

MODEL NO. _____

SERIAL NO. _____

ALLENNAIR®

AIR OPERATED ROTARY INDEX TABLES MAINTENANCE MANUAL AND PARTS LIST

ALL MODELS

1) PREPARATION OF TOP PLATE

For proper positioning results, master locating holes for tooling plate should be spotted on the Top Plate prior to removal for final machining while the table is in the indexed position with normal operating pressure applied (80 PSI Max.). Tooling may be applied directly to the Top Plate by spotting holes at each station while the Table is in the indexed position with normal operating pressure applied (80 PSI Max.). Any tooling fasteners must not protrude beyond the bottom side of the Top Plate.

All holes drilled into the Top Plate should be deburred from the bottom side to remove sharp edges and eliminate the possibility of galling the Top Plate and Rider Plate. The Table should not be put into operation with open holes in the Top Plate that would allow foreign matter to fall into them and be carried between the two plates.

2) CAUTION

The Dowel Pins locating the Top Plate are purposely set off-center to eliminate any possible chance of misindexing the Top Plate by 180° whenever it is removed and re-installed. Failure to properly locate the Top Plate when it is re-installed will cause a serious malfunction as well as damage to the Table. Do not operate the Table if Dowel Pins are below surface of Top Plate or missing.

3) MAXIMUM PRESSURE

The maximum recommended air pressure to be used on the Table is 80 PSI.

4) ADJUSTMENT OF INDEX SPEED

This is accomplished by adjusting the Speed Control Valve (495) provided on the front port of the Table Drive Cylinder.

5) LUBRICATION

An Air Line Filter and Lubricator should be used to insure cleanliness and lubrication of the Air Cylinder. Grease fittings provide for internal lubrication as required.

6) ADJUSTMENT OF PAWL STOP PIN

MODELS 725, 11-E & 11-EF

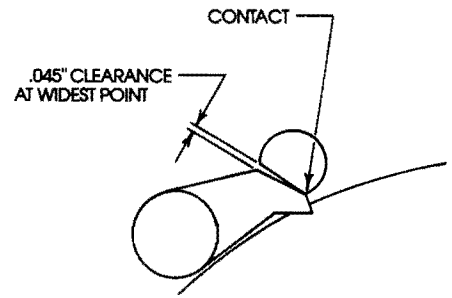
The Pawl and Stop Pin relationships shown to the right are preset at the factory, however, after a long period of use adjustment may be required.

On Rotary Index Tables manufactured before August 1987 this adjustment is made by loosening the Clamp Screw (147-ASS'Y) located in the Base Casting and rotating the Pin to the correct position.

On Rotary Index Tables manufactured after August 1987 this adjustment is now made externally.

Below the Accessory Pin there are two holes. The top hole houses the Stop Pin Clamp and the bottom hole is the Stop Pin Adjustment Access. Loosen the Stop Pin Clamp using a 5/32" hex key. Insert a 1/8" diameter pin into the stop pin thru the access hole, signal the Table to index and move the 1/8" diameter pin to the left on clockwise Tables or to the right on counterclockwise Tables. This will move the index position backwards. When the Table completes the index cycle, gradually move the 1/8" diameter pin to the right or left until the Table Top Plate is in the desired position and tighten the Stop Pin Clamp.

This adjustment is not meant to compensate for tooling errors.



MODEL 11-F

Pawl Stop Pin setting is a flat-to-flat condition and should be set with the Table in the indexed position and no more that 30 PSI pressure to the table.

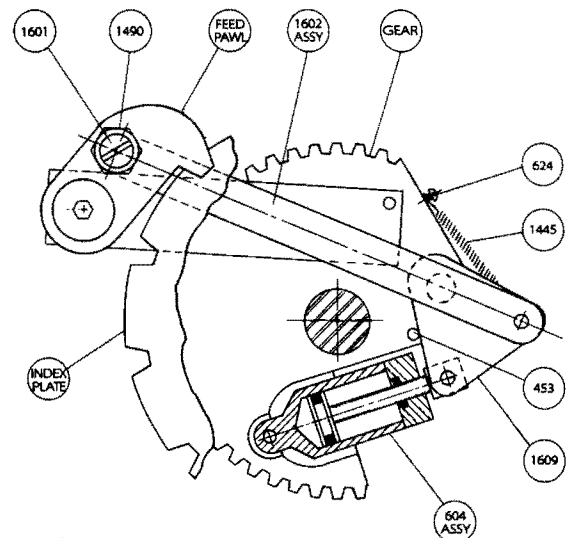


7) PAWL LATCHING MECHANISM

MODELS 11-F & 11-EF

After long usage, should slight variations in accuracy of indexing occur, it should be ascertained that the Feed Pawl locks into the notches of the Index Plate without play. If play has developed, adjustment of the Over Center Latching Mechanism is required. This is accomplished by removing the Center Stud and Gear Assemblies from the Table. Refer to Paragraph 10 A, B & C.

- Disconnect Release Spring (1445) by removing Screw (624).
- Adjust Eccentric Screw (1601) so that Pawl is fully engaged with Index Plate when the Triangular Plate (1609) rests against Stop Pin (453). Lock Eccentric Screw (1601) with Lock Nut (1490). Only finger pressure is required to lock Pawl in place and a light toggle effect should be felt.
- Recheck latching in all positions.
- Reconnect Release Spring and make certain it releases Pawl in all positions.
- Reassemble Table, making sure arrow on Rack meshes with correct number of Stations marked on the Gear.



8) ANTI-BACKUP PAWL (ALL MODELS)

This should never require adjustment. In the event it does, adjust to drop 3/4 of the way into the tooth.

Note: Normal setting produces a slight forward motion when index cycle begins.

9) ADJUSTMENT OF RACK SUPPORT (ALL MODELS)

Under normal conditions this should never require adjustment. Should adjustment be necessary, with the Table completely assembled, hand-tighten the Adjusting Screw (128 or 428) located on the side of the Table, and back off one-eighth turn, then tighten Lock Nut. This adjustment should be made while the Table is being cycled.

10) PROCEDURE TO CHANGE NUMBER OF INDEXES (ALL MODELS)

- a) Remove the three Cap Screws that secure the Top Plate. Screw these into the three adjacent tapped holes and evenly jack Top Plate off dowel pins.
- b) Remove the three Flat Head Cap Screws holding down the Rider Plate, and lift it up.
- c) Lift Index Plate and Center Stud Assembly from Table and remove Drag Bearings, Springs and Baffle Plate.
- d) Disengage Gear and Rack. Re-engage rack tooth with arrow to the root of the tooth on the Gear marked with the desired number of indexes.
- e) Replace Index Plate Assembly.
- f) Install new Baffle Plate and locate with Drag Bearings and Springs.
- g) Replace Rider Plate.
- h) Replace Top Plate.

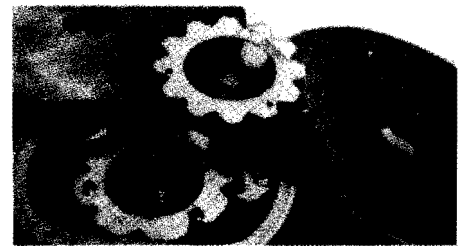
SIMPLE PROCEDURE TO CHANGE NUMBER OF INDEXES (ALL SERIES)



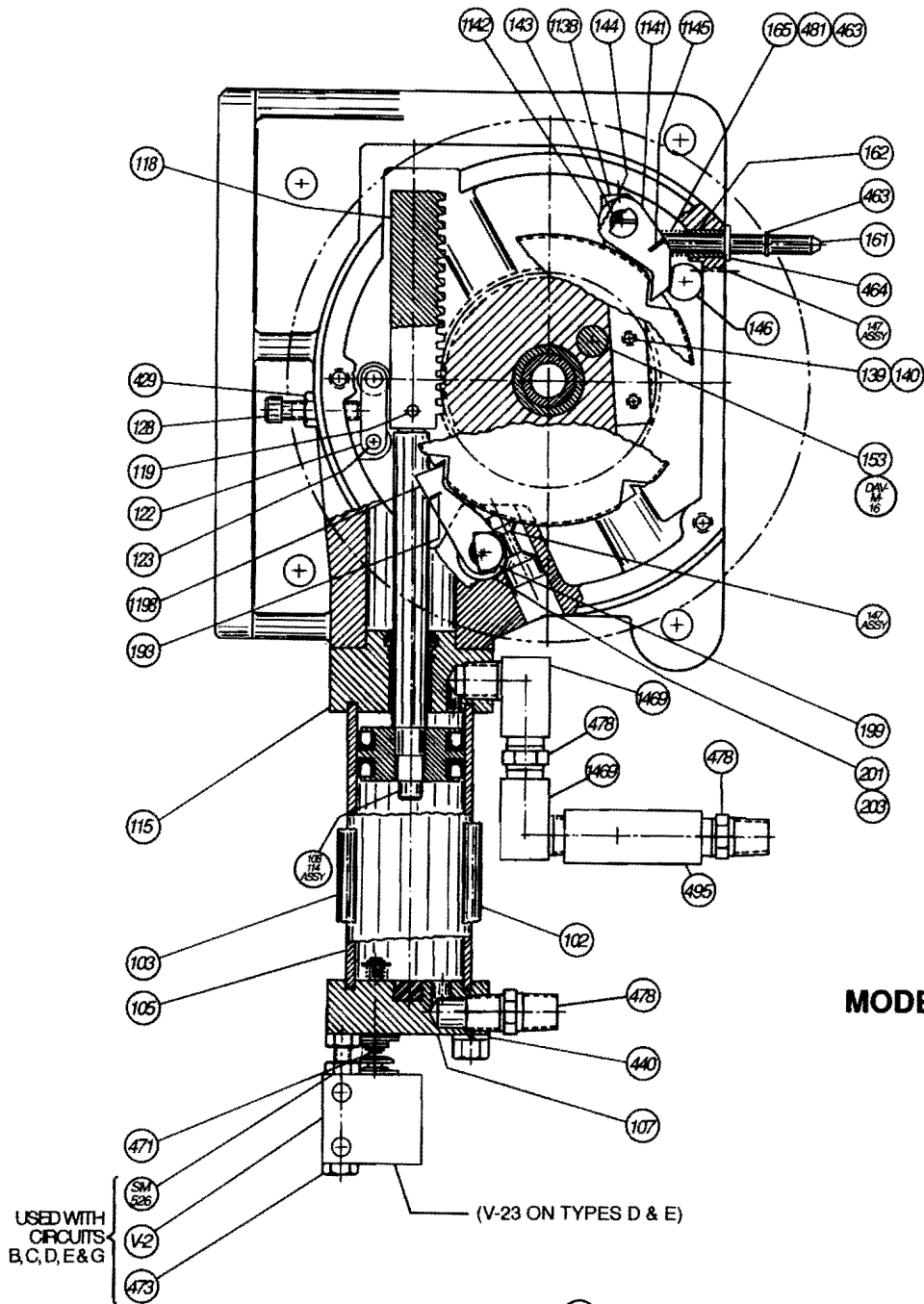
Remove Top Plate, Rider Plate and Center Stud Assembly.



Re-engage Gear so that proper number of Station Marking matches scribed tooth on Rack.

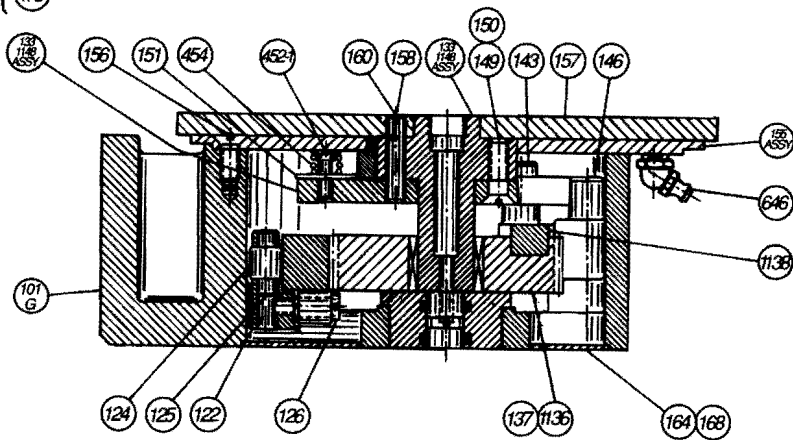


Reassemble unit with new Baffle Plate for Indexes required.

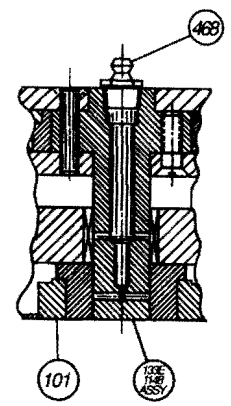


MODELS 725-E & 725-G
Clockwise

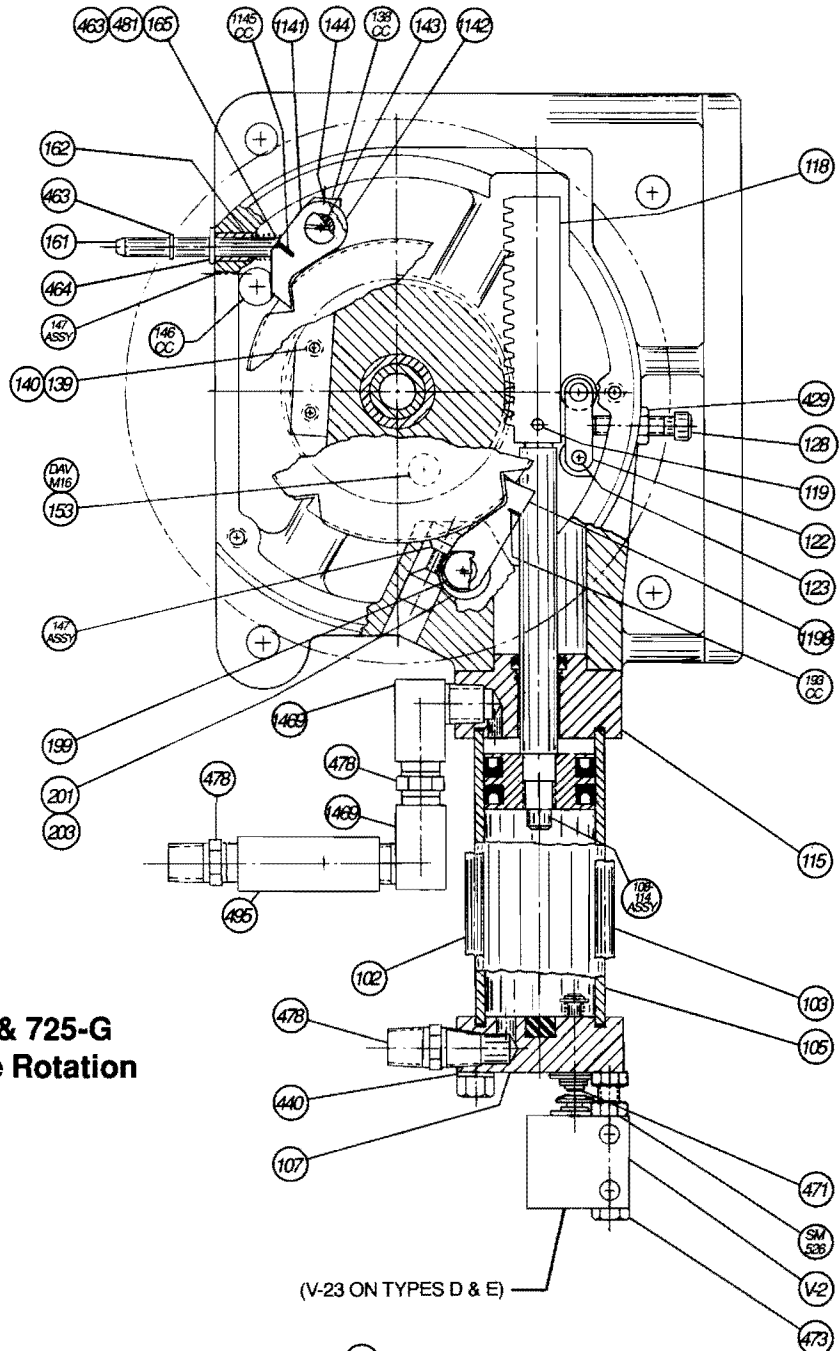
USED WITH
CIRCUITS
B, C, D, E & G



725-G



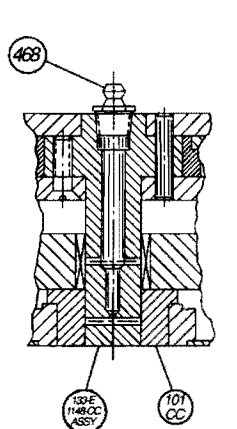
Otherwise same as 725-G
725-E



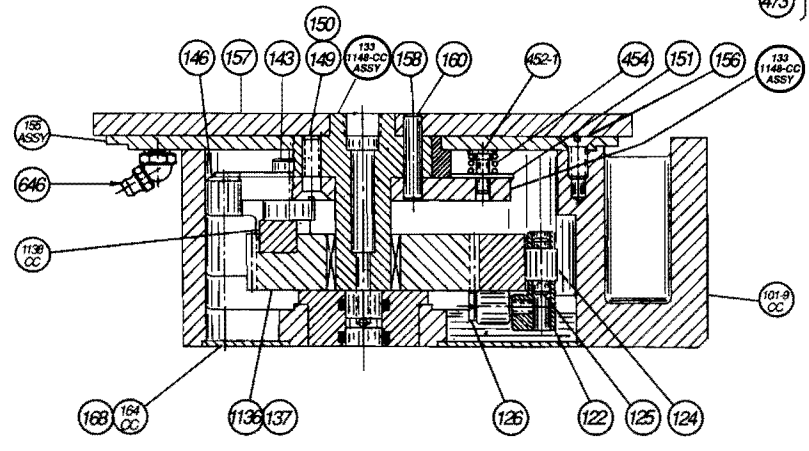
MODELS 725-E & 725-G
Counterclockwise Rotation

(V-23 ON TYPES D & E)

USED WITH
 CIRCUITS
 B, C, D, E & G

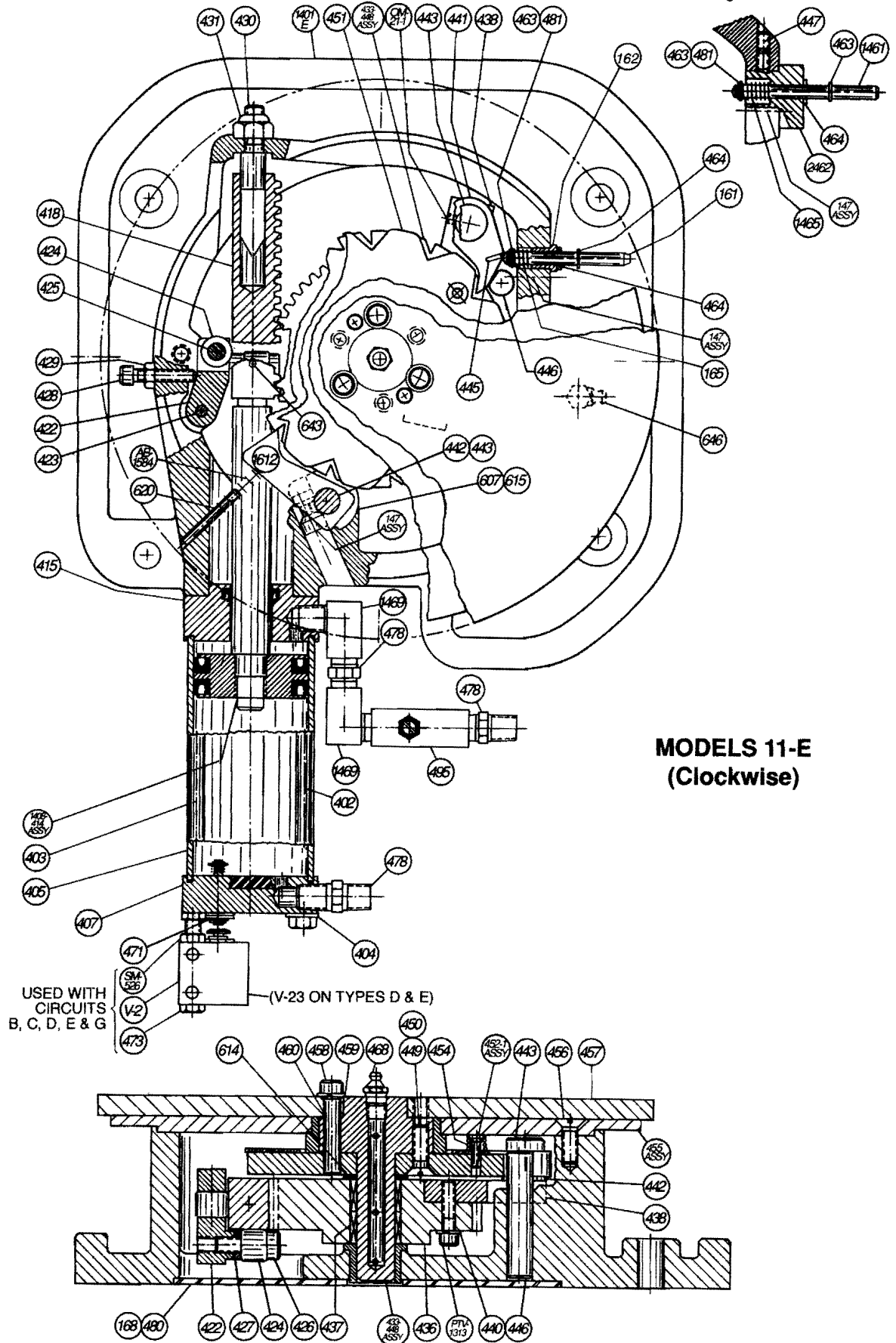


Otherwise same as 725-G
725-E



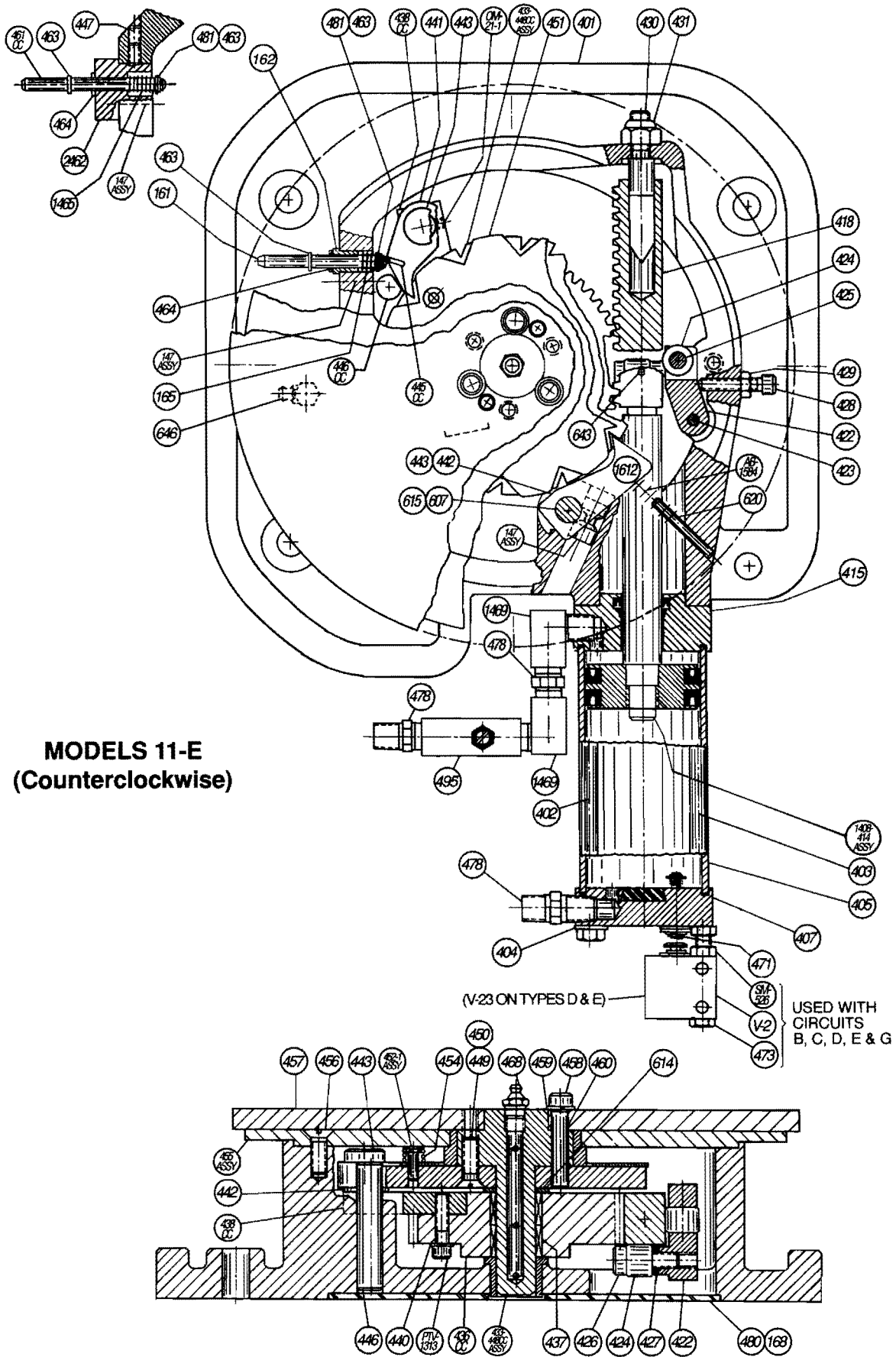
725-G

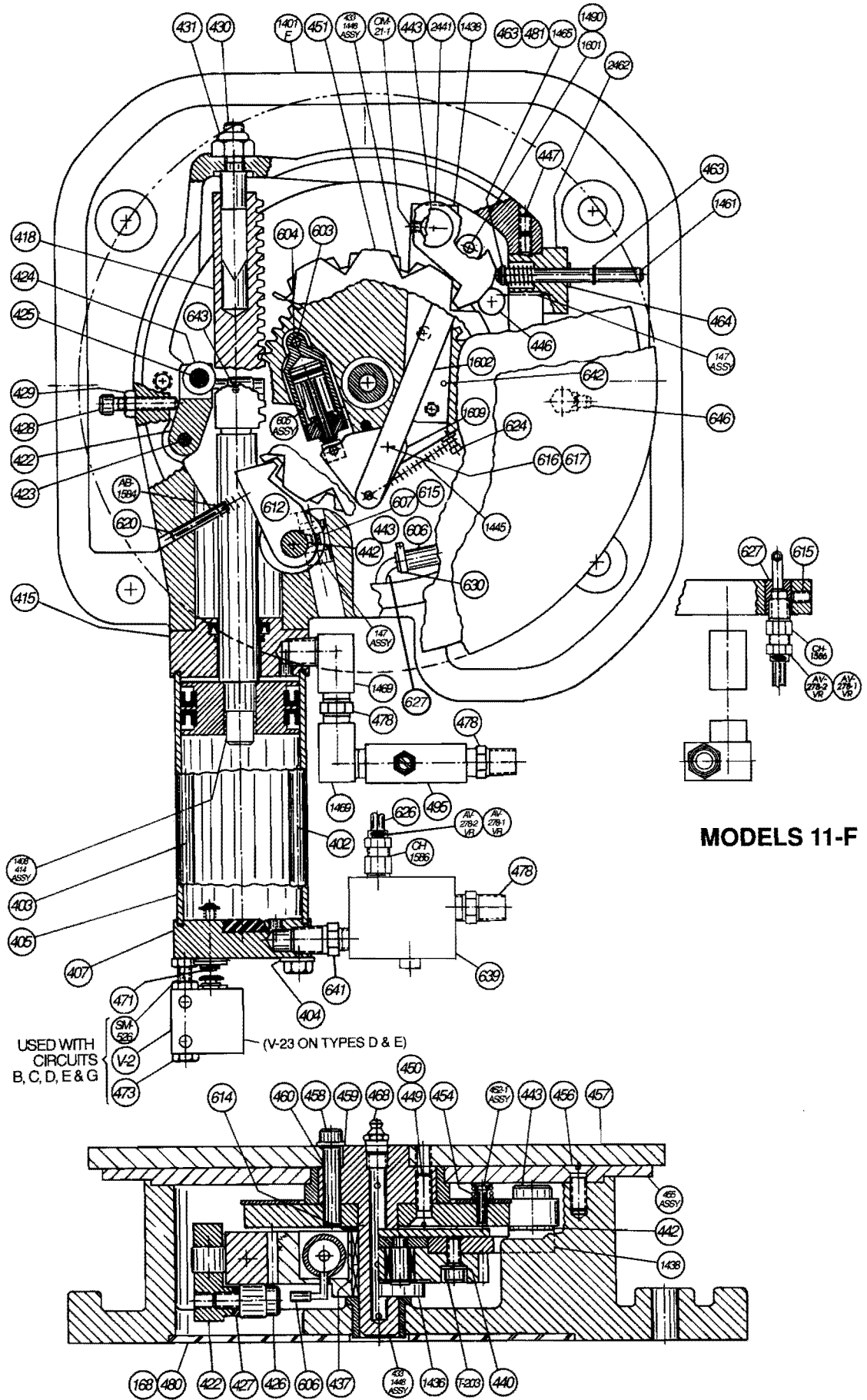
For models manufactured
before Aug. 1987



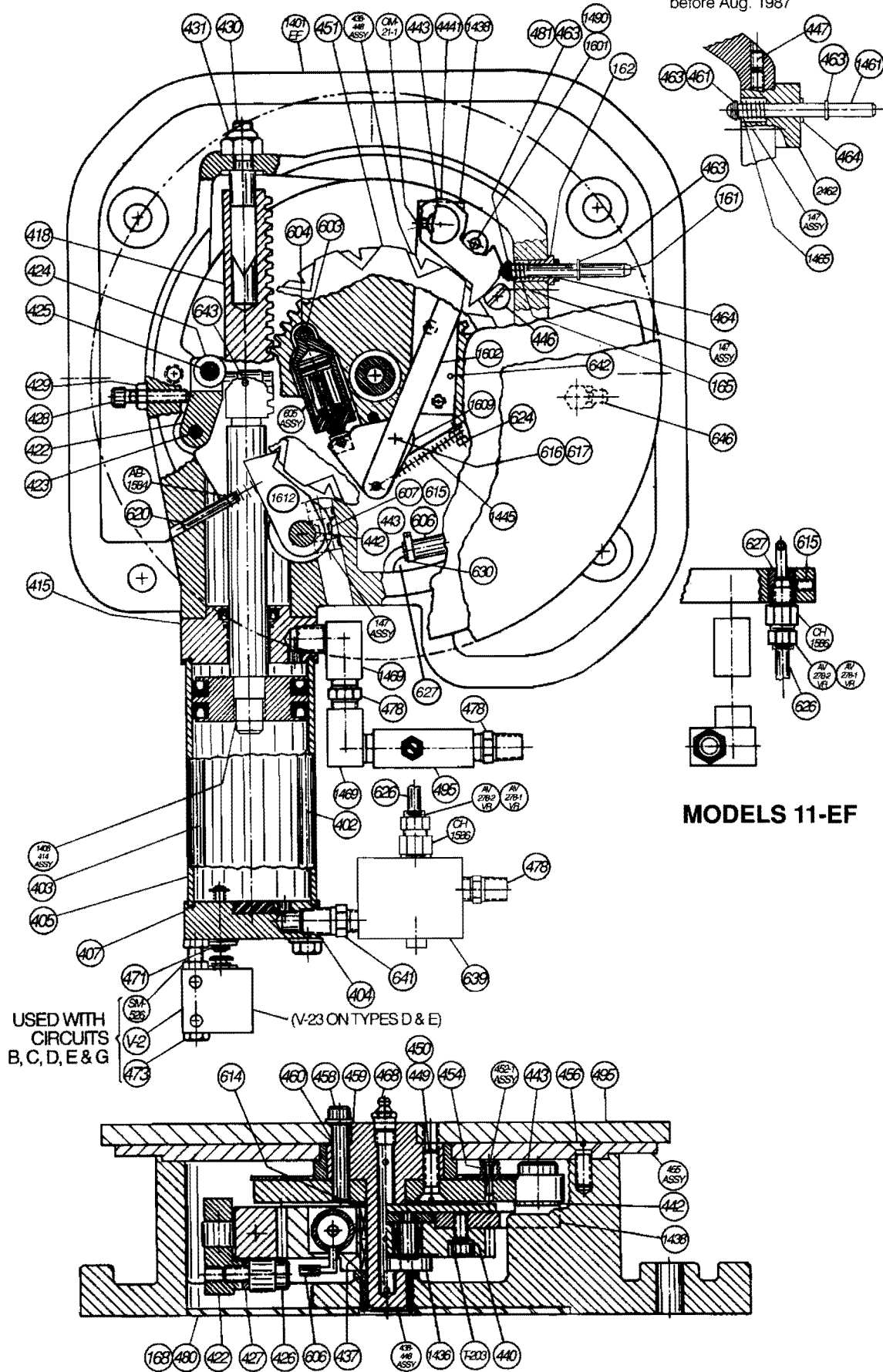
**MODELS 11-E
(Clockwise)**

For models manufactured
before Aug. 1987





For models manufactured before Aug. 1987



MODELS 11-EF

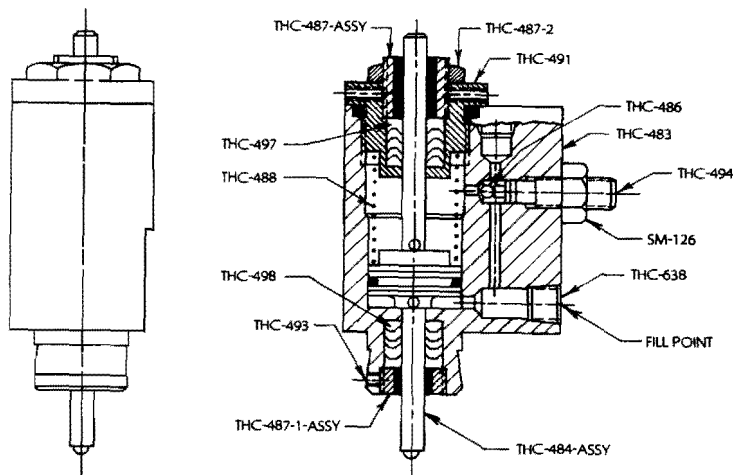
PARTS LIST (ALL MODELS)

PART No.	DESCRIPTION	PART No.	DESCRIPTION
101	Table Casting - Model 725-E	153	Gear Spacer Plug
101-CC	Table Casting (CC) - Model 725-E	155-Ass'y.	Rider Plate & Bearing Assembly
101-G	Table Casting - Model 725-G	156	Rider Plate Screw
101-G-CC	Table Casting (CC) - Model 725-G	157-7"	Top Plate - 7" Dia.
102	Cylinder Long Tie Rod	157-10"	Top Plate -10" Dia.
103	Cylinder Short Tie Rod	158	Top Plate Screw
105	Cylinder	160	Top Plate Dowel Pin
105-Ass'y.	Cylinder Ass'y. Only	161	Accessory Pin
105-118 Ass'y.	Cylinder & Rack Ass'y.	161-Ass'y.	Accessory Pin Ass'y.
107	Cylinder Rear Head	162	Accessory Pin Bushing
108-114-Ass'y.	Piston Rod Ass'y. Less Rack	164	Dust Cover
108-114-118 Ass'y.	Piston Rod Ass'y. with Rack	164-CC	Dust Cover (CC)
115	Cylinder Front Head	165	Accessory Pin Spring
118	Rack	168	Dust Plate Screw
119	Rack Pin	193	Anti-Backup Pawl Spring
122	Rack Support	193-CC	Anti-Backup Pawl Spring (CC)
122-Ass'y.	Rack Support Ass'y.	1198	Anti-Backup Pawl
122-CC-Ass'y.	Rack Support Ass'y. (CC)	199	Anti-Backup Pawl Pivot
123	Rack Support Pivot Pin	201	Anti-Backup Pawl Eccentric
124	Rack Support Needle Bearing	203	Anti-Backup Pawl Pivot Set Screw
125	Rack Support Side Bearing Shaft	401	Table Casting (CC) - Model 11-E
126	Rack Support Lower Bearing Shaft	1401-E	Table Casting - Model 11-E
128	Rack Support Adjusting Screw	1401-F	Table Casting - Model 11-F
133-1148-Ass'y.	Center Stud & Index Plate Ass'y. (Models G) (Specify No. of Indexes)	1401-EF	Table Casting - Model 11-EF
133-E-1148 Ass'y.	Center Stud & Index Plate Ass'y. (Models E) (Specify No. of Indexes)	402	Cylinder Long Tie Rod
133-1148-CC Ass'y.	Center Stud & Index Plate Ass'y. (CC) (Models G) (Specify No. of Indexes)	403	Cylinder Short Tie Rod
133-E-1148-CC Ass'y.	Center Stud & Index Plate Ass'y. (CC) (Models E) (Specify No. of Indexes)	404	Tie Rod Lock Washer
1136	Gear	405	Cylinder
1136-Ass'y.	Gear Ass'y.	405-Ass'y.	Cylinder Ass'y. Only
1136-CC-Ass'y.	Gear Ass'y. (CC)	405-418-Ass'y.	Cylinder & Rack Ass'y.
137	Gear Needle Bearing	407	Cylinder Rear Head
1138	Pawl Arm	1408-414-Ass'y.	Piston Rod Ass'y. less Rack
1138-CC	Pawl Arm (CC)	1408-414-418 Ass'y.	Piston Rod Ass'y. with Rack
139	Pawl Arm Mounting Screw	415	Cylinder Front Head
140	Pawl Arm Mtg. Screw Lock Washer	418	Rack
1141	Feed Pawl	422	Rack Support
1142	Pawl Spacer	422-Ass'y.	Rack Support Ass'y.
143	Pawl Pivot Screw	422-CC-Ass'y.	Rack Support Ass'y. (CC)
1145	Pawl Spring	423	Rack Support Pivot Pin
1145-CC	Pawl Spring (CC)	424	Rack Support Needle Bearing
146	Stop Pin	425	Rack Support Side Bearing Shaft
146-CC	Stop Pin (CC)	426	Rack Support Lower Bearing Shaft
147-Ass'y.	Stop Pin Clamp	427	Rack Support Bearing Spacer
149	Index Plate Screw	428	Rack Support Adjusting Screw
150	Index Plate Screw Washer	429	Rack Support Adjusting Lock Nut
151	Baffle Plates (4-6-8 & 12—Specify)	430	Rack Outboard Guide
151-SP	Baffle Plates Special Indexes (Specify No.)	431	Rack Outboard Guide Lock Nut
		433-448-Ass'y.	Center Stud & Index Plate Ass'y. (Specify No. of Indexes) Models 11-E & 11-EF
		433-448-CC Ass'y.	Center Stud & Index Plate Ass'y. (CC) (Specify No. of Indexes) - Model 11-E

PARTS LIST (CONTINUED)

PART No.	DESCRIPTION	PART No.	DESCRIPTION
433-1448 Ass'y.	Center Stud & Index Plate Ass'y. (Specify No. of Indexes) Model 11-F	475-B	Conversion Kit to convert Model A to B
436	Gear - Model 11-E	475-C	Conversion Kit to convert Model A to C
436-Ass'y.	Gear Ass'y. - Model 11-E	475-D	Conversion Kit to convert Model A to D
436-CC-Ass'y.	Gear Ass'y. - Model 11-E (CC)	475-E	Conversion Kit to convert Model A to E
1436	Gear - Models 11-F & 11-EF	475-G	Conversion Kit to convert Model A to G
1436-Ass'y.	Gear Ass'y. - Model 11-F	475-3	Neoprene Hose
1436-EF-Ass'y.	Gear Ass'y. - Model 11-EF	478	1/4 "x 1/4" N.P.T. Nipple
437	Gear Needle Bearing	480	Dust Cover
438	Pawl Arm - Model 11-E	481	Accessory Pin Small Washer
438-CC	Pawl Arm - Model 11-E (CC)	1490	Pawl Eccentric Screw Nut
1438	Pawl Arm - Models 11-F & 11-EF	495	Speed Control
440	Pawl Arm - Mounting Screw Lock Washer	1601	Pawl Eccentric Screw
441	Pawl - Model 11-E	1602	Tie Lever
2441	Pawl - Model 11-F	603	Auxiliary Cylinder Anchor Pin
4441	Pawl - Model 11-EF	604	Auxiliary Cylinder
442	Pawl Spacer	604-Ass'y.	Auxiliary Cylinder Ass'y.
443	Pawl Pivot Screw	605-Ass'y.	Auxiliary Cylinder Piston Rod Ass'y.
445	Pawl Spring - Model 11-E	606	Flexible Hose
445-CC	Pawl Spring - Model 11-E (CC)	607	Anti-Backup Pawl Eccentric
1445	Release Spring - Models 11-F & 11-EF	1609	Triangular Plate
446	Stop Pin	612	Anti-Backup Pawl-Model 11-F
446-CC	Stop Pin (CC)	1612	Anti-Backup Pawl-Models 11-E & 11-EF
447	Accessory Pin Bushing Lock Screw	614	Gear Spacer
449	Index Plate Screw	615	Anti-Backup Pawl Pivot Set Screw
450	Index Plate Screw Washer	616	Triangular Plate Bearing
451	Baffle Plates 4, 6, 8 or 12 (Specify)	617	Triangular Plate Snap Ring
451-SP	Baffle Plate (Special Indexes- Specify No.)	620	Anti-Backup Spring Guide
452-1-Ass'y.	Drag Bearing & Pin Ass'y.	624	Release Spring Screw
454	Drag Bearing Spring	626	1/4" Tubing
455-Ass'y.	Rider Plate & Bearing Ass'y.	627	Elbow
456	Rider Plate Screw	630	Hose Clamp
457-11"	Top Plate -11" Dia.	639	Sequence Valve
457-16"	Top Plate -16" Dia.	641	1/8" x 1/4" Nipple
457-20"	Top Plate -20" Dia.	642	Tie Lever Stop Pin
458	Top Plate Screw	643	Rack Dowel Pin
459	Top Plate Screw Lock Washer	644	Hose Clamp
460	Top Plate Dowel Pin	646	Rider Plate Grease Fitting
1461	Accessory Pin	725-P	Complete Set of Packings
462-Ass'y.	Accessory Pin Ass'y.	11-P	Complete Set of Packings
2462	Accessory Pin Bushing	AB-1584	Anti-Backup Spring
2462-Ass'y.	Accessory Pin Ass'y.	AV-278-1-VR	Comp. Ring
463	Accessory Pin Snap Ring	AV-278-2-VR	Comp. Nut
464	Accessory Pin Flat Washer	CH-1586	Tube Fitting
1465	Accessory Pin Return Spring	DAV-M-16	Gear Spacer Plug Screw
468	Center Stud Grease Fitting	OM-21-1	Pawl Pivot Lock Screw
1469	1/4" Street Ell	PTV-1313	Pawl Arm Mounting Screw - Model 11-E
471-Ass'y.	Rear Head Accessory Pin Ass'y.	PTV-4-PG	Complete Set of Packings and Gaskets for Pilot Timer Valve
473	Valve Bolt	SM-526	Valve Spacer Nut
		T-203	Pawl Arm Mounting Screw - Models 11-F & 11-EF
		V-1/4-3/8-P	Complete Set of Packings and Gaskets for 1/4" Valves
		V-2	2-Way Valve

11) HYDRAULIC CHECK # THC-483-A

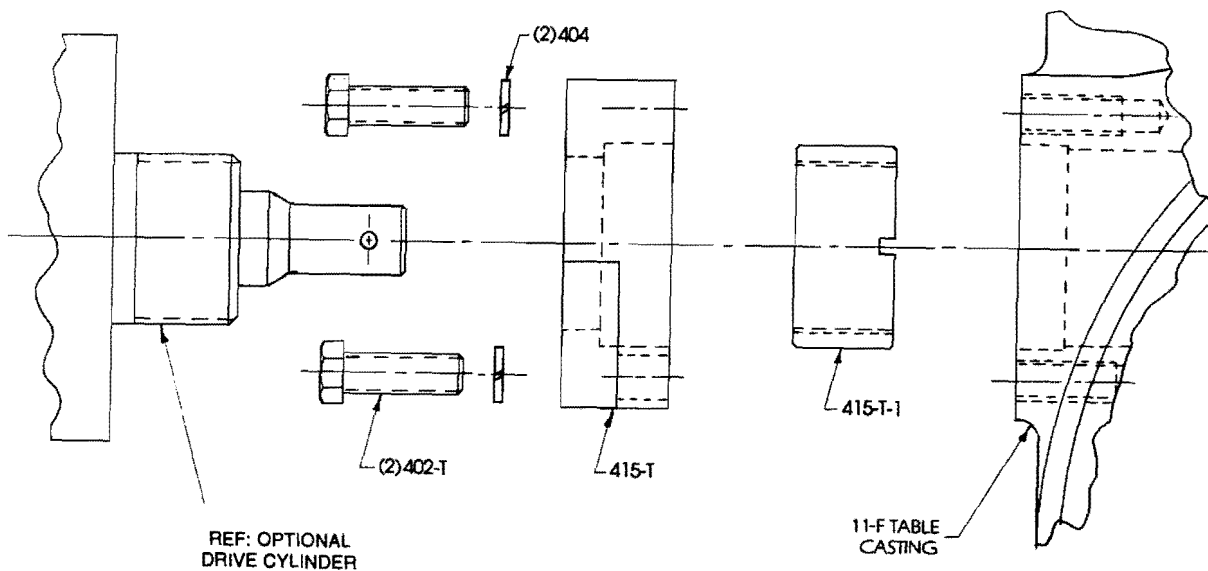


COMPLETE SET OF PACKINGS— Part No. THC-P

TO REFILL:

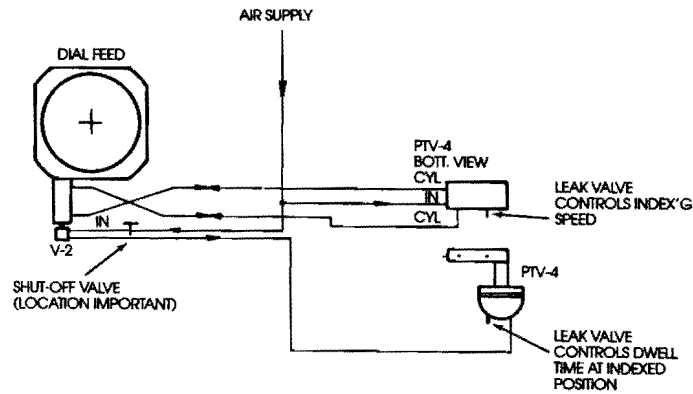
- a) Remove Adjusting Screw THC-494, Ball THC-486 and Plug THC-638.
- b) Fill with Mobil DTE Medium or equivalent at fill point and bleed from Adjusting Screw hole.
- c) Replace Ball, Screw and Plug.

12) NOSEPIECE ADAPTOR FOR OPTIONAL DRIVE CYLINDERS (See Pages 15, 16 & 18)

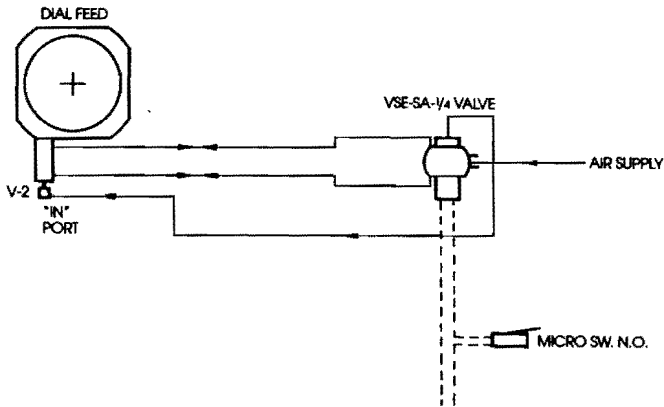


13) TABLE CIRCUITS

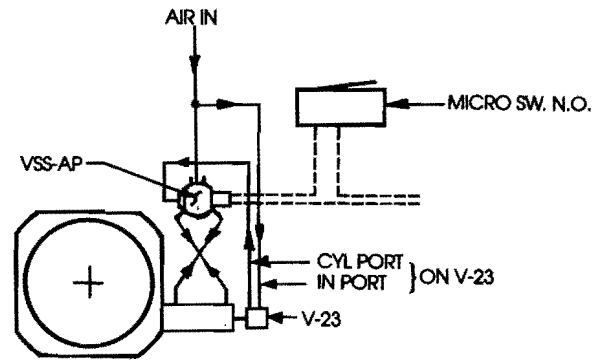
CONTROL CIRCUIT "B", PILOT TIMER USING PTV-4 VALVE



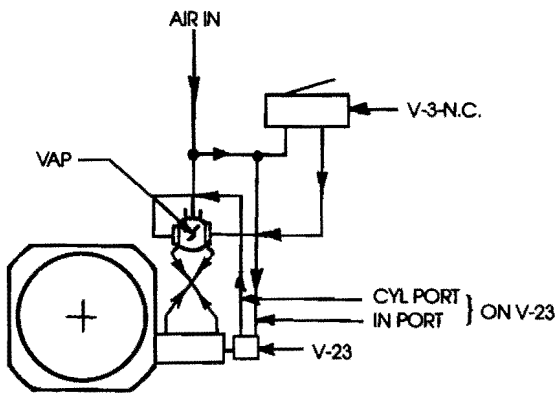
CONTROL CIRCUIT "C", SINGLE SOLINOID BLEED PILOT USING VSE-SA VALVE



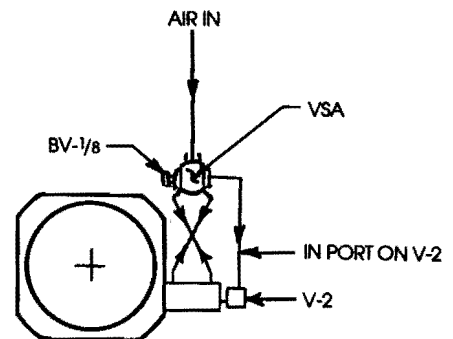
CONTROL CIRCUIT "D", SINGLE SOLINOID PRESSURE PILOT USING VSS-AP VALVE



CONTROL CIRCUIT "E", PRESSURE PILOT USING VAP VALVE



CONTROL CIRCUIT "G", BLEED PILOT USING VSA VALVE



SERVICE GUIDE

The Allenair Rotary Index Table is a rather basic mechanism using a rack and gear to convert linear motion of the drive cylinder into rotary motion of the top plate. As in any pneumatic device, the motion is totally controlled by the circuitry and valving. Therefore, locating the cause of a malfunction should start with a systematic check of the circuit and valves as follows:

- 1) Electric Circuit
 - a) Power
 - b) Switches
 - c) Solenoids
 - d) All related components

- 2) Pneumatic Circuit
 - a) Air Pressure (20 P.S.I. minimum, 80 P.S.I. maximum)
 - b) Full flow thru all lines and fittings
 - c) Air leakage
 - d) Operation of all related valves and signaling devices

Should any corrections to the above fail to resolve the malfunction, proceed to systematically check the Rotary Index Table.

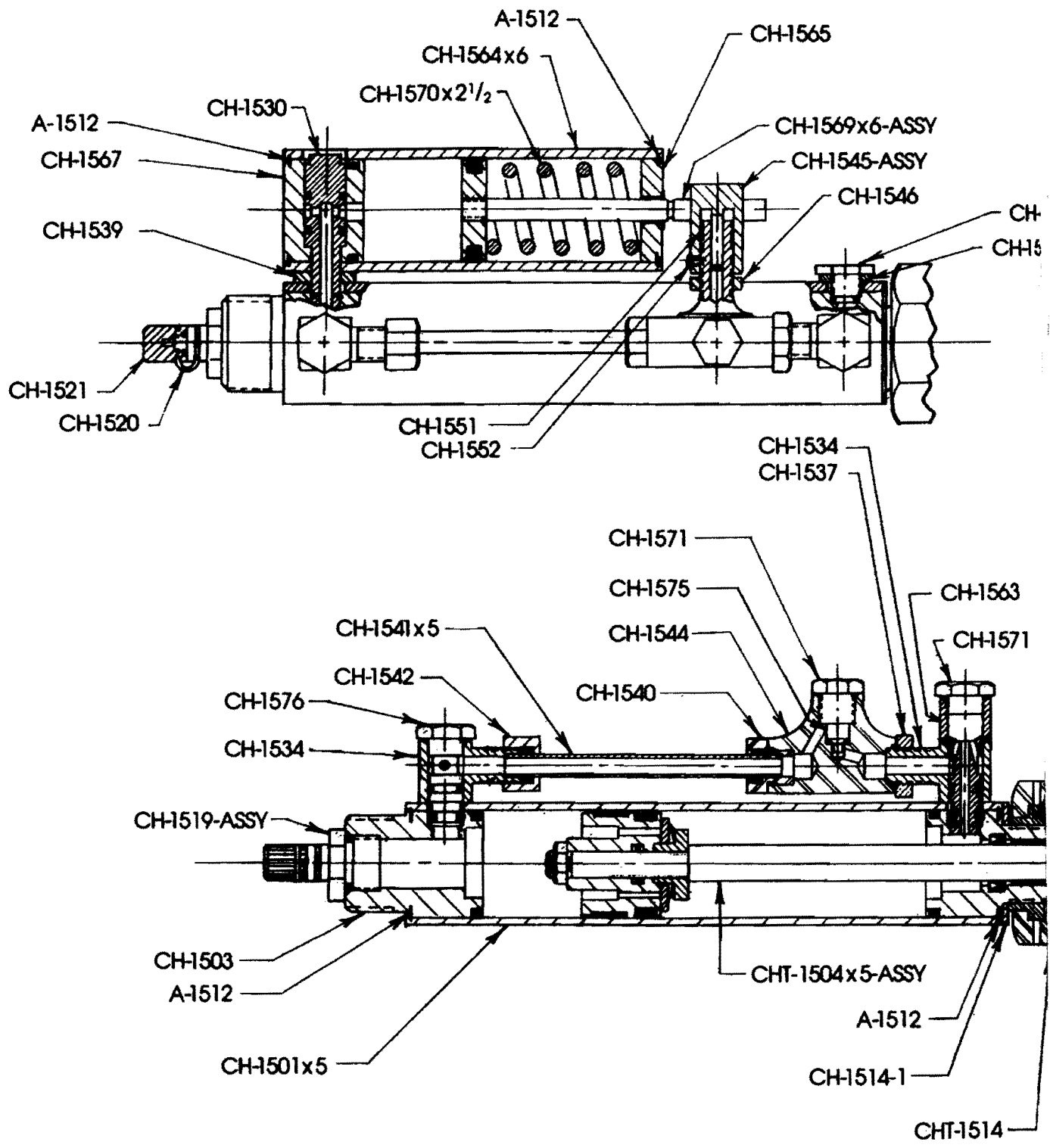
- 1) Will Not Index
 - a) External binding of top plate or fixtures
 - b) Adjustment of rack support
 - c) Drive cylinder
 - d) Pawl spring
 - e) Latching mechanism
 - f) Stop pin setting

- 2) Over Indexing
 - a) Excessive weight, top plate diameter and/or actual indexing speed (see chart on page 17 for maximum weight, diameters and minimum indexing time).
 - b) Flow control valve
 - c) External binding
 - d) Excessive air pressure
 - e) Excessive pressure drop during indexing
 - f) Stop pin setting

- 3) Not locked in working position
 - a) Drive cylinder valving reversed

- 4) Under Indexing
 - a) Air pressure
 - b) External binding
 - c) Rack and gear setting

**FOR ANY ADDITIONAL INFORMATION CONTACT YOUR
LOCAL ALLENAIR DISTRIBUTOR OR FACTORY**

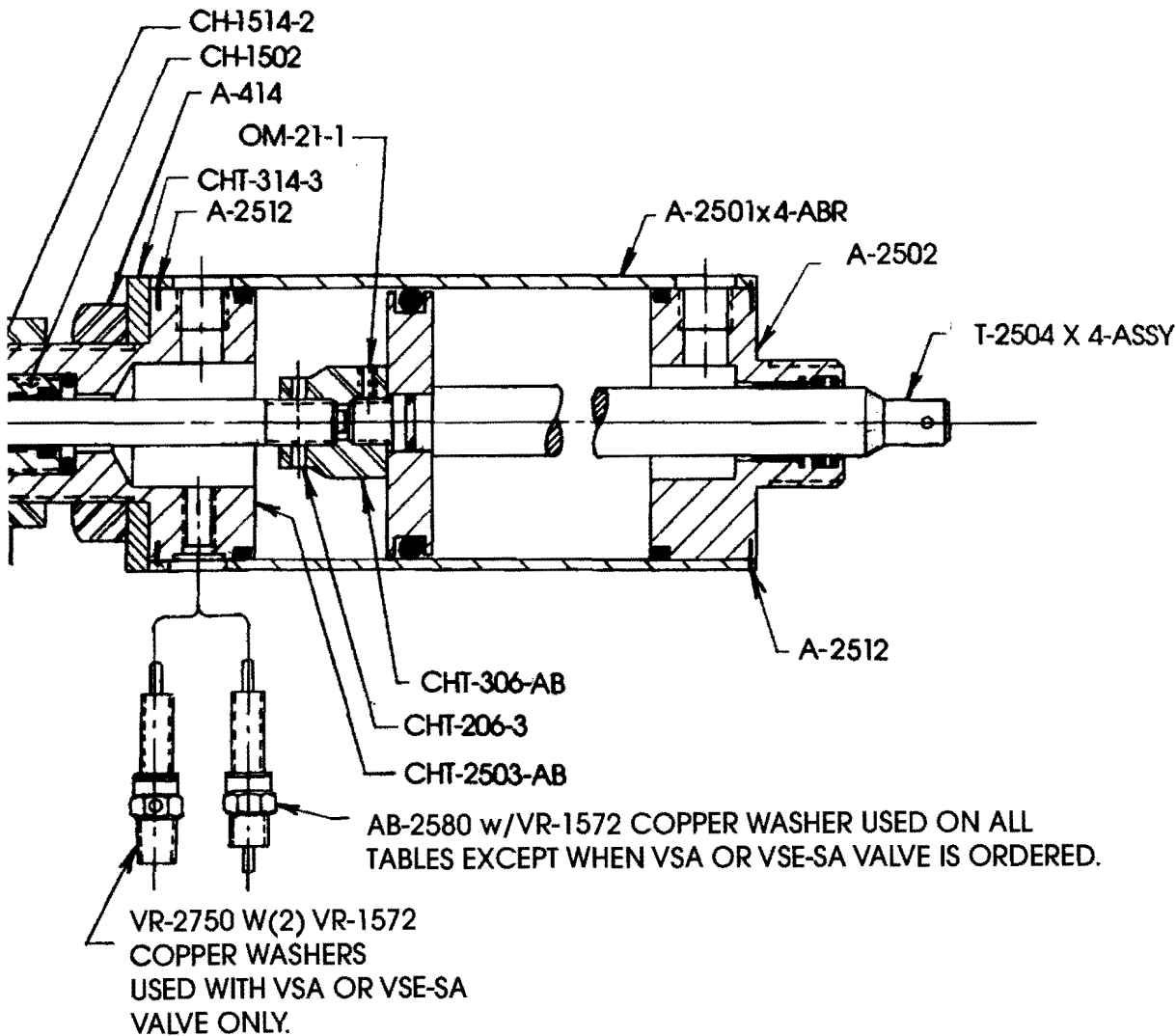


OPTIONAL CYL-CHECK FEED T-2 1/2 x 4-CHT-F-LH-5

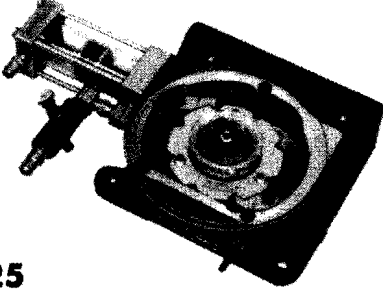
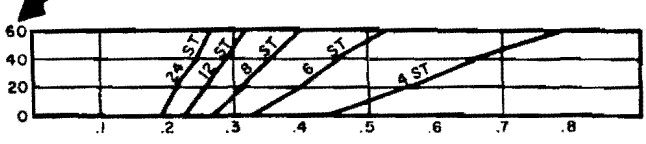
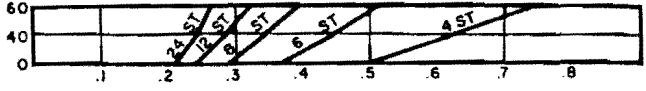
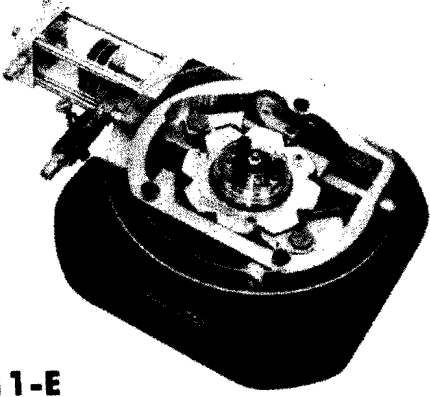
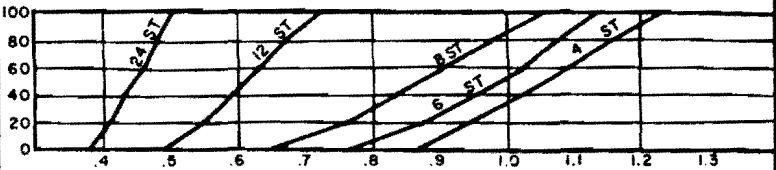
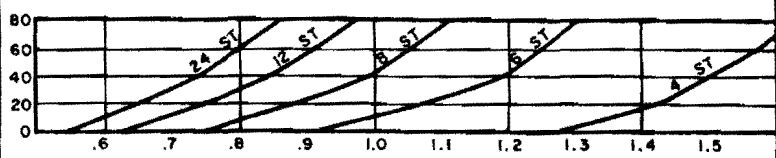
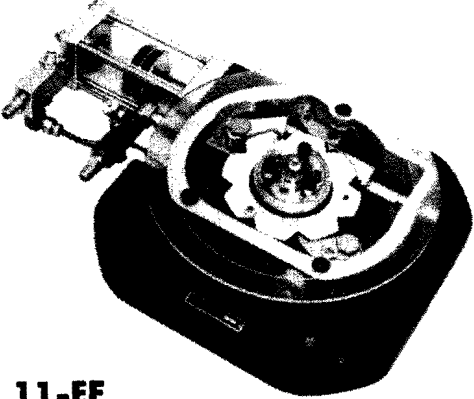
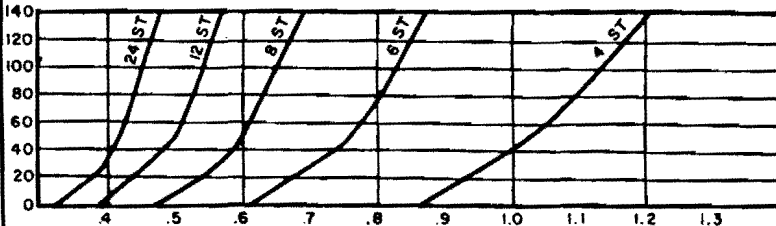
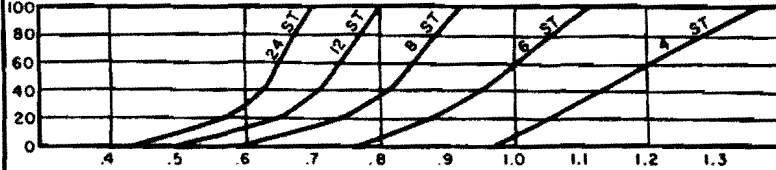
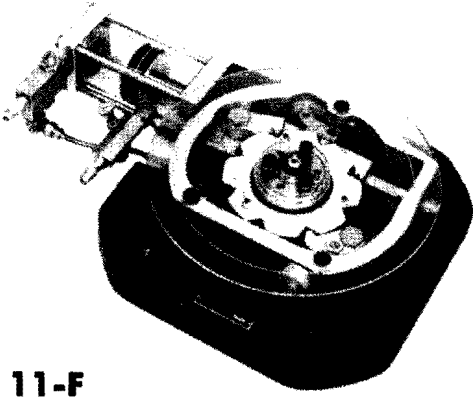
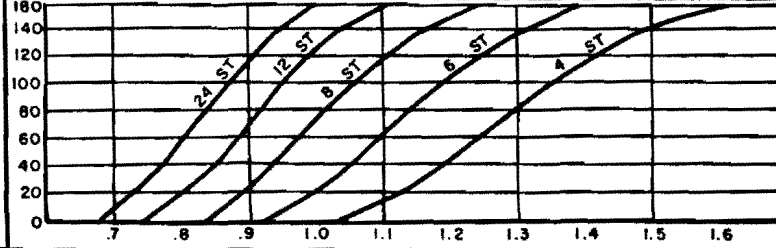
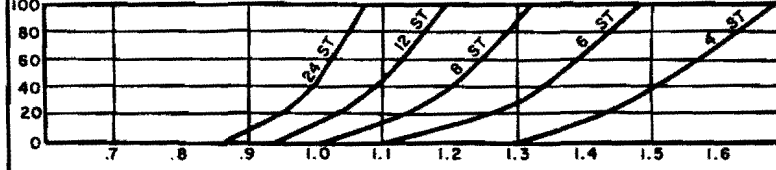
NOTES:

- 1) REPLACEMENT PARTS INCLUDE ALL APPLICABLE PACKINGS.
- 2) PACKING KIT PART NUMBERS: A-2 1/2-P AND CH-P.
- 3) SEQUENCE VALVE 639 IS INSTALLED IN REAR PORT OF CYLINDER.
- 4) SEE PAGE 12 FOR NOSE ADAPTOR.
- 5) ON TABLES SHIPPED PRIOR TO JANUARY 1, 1996, THE OPTIONAL CYL-CHECK FEED WAS SUPPLIED AS A T-3 x 4-CHT-F-LH-5. CONSULT FACTORY FOR REPLACEMENT PARTS.

1528
38

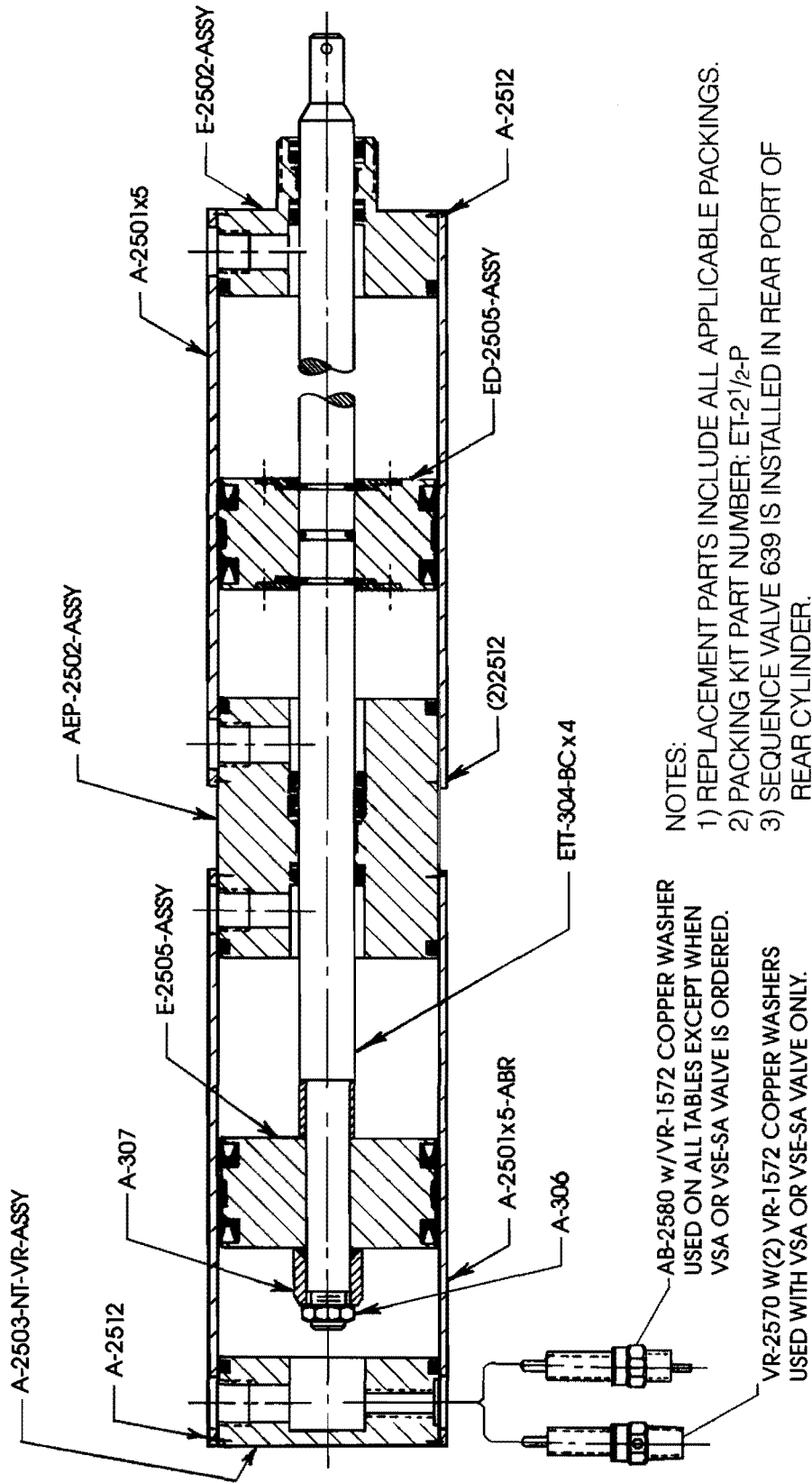


SIZE AND CAPACITY

INDEX TABLE SERIES	TOP PLATE SIZE	TOTAL POUNDS ROTATED ON TABLE	FASTEST RECOMMENDED TIME PER INDEX IN SECONDS (ST = STATIONS PER REVOLUTION)
 725	7 1/4	60	
	10		
 11-E	11	100	
	16		
 11-EF	11	140	
	16		
 11-F	16	180	
	20		

NOTES: 1) The above figures are based on maximum pressure of 80 P.S.I.
 2) Tabulations based on weights placed symmetrically 1" from periphery of Top Plates.

OPTIONAL TANDEM CYLINDER FEED ETT- 2 1/2 x 4



NOTES:

- 1) REPLACEMENT PARTS INCLUDE ALL APPLICABLE PACKINGS.
- 2) PACKING KIT PART NUMBER: ET-2 1/2-P
- 3) SEQUENCE VALVE 639 IS INSTALLED IN REAR PORT OF REAR CYLINDER.
- 4) SEE PAGE 12 FOR NOSE ADAPTOR.
- 5) ON TABLES SHIPPED PRIOR TO JANUARY 1, 1996, THE OPTIONAL TANDEM CYLINDER FEED WAS SUPPLIED AS AN ETT-3x4. CONSULT FACTORY FOR REPLACEMENT PARTS.



ALLEN AIR CORP.

255 EAST SECOND ST. - MINEOLA, NY 11501 • Phone: 516-747-5450 • Telex: 968480