

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	1014723	Bracket	83	1014360	(2) 5/16"-18 Hex Nut
2	1014350	(2) 5/16-18 X 1/2" Hex. Hd. Scr.	84	1012370	(2) O-Ring
3	1014562	(2) Washer	85	1014707	(2) Valve
4	Data Plate	On Request	87	1014347	(2) 3/8"-16 Hex Nut
5	1014370	#4 X 1/4" Drive Scr.	88	1023394	Stop Assy
6	1014908	Drive Hub	89	1014328	Stop Pawl
7	1014356	Pin	90	1015787	1/4-20 X 3/16 Soc. Set Scr.
8	1014353	(2) 5/16-18 X 5/16" Soc. Set Scr.	91	1015786	Stop Collar
9	1014907	Bearing	92	1023978	Knob
10	1014363	Pinion	93	1014703	(2) 3/8-16 X 7/8 Soc. Hd. Cap Scr.
11	1014724	Housing	94	1005080	(2) 1/4" Dia. Ball
12	1014717	(2) Needle Bearing	95	1023074	Rear Head
13	1014715	Pin	96	1014317	(2) Spacer
14	1014716	Roller	98	1014319	(2) Washer
15	1014362	Washer	99	1014318	(2) Stop Nut
16	1006965	Retaining Ring	100	1014466	Muffler
17	1014361	Bushing	101	1008209	Plug
18	1009424	Bearing	102	1014348	Pipe Tee
19	1014712**	Rack	103	1014706	Reducer Bushing
20	1010827	Fitting	104	1014346	1/4 Nipple
21	1009371	O-Ring	106	1014726**	1/4" O.D. Nylon Tubing 15-3/4 Long
22	1015720	Yoke	107	0904156	1/4-18 90 Degree Str. Elbow
23	1015719	(2) Screw	108	0904715	1/4 X 1-1/4" Nipple
24	1014157	#10-32 X 1/4" Soc. Set Scr.	109	1200313	Airline Comb. Unit
25	1014852	Pad	110	1014865	Cover
26	1015728	3/8-16 X 1" Hex. Soc. Hd. Cap Scr.	111	1010593	(3) #8-32 X 3/8 Rd. Hd. Scr.
27	1023272	Adj. Screw Assy	112	1023273	Valve Block
28	1014340**	Retainer Nut	113	1010325	(3) Tube Connector
29	1014260	Spring	114	1008110	O-Ring
30	1014336	Antirotation Pin	115	1014325	Valve Stem
31	1010784	Retaining Ring	117	1010216	O-Ring
32	1010213	Screw	118	1014323	Valve Body
33	1014339	(4) Indicator Rod	119	1010043	O-Ring
34	1010043	(4) O-Ring	120	1008695	O-Ring
35	1014479	(4) Retaining Ring	121	1014354	(4) #10-24 X 1-1/2 Soc. Hd. Scr.
36	1010706	O-Ring	122	1008695	O-Ring
37	1008130	O-Ring	123	1010043	(2) O-Ring
38	1014864	Piston	124	1016050	Valve Body
39	1005080	(4) 1/4" Dia. Ball	124A	1008645	Pin
40	1015900	Filter	125	1010216	(2) O-Ring
41	1014705	Filter Retainer	126	1005045	(2) Spring
41A	1015850	Filter Retainer	127	1008110	O-Ring
41B	1013701	O-Ring	128	1014324**	Start Button
42	1008836	Retaining Ring	129	1007548	Snap Ring
43	1014710**	Draw Bar	130	1014322**	Retract Button
46	1015740	Seal	131	1013834	Pin
47	1023076	Cylinder Block	132	1014321	Valve Body
48	1014342	Cover Plate	133	1012358	Valve
49	1011326	#10-24 Rd. Hd. Scr.	134	1012366	O-Ring
50	1014708	(2) O-Ring	135	1014722	Cover
51	1014334	Inner Cylinder	136	1010593	(3) #8-32 X 3/8 Rd. Hd. Scr.
52	1014720	Outer Cylinder	137	1015726	Clip
53	1010327	Elbow	*	1023297	Valve Block Assy, Incl: 112,113,121,133,134,and:
54	1014519**	1/4" Nylon Tubing 7-7/8" Long	*	1024198	Feed Button Assy, Incl: 122-128
55	1015739	Seal	*	1024199	Retract Button Assy, Incl: 123,125,126,130-132
57	1015722	O-Ring	*	1024200	Pilot Valve Assy, Incl: 114,115,117-120,129
58	1011530	O-Ring	*	1023397	Pinion Assy, Incl: 6,7,8,10,15,16
59	1014709	O-Ring	*	1023452	Piston Assy, Incl: 37-41,41A,41B,42
60	1023935**	Piston Assy, Incl: 55,57	*	1023453	Ret. Nut Assy, Incl: 28-31,33-36
61	1008695	O-Ring	*	1023935	Piston Assy, Incl: 55,57,60
63	1008127	(8) O-Ring			
64	1014711	(2) Tube			
65	1014713	(2) Tie Bar			
*	1024381	Cycle Comp. Signal Assy, Incl:			
66	1012381	Snap Ring			
67	1014395	Retainer			
68	1012387	Spring			
69	1008173	O-Ring			
70	1016395	Push Rod			
71	1014212	Snap Ring			
72	1008261	O-Ring			
73	1016390	Valve Body			
73A	1016389	Valve Cap			
74	1012369	O-Ring			
75	1012364	Ball			
76	1012386	Spring			
77	1014316	(4) Valve			
78	1014313	(3) Retaining Ring			
79	1012994	(2) O-Ring			
80	1014314	(2) Cap			
81	1008129	(2) O-Ring			
82	1014315	(2) Piston			

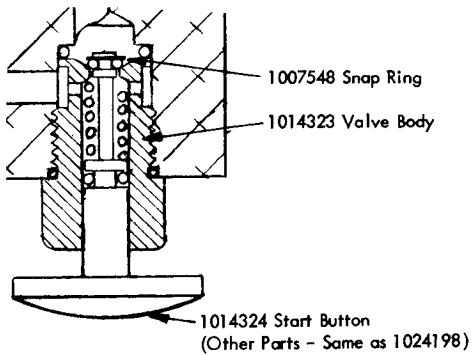
(*) PARTS NOT SHOWN
(**) See Service Notes

SERVICE NOTES

1023297 VALVE BLOCK ASSEMBLY

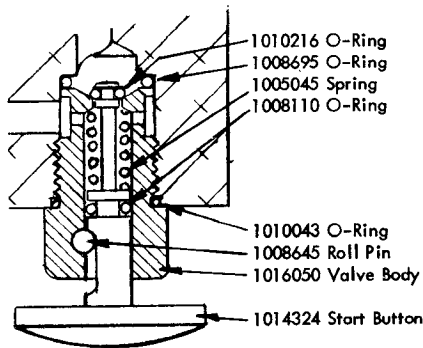
FEED BUTTON ASSEMBLIES

Early Models



Current Models

1024198 Assy



Disassemble Button Assembly and inspect.

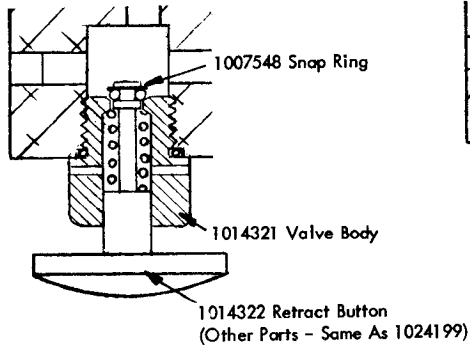
Discard Start Button not having machined flat for pin (ref. 124A) retention. Discard Valve Body not having hole for pin.

Replacement Parts:

1024198 Button Assy (Complete), or,
1008645 Roll Pin
1014324 Start Button
1016050 Valve Body

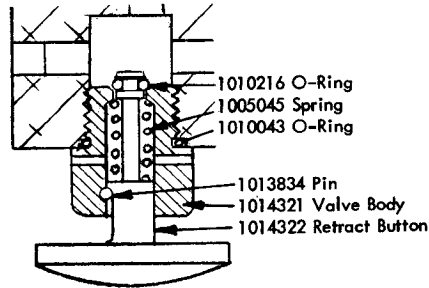
RETRACT BUTTON ASSEMBLIES

Early Models



Current Models

1024199 Assy



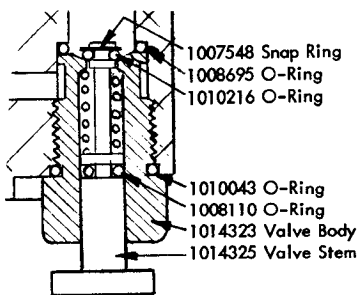
Disassemble Button Assembly and inspect.

Discard Retract Button not having machined flat for pin (ref. 131) retention. Discard Valve Body not having hole for pin.

Replacement Parts:

1024199 Button Assy (Complete), or,
1013834 Pin
1014321 Valve Body
1014322 Retract Button

PILOT VALVE ASSEMBLY



Early models included a spring as shown; remove and discard.

Install snap ring on valve stem if missing.

NYLON TUBING (Ref. Nos. 54, 106)

Use 1014957 tubing, and cut to length to fit approximately as follows:

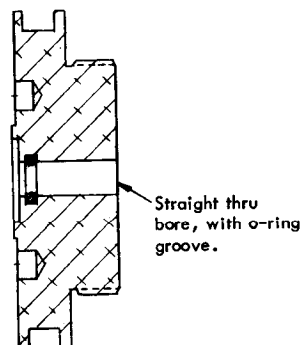
Ref. 54 : Approx. 7-7/8" long
Ref. 106: Approx. 15-13/16" long

HYDRAULIC PISTON ASSEMBLIES

1023934 Assy - For Model 15-101
1023935 Assy - For Model 20-601

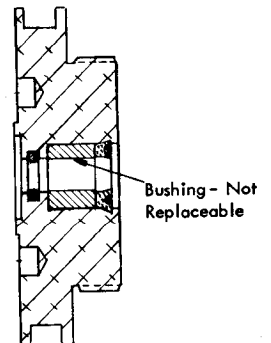
Early Models:

Includes 1015722 O-Ring Only



Current Models:

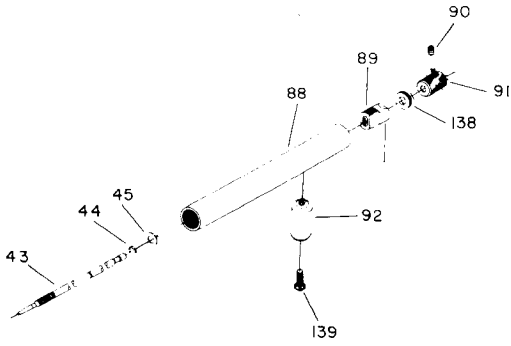
Includes 1015722 O-Ring,
1015739 Seal,
----- Bushing



Pistons must be inspected to determine type shown above. Early model must be replaced with current model.

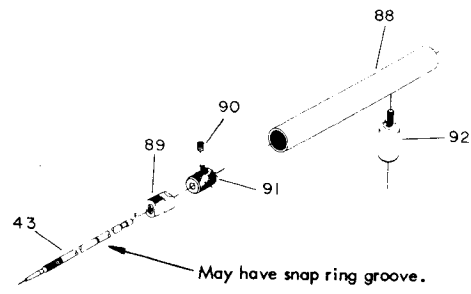
Draw Bar, Back Stop, Depth Control Knob

Early Models



- #43 1014710 Drawbar: w/o threads on back end - discard.
- #44 1014987 Klip Ring - eliminated
- #45 1015191 Washer - eliminated.
- #88 1014329 Tube } Use 1023394
- #138 1015785 Back Stop } Use 1023978
- #92 1014725 Knob }
- #139 1015771 Cap Screw }
- #90 1031538 Set Screw
- #91 1014326 Stop Collar

Current Models



- #43 1014710 Draw Bar - w/ths. on back end.
- #88 1023394 Stop Assy
- #90 1015787 Set Screw
- #91 1015786 Stop Collar
- #92 1023978 Knob

NOTE

Remove & Discard: Nos. 43 (If w/o thds on back end), 44, 45, 88, 90, 91, 92, 138, 139.

Replace With: 1014710 Draw Bar (with threads on back end).
 1023394 Stop Assy
 1023978 Knob
 1015786 Stop Collar
 1015787 Set Screw

Assembly Note:

Thread Draw Bar into Piston Assembly (ref. 38) - do not overtighten into piston to avoid damaging needle valve seat.

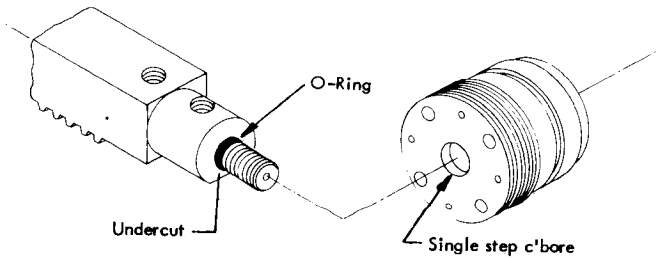
Back off on Draw Bar a maximum of 5 turns.

Seat Stop Collar (ref. 91) against end of Stop Assembly (ref. 88) and tighten Set Screw (ref. 90).

RACK & RETAINER NUT

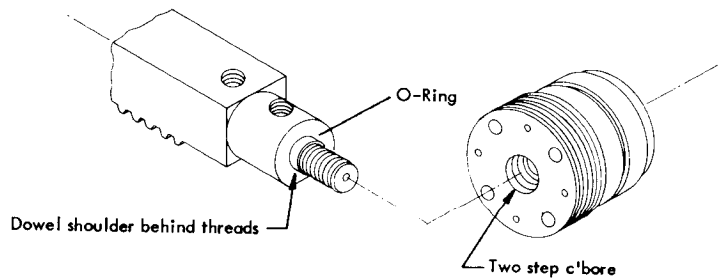
Early Models

- 1014712 Rack
- 1014340 Retainer Nut
- O-Ring



Current Models

- 1014712 Rack
- 1014340 Retainer Nut
- 1009371 O-Ring



Discard Rack with undercut behind threads; discard Retainer Nut with single step counterbore. Discard o-ring.

Replace with current design parts as described above.

Assembly Note

Tighten rack to solid position, then back it off to align hydraulic fitting halfway between two indicator rods.