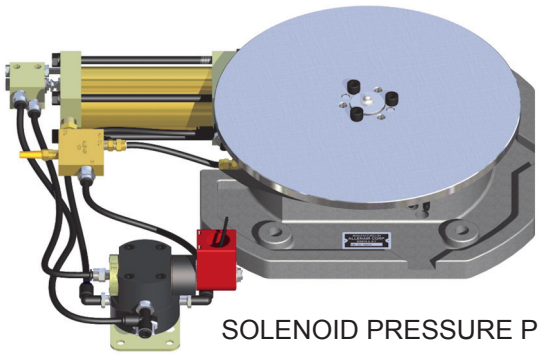
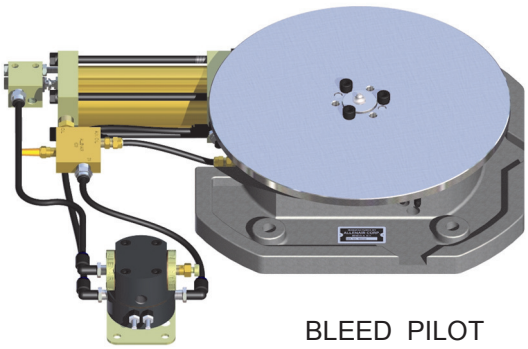
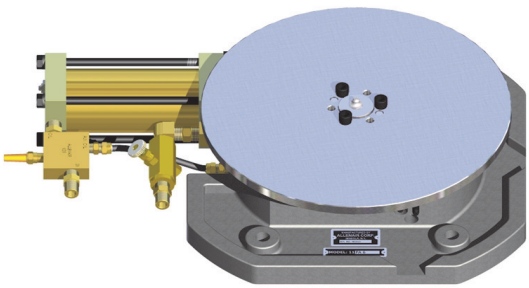


SOLENOID PRESSURE PILOT



BLEED PILOT



BASIC TABLE

ALLENAIR ROTARY INDEX TABLES are precision indexing mechanisms . . . unsurpassed in accuracy, performance and dollar value. We know of no other Tables of equal accuracy and quality available at comparable prices.

Every detail of construction is designed to increase durability and efficiency, and provide for long, trouble-free life. All parts susceptible to wear are carefully hardened. Bronze and roller bearings are incorporated. Working parts completely enclosed to protect against dust, dirt, and chips.
The Tables affect substantial savings in time and money in a wide variety of applications. For example, the Tables permit fast, automatic feeding of parts to tools in machine and assembly operations. Parts can be loaded and unloaded while machining operations continue. Other applications include cleaning and positioning operations, as well as use in conjunction with conveyor drive units.

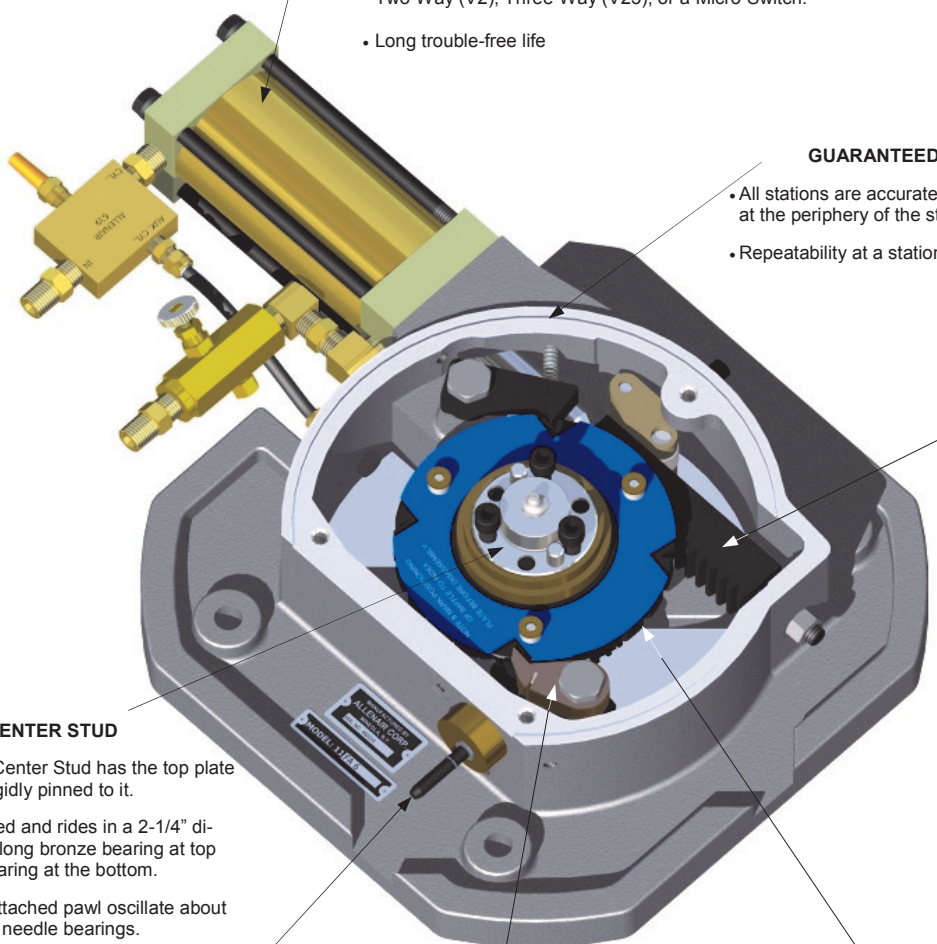
ALLENAIR ROTARY INDEX TABLES are available in a **COMPLETE PRODUCT RANGE** of four basic models, and each model can be supplied with any one of the following operating options.

1) As a basic Table with no operating valves. A 2-way or 3-way valve can be mounted on the rear of the drive cylinder as an option. (See "Basic Table" Illustration, Page 93).
2) As a basic Table with a Pilot Timer Valve (PTV4), a 2-way valve (V2), and piped with flexible air hose ready for continuous automatic indexing. (See “Pilot-Timer Control Circuit” Illustration, Page 93).
3) As a basic Table with a Single Solenoid Bleed Pilot 4-way Valve (VSESA-AAS-1/4), a 2-way valve (V2), and piped with flexible air hose ready for use. (See “Solenoid Bleed Pilot Control Circuit” Illustration, Page 93).
4) As a basic Table with a Single Solenoid Pressure Pilot 4-way Valve (VSSAP-AAS-1/4), a 3-way valve (V23), and piped with flexible air hose ready for use. (See “Solenoid Pressure Pilot Control Circuit” Illustration, Page 93).
5) As a basic Table with a Double Pressure Pilot 4-way Valve (VAP-1/4), a 3-way valve (V23), and piped with flexible air hose ready for use. (See “Double Pressure Pilot Control Circuit” Illustration, Page 93).
6) As a basic Table with a Double Bleed Pilot 4-way Valve (VSA-1/4), a 2-way valve (V2), and piped with a flexible air hose Ready for use. (See “Double Bleed Pilot Control Circuit” Illustration, Page 93).

For Allenair “TIME-A-VALVE”® see Page 80. A solid state Electronic Timer, integral with Allenair Solenoid Operators.
The standard 24 notch index plate can be set by means of baffle plates to allow 4, 6, 8, 12 or 24 indexes. Special indexes from 5 to 100 are available. A Flow Control Valve is also furnished on all models to control indexing speeds. Standard and optional Top Plates, of mild steel, are readily workable, and are precision ground, flat and parallel, to within .002 T.I.R

PNEUMATIC DRIVE

- Double-acting Cylinder with Precision honed brass tubing and self-adjusting Buna-N-piston cups.
- Inlet pressure can be adjusted to provide exact force for moving load (and prevent damage in case of accidental obstructions)
- Adjustable Flow Control to provide Exact indexing speed required.
- Built in Plunger mounted at rear of Cylinder to actuate a Two-Way (V2), Three-Way (V23), or a Micro-Switch.
- Long trouble-free life



GUARANTEED ACCURACY WITHIN ± .001

- All stations are accurate to each other within ± .001 measured at the periphery of the standard size top plate.
- Repeatability at a station is in the low tenths.

GEAR AND RACK CONSTRUCTION

A rack attached to the stainless steel piston rod drives a gear which carries a pawl to actuate the index plate. **Only a rack** and **gear** drive can transmit the straight line motion of the air cylinder to the necessary rotary motion with full power throughout its cycle. The rack is supported against thrust by two roller bearings independently of the piston rod. Rack, gear, pawl and index plate are all carefully hardened.

CENTER STUD

- The hardened Center Stud has the top plate & index plate rigidly pinned to it.
- Stud is supported and rides in a 2-1/4" diameter X 9/16" long bronze bearing at top and an oilite bearing at the bottom.
- The gear and attached pawl oscillate about the stud on two needle bearings.
- A single grease fitting at the center lubricates all internal parts.

ACCESSORY PIN

Since the working parts of the table are completely enclosed, a rod extending thru a bronze bushing moves outward (approximately 1/4") to actuate a valve or micro-switch for **secondary operations** as the table comes into its new indexed position. This pin remains extended while the table is in the indexed position.

FEED PAWL

- Hardened pawl stops against a hardened stop pin and prevents any forward rotary motion.
- Hardened anti-back-up pawl locks table against rearward rotary motion. (Located 180° from feed pawl.)

INDEX PLATE

The standard table can be set to index 90° (4 index), 60° (6 index), 45° (8 index), 30° (12 index), or 15° (24 index). Since the standard index plate has 24 teeth, baffles are used to **prevent "loss of index,"** that is, to prevent the pawl from engaging improper teeth when less than 24 index is required. These baffles are very reasonably priced and always available from stock. The changeover from one index setup to another can be made from the top of the index table, usually in less than 15 minutes.

NOTE: The above illustration is shown without the top plate and rider plate.

DESCRIPTIONS

MODELS 725: These models are designed for rapid indexing under rather light load conditions, the maximum indexing load being 60 lbs. with either the standard 7-1/4" or optional 10" dia. Top Plate. Two styles are available. Model 725-G permits piping of air to the top of the Center Stud, for actuation of small air operated devices such as air chucks, collets or clamps, while Model 725-E does not. Both models have spring tension on the Feed Pawl, which insures constant and proper engagement with the Indexing Plate. A dual purpose Mounting Base enables horizontal or vertical mounting, and both styles are available in clockwise or counterclockwise rotation. A hole through the Center Stud (9/16" dia. only) is available as an option on Model 725-E."HS" option.

MODEL 11-E: This model, being larger and heavier than Model 725, is designed for more rugged operations. The maximum indexing load is 100 lbs. with the standard 11" dia. Top Plate and 80 lbs. with the optional 16" dia. Top Plate. Spring tension on the Feed Pawl insures constant and proper engagement with the Indexing Plate. Both clockwise or counterclockwise models are available. A hole through the Center Stud (9/16" dia. only), is available as an option. "HS" option.

MODEL 11-F: This is the heaviest duty model in the line, the maximum indexing load being 180 lbs. with either the standard 11" or optional 16" dia. Top Plate, and 100 lbs. with the optional 20" dia. Top Plate. One of its outstanding features is the "Positive Locking" Device, which securely locks the Feed Pawl to the Indexing Plate by an internal over-center latching mechanism. This design, together with the optional Hydraulic Check, allows the Table to perform at the high load limits specified. The Hydraulic Check (CODE THC), which is adjustable, cushions approximately the last 5° of rotation and helps to control the shock of heavier loads.
Two additional drive options can be added to this model. One is the Tandem-in-Line Cyl-Check Drive (T-2-1/2 x 4 - CHTFLH-5, CODE CHD) which gives hydraulic control and provides precise, constant, smooth indexing. The second optional drive employs a Tandem Cylinder (ETT-2-1/2 x 4, CODE TCD). This provides higher torque (as differentiated from index load) than the standard drive cylinder. A hole through the Center Stud (9/16" dia. only) is also available as an option. "HS" option.

MODEL 11-EF: This model is almost identical to Model 11-F. The basic difference is that on Model 11-EF, we use the Model 11-E Index Plate, and incorporate the Positive Lock Device of Model 11-F This allows for slightly faster indexing, but the two optional drives and Hydraulic Check (as listed for Model 11-F) are not available. The maximum indexing load is 140 lbs. with the standard 11" dia.
Top Plate and 100 lbs. with the optional 16" dia. Top Plate. A hole through the Center Stud (9/16" dia. only) is available as an option. "HS" option.

NOTES: 1) The figures for "Indexing Load Weights" mentioned above are based on symmetrically placed loads located 1" from the periphery of the specified Top Plates.
2) For further information concerning Principle of Operation and Speeds, see pages **92, 94 and 95**.

STANDARD SPECIFICATION	725	11-E	11-EF	11-F
Std. Top Plate Diameters	7-1/4"	11"	11"	11"
*Optional Top Plate Diameters	10"	16"	16"	16" & 20"
Maximum Indexing Load (Lbs.) (See Indexing Speed Charts.)	60	100	140	180
**Maximum Process Load (Lbs.)	1,000	1,000	1,000	1,000
Minimum Line Pressure (PSI)	20	20	20	20
Maximum Recm'd Line Pressure. (PSI)	80	80	80	80
Torque at 80 PSI (Inch-Lbs.)	210	640	640	640
Maximum Number of Stations (Optional)	60	100	60	30
Nominal Unit Weight (Lbs.)	20	50	50	50

NOTES: 2 position and 3 position can be obtained by indexing twice with a 4 or 6 station table.
*These are maximum recommended diameters.
**Normal machining or operational, non-shock loads applied vertically within table base area (3" radius on 725 Models and 4" radius on 11" Models). Consult factory or distributor for assistance on special cases.

SIMPLE PROCEDURE TO CHANGE NUMBER OF INDEXES (ALL SERIES)***
- Remove Top Plate, Rider Plate and Center Stud Assembly
- Re-engage Gear so that proper No. of Station Marking matches scribed tooth on Rack
- Reassemble unit with new Baffle Plate for indexes required.

***REFER TO MAINTENANCE MANUAL SUPPLIED WITH TABLE, FORM TMM, FOR DETAILS**

HOW TO ORDER:
(DETAILS FOLLOW IN ORDER)

MODEL NUMBER

11-E	B	8	

SELECT SIZE & TYPE
SELECT STANDARD OPTIONS
SELECT NO. OF STATIONS
(4, 6, 12, or 24 ARE STD.)
SPECIFY OPTIONAL EQUIPMENT
OR VOLTAGE WHEN REQUIRED

OPTION	SPECIFY
Large Top Plate	Size
Voltage, When Required	Voltage
Hydraulic Check	THC
Cyl-Check Feed	CHD
Tandem Cylinder	TCD

LAST 3 OPTIONS AVAILABLE ON 11-F ONLY

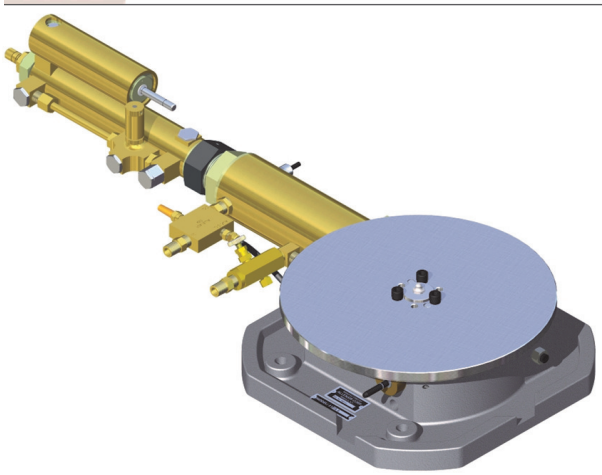
PRINCIPLE OF OPERATION

GENERAL: (ALL SERIES)

SEQUENCE	BASIC TABLE OPERATION	SOLENOID BLEED PILOT CONTROL CIRCUIT OPERATION (OPTIONAL)	SOLENOID PRESSURE PILOT CONTROL CIRCUIT OPERATION (OPTIONAL)
WORKING SEQUENCE	Driving Cylinder is in "Advanced " Position with feed Pawl & Anti-Back-Up Pawl Locking Table in Working Position.		
RETRACTION STROKE	Supply Air Pressure to Front Cylinder Port, Exhaust Rear. Rack will retract Drive Gear and Feed Pawl.	Momentary Electrical Signal to Solenoid Valve will automatically provide functions described under basic operation.	Momentary Electrical Signal to Solenoid Valve will automatically provide functions described under basic operation.
DRIVE STROKE	Supply Air Pressure to Rear Cylinder Port, Exhaust Front. Rack will advance Drive Gear, engaging Feed Pawl. In Indexing Plate to rotate Top Plate Forward. Accessory Pin shifts 3/16"at end of rotation to signal secondary operations. Set Flow Control to desired indexing speed.	When Cylinder completes retraction, Built-in Two-Way is actuated by Piston, shifting Main Valve to provide functions described under basic operation. Solenoid Valve is ready for next signal following dwell period.	When Cylinder completes retraction, built-in Three-Way Valve is actuated by Piston, shifting Main Valve to provide factions described under basic operation. Solenoid Valve is ready for next signal following dwell period.
INDEXED POSITION	At completion of drive stroke, feed Pawl locks Table against forward movement and Anti-Back-Up Paw locks against rearward movement during work at stations.		

GENERAL: (ALL SERIES)

SEQUENCE	DOUBLE PRESSURE PILOT CONTROL CIRCUIT OPERATION (OPTIONAL)	DOUBLE BLEED PILOT CONTROL CIRCUIT OPERATION (OPTIONAL)	PILOT-TIMER CONTROL CIRCUIT OPERATION (OPTIONAL)
WORKING SEQUENCE	Driving Cylinder is in "Advanced " Position with feed Pawl & Anti-Back-Up Pawl Locking Table in Working Position.		
RETRACTION STROKE	Momentary pressure Pilot Signal to Four-Way Valve will automatically provide functions described under basic operation.	Momentary Bleed Pilot Signal to Four-Way Valve will automatically provide functions described under basic operation.	Supply Air to Circuit and Table Will continuously cycle as follows: 1) Upon bleeding of air from Pilot Timer, Valve will shift causing Cylinder to retract. 2) At end of retraction stroke, Cylinder actuates Two-Way Valve, which recharges Timer and shifts main Vale to advance Cylinder and rotate Top Plate forward. 3) Timer provides dwell according to the Leak Control Setting. Upon completion of dwell, cycle then repeats as above
DRIVE STROKE	When Cylinder completes retraction, built-in Three-Way Valve is actuated by Piston, shifting Main Valve to provide functions described under basic operation. Four-Way Valve is ready for next signal following dwell period.	When Cylinder completes retraction, Built-in Two-Way Valve is actuated by Piston, shifting Main Valve to provide functions described under basic operation. Four-Way Valve is ready for next signal following dwell period.	
INDEXED POSITION	At completion of drive stroke, feed Pawl locks Table against forward movement and Anti-Back-Up Pawl locks against rearward movement during work at stations.		



OPTIONAL CYL-CHECK FEED SHOWN

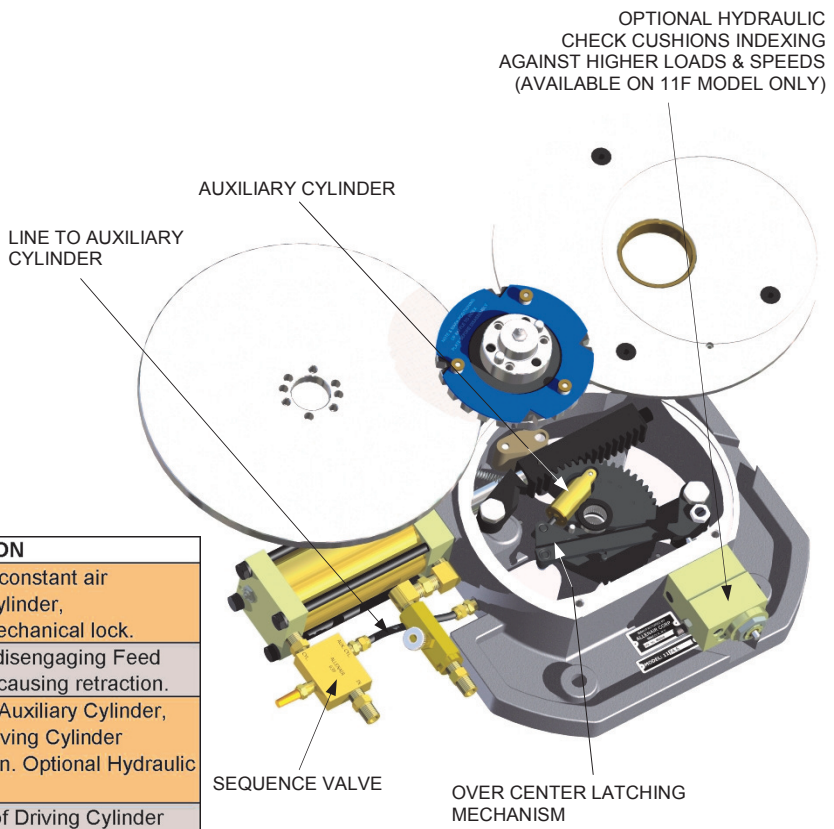
T-2-1/2 X 4 CHT-F-LH-5
PROVIDE HYDRAULIC FEED CONTROL FOR SMOOTH INDEXING
OF EITHER LIGHT OR HEAVY LOADS

OPTIONAL TANDEM CYLINDER FEED

(ETT 2-1/2 X 4) CAN PROVIDE HYDRAULIC CONTROL
OR INCREASED TORQUE

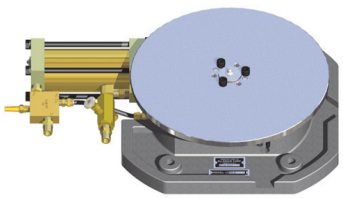
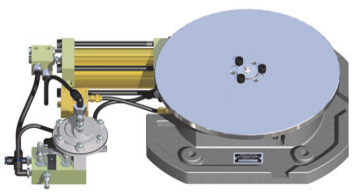
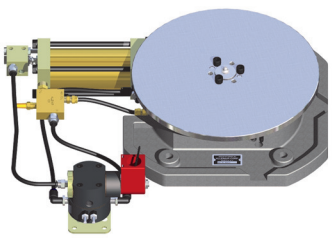
POSITIVE LOCK FEATURE: (11-F & 11EF SERIES ONLY)

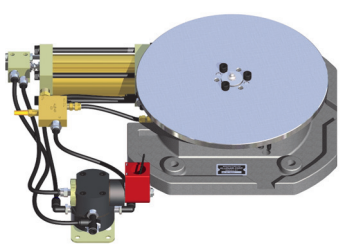
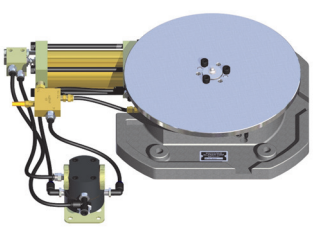
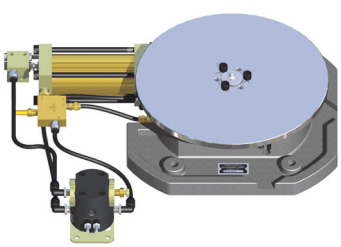
TABLE SHOWN WITH INDEX PLATE & CENTER STUD ASSEMBLY REMOVED



SEQUENCE	POSITIVE LOCK OPERATION
WORKING POSITION	Driving Cylinder is in advanced position with constant air supply though Sequence Valve to Auxiliary Cylinder, latching Pawl over center to provide a rigid mechanical lock.
RETRACTION STROKE	Sequence Valve exhausts Auxiliary Cylinder disengaging Feed Pawl, then exhausts rear of Driving Cylinder causing retraction.
DRIVE STROKE	At end of retraction sequence valve charges Auxiliary Cylinder, engaging Feed Pawl, then charges rear of Driving Cylinder advancing it, rotating the Table to next position. Optional Hydraulic Check cushions last 5° of rotation.
INDEXED POSITION	Sequence Valve maintains pressure on rear of Driving Cylinder and Auxiliary Cylinder latching Pawl linkage over center, providing a rigid mechanical lock in indexed position.

STANDARD INDEX TABLE OPTIONS (11- F SERIES PICTURED)

7-1/4" SIZE TABLES	 BASIC TABLE	 PILOT-TIMER CONTROL CIRCUIT (Continuous, Automatic Indexing)	 *SOLENOID BLEED PILOT CONTROL CIRCUIT (Indexes on Momentary Signal)
Standard Model (Clockwise Rotation)	725-EA	725-EB	725-EC
Counter Clockwise Rotation	725-EAC	725-EBC	725-ECC
Air Supply (1/4 NPT) in Center Stud	725-GA	725-GB	725-GC
With Counter Clockwise Rotation	725-GAC	725-GBC	725-GCC
11" SIZE TABLES			
Standard Model (Clockwise Rotation)	11-EA	11-EB	11-EC
Counter Clockwise Rotation	11-EAC	11-EBC	11-ECC
**Heavy-Duty (Clockwise Rotation)	11-FA	11-FB	11-FC
**Combination Duty (Clockwise Rotation)	11-EFA	11-EFB	11-EFC

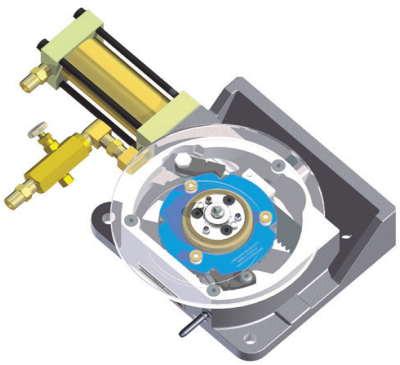
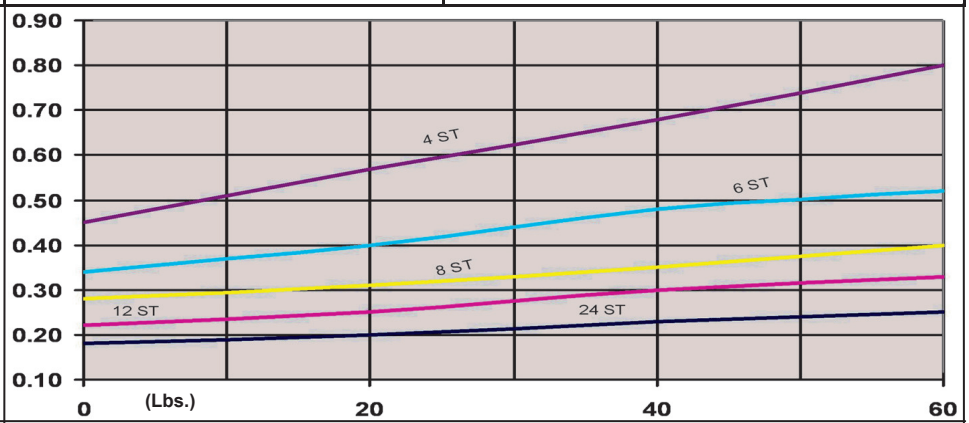
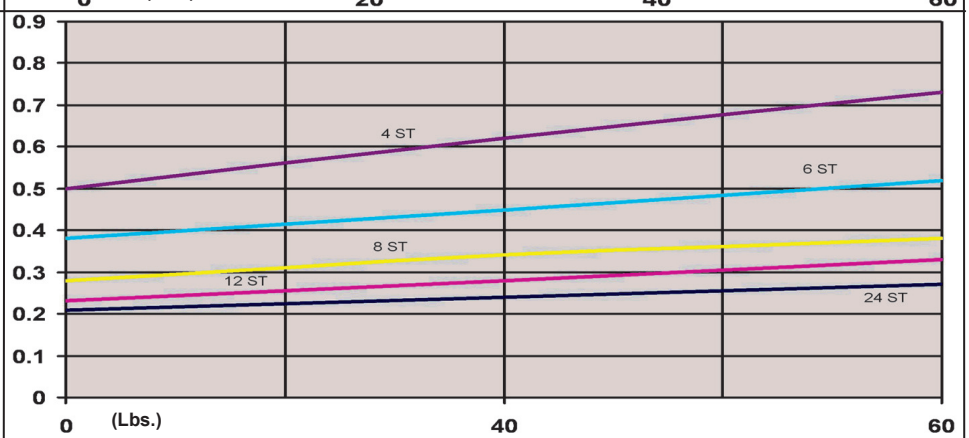
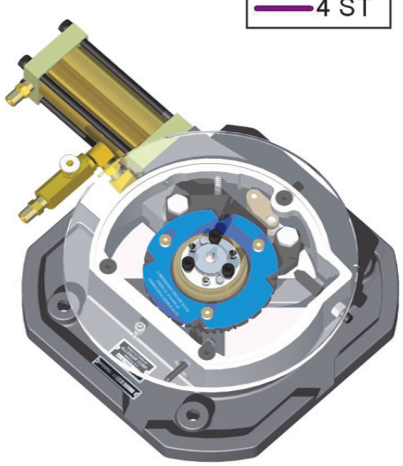
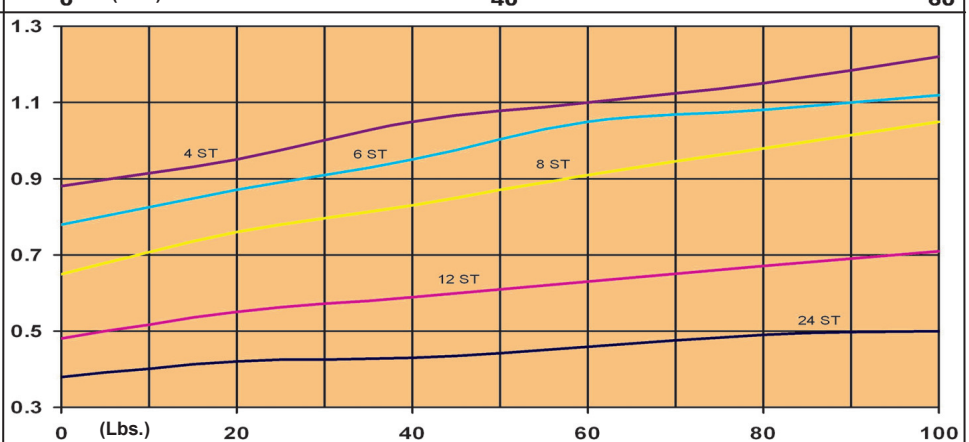
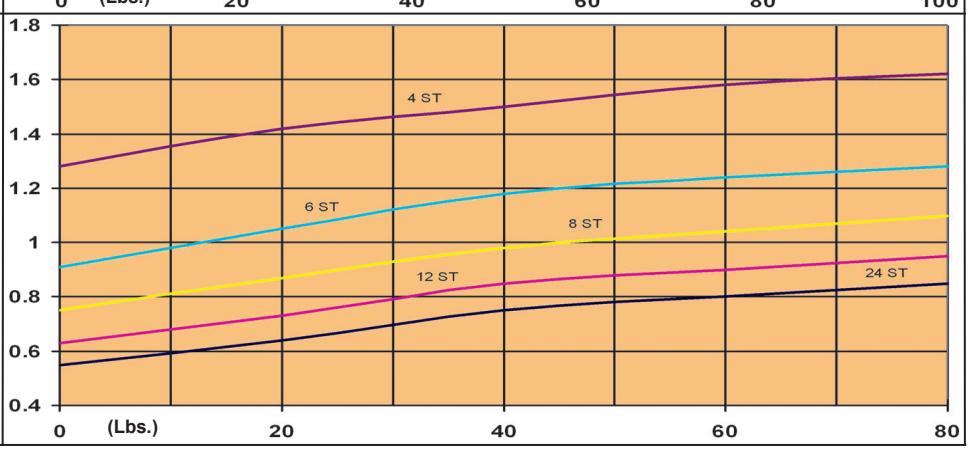
7-1/4" SIZE TABLES	 *SOLENOID PRESSURE PILOT CONTROL CIRCUIT (Indexes on Momentary Signal)	 DOUBLE PRESSURE PILOT CONTROL CIRCUIT (Indexes on Momentary Pressure Signal)	 DOUBLE BLEED PILOT CONTROL CIRCUIT (Indexes on Momentary Bleed Signal)
Standard Model (Clockwise Rotation)	725-ED	725-EE	725-EG
Counter Clockwise Rotation	725-EDC	725-EEC	725-EGC
Air Supply (1/4 NPT) in Center Stud	725-GD	725-GE	725-GG
With Counter Clockwise Rotation	725-GDC	725-GEC	725-GGC
11" SIZE TABLES			
Standard Model (Clockwise Rotation)	11-ED	11-EE	11-EG
Counter Clockwise Rotation	11-EDC	11-EEC	11-EGC
**Heavy-Duty (Clockwise Rotation)	11-FD	11-FE	11-FG
**Combination Duty (Clockwise Rotation)	11-EFD	11-EFE	11-EFG

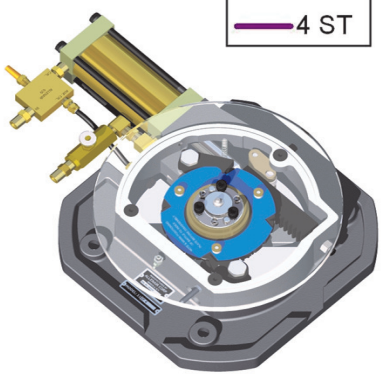
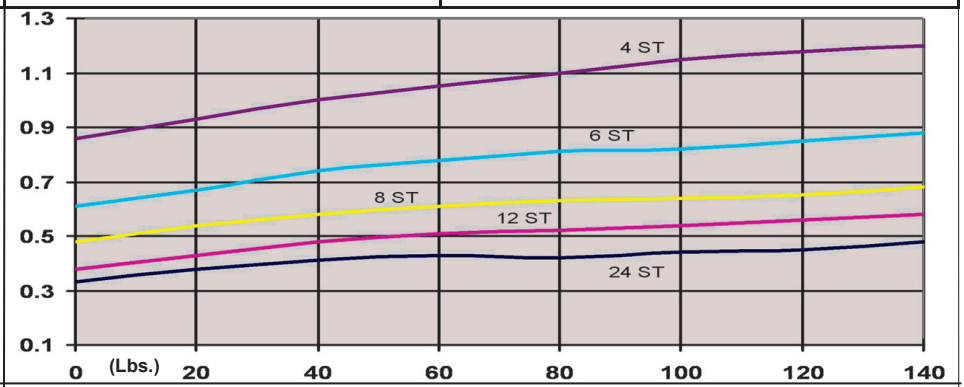
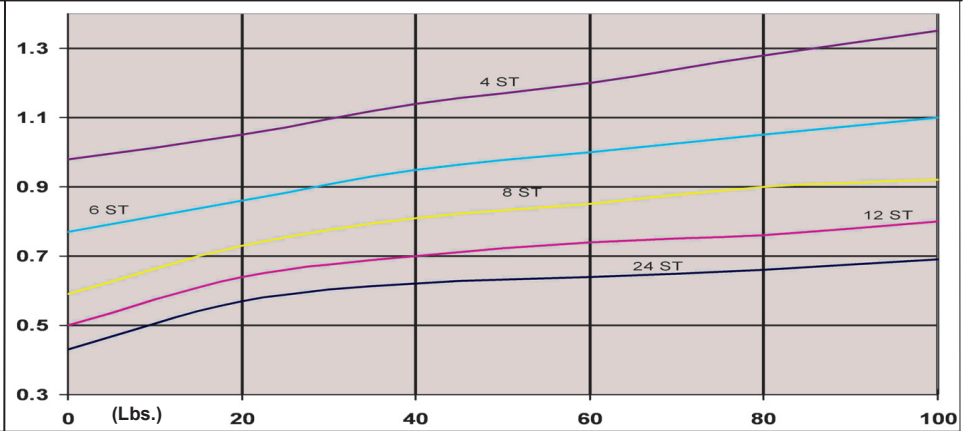
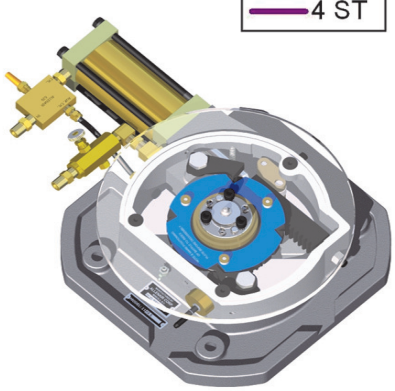
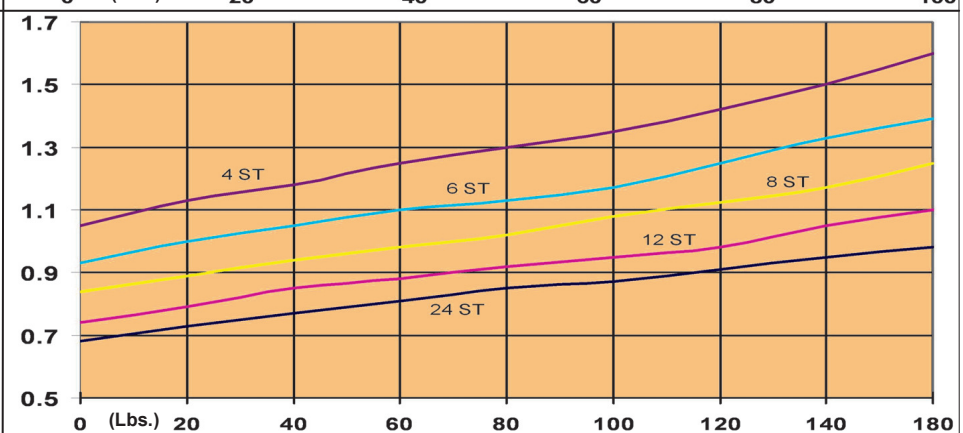
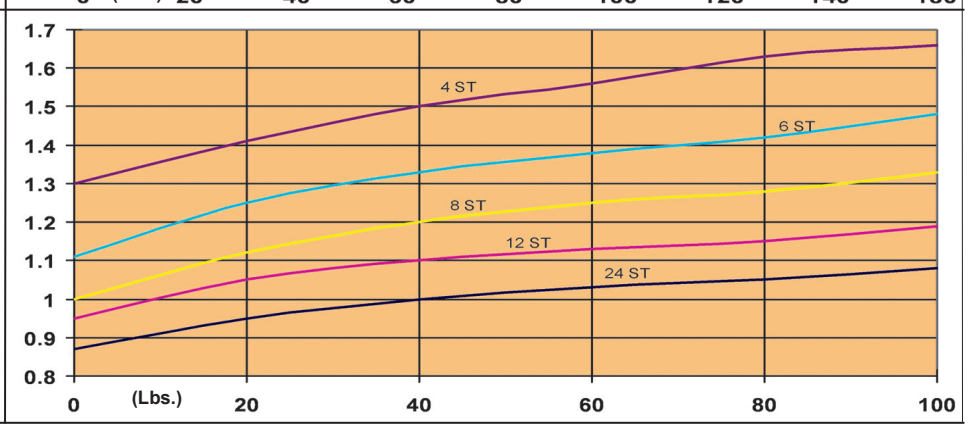
NOTES:

*Standard Voltages on Single Solenoid Valve (Model VSESA-1/4-AAS and VSSAP-1/4) are 12, 24, 120 & 240/60, and 6, 12 & 24VDC. Other popular voltages available at no additional cost.

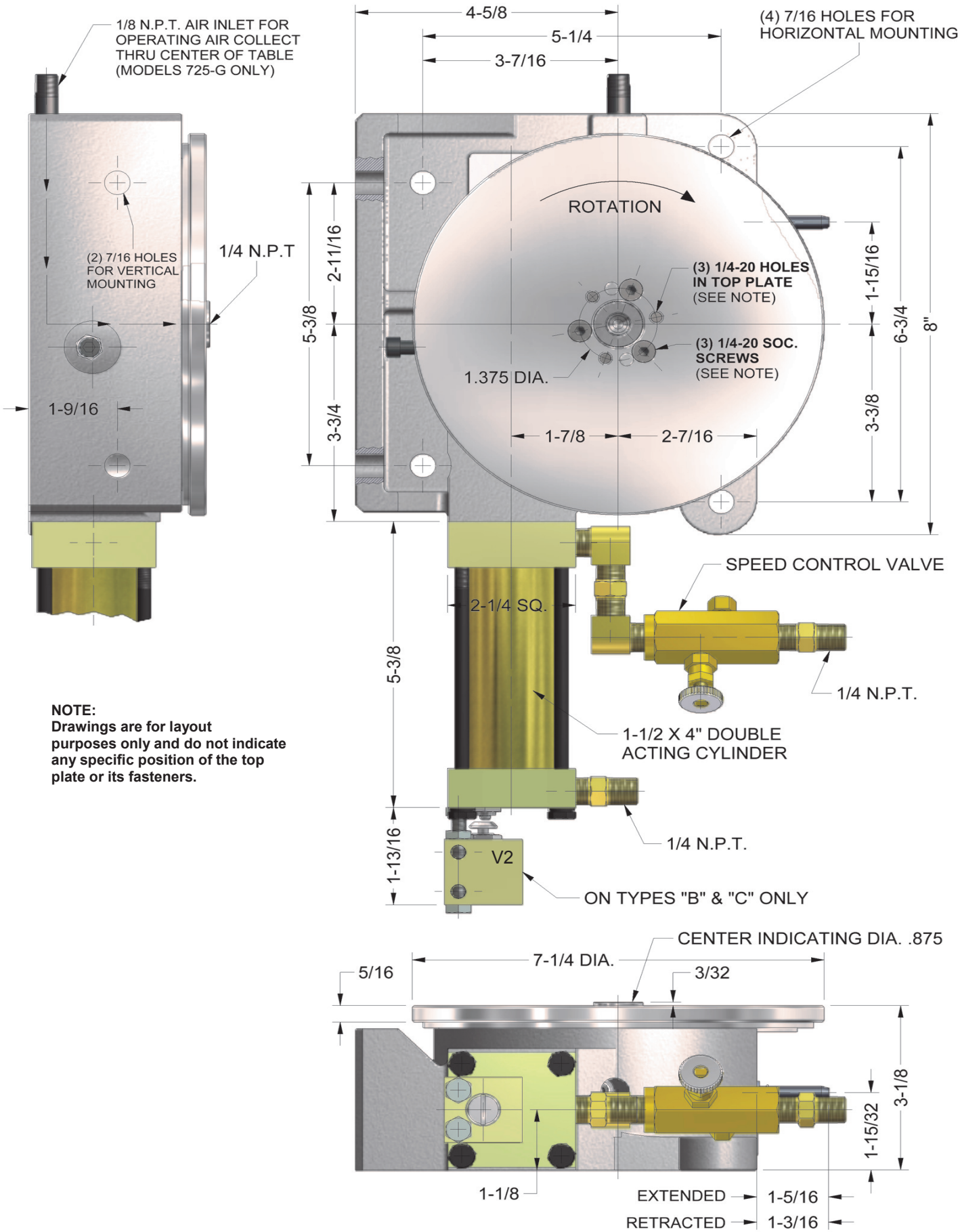
**Not available in Counterclockwise Rotation

ROTARY INDEX TABLES
SIZE AND CAPACITY

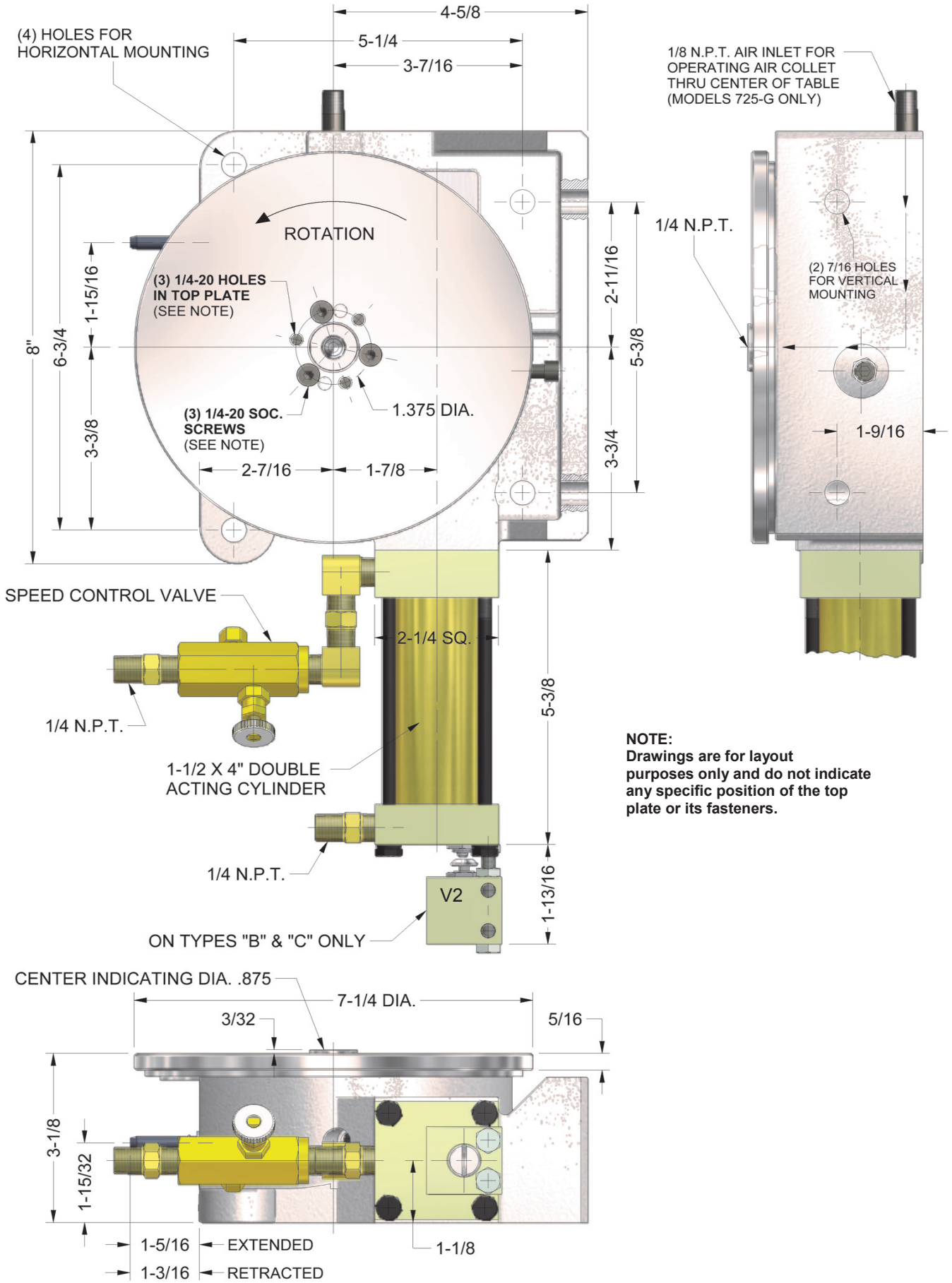
INDEX TABLE SERIES All figures are based on maximum pressure of 80 P.S.I. & Weight placed Symmetrically 1" from periphery of Top plates	TOP PLATE SIZE	FASTEST RECOMMENDED TIME PER INDEX IN SECONDS (ST=STATIONS PER REVOLUTION)	TOTAL POUNDS ROTATED ON TABLE (Lbs.)
LEGEND: 24 ST, 12 ST, 8 ST, 6 ST, 4 ST  725	7-1/4		
	10"		
LEGEND: 24 ST, 12 ST, 8 ST, 6 ST, 4 ST  11-E	11"		
	16"		

INDEX TABLE SERIES All figures are based on maximum pressure of 80 P.S.I. & Weight placed Symmetrically 1" from periphery of Top plates	TOP PLATE SIZE	FASTEST RECOMMENDED TIME PER INDEX IN SECONDS (ST=STATIONS PER REVOLUTION)	TOTAL POUNDS ROTATED ON TABLE (Lbs.)
LEGEND 24 ST 12 ST 8 ST 6 ST 4 ST  11-EF	11"		
	16"		
LEGEND 24 ST 12 ST 8 ST 6 ST 4 ST  11-F	11" & 16"		
	20"		

ROTARY INDEX TABLES
MODEL 725 CLOCKWISE ROTATION



NOTE:
Drawings are for layout purposes only and do not indicate any specific position of the top plate or its fasteners.



NOTE:
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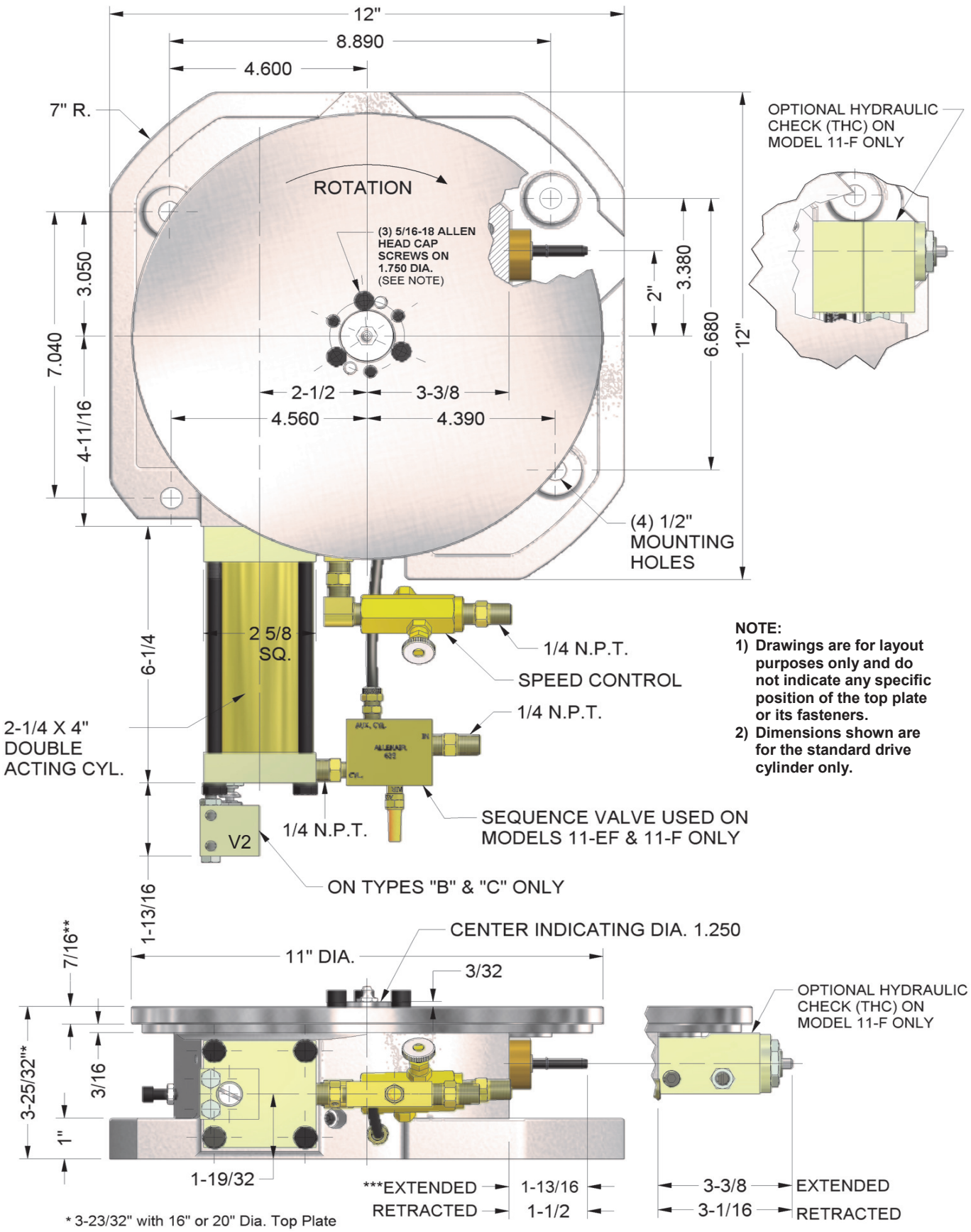
ROTARY INDEX TABLES
MODELS 11- E, 11- EF &11- F
CLOCKWISE ROTATION



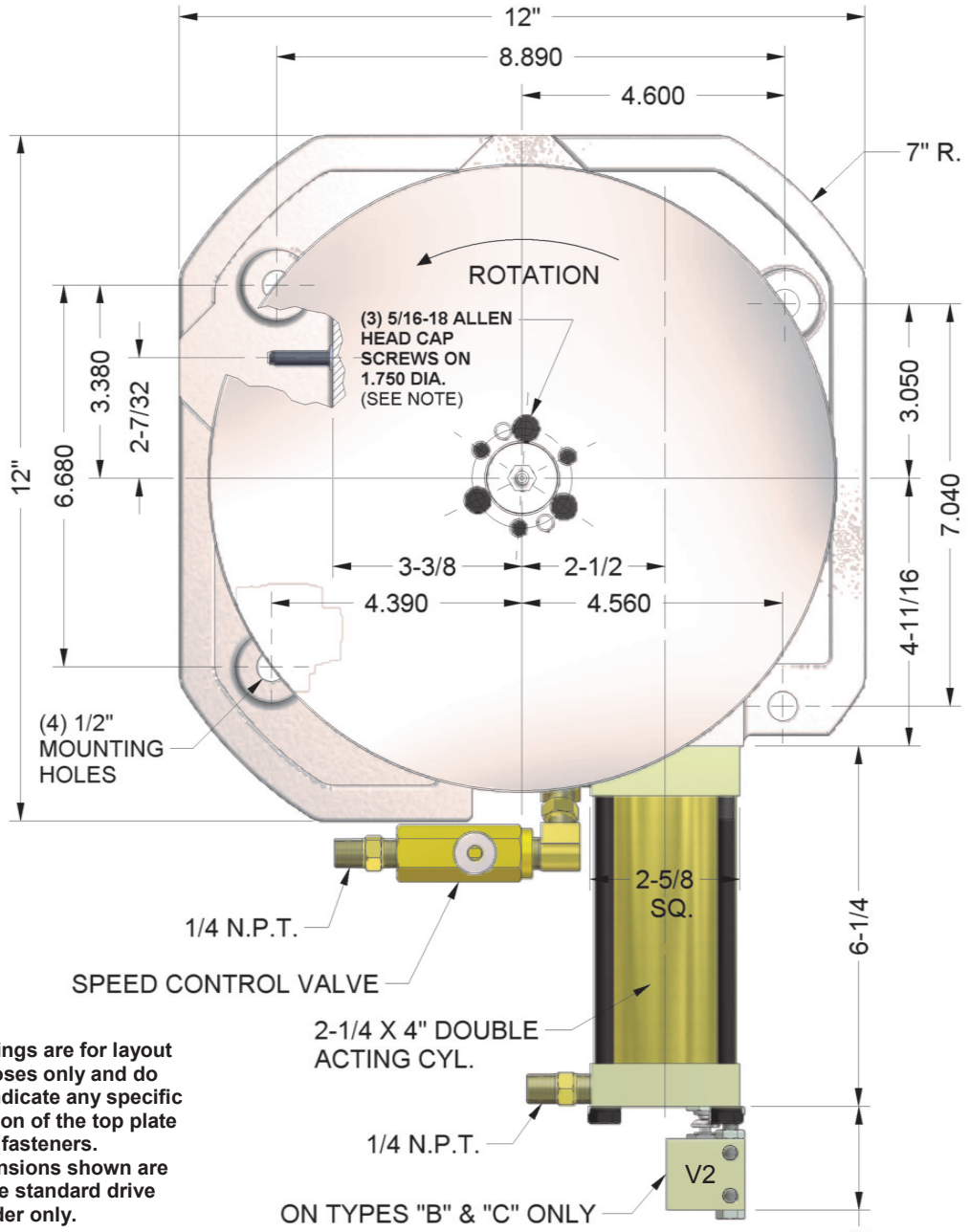
NOTE:

1) **Drawings are for layout purposes only and do not indicate any specific position of the top plate or its fasteners.**
2) **Dimensions shown are for the standard drive cylinder only.**

* 3-23/32" with 16" or 20" Dia. Top Plate

** 3/8" for 16" or 20" Dia. Top Plate

*** On Models 11E & 11EF
Extended 1-1/2, Retracted 1-3/16



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