

INDEX FOR VALVE SYSTEM

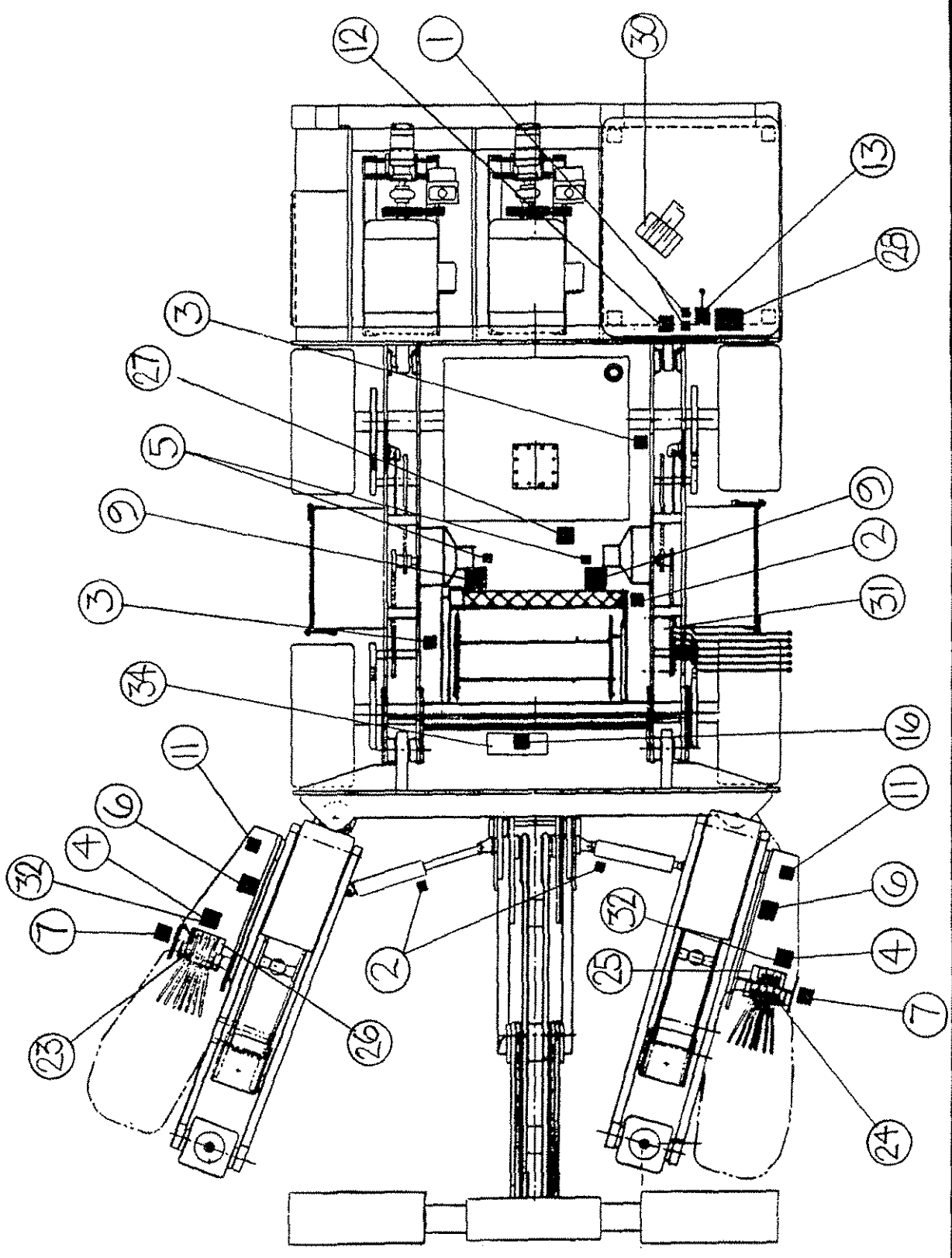
90121 & 122

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>	<u>SHEET NO.</u>	<u>NO. REQ'D</u>
17	CONTROL VALVE SECTION	29363	HV-1112	21
18	WORKING VALVE SECTION	29366	HV-1113	1
19	WORKING VALVE SECTION	29383	HV-1121	1
20	WORKING VALVE SECTION	29377	HV-1124	2
21	WORKING VALVE SECTION	29409	HV-1124A	2
22	WORKING VALVE SECTION	29370	HV-1126	1
23	CONTROL VALVE ASSEMBLY (RH BOOM)	147075	HV-1128	1
24	CONTROL VALVE ASSEMBLY (LH BOOM)	147076	HV-1129	1
25	CONTROL VALVE ASS'Y (LEFT BOOM)	147071	HV-1130A	1
26	CONTROL VALVE ASS'Y (RIGHT BOOM)	147071	HV-1130B	1
27	MAIN SAFETY RELIEF VALVE	36763	HV-1141	1
28	CONTROL VALVE ASSEMBLY	147088	HV-1149	1
29	RELIEF VALVE CARTRIDGE	29410	HV-1151	6
30	TRAM CONTROL VALVE ASSEMBLY	147187	HV-1249	1
31	POSITION CONTROL VALVE ASS'Y	147246	HV-1298	1
32	BOLT TIGHTENER SEQUENCE VALVE	36746	HV-1480	2
33	VALVE HANDLE ARRANGEMENT	41513	HY-40	27
34	HYDRAULIC ACCUMULATOR (TRS RAISE)	45414	HY-130	1
35	POSITION CONTROL STATION		MY-323	1

INDEX FOR VALVE SYSTEM

90121 & 122

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>	<u>SHEET NO.</u>	<u>NO. REQ'D</u>
HYDRAULIC CIRCUIT				
1	TRAM SYSTEM CHECK VALVE ASS'Y	2531 (BI-7)	HV-76	2
2	FLOW CONTROL ASSEMBLY (SWING & SPOOLER OILER)	31468	HV-170	3
3	FLOW CONTROL VALVE ASSEMBLY (FRONT LIFT, REAR LIFT,)	31508	HV-252	3
4	BOLT TIGHTENER PILOT RELIEF	31509	HV-254	2
5	DISC BRAKE SHUTTLE VALVE ASS'Y	31530	HV-330	2
6	RELIEF & FLOW CONTROL VALVE (DRILL FEED)	31538	HV-337	2
7	DIRECION CONTROL VALVE (BOLT TIGHTENER)	31569	HV-360	2
8	PILOT CHECK CARTRIDGE	31577	HV-401	11
9	TRAM SYSTEM MOTION CONTROL VALVE	31654	HV-589	2
11	DRILL CANOPY RELIEF VALVE	31658	HV-634	2
12	CABLE REEL SPEED CONTROL VALVE	33641	HV-915	1
13	DUAL DIVERSION VALVE ASSEMBLY (PUMP CONTROL)	47447	HV-1020	1
16	TRS RAISE, CHECK, & RELIEF VALVE	33787	HV-1044	1



SHEET NO.

TITLE

LOCATIONS FOR VALVE SYSTEM

DATE

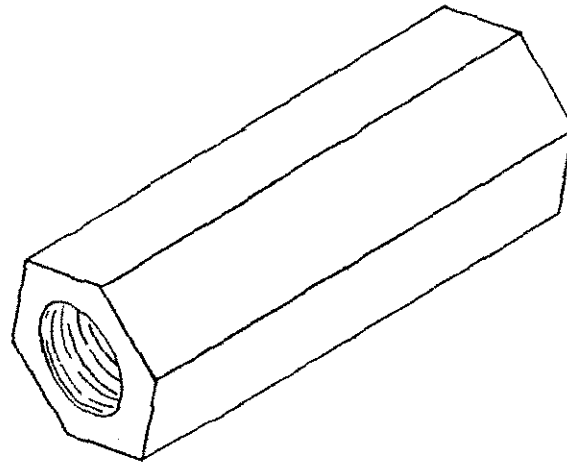
R

J. H. FLETCHER & CO.
 HUNTINGTON, W. VA.
 707 WEST 7TH STREET

NOTE:
NO PARTS RECOMMENDED FOR FIELD SERVICE.
REPLACE COMPLETE CHECK VALVE ASSEMBLY.

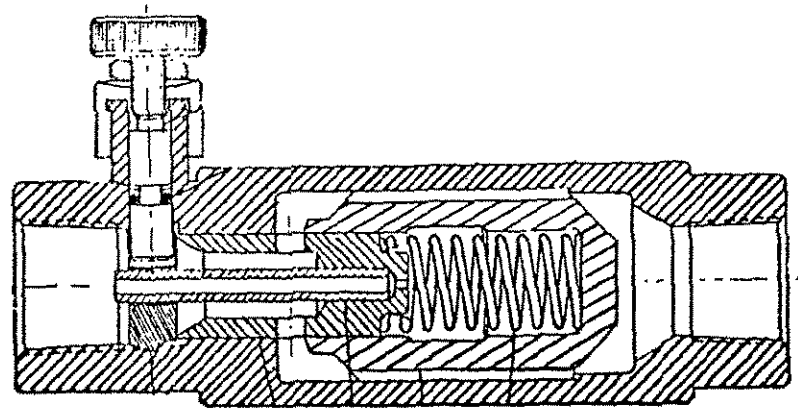
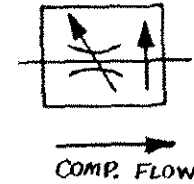


GRAPHICAL SYMBOL



2 REQ'D FOR THE TRAM SYSTEM

SHEET NO.	TITLE	DATE	R	J. H. FLETCHER & CO.	
HV-76	2531 CHECK VALVE ASSEMBLY (BI-7)	9/30/82		707 WEST 7TH STREET	HUNTINGTON, W. VA.

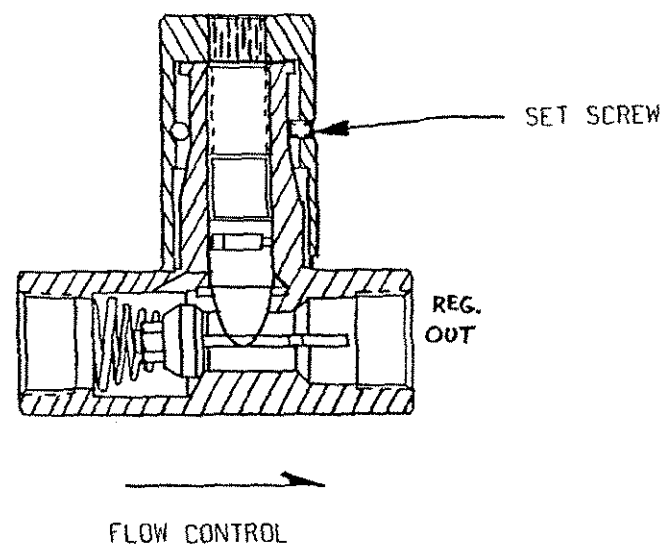
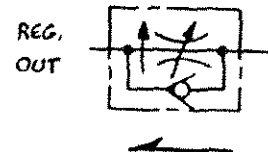


NOTE: NO PARTS ARE RECOMMENDED FOR FIELD SERVICE.
REPLACE COMPLETE VALVE.

3 REQ'D

1 REQ'D FOR THE SPOOLER OILER
2 REQ'D, 1 FOR EACH BOOM SWING

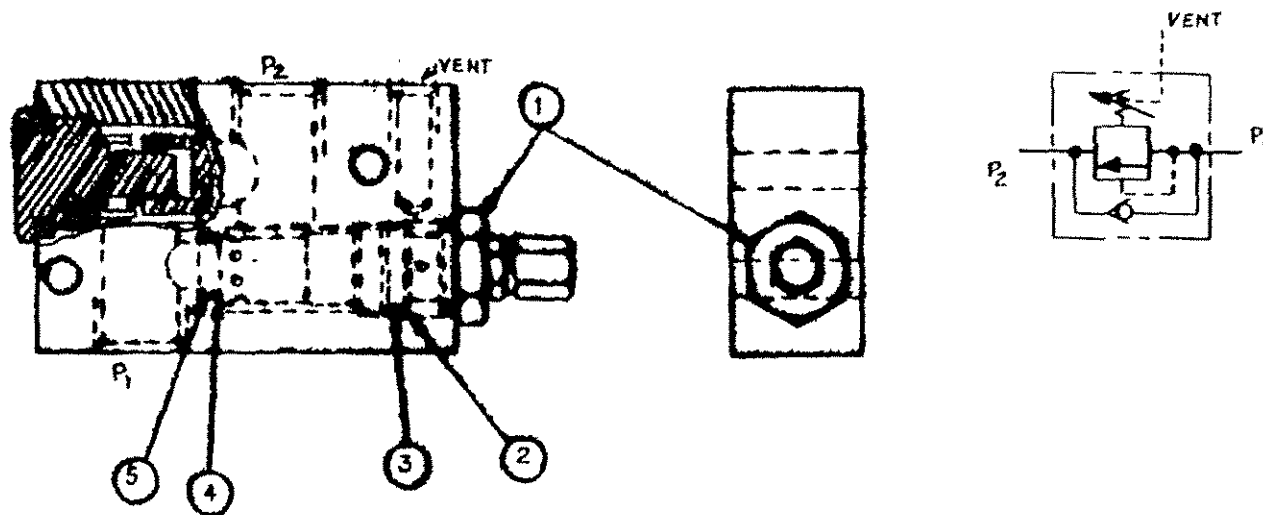
SHEET NO.	TITLE	DATE	R	J. W. FLETCHER & CO. 707 WEST 7TH STREET HUNTINGTON VA.
HV-170	31468 ADJUSTABLE FLOW CONTROL VALVE	10/18/65		



NOTE:
 NO PARTS ARE RECOMMENDED FOR FIELD
 SERVICE. REPLACE COMPLETE VALVE.

- 2 REQ'D
- 1 REQ'D FOR THE FRONT LIFT
- 1 REQ'D FOR THE REAR LIFT

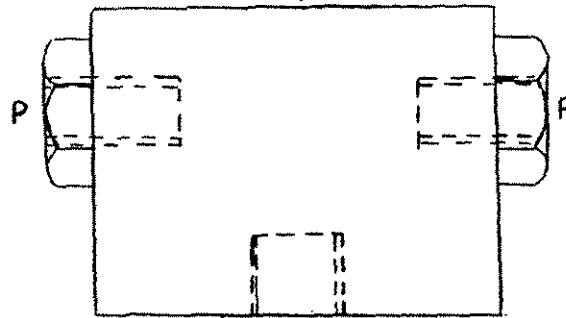
SHEET NO. HV-252	TITLE 31508 FLOW CONTROL VALVE	DATE 4/7/80	R	J. W. FLETCHER & CO. 707 WEST 7TH STREET HUNTING W. VA.
---------------------	-----------------------------------	----------------	---	---



<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>	<u>NO. REQ'D</u>
1.	CARTRIDGE COMPLETE	45238	1
2.	TEFLON BACK-UP	21413	1
3.	"O" RING	21415	1
4.	TEFLON BACK-UP	21414	1
5.	"O" RING	21416	1

2 REQ'D, 1 FOR EACH BOLT TIGHTENER

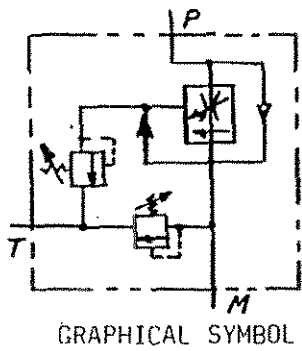
SHEET NO. HV-254	TITLE 31509 PILOT OPERATED RELIEF VALVE	DATE 11-18-68	R	J. N. FLETCHER & CO. 707 WEST 7TH STREET HUNTINGTON, W. VA.
---------------------	--	------------------	---	--



NOTE: NO PARTS ARE RECOMMENDED FOR FIELD SERVICE. REPLACE COMPLETE VALVE.

2 REQ'D FOR DISC BRAKES

SHEET NO.	TITLE	DATE	R	J. H. FLETCHER & CO. 707 WEST 7TH STREET HUNTINGTON, W. VA.
HV-330	31530 SHUTTLE VALVE			



23433 ADJUSTMENT ASSEMBLY

25440 KNOB KIT

23455 RELIEF CARTRIDGE

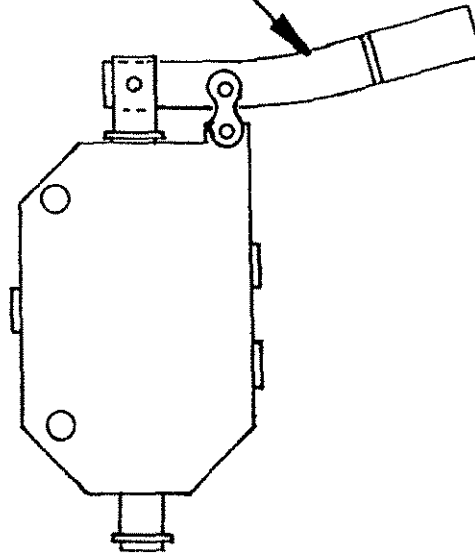
23435 CHECK PARTS GROUP

23434 FLOW REGULATOR ASSEMBLY

2 REQ'D, 1 FOR EACH DRILL FEED

<p>SHEET NO. IIV-337</p>	<p>TITLE 31538 RELIEF & FLOW CONTROL VALVE PACKAGE</p>	<p>DATE 2/8/83</p>	<p>R J. H. FLETCHER & CO. 787 WEST 7TH STREET HUNTINGTON, W. VA.</p>
-------------------------------------	---	-------------------------------	--

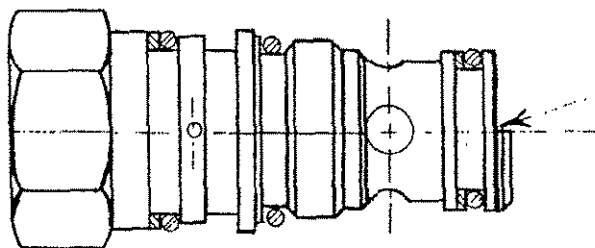
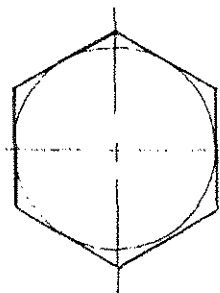
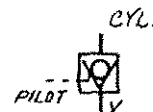
36823 HANDLE KIT



NOTE: NO PARTS ARE RECOMMENDED FOR SERVICE. THE COMPLETE VALVE MUST BE REPLACED.

2 REQ'D, 1 FOR EACH BOLT TIGHTENER

SHEET NO. HV-360	TITLE 31569 DIRECTION CONTROL VALVE	DATE 12-12-72	R	J. H. FLETCHER & CO. 707 WEST 7TH STREET HUNTINGTON, W. VA.
---------------------	--	------------------	---	---



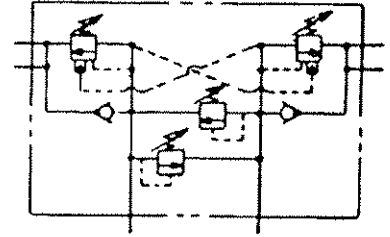
LOCK PORT AREA

35387 O-RING & BACK-UP KIT

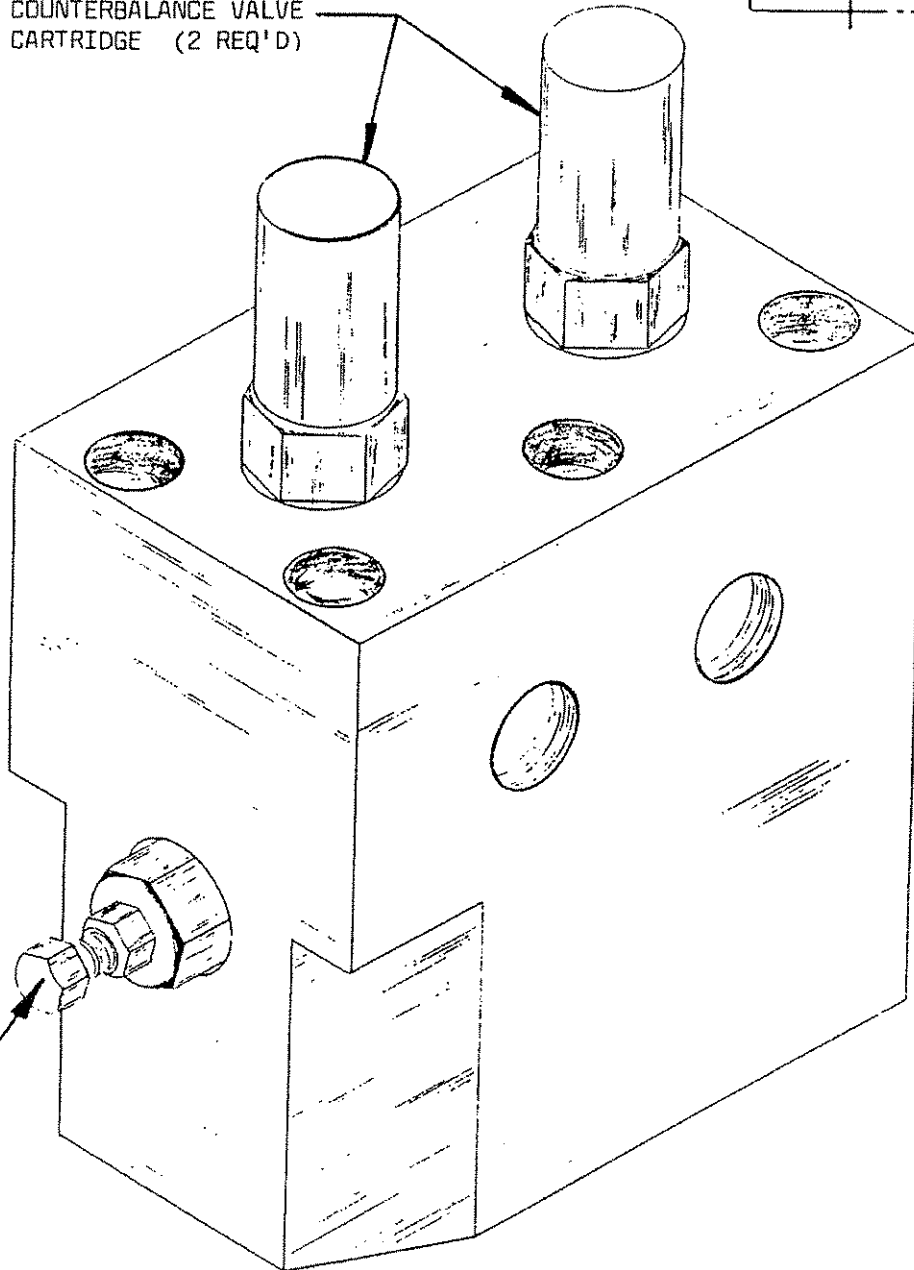
11 REQ'D

- 1 REQ'D FOR EACH TRS RAISE CYLINDER
- 2 REQ'D, 1 FOR EACH FRONT LIFT CYLINDER
- 2 REQ'D, 1 FOR EACH REAR LIFT CYLINDER
- 2 REQ'D, 1 FOR EACH DRILL CANOPY RAISE CYLINDER
- 2 REQ'D, 1 FOR EACH BOOM SWING CYLINDER
- 2 REQ'D, 1 FOR EACH BOOM FOOT CYLINDER

<p>SHEET NO. HV-401</p>	<p>TITLE 31577 PILOT CHECK VALVE CARTRIDGE</p>	<p>DATE 6-5-74</p>	<p>R</p>	<p>J. H. FLETCHER & CO. 707 WEST 7TH STREET HUNTINGTON, W. VA.</p>
-----------------------------	--	------------------------	----------	---



33608 COUNTERBALANCE VALVE
CARTRIDGE (2 REQ'D)



33728 RELIEF VALVE CARTRIDGE (2 REQ'D)

2 REQ'D FOR THE TRAM SYSTEM

TITLE

31654 MOTION CONTROL VALVE ASSEMBLY

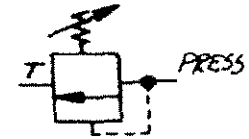
J. H. FLETCHER & CO.

707 WEST 7TH STREET

HUNTINGTON W VA

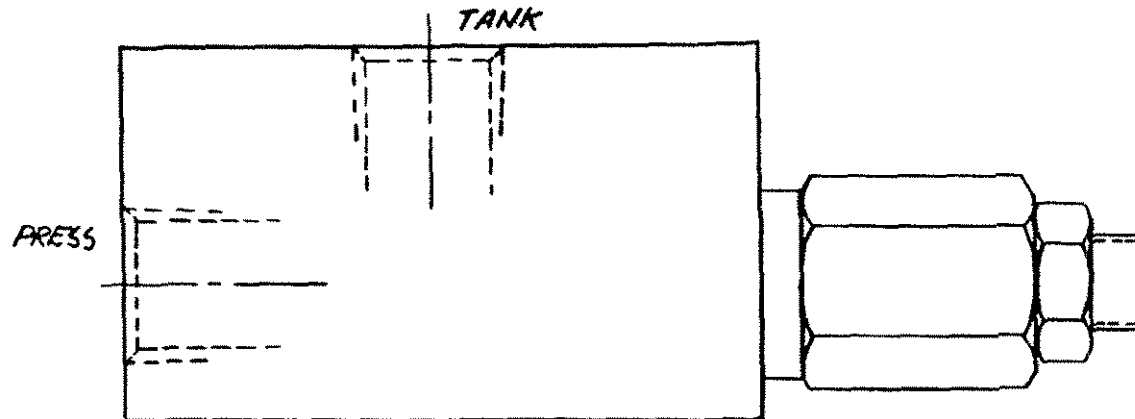
SHEET NO.

HV-589



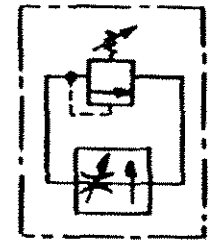
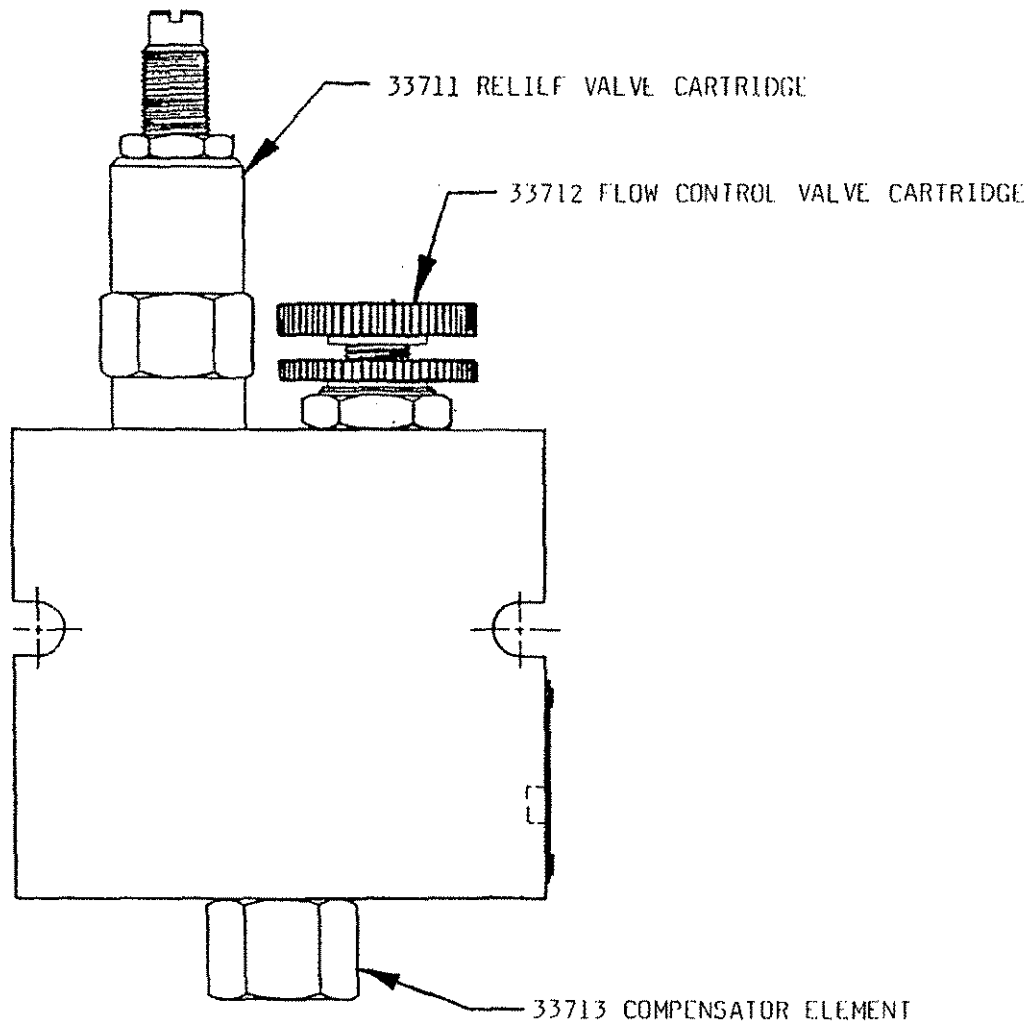
NOTE:

NO PARTS ARE RECOMMENDED FOR FIELD SERVICE,
REPLACE COMPLETE VALVE.



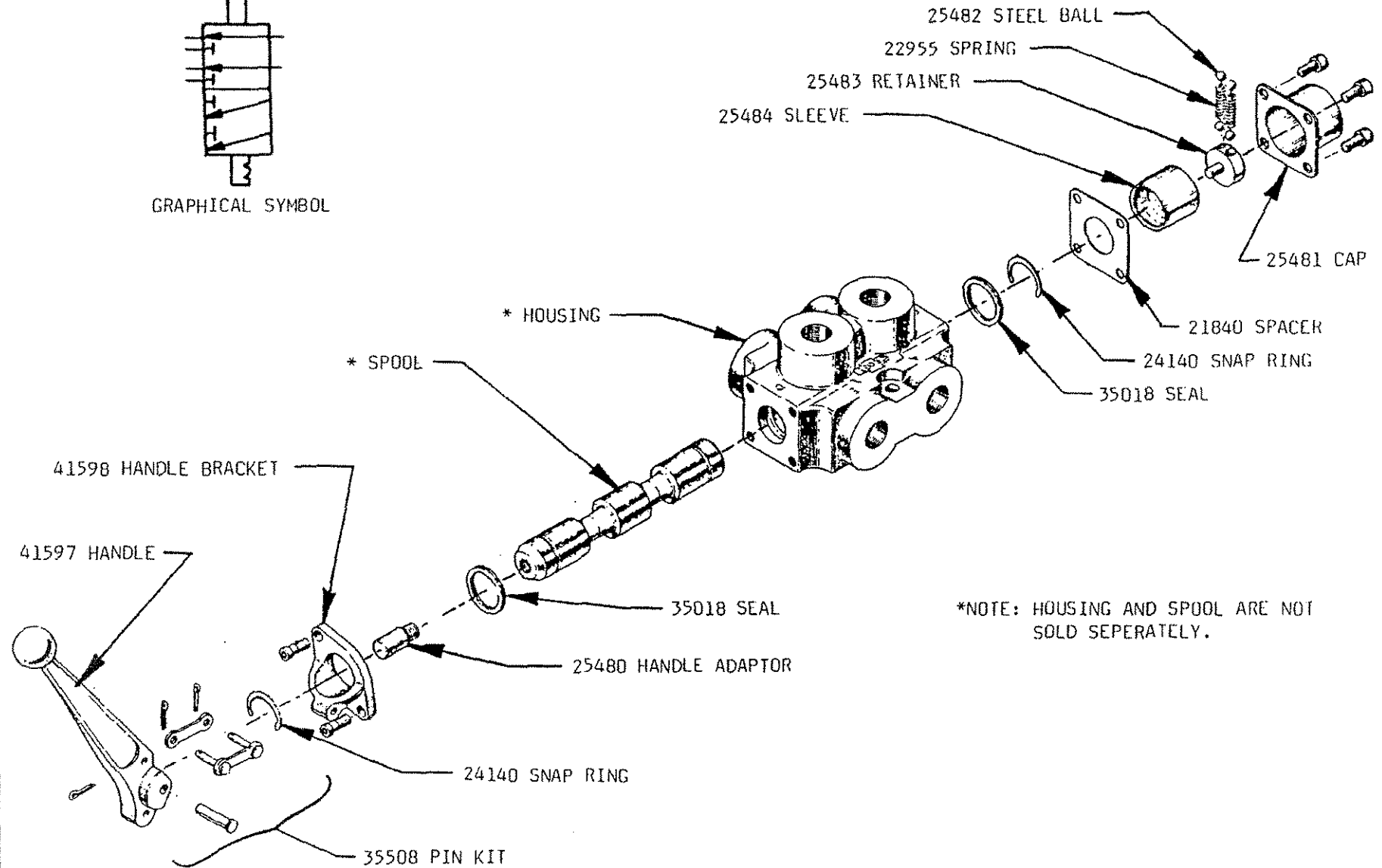
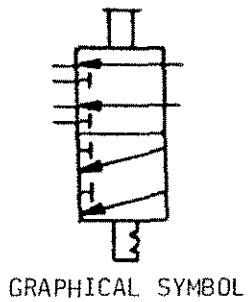
2 REQ'D, 1 FOR EACH DRILL CANOPY

SHEET NO.	TITLE	DATE	R	J. W. FLETCHER & CO.
HV-634	31658 RELIEF VALVE	5-25-78		707 WEST 7TH STREET HUNTINGTON, W. VA.



1 REQ'D FOR CABLE REEL

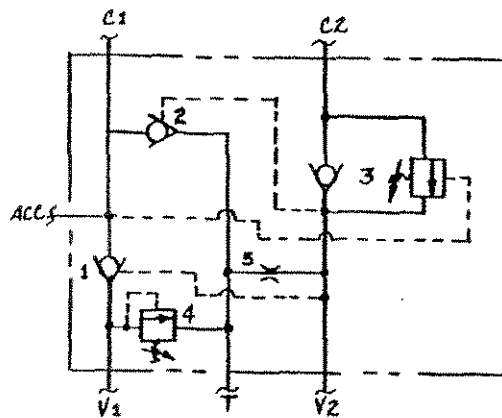
<p>SHEET NO. HV-915</p>	<p>TITLE 33641 RELIEF & FLOW CONTROL VALVE</p>	<p>DATE 12/8/61</p>	<p>R</p>	<p>J. H. FLETCHER & CO. 707 WEST 7TH STREET HUNTINGTON, W. VA.</p>
------------------------------------	---	--------------------------------	-----------------	---



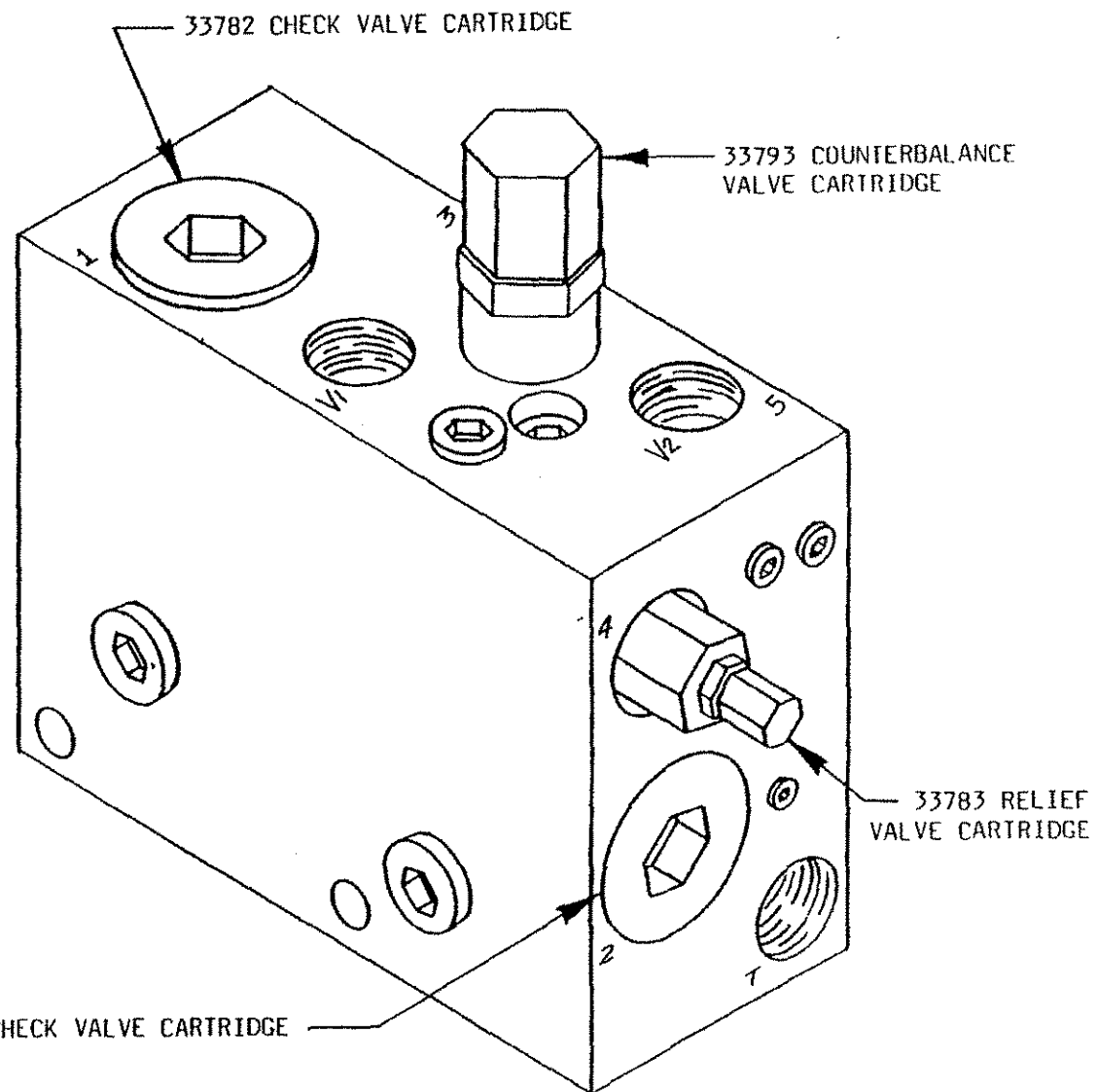
*NOTE: HOUSING AND SPOOL ARE NOT SOLD SEPERATELY.

1 REQ'D FOR THE PUMP SYSTEM

SHEET NO.	TITLE	DATE	R	J. H. FLETCHER & CO.	
HV-1020	47447 DUAL DIVERSION VALVE ASSEMBLY	10-1-84		707 WEST 7TH STREET	HUNTINGTON, W. VA.



GRAPHICAL SYMBOL



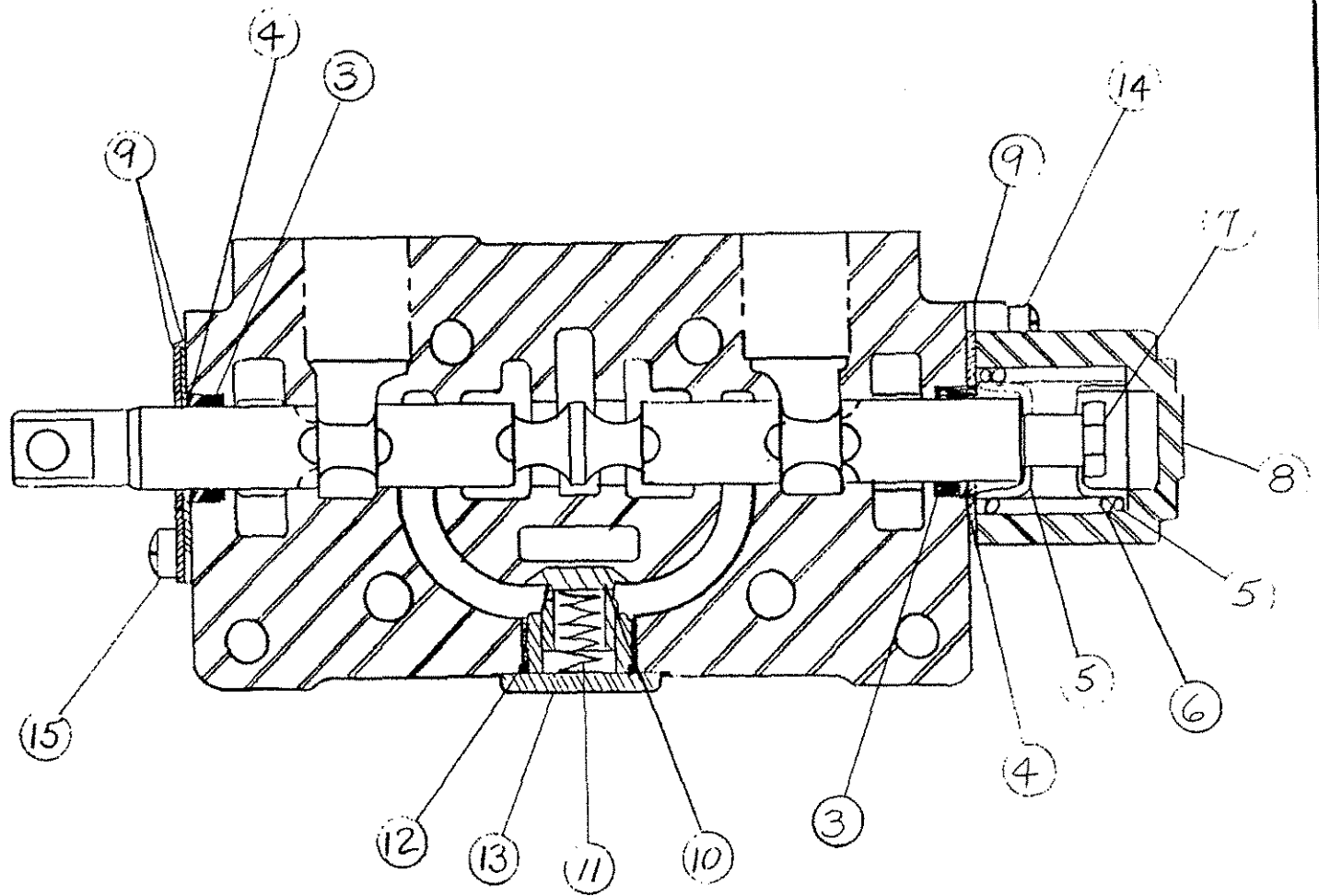
1 REQ'D FOR THE TRS RAISE

SHEET NO.	TITLE	DATE	R	J. M. FLETCHER & CO. 707 WEST 7TH STREET HUNTINGTON, W. VA.
HV-1044	33787 CHECK & RELIEF VALVE PACKAGE	3/5/85		

SHEL NO.	TITLE	DATE	R	J. H. FLETCHER & CO. 707 WEST 7TH STREET HUNTINGTON, W. VA.
HV-1112	29363 SPRING RETURN SECTION	6-16-86		

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>NO. REQ'D</u>
3	24405	QUAD SEAL	2
4	35074	BACK-UP RING (TFE)	2
5	23003	GUIDE SPRING	2
6	22979	RETURN SPRING	1
7	20003	STRIPPER BOLT	1
8	23479	VALVE CAP	1
9	23002	RETAINING PLATE	3
10	25532	POPPET CHECK	1
11	22978	CHECK SPRING	1
12	21254	O-RING CHECK	1
13	25531	CHECK CAP	1
14	24921	FILISTER Hd SCREW (3/4" Lg.)	2
15	130043	FILISTER Hd SCREW (1/2" Lg.)	2
16	21257	SECTION SEAL (SQ.)	1
17	25212	SECTION SEAL (SQ.)	3

Items not shown on drawing are used in the assembly of the control valve (#16 & 17)



21 REQ'D

SHEET NO.

HV-1112

TITLE

29363 SPRING RETURN SECTION

DATE

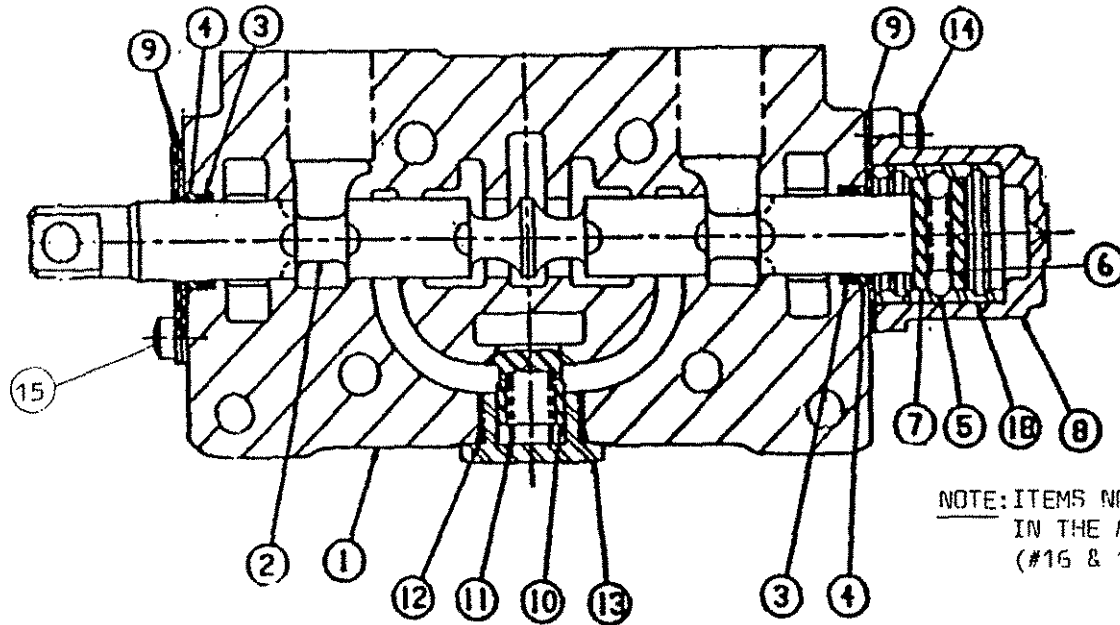
6-16-86

R

J. W. FLETCHER & CO.

707 WEST 7TH STREET

HUNTINGTON, W. VA.



NOTE: ITEMS NOT SHOWN ON DRAWING ARE USED
IN THE ASSEMBLY OF THE VALVE
(#16 & 17)

ITEM	PART NO.	DESCRIPTION	NO. REQ'D
3	24405	QUAD SEAL	2
4	35074	BACK-UP RING (TFE)	2
5	23481	BALL	2
6	22915	DETENT SPRING	1
7	23056	DETENT RETAINER	1
8	23479	VALVE CAP	1
9	23002	RETAINING PLATE	3
10	25532	POPPET CHECK	1
11	22978	SPRING CHECK	1
12	35075	O-RING, CHECK	1
13	25531	CHECK CAP	1
14	24921	FILISTER Hd. SCREW (3/4" Lg)	2
15	130043	FILISTER Hd. SCREW (1/2" Lg)	2
16	21257	SECTION SEAL (SQ)	1
17	25212	SECTION SEAL (SQ)	3
18	23054	DETENT SLEEVE	1

SHEET NO.	TITLE	DATE	R	J. H. FLETCHER & CO.
HV-1113	29366 VALVE SECTION	6-16-86		707 WEST 7TH STREET HUNTINGTON, W. VA.

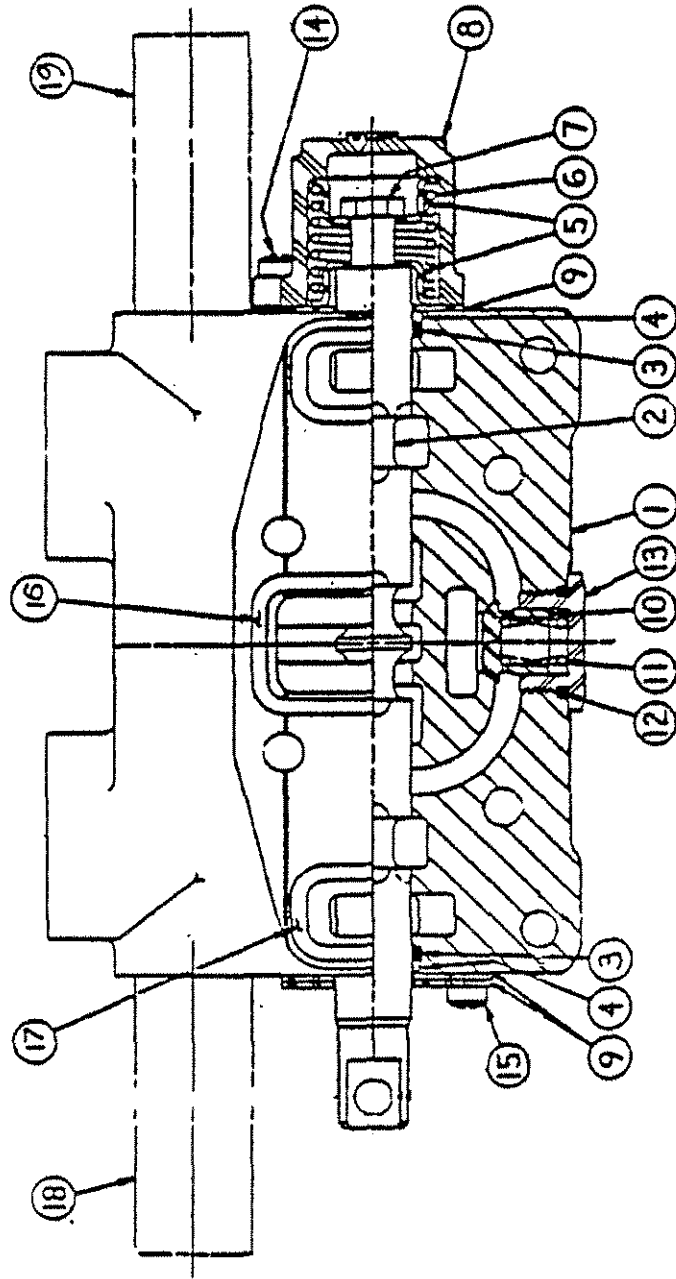
SHEET NO. HV-1124	TITLE 29377 VALVE SECTION	DATE 7-15-86	R	J. H. FLETCHER & CO. 707 WEST 7TH STREET HUNTINGTON W VA
----------------------	------------------------------	-----------------	---	--

NOTE: TOP PORT BEING HANDLE END OF VALVE.
 (*) INDICATES PARTS & REQUIREMENTS OF VALVE

PORT RELIEFS		CARTRIDGES		
* TOP	* PRESET	SCREW ADJUSTABLE	PRESURE SETTING	500
* BOTTOM	* PRESET	SCREW ADJUSTABLE	PRESURE SETTING	500

ITEM	PART NO.	DESCRIPTION	NO. REQ'D
3	24405	QUAD SEAL	2
4	35074	BACK-UP RING	2
5	23003	SPRING GUIDE	2
6	22979	RETURN SPRING	1
7	20003	STRIPPER BOLT	1
8	23479	VALVE CAP	1
9	23002	RETAINING PLATE	3
10	25532	POPPET CHECK	1
11	22978	CHECK SPRING	1
12	35075	O-RING CHECK	1
13	25531	CHECK CAP	1
14	24921	FILISTER Hd. SCREW (3/4"Lg.)	2
15	130043	FILISTER Hd. SCREW (1/2"Lg.)	2
16	21257	SECTION SEAL (SQ.)	1
17	25212	SECTION SEAL (SQ.)	3
18	29410	RELIEF CARTRIDGE (SEE SHEET HV-1151 or 1152 FOR PARTS)	
19	29428	PLUG (FOR VALVE 29378 ONLY)	1

NOTE: SPOOLS AND VALVE BODY ARE SOLD AS A UNIT ONLY.



2 REQ'D

SHEET NO.

HV-1124

TITLE

29377 VALVE SECTION

DATE

7-15-86

R

J. H. FLETCHER & CO.
 707 WEST 7TH STREET
 HUNTINGTON, W. VA.

SHEE. J.	TITLE	DATE	R	J. H. FLETCHER & CO. 707 WEST 7TH STREET HUNTINGTON W VA
HV-1124 A	<u>2937B</u> VALVE SECTION	7-15-86		

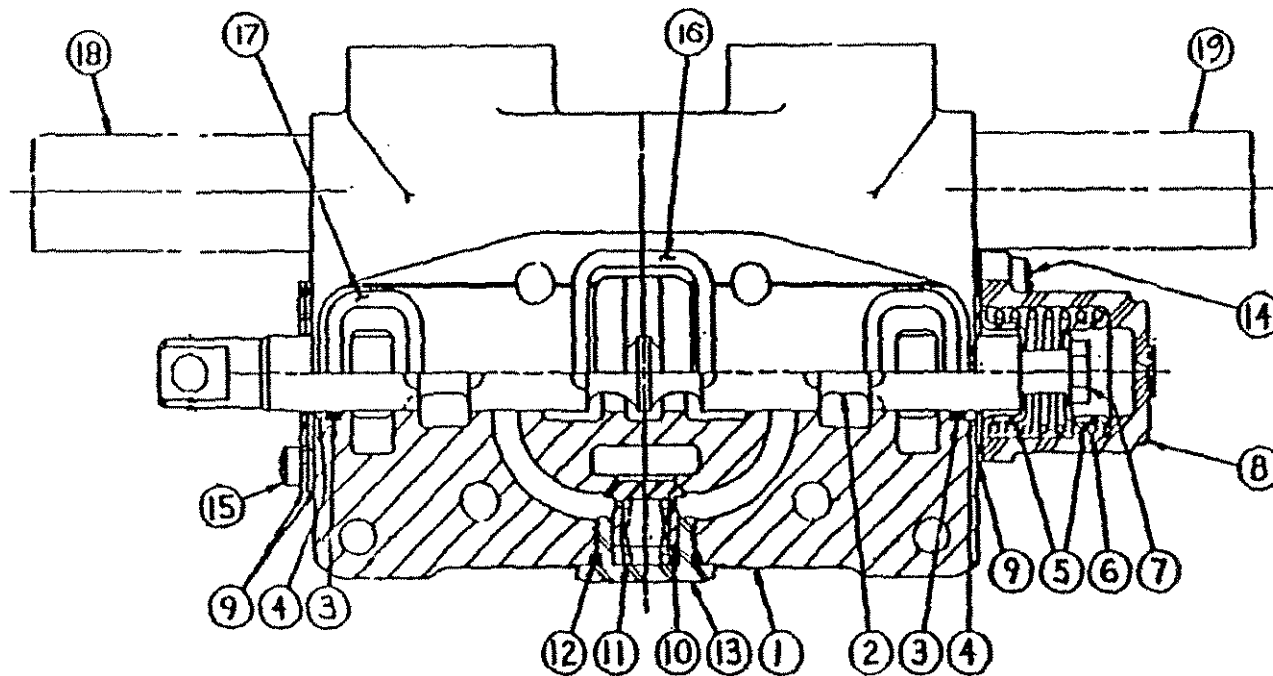
NOTE: TOP PORT BEING HANDLE END OF VALVE.

(*) INDICATES PARTS & REQUIREMENTS OF VALVE.

PORT RELIEFS		CARTRIDAGES		
* TOP	* PRESET	SCREW ADJUSTABLE	PRESURE SETTING	<u>500</u>
BOTTOM	PRESET	SCREW ADJUSTABLE	PRESURE SETTING	<u> </u>

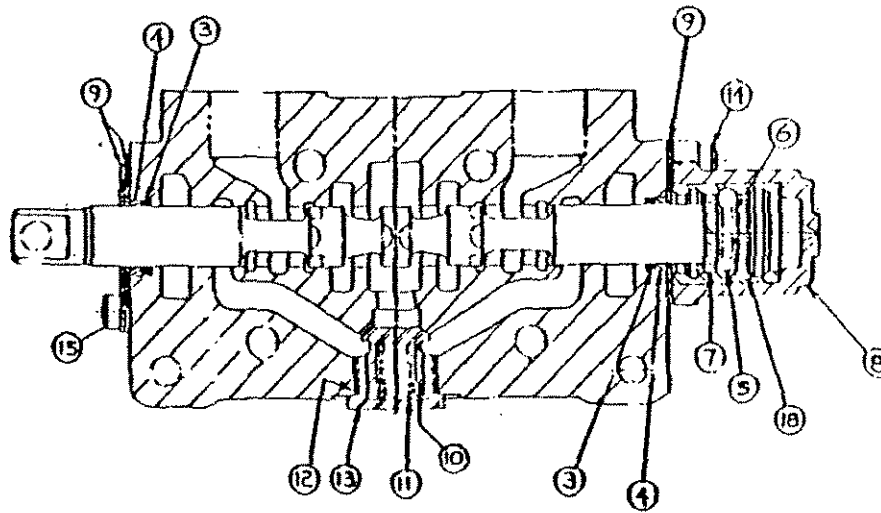
ITEM	PART NO.	DESCRIPTION	NO. REQ'D
3	24405	QUAD SEAL	2
4	35074	BACK-UP RING	2
5	23003	SPRING GUIDE	2
6	22979	RETURN SPRING	1
7	20003	STRIPPER BOLT	1
8	23479	VALVE CAP	1
9	23002	RETAINING PLATE	3
10	25532	POPPET CHECK	1
11	22978	CHECK SPRING	1
12	35075	O-RING CHECK	1
13	25531	CHECK CAP	1
14	24921	FILISTER Hd. SCREW (3/4"Lg.)	2
15	130043	FILISTER Hd. SCREW (1/2"Lg.)	2
16	21257	SECTION SEAL (SQ.)	1
17	25212	SECTION SEAL (SQ.)	3
18	<u>29410</u>	RELIEF CARTRIDGE (SEE SHEET HV-1151 or 1152 FOR PARTS)	
19	<u>29428</u>	PLUG (FOR VALVE 2937B ONLY)	1

NOTE: SPOOLS AND VALVE BODY ARE SOLD AS A UNIT ONLY.



2 REQ'D

SHEET NO.	TITLE	DATE	R	J. W. FLETCHER & CO.
HV-1124A	2937B VALVE SECTION	7-15-86		707 WEST 7TH STREET, HUNTINGTON, W. VA.



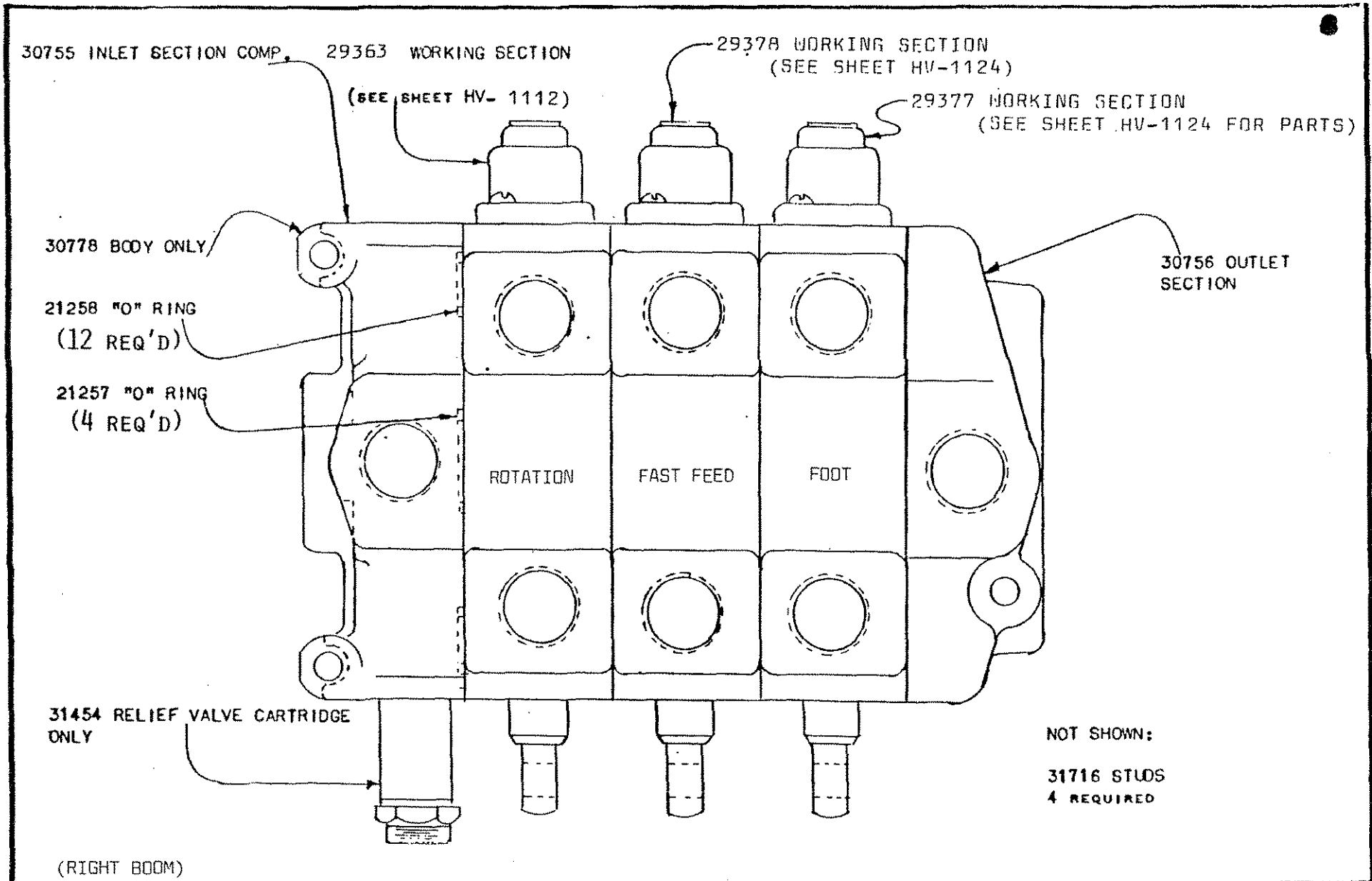
1 REQ'D

ITEM	PART NO.	DESCRIPTION	NO. REQ'D
3	24405	QUAD SEAL	2
4	35074	BACK-UP RING	2
5	23481	BALL	2
6	22915	DETENT SPRING	1
7	23056	DETENT RETAINER	1
8	23479	VALVE CAP	1
9	23002	RETAINING PLATE	3
10	25532	POPPET CHECK	1
11	22978	SPRING CHECK	1
12	21254	D-RING CHECK	1
13	25531	CHECK CAP	1
14	24921	FILISTER Hd. SCREW	2
15	130043	FILISTER Hd. SCREW	2
16	21257	SECTION SEAL (SQ)	1
17	25212	SECTION SEAL (SQ)	3
18	23054	DETENT SLEEVE	1

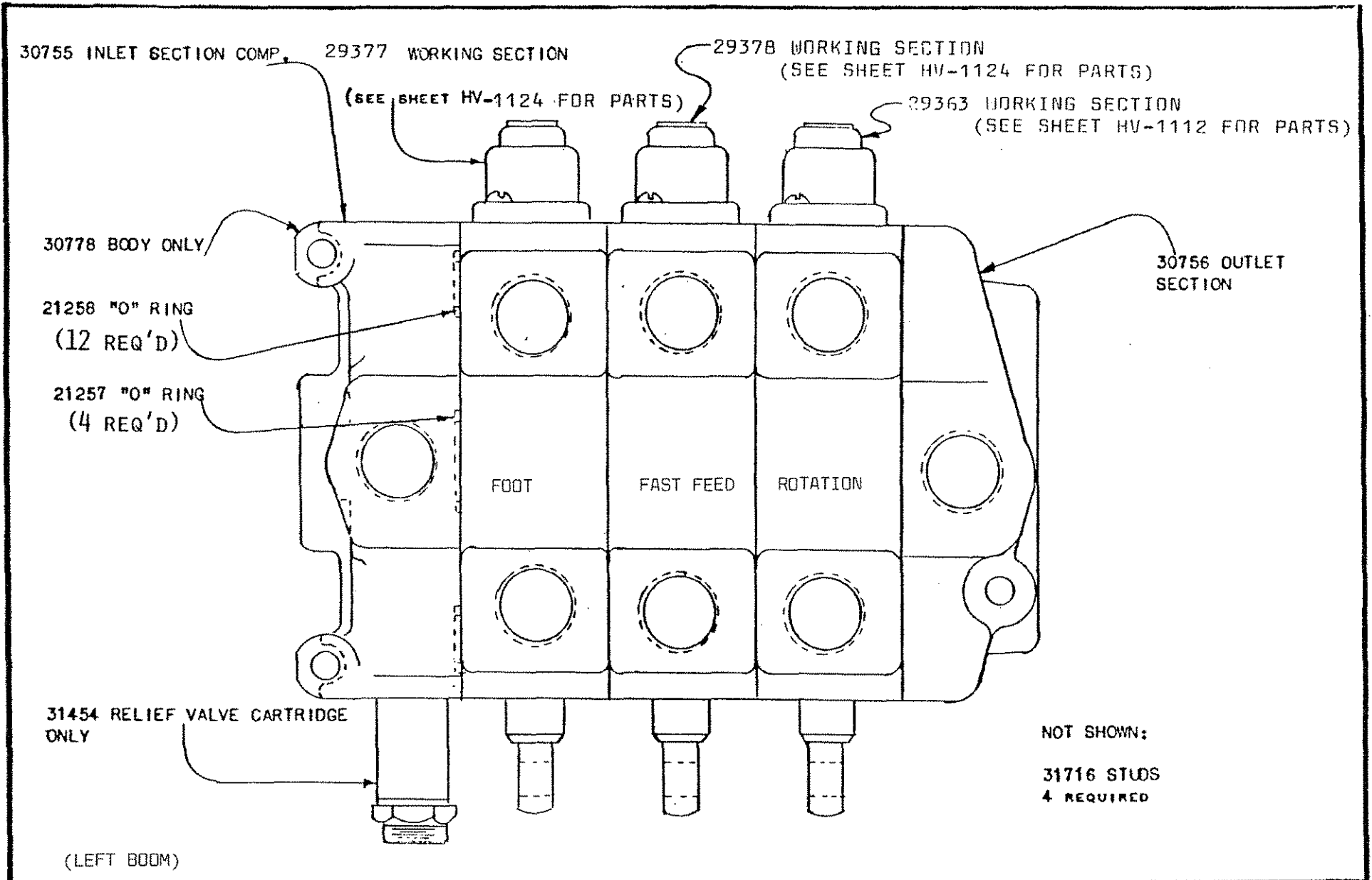
NOTE: HOUSING & SPOOL ARE NOT SOLD SEPERATLY.
SOLD AS UNIT ONLY

NOTE: ITEMS (16 & 17) NOT SHOWN ON DRAWING. ARE USED
IN THE ASSEMBLY OF THE VALVE.

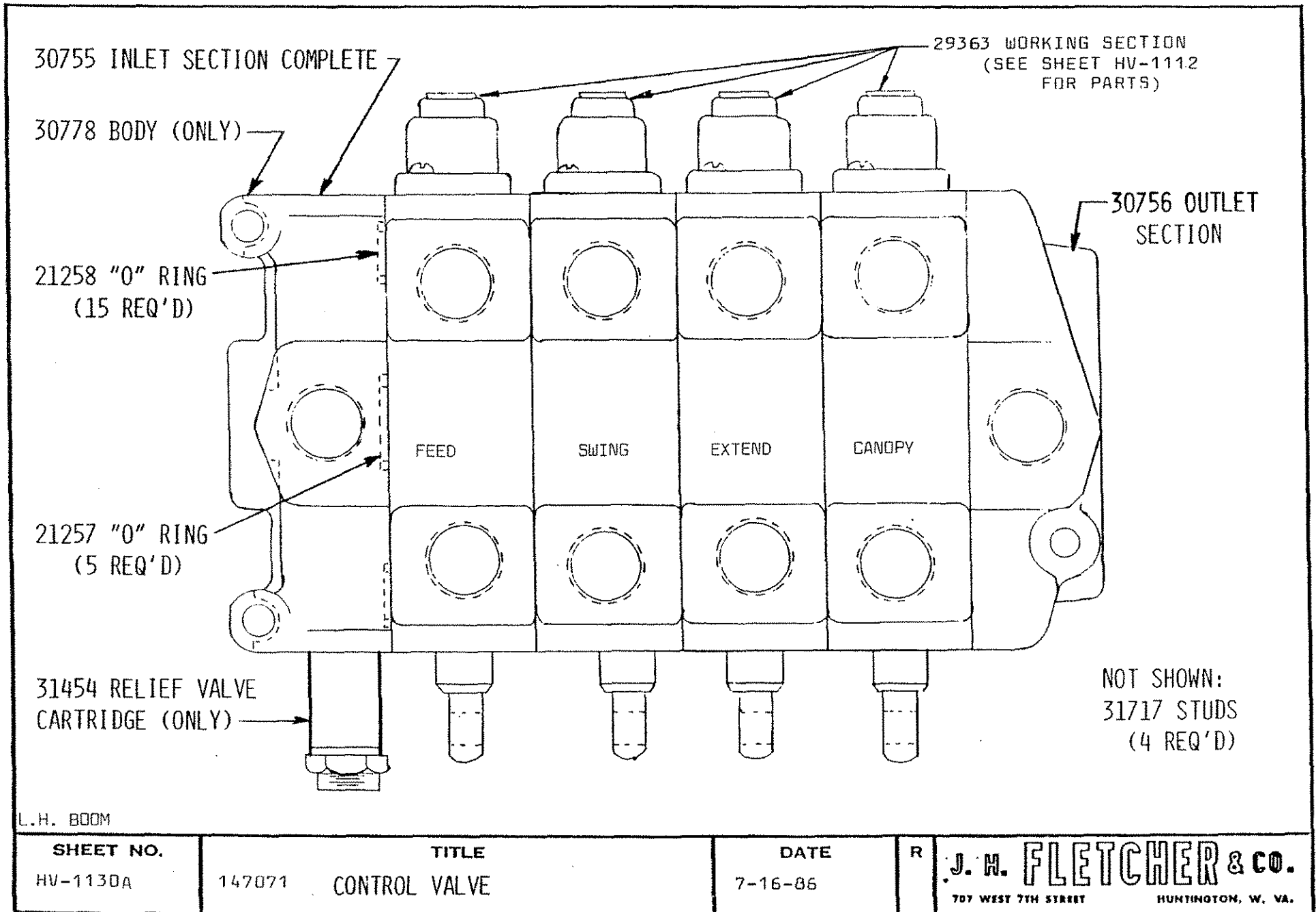
SHEET NO.	TITLE	DATE	R	J. H. FLETCHER & CO.
HV-1126	29370 VALVE SECTION	7-15-86		707 WEST 7TH STREET HUNTINGTON, W. VA.



SHEET NO. HV-1128	147075	TITLE CONTROL VALVE	DATE 7-16-86	R J. H. FLETCHER & CO. 707 WEST 7TH STREET HUNTINGTON, W. VA.
----------------------	--------	------------------------	-----------------	---



SHEET NO. HV-1129	147076	TITLE CONTROL VALVE	DATE 7-16-86	R	J. M. FLETCHER & CO. 707 WEST 7TH STREET HUNTINGTON, W. VA.
----------------------	--------	------------------------	-----------------	---	---



30755 INLET SECTION COMPLETE

30778 BODY (ONLY)

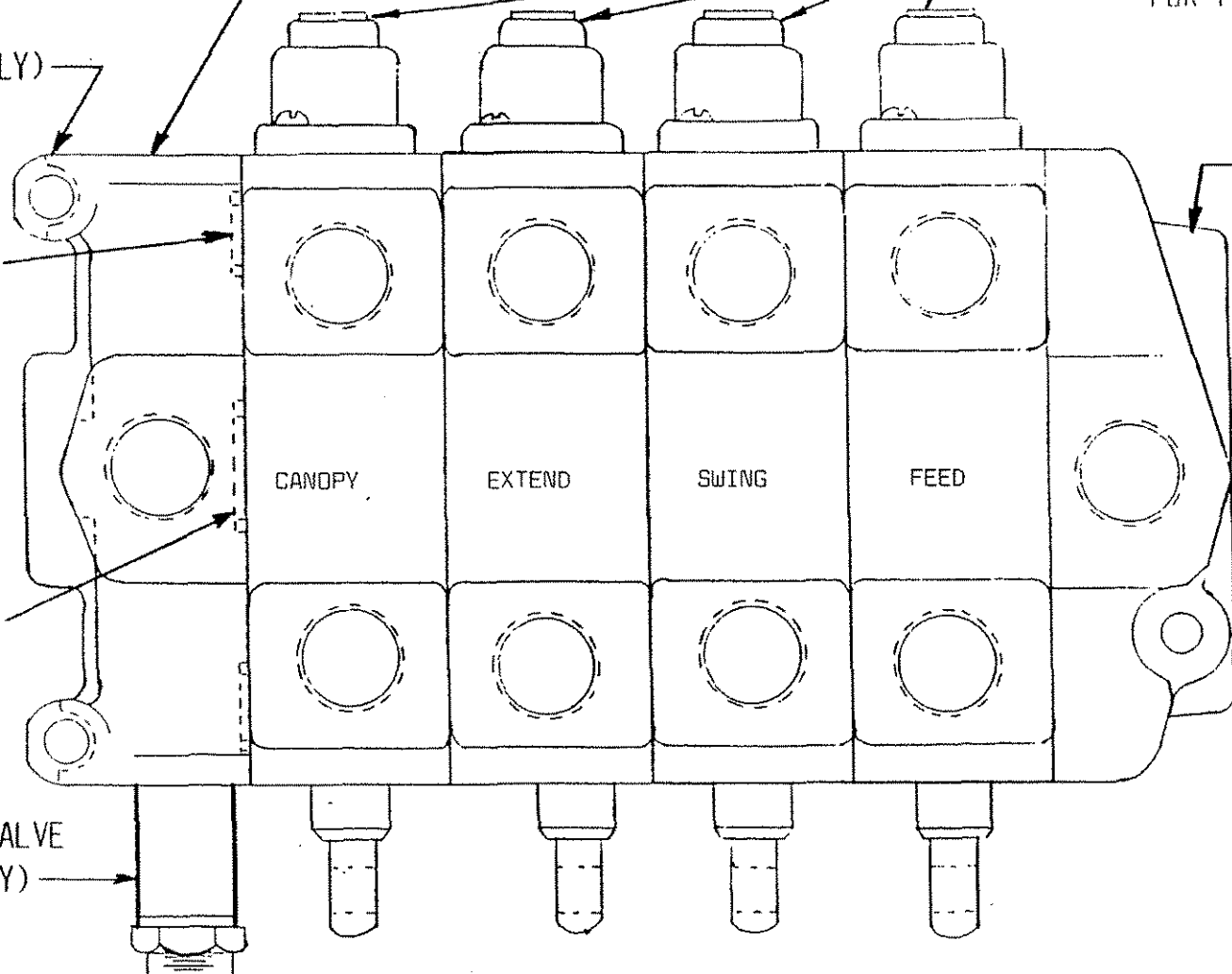
21258 "O" RING
(15 REQ'D)

21257 "O" RING
(5 REQ'D)

31454 RELIEF VALVE
CARTRIDGE (ONLY)

29363 WORKING SECTION
(SEE SHEET HV-1112
FOR PARTS)

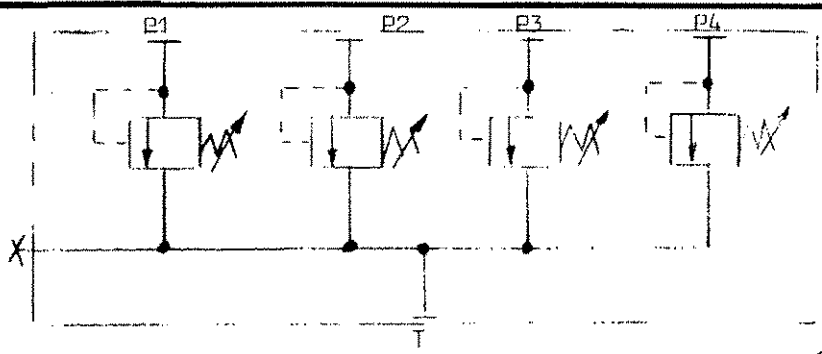
30756 OUTLET
SECTION



NOT SHOWN:
31717 STUDS
(4 REQ'D)

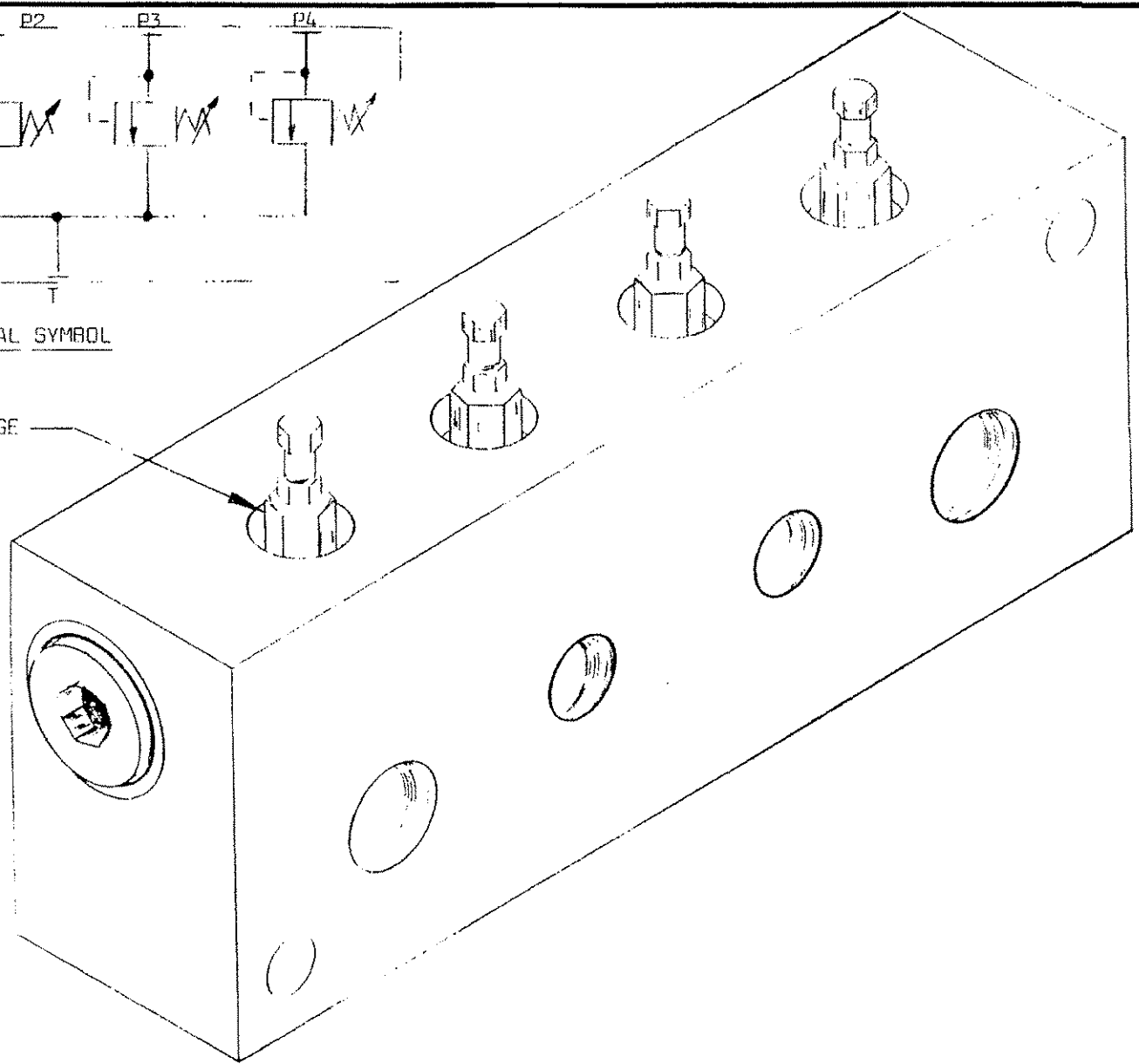
R.H. BOOM

SHEET NO.	TITLE	DATE	R	J. H. FLETCHER & CO. 707 WEST 7TH STREET HUNTINGTON, W. VA.
HV-1130 B	147071 CONTROL VALVE	7-16-86		



GRAPHICAL SYMBOL

36777 RELIEF CARTRIDGE
(4 REQ'D)



1 REQ'D (MAIN SAFETY)

SHEET NO.	TITLE	DATE	R	J. H. FLETCHER & CO.
HV-1141	36763 RELIEF VALVE	8-27-86		707 WEST 7TH STREET HUNTINGTON, W VA

30755 INLET SECTION COMPLETE
30778 BODY ONLY

29366 WORKING SECTION
(SEE SHEET HV-1113)

30803 OUTLET SECTION

21258 O-RING
(12 REQ'D)

21257 O-RING
(4 REQ'D)

CABLE REEL

REAR LIFT

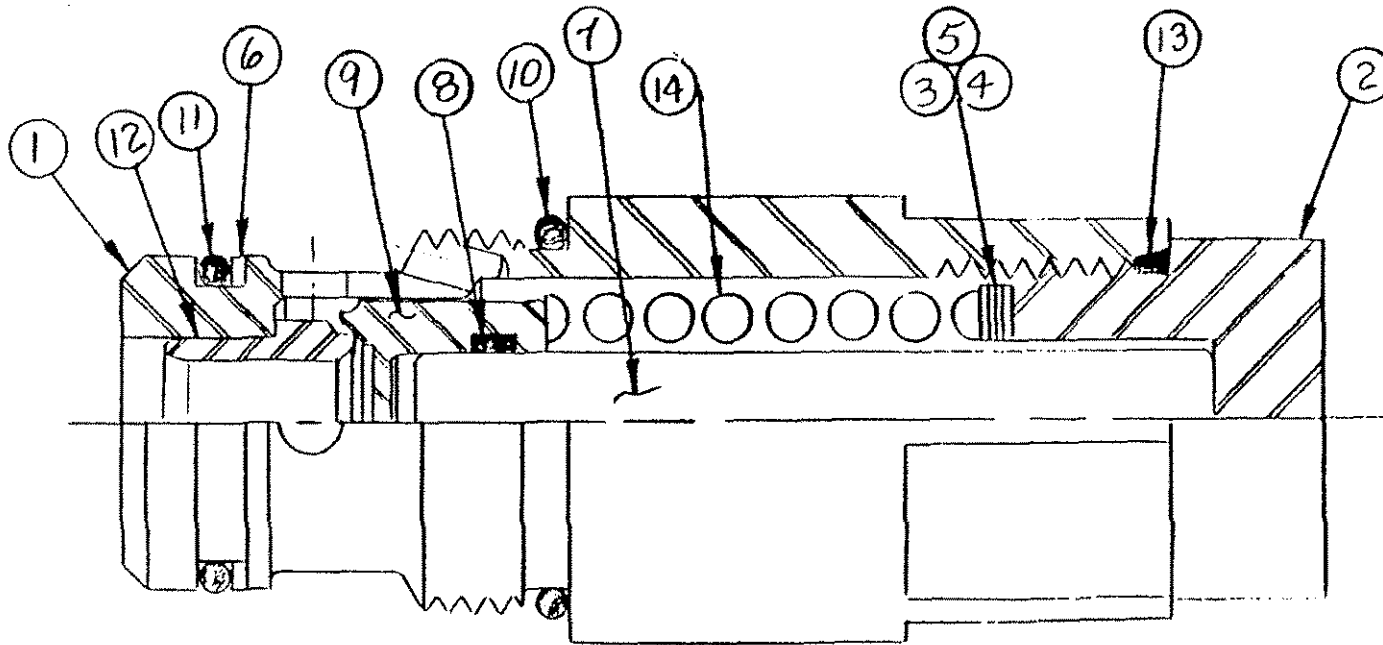
FRONT LIFT

31454 RELIEF VALVE
CARTRIDGE

NOT SHOWN: 31716 STUDS &
22216 WASHERS (4 REQ'D)

29353 WORKING SECTION
(SEE SHEET HV-1112)

SHEET NO.	TITLE	DATE	R	J. W. FLETCHER & CO. 757 WEST 7TH STREET HUNTINGTON, W. VA.
HV-1149	147088 CONTROL VALVE ASSEMBLY	8/21/86		



ITEM	DESCRIPTION	PART NO.
1	CARTRIDGE	
2	CAP	31205
3	SHIM	21879
4	SHIM SEE TABLE	21880
5	SHIM	21881
6	BACK-UP RING	35380
7	PLUNGER	34065
8	SEAL	35077
9	FLOATING POPPET	31204
10	O-RING	35369
11	O-RING	35381

ITEM	DESCRIPTION	PART NO.
12	POPPET SEAT	31203
13	O-RING	35379
14	SPRING	22985

TABLE	
SHIM	SIZE
21879	.005
21880	.015
21881	.062

SHEET NO.

HV-1151

TITLE

29410 RELIEF CARTRIDGE (600 psi)

DATE

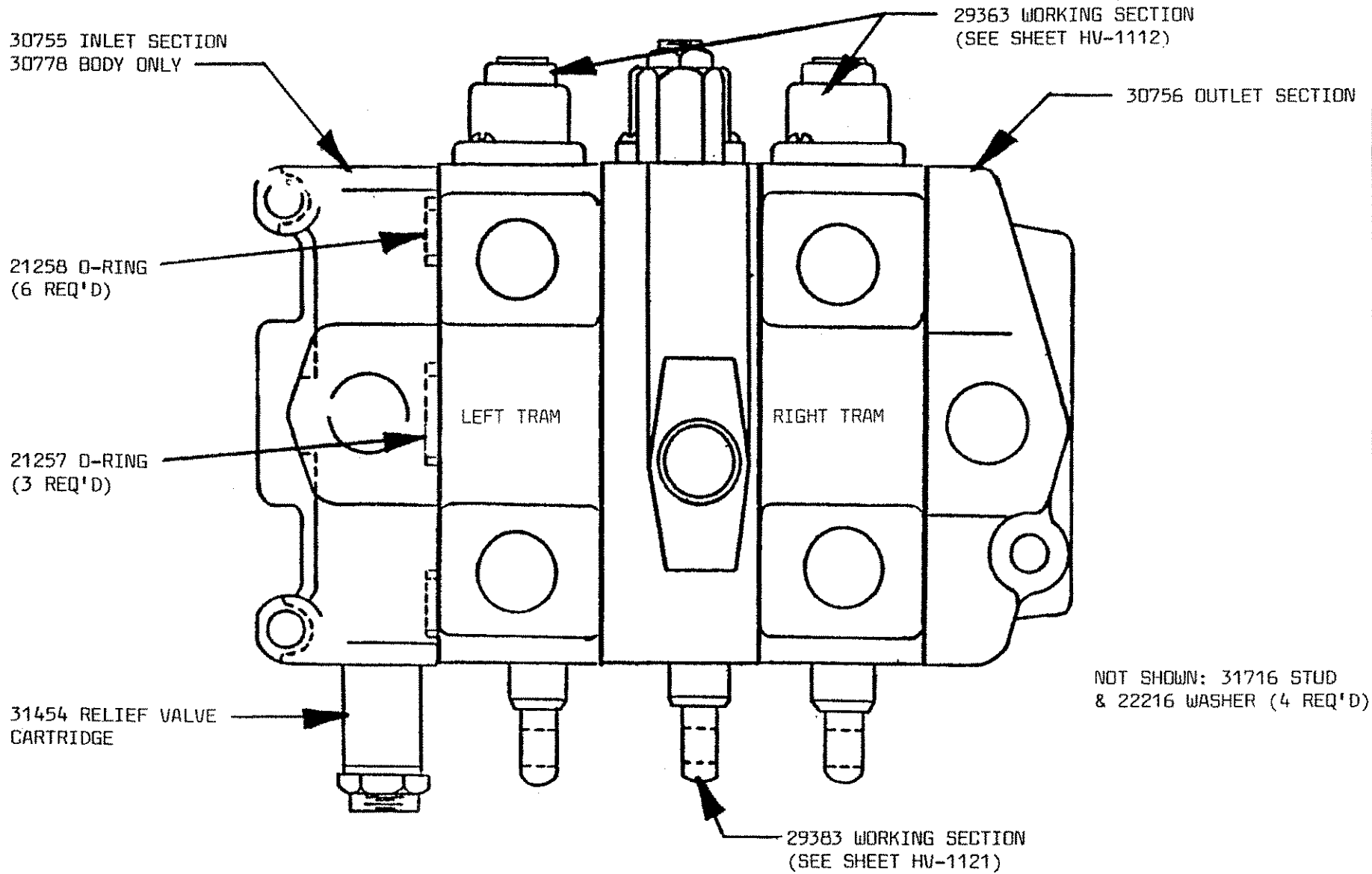
8-19-86

R

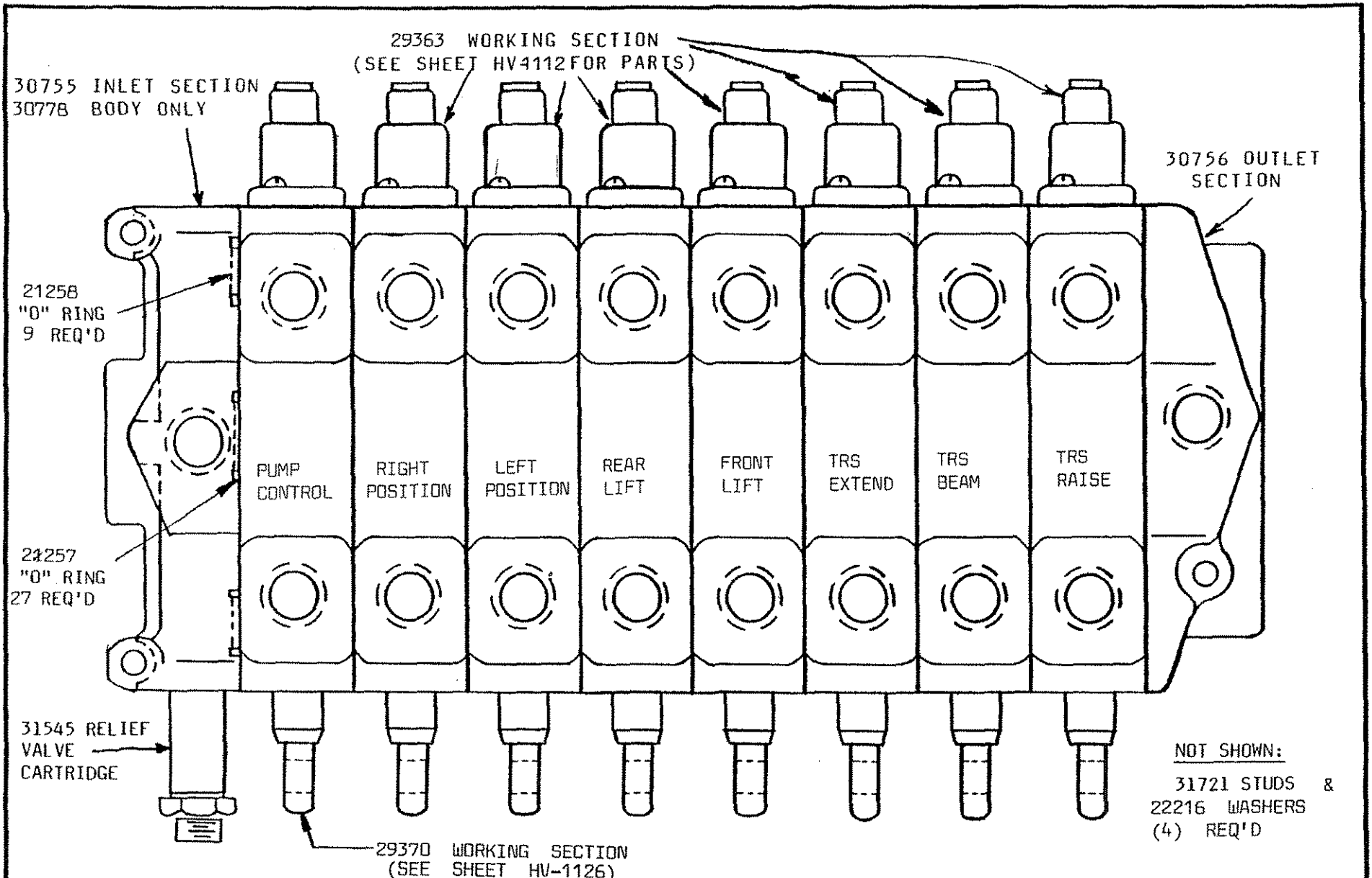
J. H. FLETCHER & CO.

707 WEST 7TH STREET

HUNTINGTON, W. VA

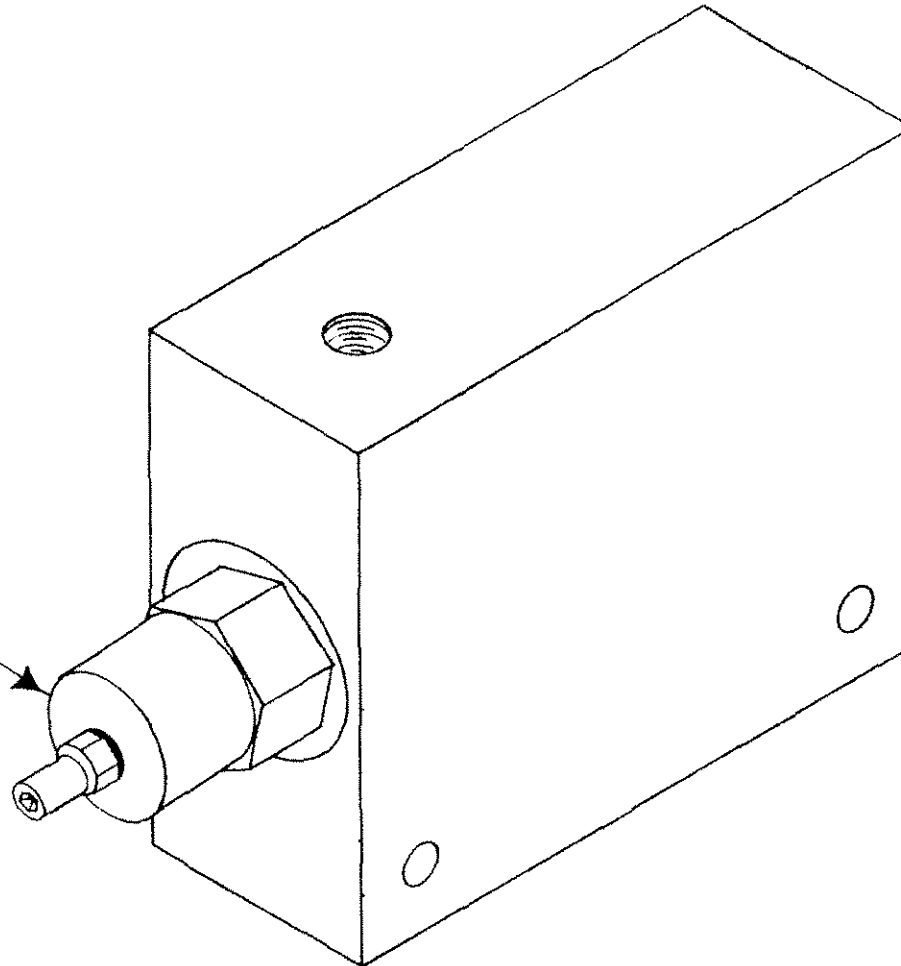


SHEET NO.	TITLE	DATE	R	J. H. FLETCHER & CO.
HV-1249	147187 CONTROL VALVE ASSEMBLY	5/12/87		707 WEST 7TH STREET HUNTINGTON, W. VA.



SHEET NO.	TITLE	DATE	R	J. H. FLETCHER & CO. 707 WEST 7TH STREET HUNTINGTON, W. VA.
IV - 1298	147246 CONTROL VALVE	12/9/88		

36774 RELIEF CARTRIDGE

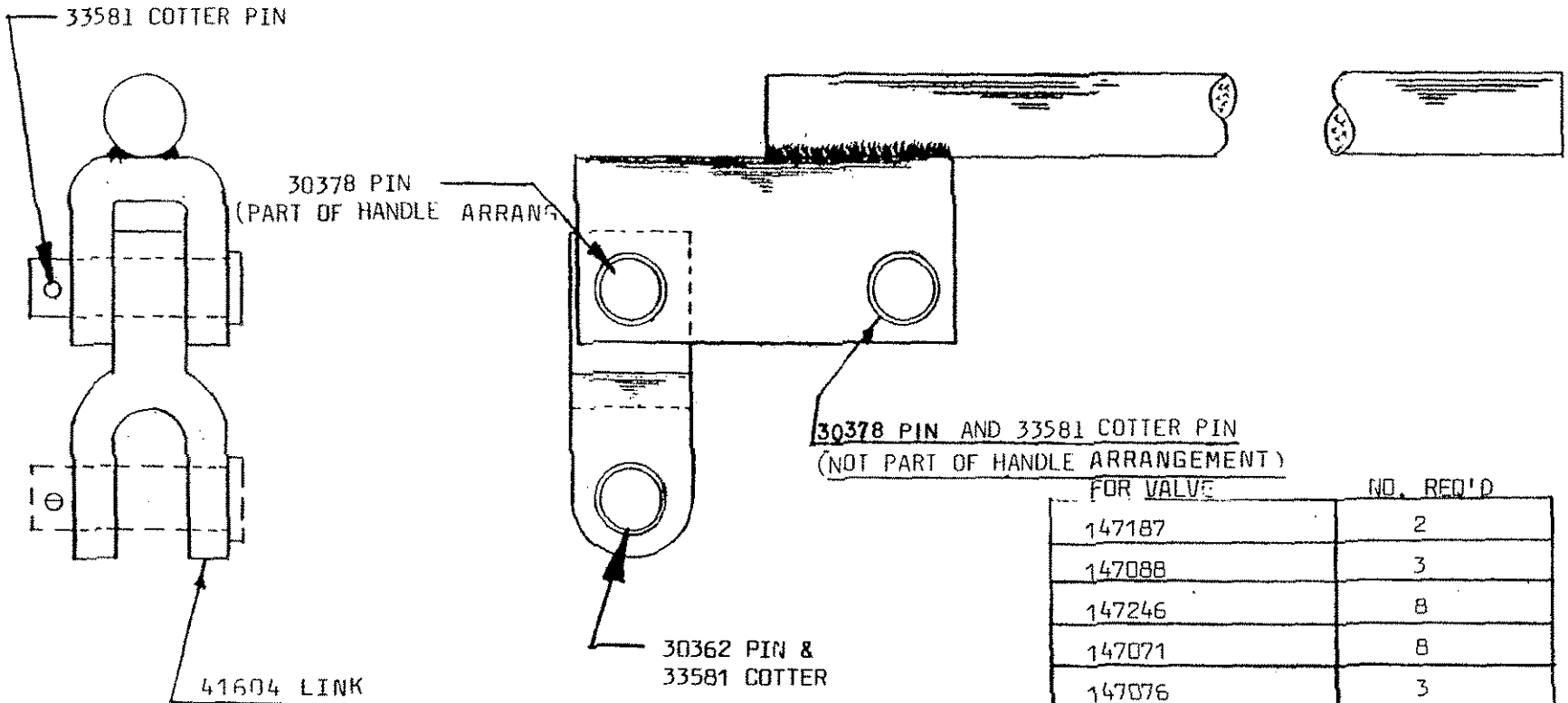


2 REQ'D, 1 FOR EACH BOLT TIGHTENER

NOTE: REQUIRES 135057 SEAL KIT

SHEET NO.	TITLE	DATE	R	J. H. FLETCHER & CO.
HV-1480	36746 SEQUENCE VALVE	11-20-90		707 WEST 7TH STREET HUNTINGTON, W. VA

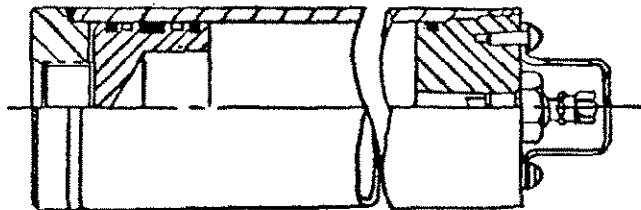
NOT SHOWN: 41617 RUBBER GRIP



NOTE: LINK & PINS (ARE NOT PART OF ARRANGEMENT) MUST BE ORDERED SEPERATLY.

SHEET NO.	TITLE	DATE	R	J. W. FLETCHER & CO.
HY-40	41513 VALVE HANDLE ARRANGEMENT	7-16-86		707 WEST 7TH STREET HUNTINGTON, W. VA.

NOTE: NO PARTS RECOMMENDED FOR
FIELD SERVICE. REPLACE
COMPLETE ACCUMULATOR.



NOTE: PRE CHARGED TO 400 LBS. psi.

NOT SHOWN:
20464 ADAPTOR (1 REQ'D)

1 REQ'D FOR THE TRS RAISE

SHEET NO.	TITLE	DATE	R	J. H. FLETCHER & CO.	
HY-130	45414 HYDRAULIC ACCUMULATOR	11/30/78		707 WEST 7TH STREET	HUNTINGTON, W. VA.

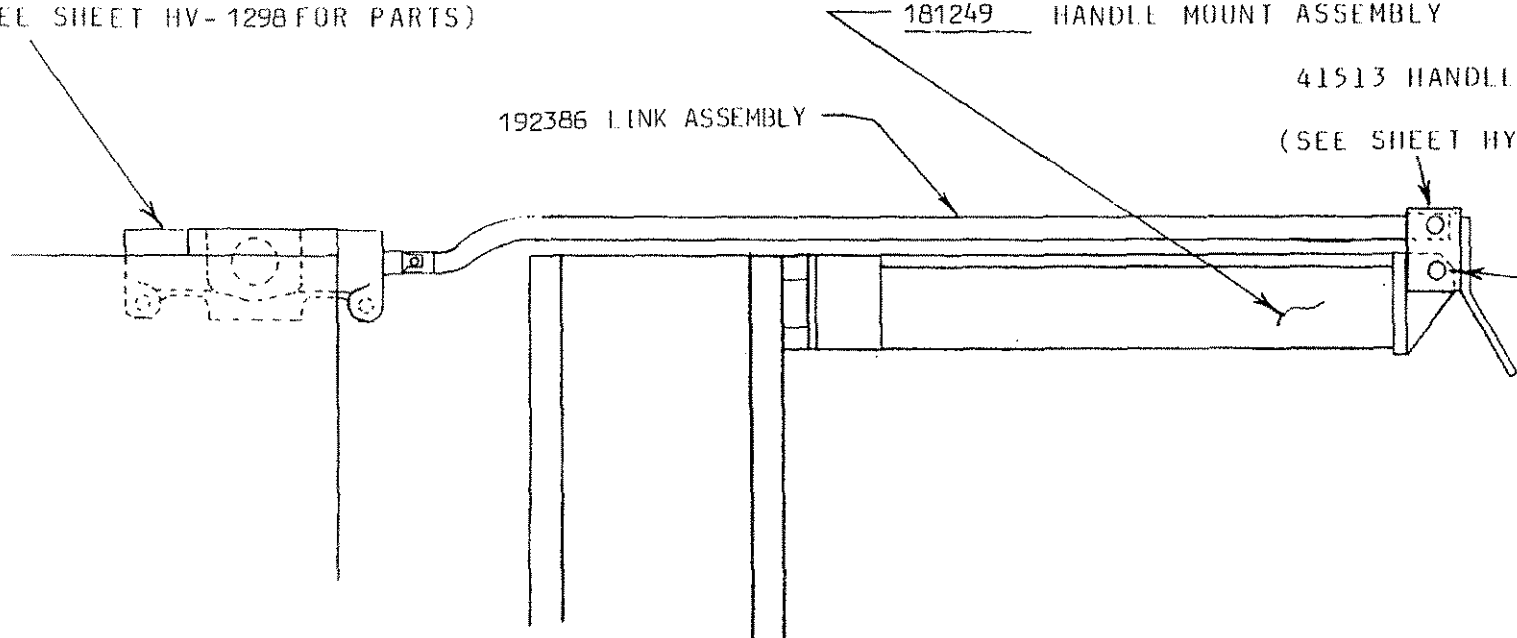
147246 CONTROL VALVE ASSEMBLY
(SEE SHEET HV-1298 FOR PARTS)

181249 HANDLE MOUNT ASSEMBLY

192386 LINK ASSEMBLY

41513 HANDLE ASSEMBLY
(SEE SHEET HY-40 FOR PARTS)

33392 PIN



SHEET NO.

NY-525

TITLE

POSITION CONTROL STATION

DATE

6/22/78

R

J. H. FLETCHER & CO.

707 WEST 7TH STREET HUNTINGTON, W. VA.