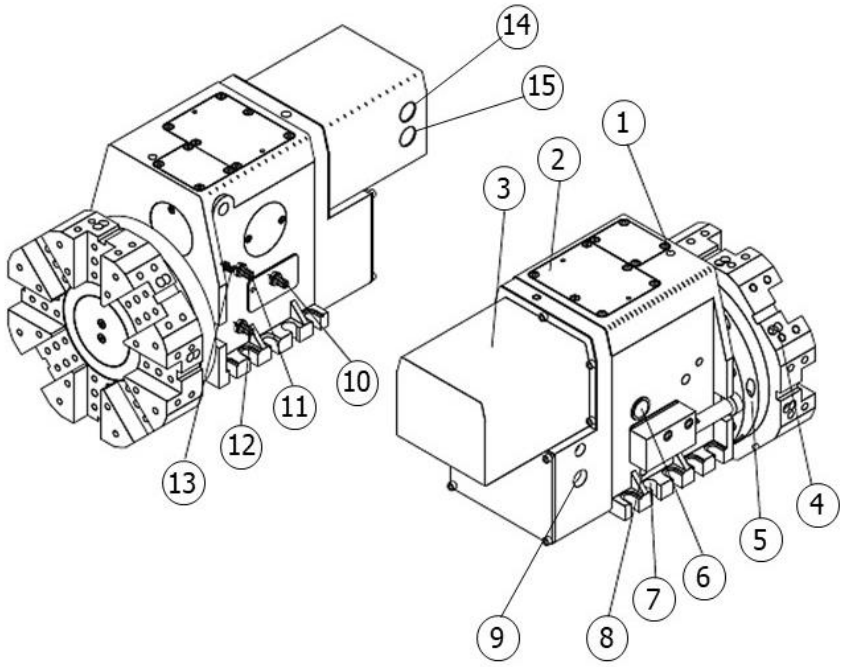
TRAK Machine Tools
Southwestern Industries, Inc.

Hydraulic Turret Specifications – 8 Station

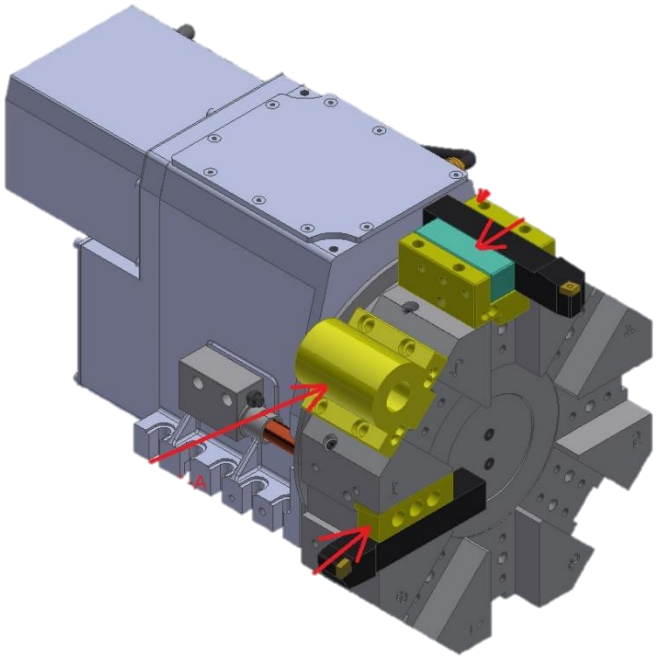


Functions

1. Lifting Eye Bolt Hole
2. Gearbox Cover
3. Hyd. Rotation Mechanism
4. Coolant Outlets
5. Turret Disc
6. Oil Sightglass
7. Mounting Bolt Slots
8. Coolant Passageway
9. Logic Cable Housing
10. Coolant Inlet
11. Clamp Hyd. Inlet
12. Unclamp Hyd. Inlet
13. Hyd. Fluid Inlets
14. Counterclockwise Hyd. Inlet
15. Clockwise Hyd. Inlet

Specifications

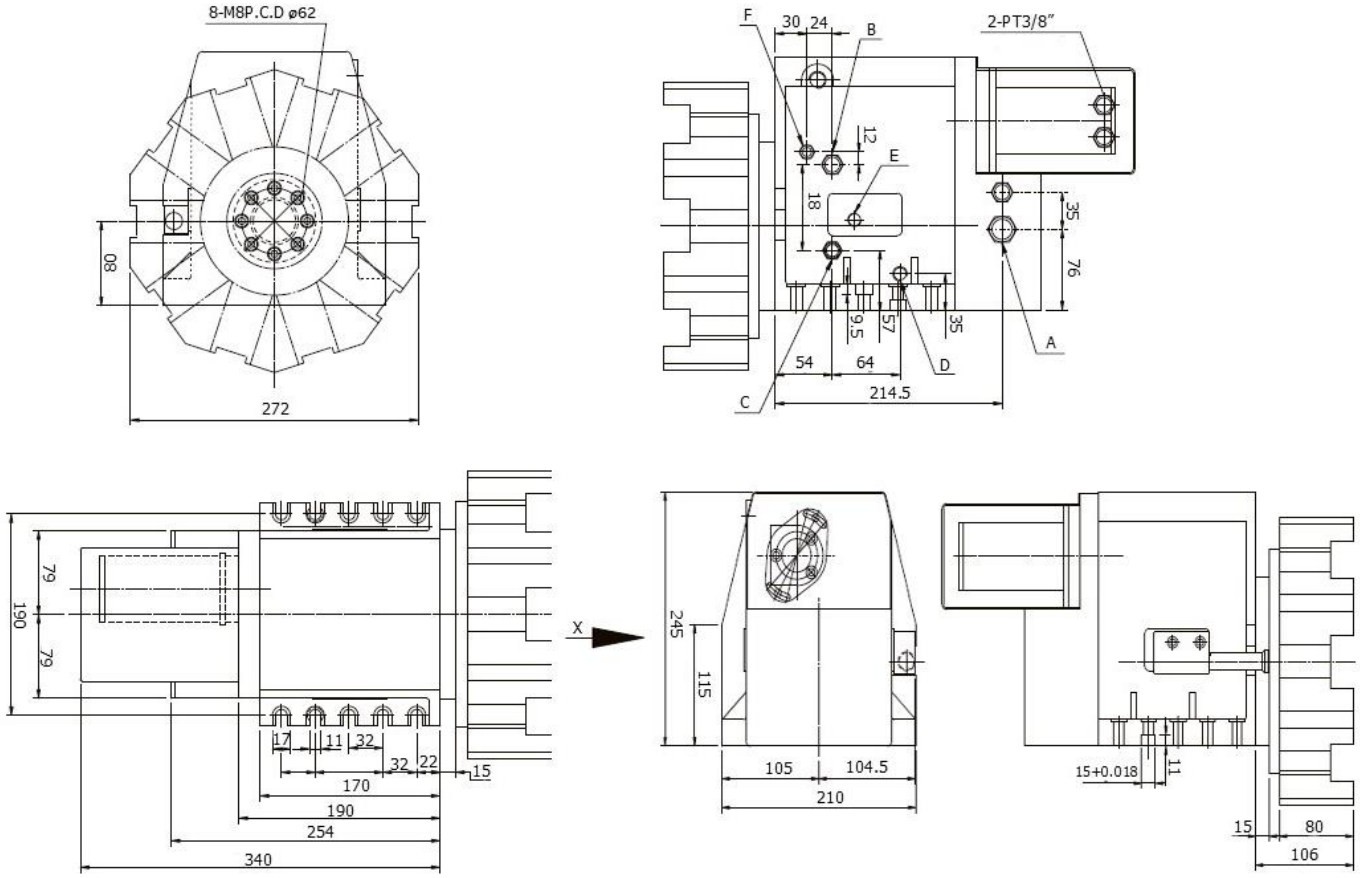
- **Hydraulic System** – The hydraulic system is comprised of a hydraulic tank, pump, and valves that transmit hydraulic fluid to the turret to control its operation.
- **Turret Body –** The turret body will be mounted to the lathe on a precision ground base block, and aligned to the spindle for accurate machining.
- **Turret Disc –** Beyond just holding the tooling, the turret disc also has internal passageways to supply coolant to the tool.
- **Coolant Inlet** – The coolant inlet guides the coolant through the main body, and seals to the disc when clamped.
- **Curvic Coupling** – The curvic coupling is constantly pressurized with hydraulic fluid to keep noise down while assuring reliable, consistent clamping force.



Technical Specifications

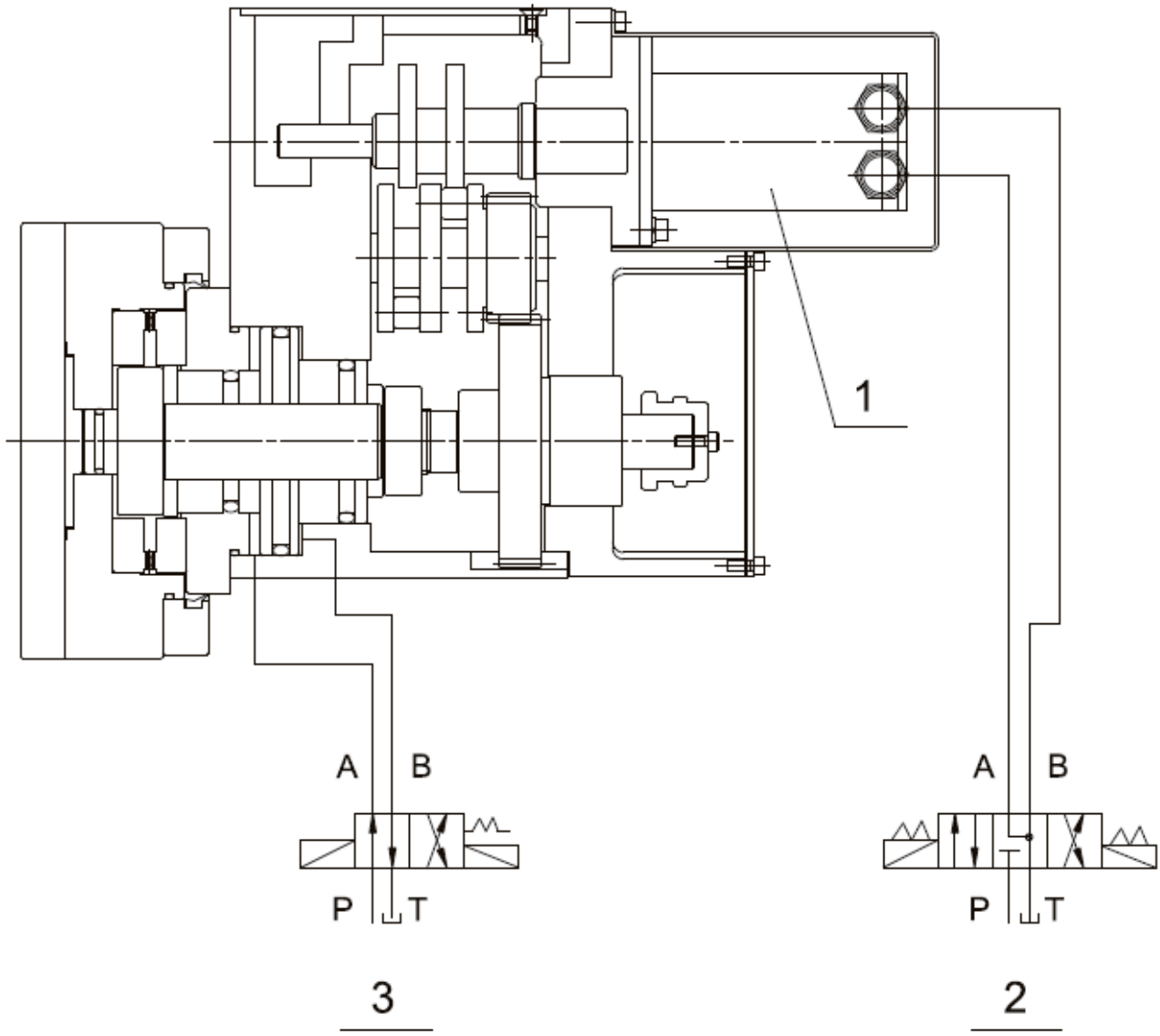
Description		Turret Spec
Center Height	in. (mm)	3.15 (80)
Number of Tools	No.	8
Rotating Time (tool-to-tool)	sec	0.5
Rotating Time (including clamping)	sec	0.6
Total Indexing Time for 180°	sec	1.8
Total Indexing Time for 180° (including clamping)	sec	2
Curvic Coupling Type		24140
Hydraulic Motor Type	DANFOSS	OMM50
Solenoid Operated Valve		AC 110V / DC 24V
Hydraulic Working Pressure	PSI (kgf/cm²)	426.7 (30)
Flow Rate	GPM (L/min.)	5.3 (20)
Clamping Force of Hydraulic Cylinder	Lbf (kgf)	4,557 (2,067)
Accuracy of Repeatability	In (mm)	.00012 (0.003)
N.W. (without tool disc)	Lbs (kg)	110.23 (50)

Overall Dimensions



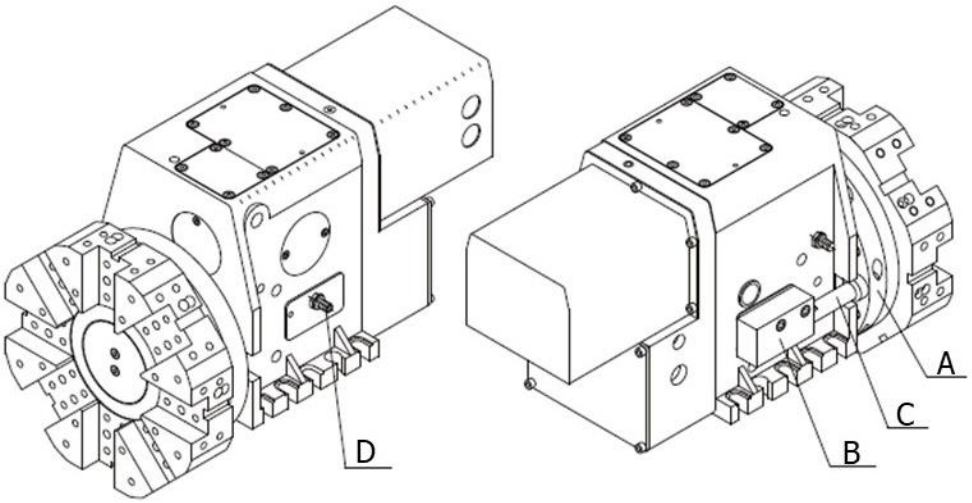
	Threading Hole Spec	Position
A	PT ½"	Logic Cable Entrance
B	PT ¼"	Gear Oil Sightglass
C	PT ¼"	Unclamp Port
D	PT ¼"	Gear Oil Drain
E	PT ¼"	Coolant Inlet
F	PT 1/8"	Clamp Port

Hydraulic System



1. Hydraulic Rotation Mechanism	OMM 50
2. Hydraulic Rotation Solenoid Valve	DSG-01-3C4-A110/D24
3. Tool Clamp Solenoid Valve	DSG-01-2D2-A110/D24

Coolant Supply



- The coolant inlet is connected through the turret casting and enters the coolant passageway on the opposite side.
- The coolant then travels down the coolant tube and seals against the back of the turret disc on clamping. Sealing is achieved by compressing an O-ring on the coolant tube face.
- When the turret disc is unclamped, the coolant will automatically stop, and resume again once the turret is reclamped.
- Coolant system maintenance:
    1. Remove the coolant passageway in order to remove the coolant tube and locking screw.
    2. Remove the coolant tube in order to take out the M5 mounting screw.
    3. Inspect the O-ring and spring, replace if hardened or damaged.

Maintenance

Maintenance Time Period	Items
Monthly	1. Check hydraulic oil level in sight glass on tank. 2. Check hyd. pump, tank, and hoses for leaks or damage. 3. Check coolant line and system for leaks or damage. 4. Check all electrical cables for damage.
Annually	1. Drain and change turret gear oil – 1.2L of SAE 90 (ISO VG 220). 2. Drain and refill full hydraulic system – 38L of SAE 10W (ISO VG 32).