



Illustrated Parts Catalogue

**Illustrated Parts Catalogue
Woodward Diesel Systems**

**Goodrich
Pumps & Injectors**

Manual 55175

General

This Illustrated Parts Catalog (IPC) is designed to assist customers in identifying spare parts for the most common applications of Woodward equipment.

We recognize that there may be instances where engines of identical type have, at times, been fitted with fuel injection equipment which differs from that listed. It is important, therefore, to quote the type-code of the equipment in use when ordering replacement parts.

A number in parenthesis indicates quantity per unit of more than one.

An item number with suffix "ND" indicates item Not Drawn, and suffix "AR" indicates As Required.

Part numbers of other manufacturers are included for cross reference purposes only.

It is Woodward policy to update the information contained in this catalog periodically and to re-issue to Distributors and Operators as appropriate.

This IPC contains the spare part and sub assembly level of breakdown consistent with the overhaul and maintenance policy recommended by Woodward Diesel Systems.

If you have a need for additional or change information to be included in this IPC or for other applications to be added please contact Woodward Customer Services Department. Your requirements will be considered at the next revision point.

Woodward Diesel Systems strive to achieve the maximum accuracy of the information provided within this document, no liability can be accepted by Woodward for damage, loss or injury caused by any errors in the information within this IPC.

To guarantee the safety, performance, and reliability of the equipment, only genuine Woodward spares must be used during rework.

References

These publications are available at www.woodward.com/publications:

55142—Diesel Engine Fuel Pump Supersession List

55143—Diesel Engine Fuel Pump Application List

55151—Fuel Injection Equipment Introductory Manual

55152—Practical Aspects of Fuel Injection Equipment

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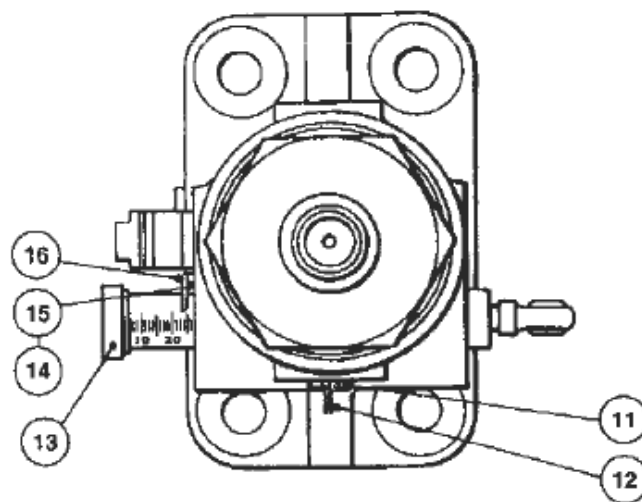
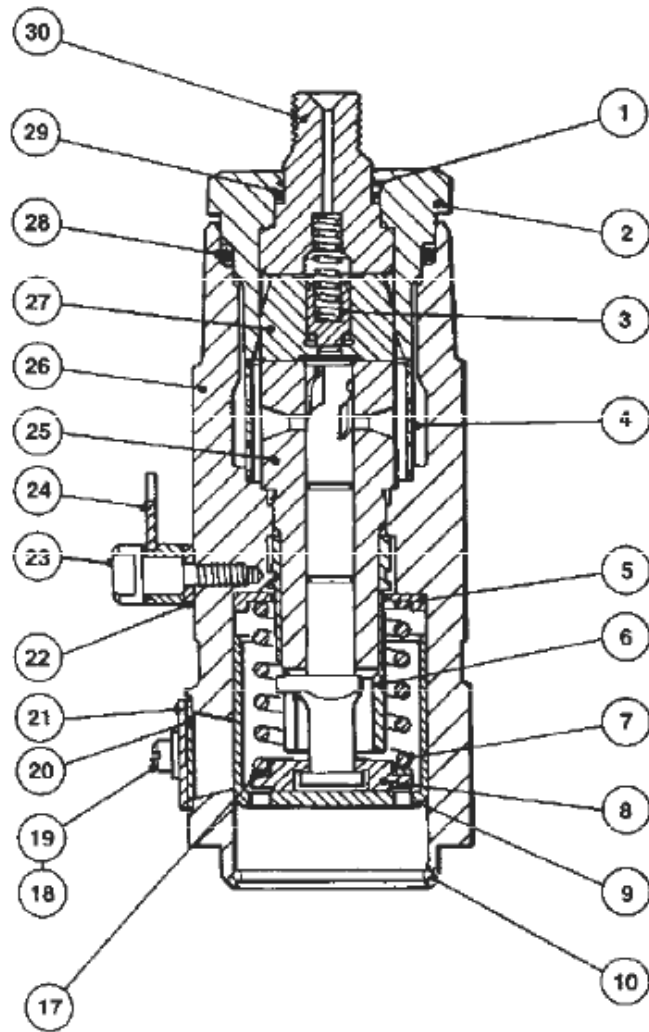
Goodrich

Pump	Injector	Engine Ref.
FCQAB150A0372	99/340	251B, 1050 hp/6-cyl., 2600 hp/16-cyl
FCQAB160A0372	99/412	251C, 251E Revised Pistons
FCQAB160A0372	99/340	251C, 251E 2150 hp, 12-cyl, 3050 hp/16-cyl., 3300 hp/16-cyl.
FCQAB160A0372	99/463	251, 215 bmep @ 1100/1150 rpm, 220 bmep @ 900 rpm
FCQAB160A0372	99/412	251, 215 bmep @ 1100/1150 rpm, 220 bmep @ 900 rpm
FCQAB170A0571	99/341	251D 1350 hp/6-cyl. 251E 1700 hp/8-cyl. 251F 2600 hp/12-cyl., 3900 hp/16-cyl.
FCQAB170A0571	99/406	251E, 251F Revised Pistons
FCQAB170A0753	99/406	251, 263 bmep @ 1100 rpm
FCQAB170A0753	99/413	251, 263 bmep @ 1100 rpm
FCQAB170A0921	99/341	251, 3600 hp
FCQAB180A0565	99/413	251F, Revised Pistons
FCQAB180A0565	99/390	251F, 1500 hp/6-cyl., 3000 hp/12-cyl., 4500 hp/18-cyl.

**FCQAB150A0372 Fuel Injection Pump
for Goodrich 251B Engine
(1050 hp 6-cyl., 2600 hp 16-cyl.)**

(January 1997, Issue #3)

Item			
No.	Part Name	Woodward No.	Goodrich No.
	Fuel Pump	FCQAB150A0372	2320016-3
1	Washer-O-ring seal	106/116	2155085-1
2	Retaining nut	7/134	2321577
3	Spring-delivery valve	7/133	2321393
4	Spill-baffle	7/107	2322662
5	Spring plate-upper	7/119	2321316
6	Control sleeve	7/118	2321445-1
7	Spring-plunger	7/120	2322094-1
8	Spring plate-lower	7/121	2321304
9	Tappet	7/123	2321294-1
10	Circlip-lower	7/124	2321464
11	Screw-control rod locating	7/117	2322105
12	Locking wire (AR)	18SWG	
13	Control rod assembly	7/108	2321379
14	Shims-pointer (1AR)	7/116A-E	23210322-325
15	Pointer control rod	7/115	2321355
16	Screw-pointer (2)	365/C	21558144
17	Washer-plunger spring	7/122	2322384
18	Washer-locking (2)	NW3/29	532209A
19	Screw-cover plate (2)	366/405	21558145
20	Gasket-cover plate	7/136	2322083
21	Cover plate-window	7/135	2321533
22	Spacer-safety stop	7/158	2322642-1
23	Bolt-safety stop	7/128	2321654
24	Safety stop-control rod	7/125	2322662
25	Element assembly	7/104A	2321267
26	Pump-housing sub-assembly	7/101	2321338
27	Delivery valve & seat assembly	7/129	23213611
28	Seal-O-ring	359/163	2321326-1
29	Seal-O-ring	359/136	2321327
30	Delivery valve holder	7/132	2321349-1
31ND	Dowel-barrel locating	6/125	2321383-1



FCQAB150A0372 Fuel Injection Pump

FCQAB160A0372 Fuel Injection Pump for Goodrich Engines:

251C, 251E Revised Pistions

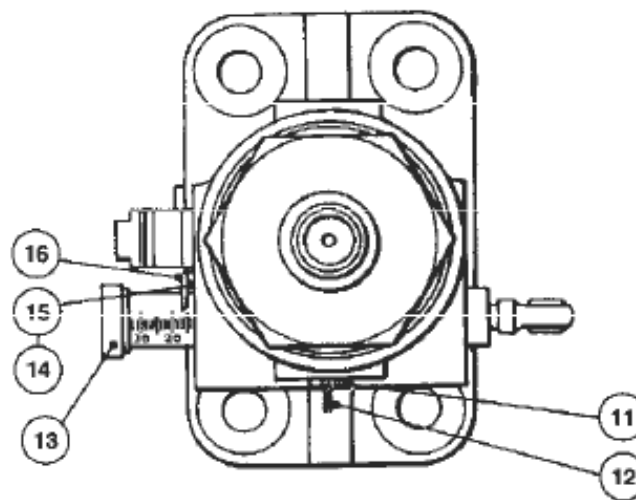
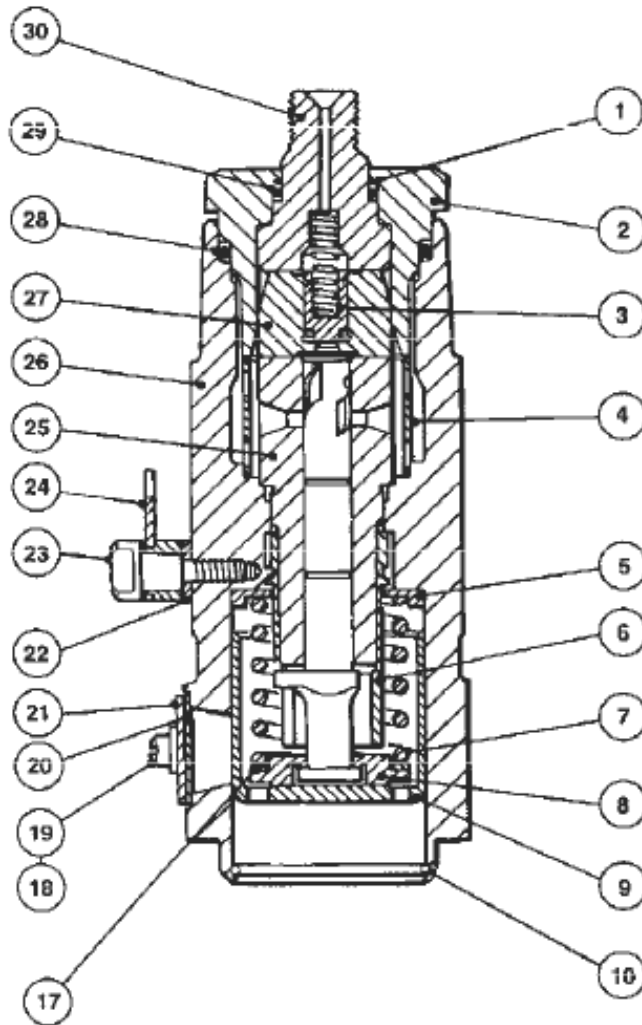
251C, 251E 2150 hp, 12-cyl, 3050 hp/16-cyl., 3300 hp/16-cyl.

251, 215 bmep @ 1100/1150 rpm, 220 bmep @ 900 rpm

251, 215 bmep @ 1100/1150 rpm, 220 bmep @ 900 rpm

(January 1997, Issue #3)

Item			
No.	Part Name	Woodward No.	Goodrich No.
	Fuel Pump	FCQAB160A0372	23200123-1
1	Washer-O-ring seal	106/116	2155085-1
2	Retaining nut	7/134	2321577
3	Spring - delivery valve	7/133	2321393
4	Spill - baffle	7/107	2322662
5	Spring plate - upper	7/119	2321316
6	Control sleeve	7/118	2321445-1
7	Spring - plunger	7/120	2322094-1
8	Spring plate - lower	7/121	2321304
9	Tappet	7/123	2321294-1
10	Circlip - lower	7/124	2321464
11	Screw - control rod locating	7/117	2322105
12	Locking wire (AR)	18SWG	
13	Control rod assembly	7/108	2321379
14	Shims - pointer (1AR)	7/116A-E	23210322-325
15	Pointer control rod	7/115	2321355
16	Screw - pointer (2)	365/C	21558144
17	Washer - plunger spring	7/122	2322384
18	Washer - locking (2)	NW3/29	532209A
19	Screw - cover plate (2)	366/405	21558145
20	Gasket - cover plate	7/136	2322083
21	Cover plate - window	7/135	2321533
22	Spacer - safety stop	7/138	2322642-1
23	Bolt - safety stop	7/128	2321654
24	Safety stop - control rod	7/125	2322662
25	Element assembly	7/104B	23212610
26	Pump-housing sub-assembly	7/101	2321338
27	Delivery valve & seat assembly	7/129	23213611
28	Seal-O-ring	359/163	2321326-1
29	Seal-O-ring	359/136	2321327
30	Delivery valve holder	7/132	2321349-1
31ND	Dowel-barrel locating	6/125	2321383-1



FCQAB160A0372 Fuel Injection Pump

FCQAB170A0571 Fuel Injection Pump for Goodrich Engines:

251D 1350 hp/6-cyl.

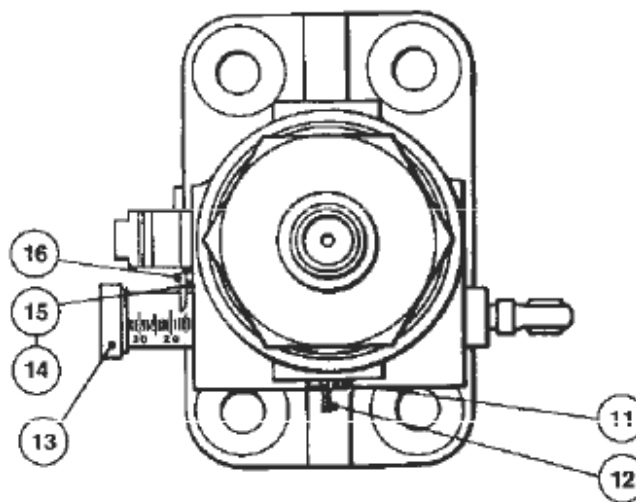
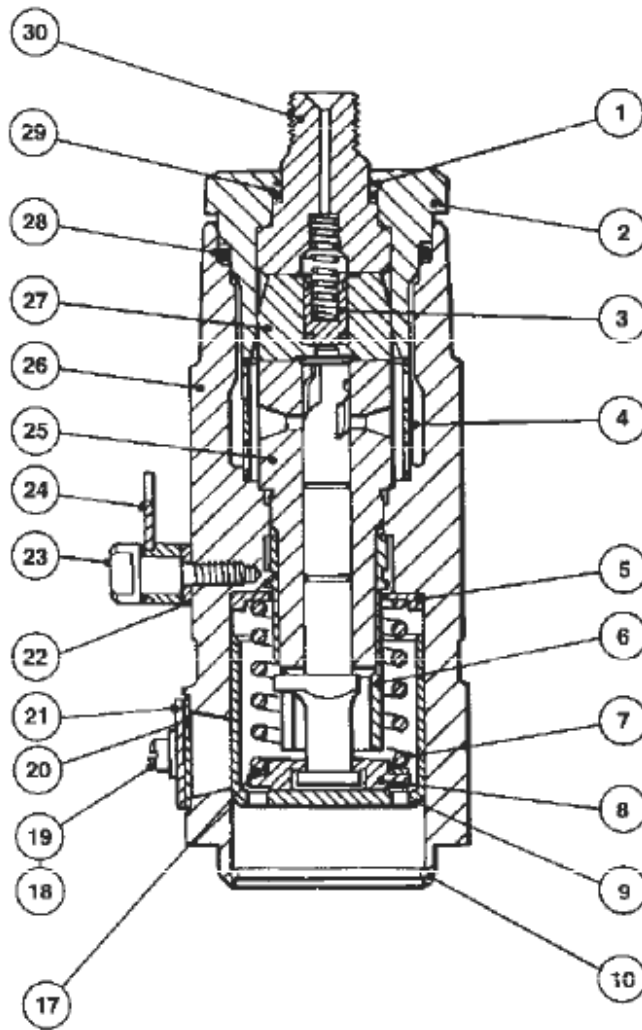
251E 1700 hp/8-cyl.

251E, 251F Revised Pistons

251F 2600 hp/12-cyl., 3900 hp/16-cyl.

(January 1997, Issue #3)

Item			
No.	Part Name	Woodward No.	Goodrich No.
	Fuel Pump	FCQAB170A0571	4320021-1
1	Washer-O-ring seal	106/116	2155085-1
2	Retaining nut	7/134	2321577
3	Spring - delivery valve	7/133	2321393
4	Spill - baffle	7/107	2322662
5	Spring plate - upper	7/119	2321316
6	Control sleeve	7/118	2321445-1
7	Spring - plunger	7/120	2322094-1
8	Spring plate - lower	7/121	2321304
9	Tappet	7/123	2321294-1
10	Circlip - lower	7/124	2321464
11	Screw - control rod locating	7/117	2322105
12	Locking wire (AR)	18SWG	
13	Control rod assembly	7/108	2321379
14	Shims - pointer (1AR)	7/116A-E	23210322-325
15	Pointer control rod	7/115	2321355
16	Screw - pointer (2)	365/C	21558144
17	Washer - plunger spring	7/122	2322384
18	Washer - locking (2)	NW3/29	532209A
19	Screw - cover plate (2)	366/405	21558145
20	Gasket - cover plate	7/136	2322083
21	Cover plate - window	7/135	2321533
22	Spacer - safety stop	7/138	2322642-1
23	Bolt - safety stop	7/128	2321654
24	Safety stop - control rod	7/125	2322662
25	Element assembly	7/104C	4321091
26	Pump - housing sub-assembly	7/101	2321338
27	Delivery valve & seat assembly	7/141	2321368
28	Seal-O-ring	359/163	2321326-1
29	Seal-O-ring	359/136	2321327
30	Delivery valve holder	7/132	2321349-1
31ND	Dowel-barrel locating	6/125	2321383-1

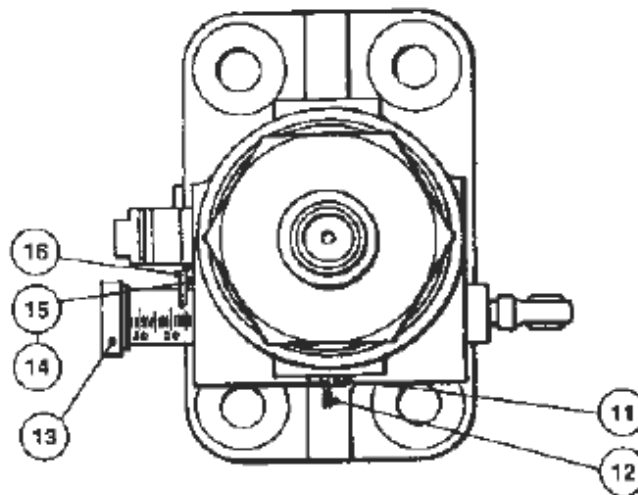
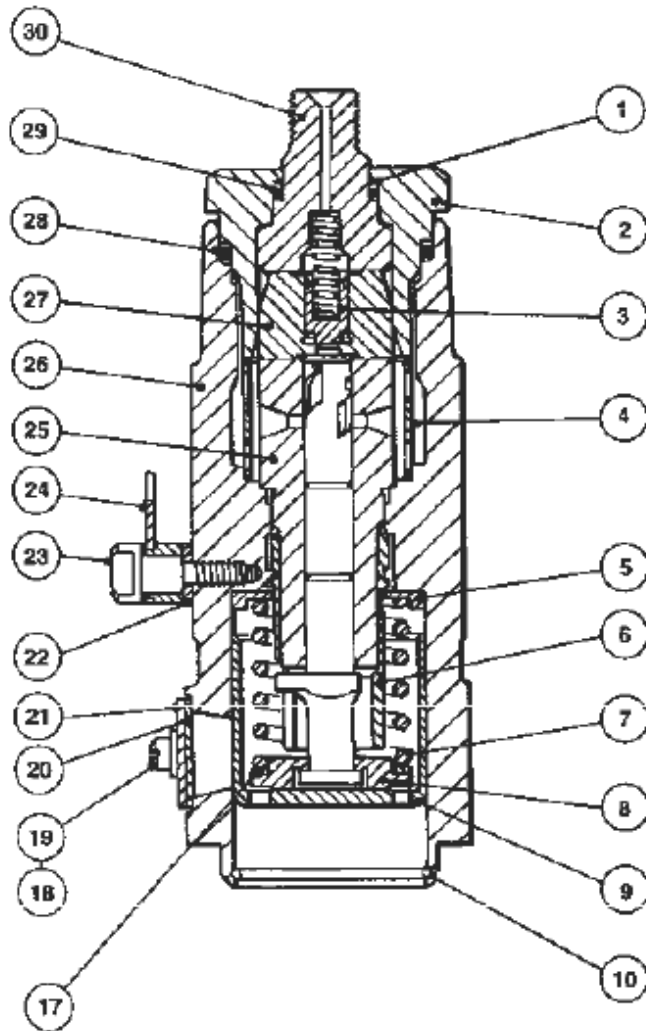


FCQAB170A0571 Fuel Injection Pump

FCQAB170A0753 Fuel Injection Pump for Goodrich 251 Engine (263 bmep @ 1100 rpm)

(January 1997, Issue #3)

Item			
No.	Part Name	Woodward No.	Goodrich No.
	Fuel Pump	FCQAB170A0753	
1	Washer-O-ring seal	106/116	2155085-1
2	Retaining nut	7/134	2321577
3	Spring - delivery valve	7/133	2321393
4	Spill - baffle	7/107	2322662
5	Spring plate - upper	7/119	2321316
6	Control sleeve	7/118	2321445-1
7	Spring - plunger	7/120	2322094-1
8	Spring plate - lower	7/121	2321304
9	Tappet	7/123	2321294-1
10	Circlip - lower	7/124	2321464
11	Screw - control rod locating	7/117	2322105
12	Locking wire (AR)	18SWG	
13	Control rod assembly	7/108	2321379
14	Shims - pointer (1AR)	7/116A-E	23210322-325
15	Pointer control rod	7/115	2321355
16	Screw - pointer (2)	365/C	21558144
17	Washer - plunger spring	7/122	2322384
18	Washer - locking (2)	NW3/29	532209A
19	Screw - cover plate (2)	366/405	21558145
20	Gasket - cover plate	7/136	2322083
21	Cover plate - window	7/135	2321533
22	Spacer - safety stop	7/138	2322642-1
23	Bolt - safety stop	7/128	2321654
24	Safety stop - control rod	7/125	2322662
25	Element assembly	7/139C	
26	Pump - housing sub-assembly	7/101	2321338
27	Delivery valve & seat assembly	7/141	2321368
28	Seal-O-ring	359/163	2321326-1
29	Seal-O-ring	359/136	2321327
30	Delivery valve holder	7/132	2321349-1
31ND	Dowel-barrel locating	6/125	2321383-1

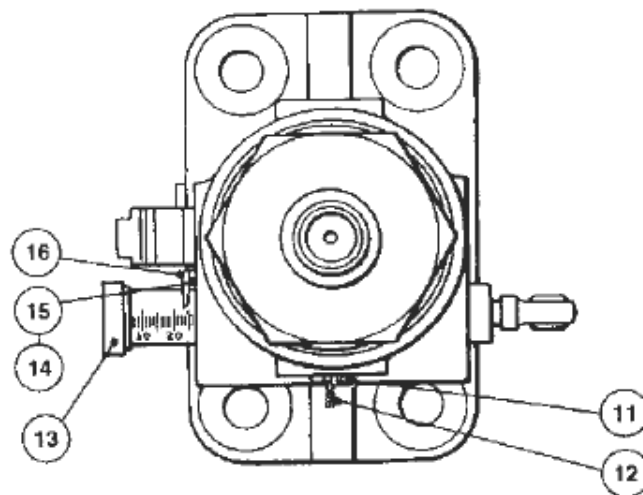
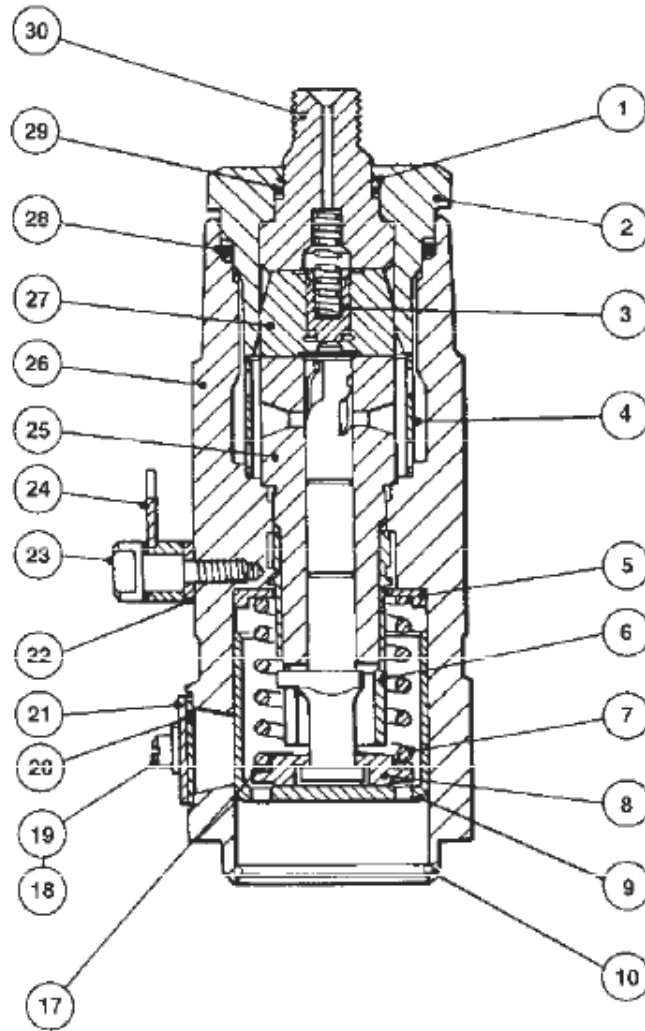


FCQAB170A0753 Fuel Injection Pump

FCQAB170A0921 Fuel Injection Pump for Goodrich 251 Engine (3600 hp)

(September 1997, Issue #4)

Item No.	Part Name	Woodward No.	Goodrich No.
	Fuel Pump	FCQAB170A0921	
1	Washer-O-ring seal	106/116	2155085-1
2	Retaining nut	7/134	2321577
3	Spring - delivery valve	7/133	2321393
4	Spill - baffle	7/107	2322662
5	Spring plate - upper	7/119	2321316
6	Control sleeve	7/118	2321445-1
7	Spring - plunger	7/120	2322094-1
8	Spring plate - lower	7/121	2321304
9	Tappet	7/123	2321294-1
10	Circlip - lower	7/124	2321464
11	Screw - control rod locating	7/117	2322105
12	Locking wire (AR)	18SWG	
13	Control rod assembly	7/108	2321379
14	Shims - pointer (1AR)	7/116A-E	23210322-325
15	Pointer control rod	7/115	2321355
16	Screw - pointer (2)	365/C	21558144
17	Washer - plunger spring	7/122	2322384
18	Washer - locking (2)	NW3/29	532209A
19	Screw - cover plate (2)	366/405	21558145
20	Gasket - cover plate	7/136	2322083
21	Cover plate - window	7/135	2321533
22	Spacer - safety stop	7/158	
23	Bolt - safety stop	7/128	2321654
24	Safety stop - control rod	7/125	2322662
25	Element assembly	7/104C	
26	Pump - housing sub-assembly	7/101	2321338
27	Delivery valve & seat assembly	7/141	2321368
28	Seal-O-ring	359/163	2321326-1
29	Seal-O-ring	359/136	2321327
30	Delivery valve holder	7/132	2321349-1
31ND	Dowel-barrel locating	6/125	2321383-1



FCQAB170A0921 Fuel Injection Pump

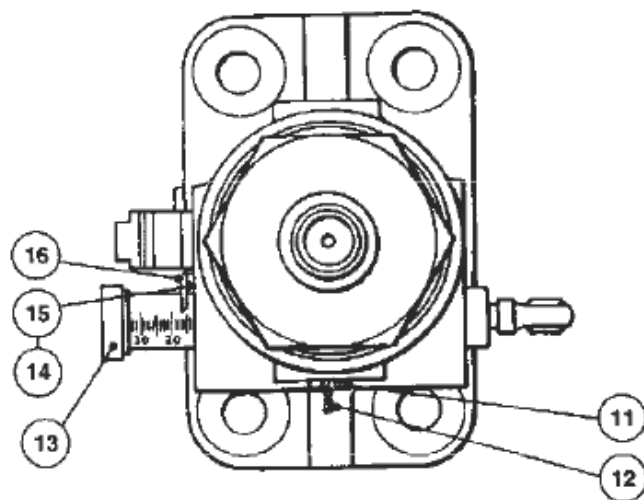
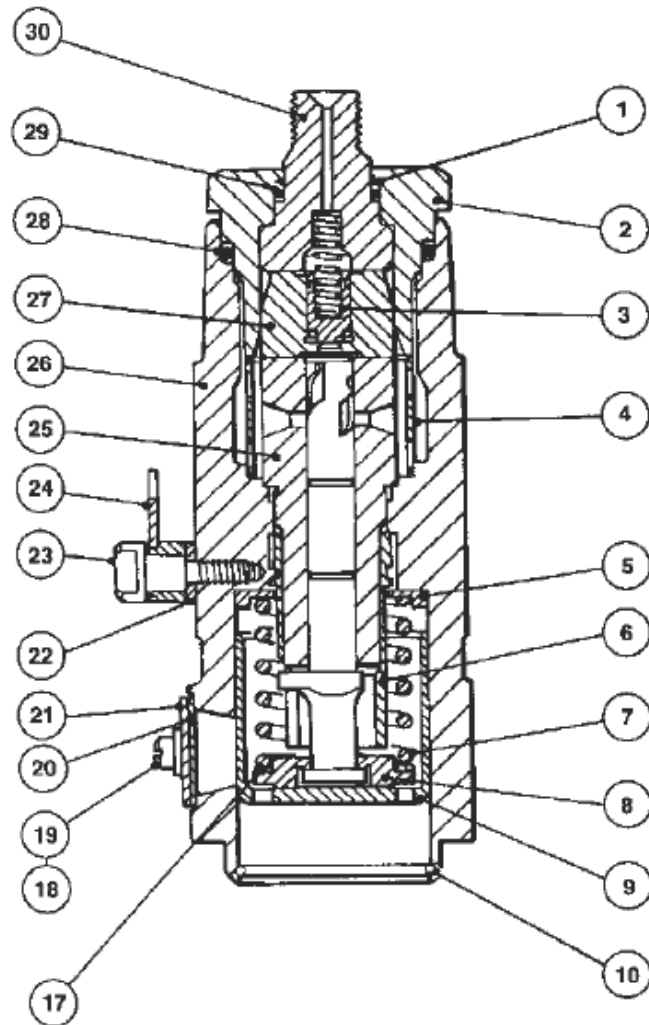
FCQAB180A0565 Fuel Injection Pump for Goodrich Engines:

251F, Revised Pistons

251F, 1500 hp/6-cyl., 3000 hp/12-cyl., 4500 hp/18-cyl.

(January 1997, Issue #3)

Item			
No.	Part Name	Woodward No.	Goodrich No.
	Fuel Pump	FCQAB180A0565	23200127
1	Washer-O-ring seal	106/116	2155085-1
2	Retaining nut	7/134	2321577
3	Spring - delivery valve	7/133	2321393
4	Spill - baffle	7/107	2322662
5	Spring plate - upper	7/119	2321316
6	Control sleeve	7/118	2321445-1
7	Spring - plunger	7/120	2322094-1
8	Spring plate - lower	7/121	2321304
9	Tappet	7/123	2321294-1
10	Circlip - lower	7/124	2321464
11	Screw - control rod locating	7/117	2322105
12	Locking wire (AR)	18SWG	
13	Control rod assembly	7/108	2321379
14	Shims - pointer (1AR)	7/116A-E	23210322-325
15	Pointer control rod	7/115	2321355
16	Screw - pointer (2)	365/C	21558144
17	Washer-plunger spring	7/122	2322384
18	Washer - locking (2)	NW3/29	532209A
19	Screw - cover plate (2)	366/405	21558145
20	Gasket - cover plate	7/136	2322083
21	Cover plate - window	7/135	2321533
22	Spacer - safety stop	7/138	2322642-1
23	Bolt - safety stop	7/128	2321654
24	Safety stop - control rod	7/125	2322662
25	Element assembly	7/139D	23212611
26	Pump - housing sub-assembly	7/101	2321338
27	Delivery valve & seat assembly	7/141	2321368
28	Seal-O-ring	359/163	2321326-1
29	Seal-O-ring	359/136	2321327
30	Delivery valve holder	7/132	2321349-1
31ND	Dowel-barrel locating	6/125	2321383-1



FCQAB180A0565 Fuel Injection Pump

99/340 Injector for Goodrich Engines:

251B, 1050 hp/6-cyl., 2600 hp/16-cyl

251C, 251E 2150 hp, 12-cyl, 3050 hp/16-cyl., 3300 hp/16-cyl.

(January 1997, Issue #3)

Item No.	Part Name	Woodward No.	Goodrich No.
	Injector	99/340	
1	Washer-spring adjusting	106/107	2231391
2	Shim-spring adjusting (1AR)	NW2/76-80	2231411-2231414
3	Spring-injector	52/305	2231295
4	Thrust cap	52/304	2231610
5	Transfer block	52/306	2231402/1
6	Nozzle nut	52/307	22313310
7	Nozzle assembly	H157T35K493	
8	Nozzle holder body assembly	52/301	2231278

99/341 Injector for Goodrich Engines:

251, 3600 hp

251D 1350 hp/6-cyl.

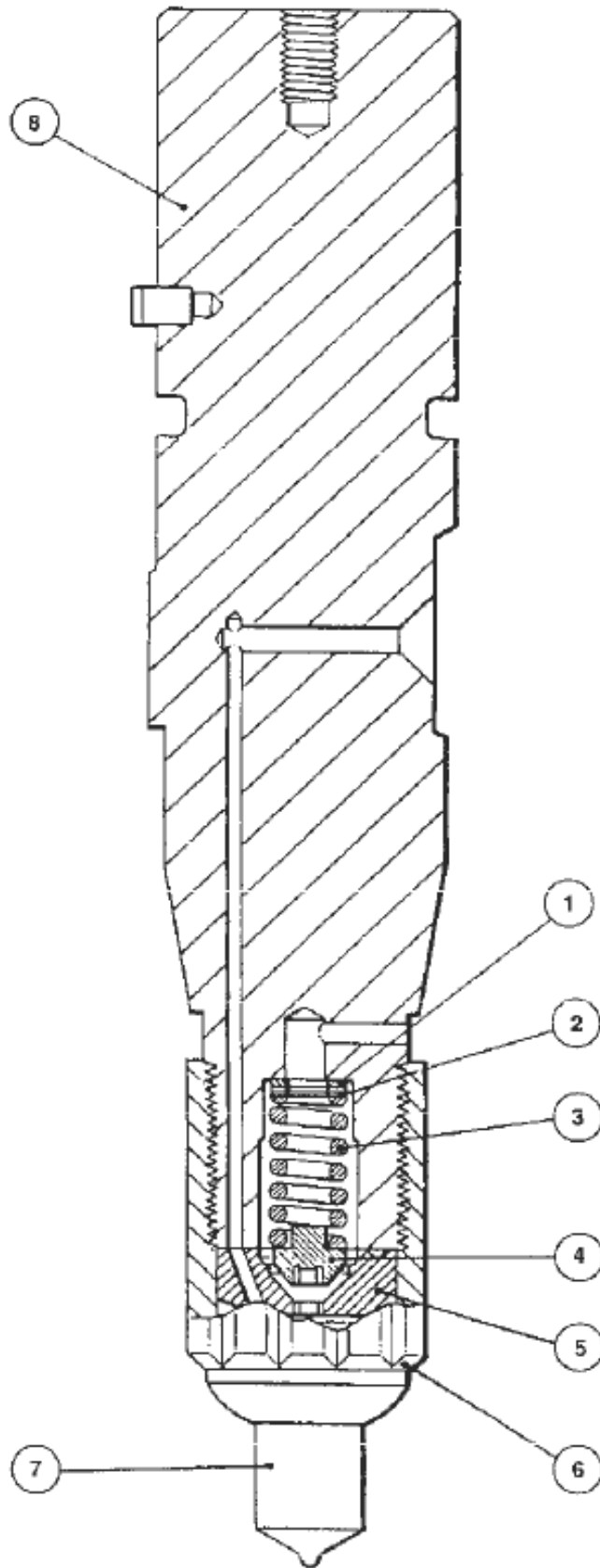
251E 1700 hp/8-cyl.

251F 2600 hp/12-cyl., 3900 hp/16-cyl.

(September 1997, Issue #4)

Item

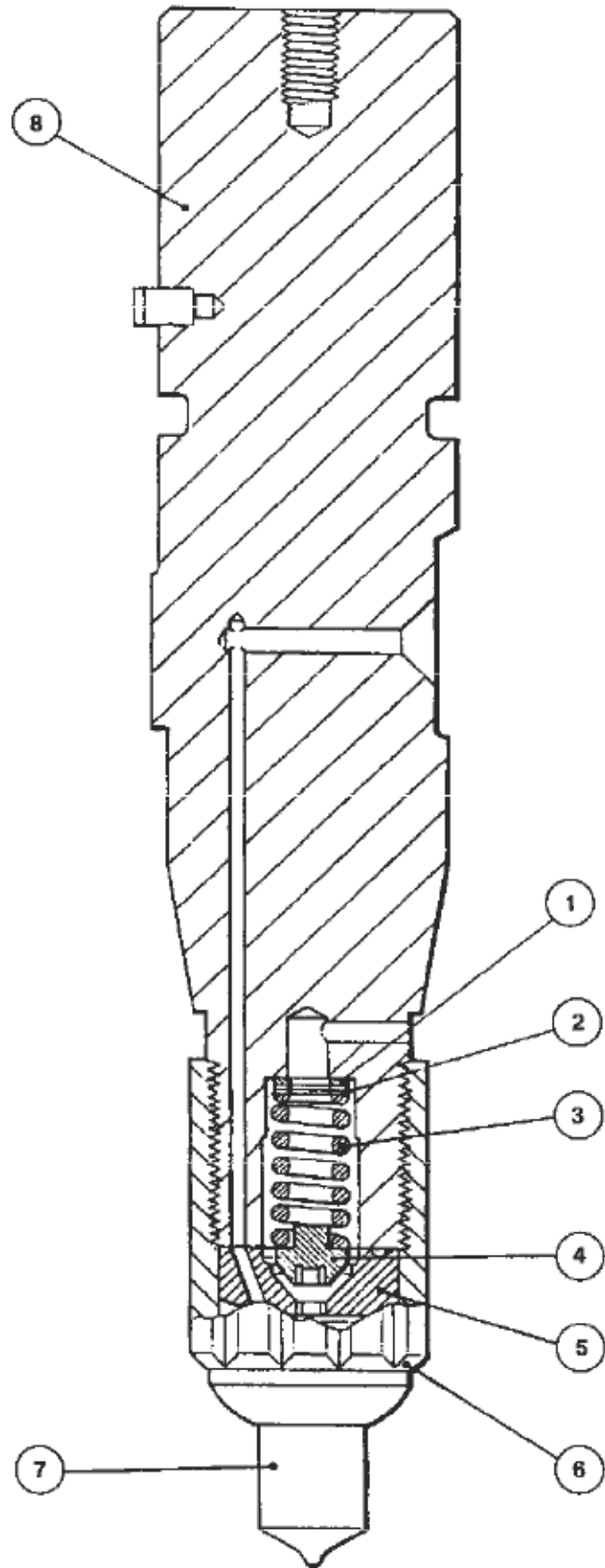
No.	Part Name	Woodward No.	Goodrich No.
	Injector	99/341	
1	Washer-spring adjusting	106/107	2231391
2	Shim-spring adjusting (1AR)	NW2/76-80	2231411-2231414
3	Spring-injector	52/305	2231295
4	Thrust cap	52/304	2231610
5	Transfer block	52/306	2231402/1
6	Nozzle nut	52/307	22313310
7	Nozzle assembly	H157T37K493	4231051/1
8	Nozzle holder body assembly	52/301	223127



99/341 Injector

99/390 Injector
for Goodrich Engine:
251F, 1500 hp/6-cyl., 3000 hp/12-cyl., 4500 hp/18-cyl.
(January 1997, Issue #3)

Item No.	Part Name	Woodward No.	Goodrich No.
	Injector	99/390	
1	Washer-spring adjusting	106/107	2231391
2	Shim-spring adjusting (1AR)	NW2/76-80	2231411-2231414
3	Spring-injector	52/305	2231295
4	Thrust cap	52/304	2231610
5	Transfer block	52/306	2231402/1
6	Nozzle nut	52/307	22313310
7	Nozzle assembly	H157T40K648	
8	Nozzle holder body assembly	52/301	2231278



99/390 Injector

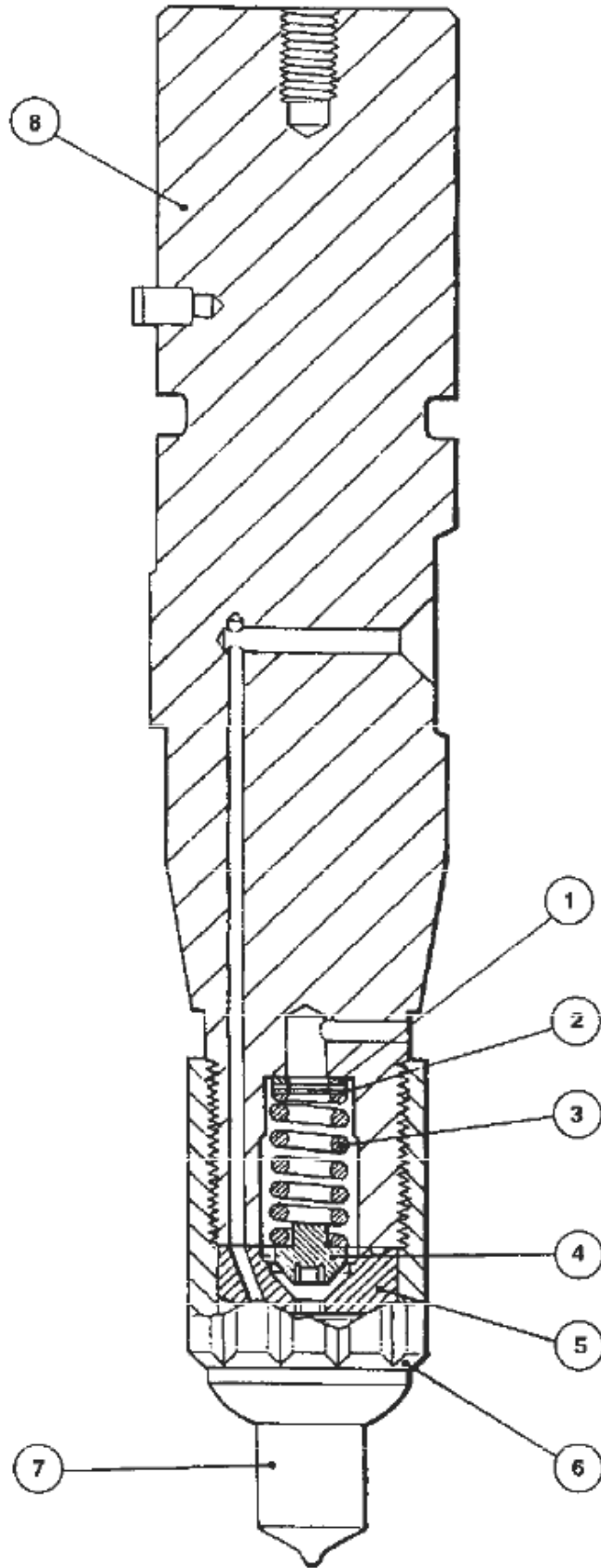
99/406 Injector for Goodrich Engines:

251, 263 bmep @ 1100 rpm

251E, 251F Revised Pistons

(January 1997, Issue #3)

Item No.	Part Name	Woodward No.	Goodrich No.
	Injector	99/406	
1	Washer-spring adjusting	106/107	2231391
2	Shim-spring adjusting (1AR)	NW2/76-80	2231411-2231414
3	Spring-injector	52/305	2231295
4	Thrust cap	52/304	2231610
5	Transfer block	52/306	2231402/1
6	Nozzle nut	52/307	22313310
7	Nozzle assembly	H145T37K648	
8	Nozzle holder body assembly	52/301	2231278



99/406 Injector

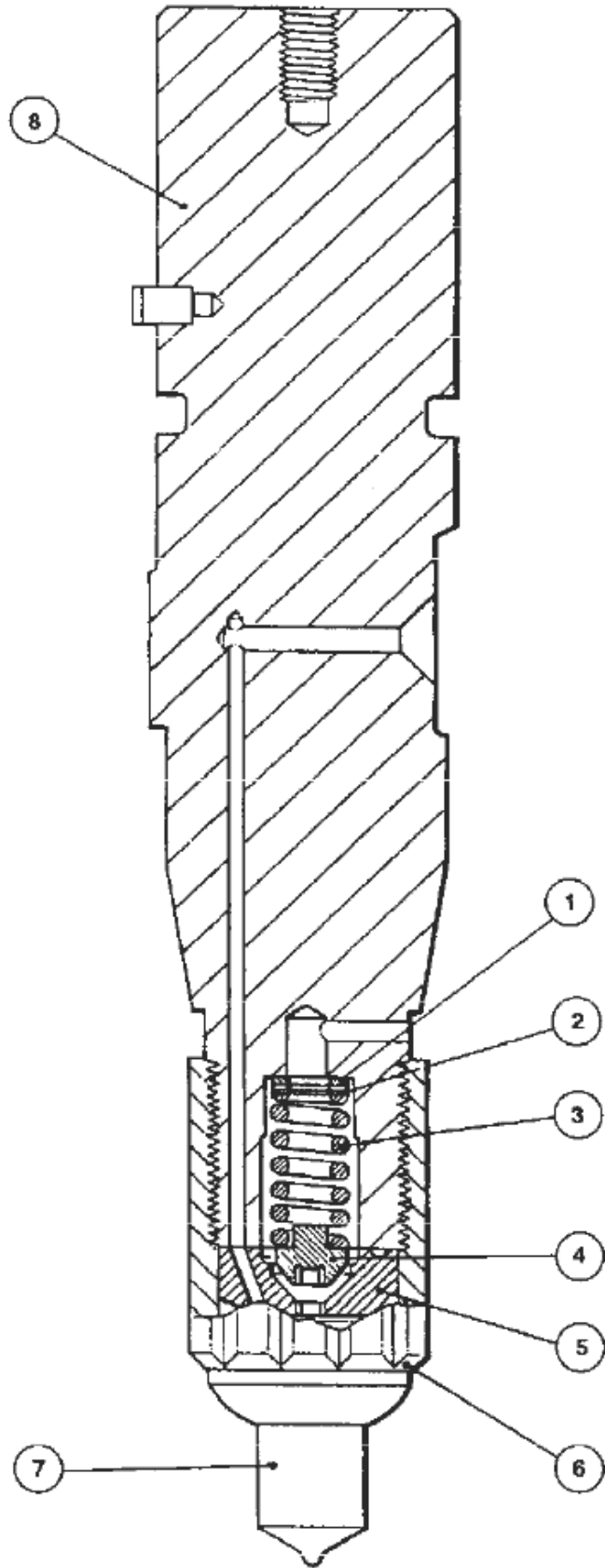
99/412 Injector for Goodrich Engines:

251, 215 bmep @ 1100/1150 rpm, 220 bmep @ 900 rpm

251C, 251E Revised Pistons

(January 1997, Issue #3)

Item			
No.	Part Name	Woodward No.	Goodrich No.
	Injector	99/412	
1	Washer-spring adjusting	106/107	2231391
2	Shim-spring adjusting (1AR)	NW2/76-80	2231411-2231414
3	Spring-injector	52/305	2231295
4	Thrust cap	52/304	2231610
5	Transfer block	52/306	2231402/1
6	Nozzle nut	52/307	22313310
7	Nozzle assembly	H145T35K648	
8	Nozzle holder body assembly	52/301	2231278



99/412 Injector

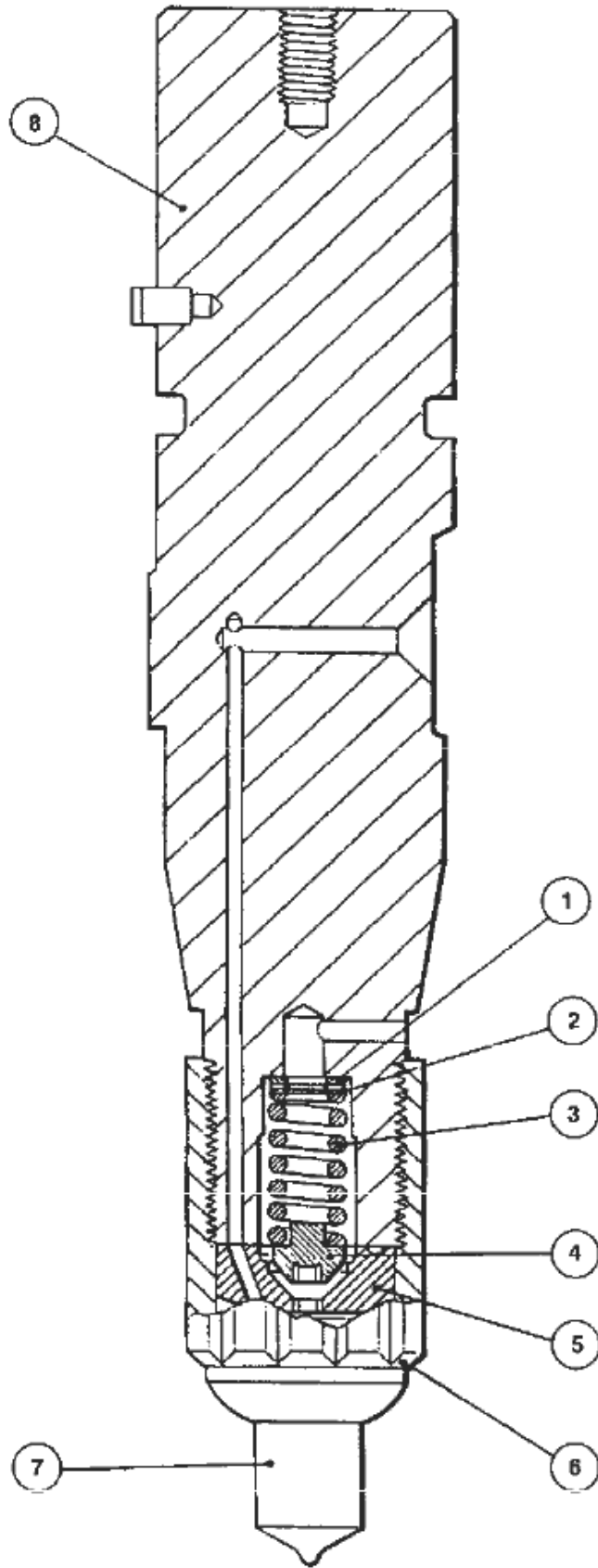
99/413 Injector for Goodrich Engines:

251, 263 bmep @ 1100 rpm

251F, Revised Pistions

(January 1997, Issue #3)

Item No.	Part Name	Woodward No.	Goodrich No.
	Injector	99/413	
1	Washer-spring adjusting	106/107	2231391
2	Shim-spring adjusting (1AR)	NW2/76-80	2231411-2231414
3	Spring-injector	52/305	2231295
4	Thrust cap	52/304	2231610
5	Transfer block	52/306	2231402/1
6	Nozzle nut	52/307	22313310
7	Nozzle assembly	H145T40K648	
8	Nozzle holder body assembly	52/301	2231278

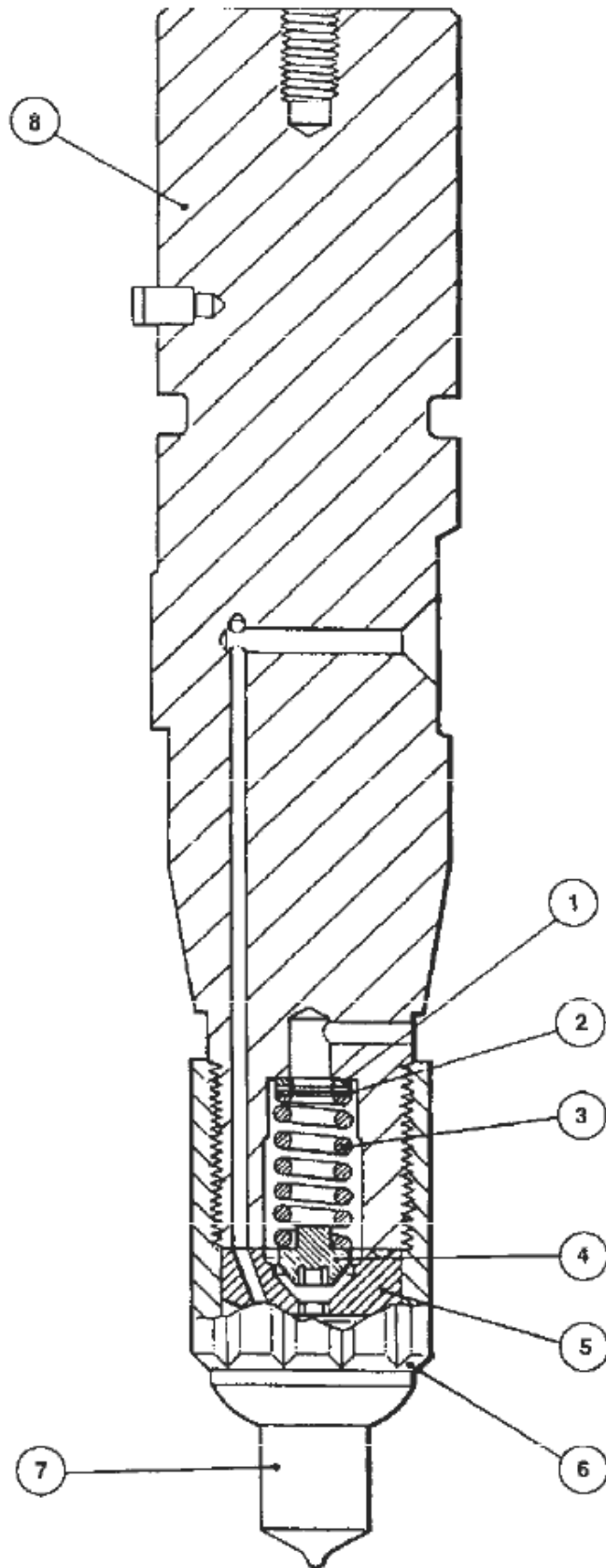


99/413 Injector

99/463 Injector for Goodrich Engine:

251, 215 bmep @ 1100/1150 rpm, 220 bmep @ 900 rpm
(January 1997, Issue #3)

Item No.	Part Name	Woodward No.	Goodrich No.
	Injector	99/463	
1	Washer-spring adjusting	106/107	2231391
2	Shim-spring adjusting (1AR)	NW2/76-80	2231411-2231414
3	Spring-injector	52/305	2231295
4	Thrust cap	52/304	2231610
5	Transfer block	52/306	2231402/1
6	Nozzle nut	52/307	22313310
7	Nozzle assembly	H145T32K648	
8	Nozzle holder body assembly	52/301	2231278



99/463 Injector

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