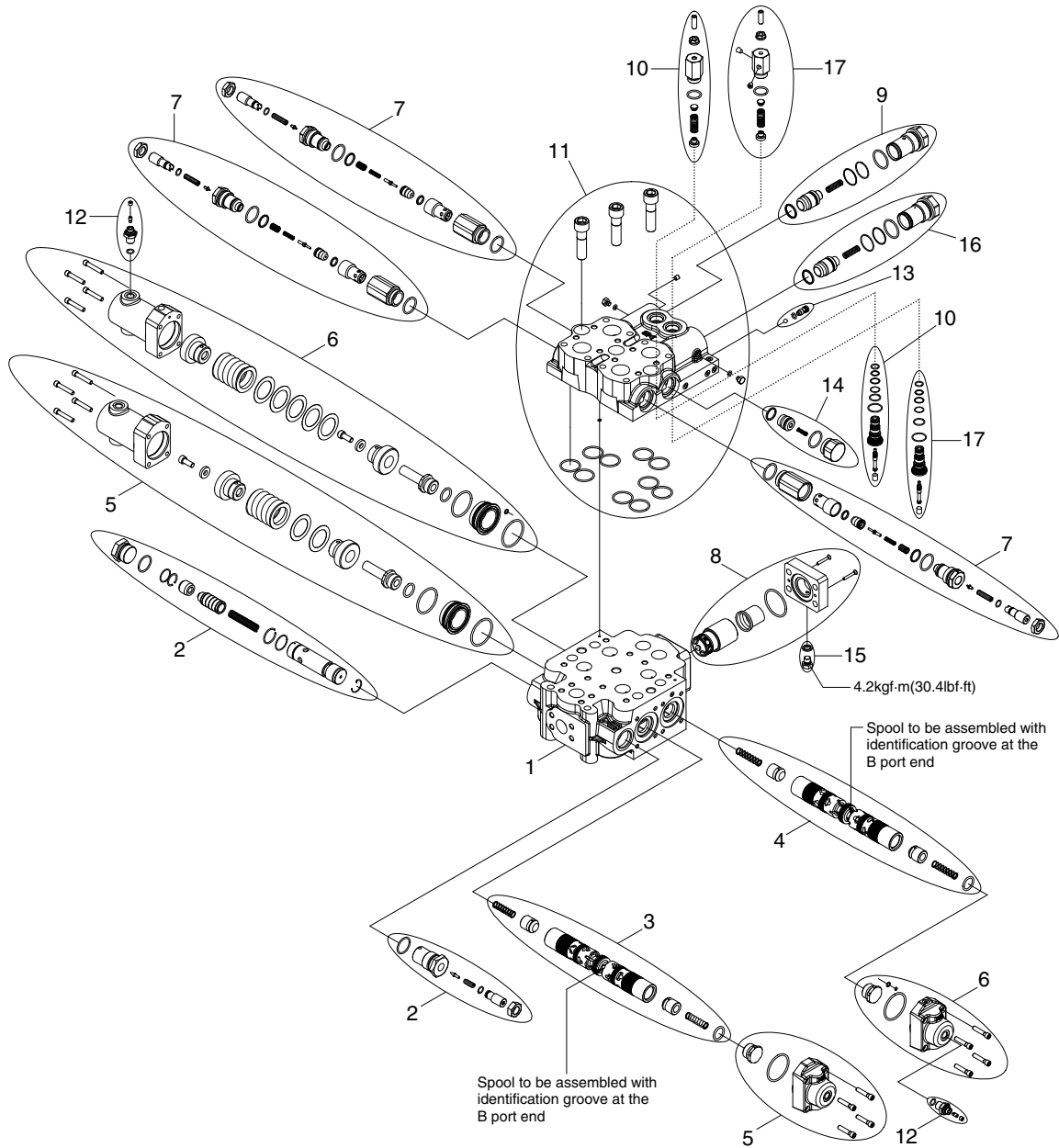


GROUP 4 DISASSEMBLY AND ASSEMBLY

1. MAIN CONTROL VALVE

1) STRUCTURE



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- | | | | |
|---|--|----|---|
| 1 | Housing group | 10 | Pilot valve assembly |
| 2 | Main relief valve assembly | 11 | Pilot operated float check block assembly |
| 3 | Double acting spool(Bucket) | 12 | Adaptor & check valve |
| 4 | Double acting spool(Boom) | 13 | Shuttle valve assembly |
| 5 | Bucket spool centering | 14 | Anti-cavitation check valve assembly |
| 6 | Boom spool centering | 15 | 1/4 " BSPP plug |
| 7 | Combined overload & anti-cavitation assembly | 16 | Check valve assembly |
| 8 | Back pressure valve | 17 | Pilot valve assembly |
| 9 | Check valve assembly | | |

2) DISASSEMBLY AND ASSEMBLY

- ※ Ensure that the machine is in a safe condition with no suspended loads or trapped pressure within the system before removing any pipework or component.
Servicing must only be carried out by trained personnel.

(1) MAIN RELIEF VALVE (Item 2)

① Removal

Unscrew both the pilot assembly and the plug from both ends of the relief valve. The main stage assembly must be driven or pressed out in the direction of the pilot assembly using a soft drift.

Refitting

- ② Lubricate sleeve and assemble by pressing into housing until detent ring (12) locates on housing.
Fit the pilot assembly and end cap.

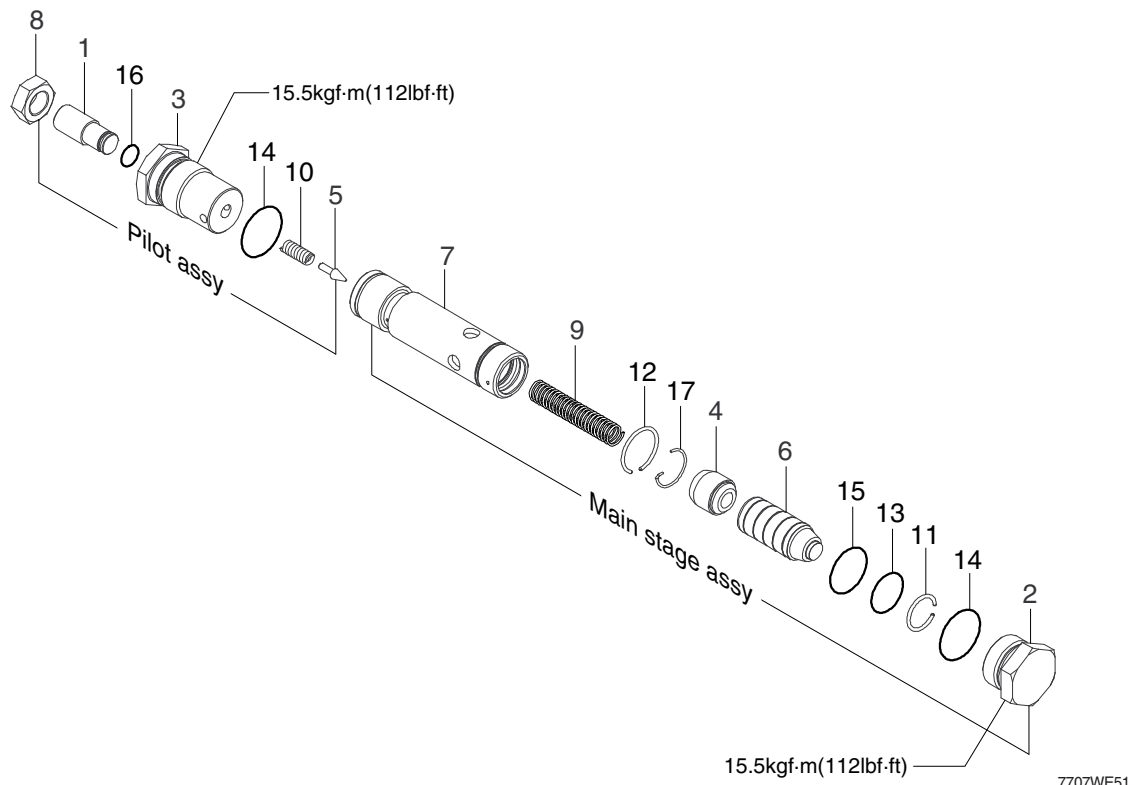
③ Adjusting

The main relief valve must be adjusted to the required setting when the machine is recommissioned.

Adjustment is made by first unscrewing the adjuster (1) until there is no load on the pilot spring (10).

Select a machine service to its end stop.

Screw in the adjuster until the correct pressure setting is measured at the valve inlet, account must be taken for the effect of back pressure on the measured setting.



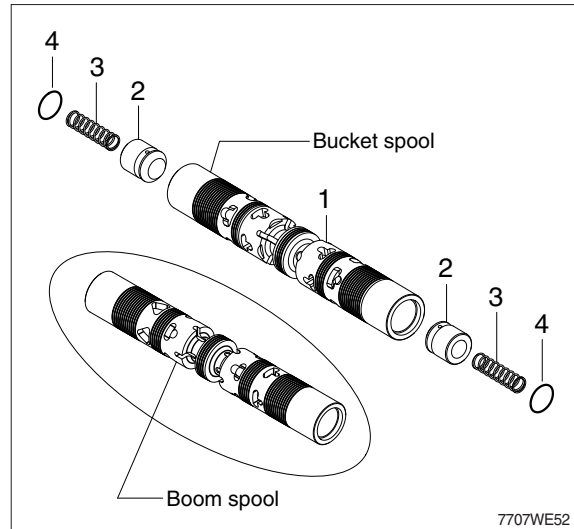
1	Adjusting screw	7	Sleeve	13	O-ring
2	Plug cap	8	Lock nut	14	O-ring
3	Cap	9	Spring	15	O-ring
4	Seat	10	Spring	16	O-ring
5	Poppet	11	Detent ring	17	Orifice wire
6	Plunger	12	Detent ring		

(2) DOUBLE ACTING SPOOL (Item 3, 4)

Control spools are not replaceable as they are individually sized to suit the housing.

When removing and refitting spools ensure that they are refitted into the correct bore and correctly orientated as shown by the identification groove location on the valve assembly drawing.

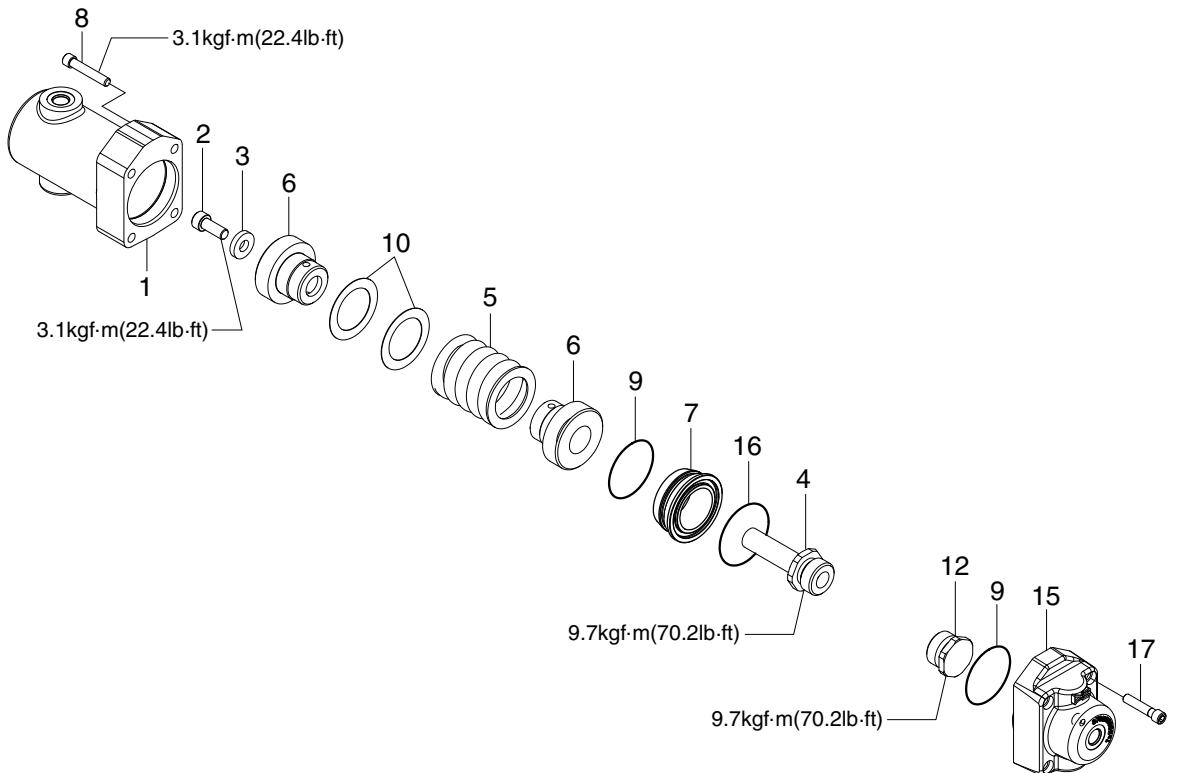
- | | |
|-----------|----------|
| 1 Spool | 3 Spring |
| 2 Plunger | 4 O-ring |



(3) BUCKET SPOOL CENTERING (Item 5)

Remove 4 retaining screws (8) from the spring centring end. Remove the cover (1) and withdraw the spring pack and spool from the valve.

Hold the spool in a suitable soft clamp being careful not to damage the spool surface or bend the spool. Remove the spool caps from the spool. The replacement assembly is supplied with the spring set to the correct load. Refit the spool caps to the specified torque using Loctite 542 or similar medium strength oil tolerant thread locking product.

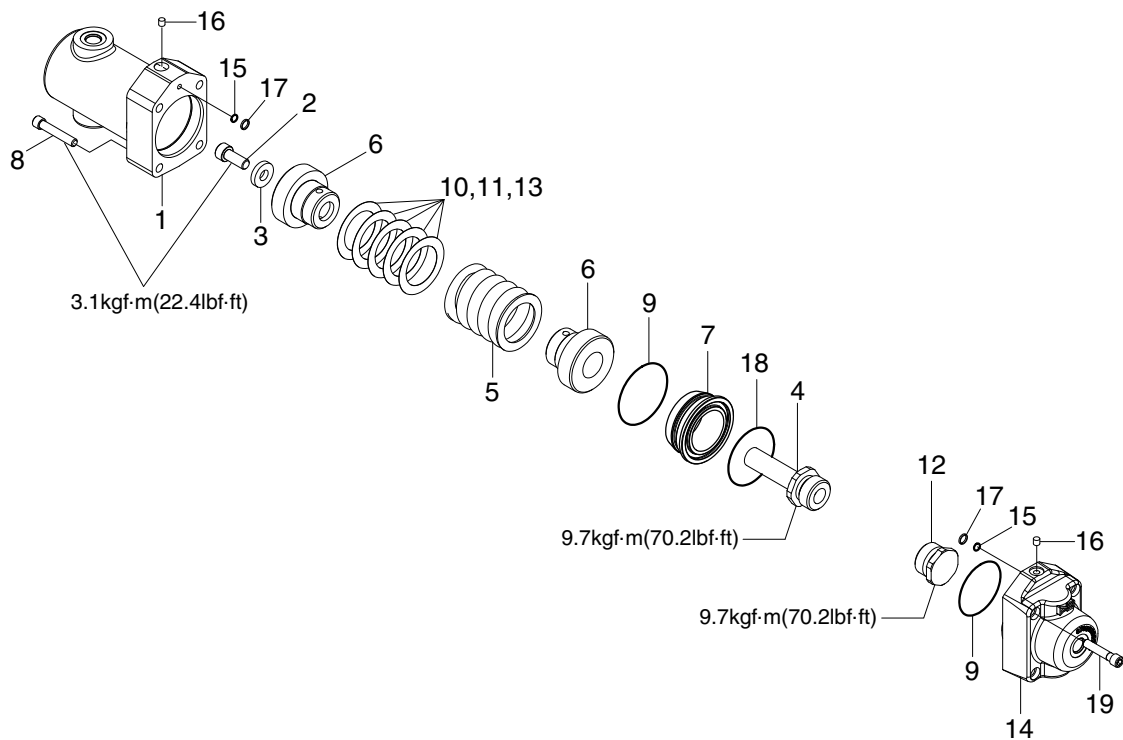


- | | | |
|-------------|---|--------------|
| 1 Cover | 6 Spring retainer | 12 Spool cap |
| 2 Cap screw | 7 Seal retainer | 15 Cover |
| 3 Washer | 8 Cap screw | 16 O-ring |
| 4 Spool cap | 9 O-ring | 17 Cap screw |
| 5 Spring | 10 Shim (0.020, 0.010, 0.005, 0.002 inch) | |

(4) BOOM SPOOL CENTERING (Item 6)

Remove 4 retaining screws (8) from the spring centering end. Remove the cover (1) and withdraw the spring pack and spool from the valve.

Hold the spool in a suitable soft clamp being careful not to damage the spool surface or bend the spool. Remove the spool caps from the spool. The replacement assembly is supplied with the spring set to the correct load. Refit the spool caps to the specified torque using loctite 542 or similar medium strength oil tolerant thread locking product.

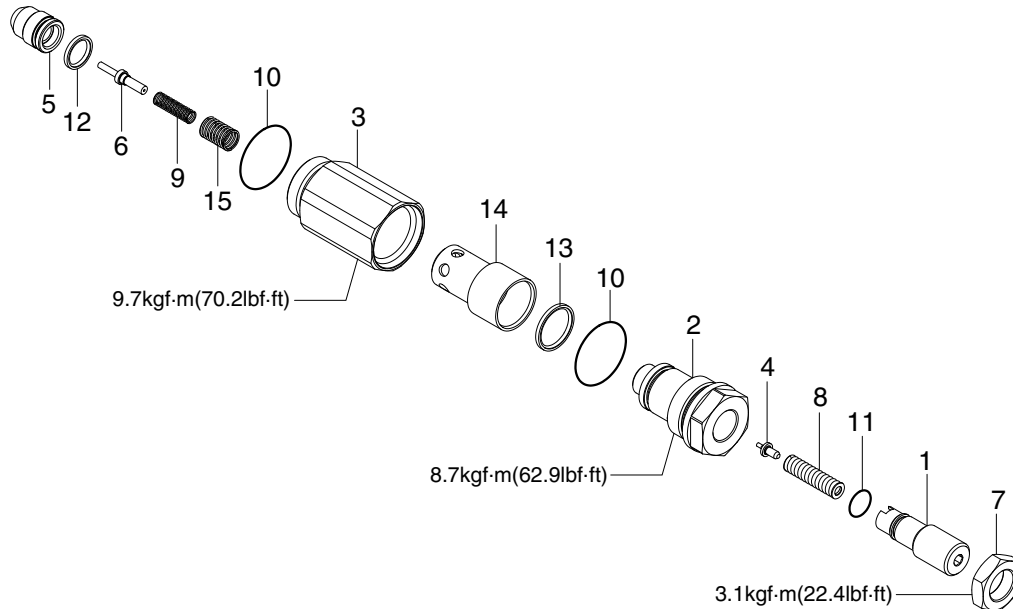


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1	Cover	8	Cap screw	14	Cover
2	Cap screw	9	O-ring	15	O-ring
3	Washer	10	Shim (0.020inch, 2EA)	16	Plug
4	Spool cap	11	Shim (0.005inch, 2EA)	17	Back up ring
5	Spring	12	Spool cap	18	O-ring
6	Spring retainer	13	Shim (0.005inch, 1EA)	19	Cap screw
7	Seal retainer				

(5) COMBINED OVERLOAD AND ANTI-CAVITATION (Item 7)

This is a non servicable item and a replacement unit factory set to the correct setting should be fitted. Inspect seat in valve housing for damage before refitting.

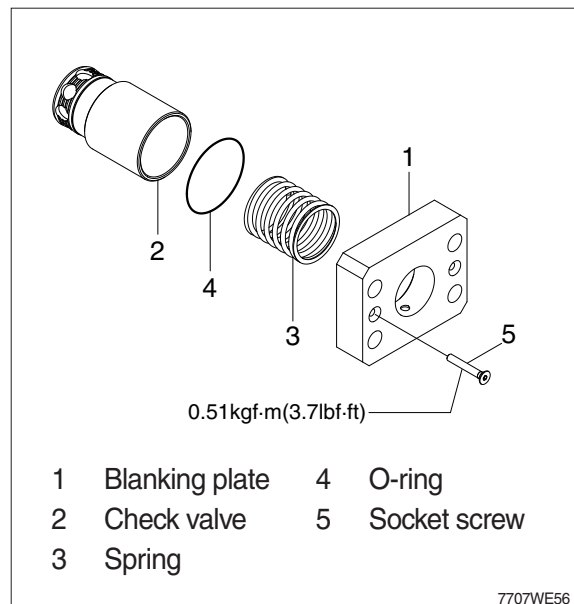


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- | | | | | | |
|---|-----------------|----|--------------|----|----------------------------|
| 1 | Adjusting screw | 6 | Pilot pin | 11 | O-ring |
| 2 | Pilot housing | 7 | Thin nut | 12 | Composite piston seal |
| 3 | A/C housing | 8 | Pilot spring | 13 | Composite piston seal |
| 4 | Pilot poppet | 9 | Spring | 14 | A/C check and main housing |
| 5 | Main plunger | 10 | O-ring | 15 | Return spring |

(6) BACK PRESSURE VALVE (Item 8)

This assembly is retained by screws (5) when replacing the check valve (2) ensure that it is free to slide in the housing before refitting the blanking plate.



- | | | | |
|---|----------------|---|--------------|
| 1 | Blanking plate | 4 | O-ring |
| 2 | Check valve | 5 | Socket screw |
| 3 | Spring | | |

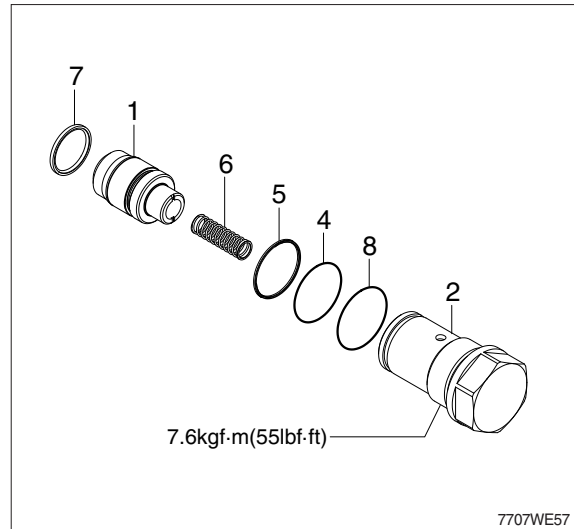
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(7) CHECK VALVE ASSEMBLY (Item 9, 16)

This is a non servicable item and a replacement unit should be fitted.

Ensure that orifice in check valve (1) is clear when refitting. Inspect seat in float check block for damage before refitting.

- | | | | |
|---|-------------------|---|-----------------------|
| 1 | Float check valve | 6 | Spring |
| 2 | Housing | 7 | Composite piston seal |
| 4 | O-ring | 8 | O-ring |
| 5 | Back up ring | | |



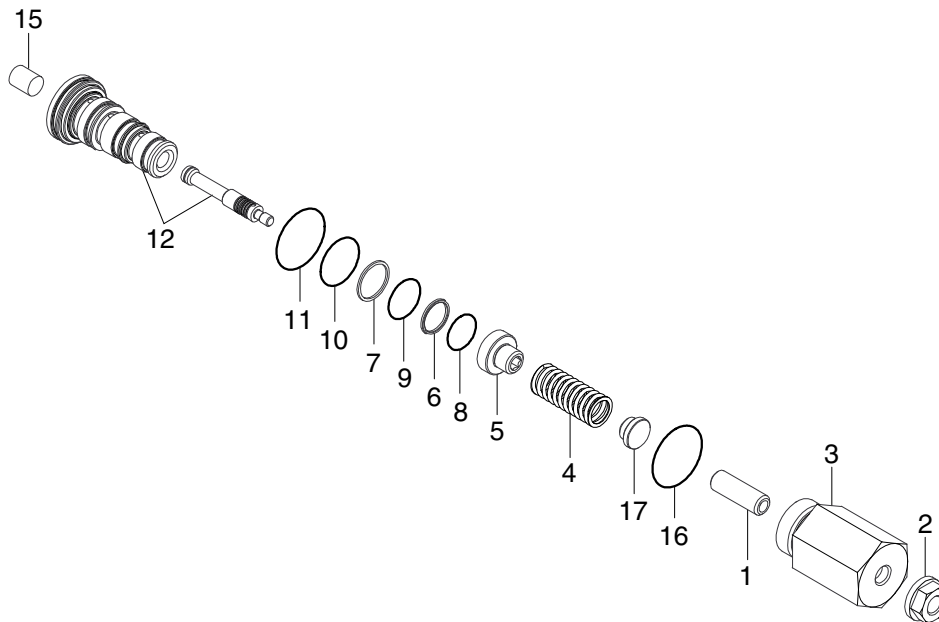
(8) PILOT VALVE ASSEMBLY (Item 10)

The replacement of this item requires that the float check block is first removed from the valve.

This is a non servicable item and a replacement unit should be fitted.

The logic spool is individually sized to the housing bore in item 12.

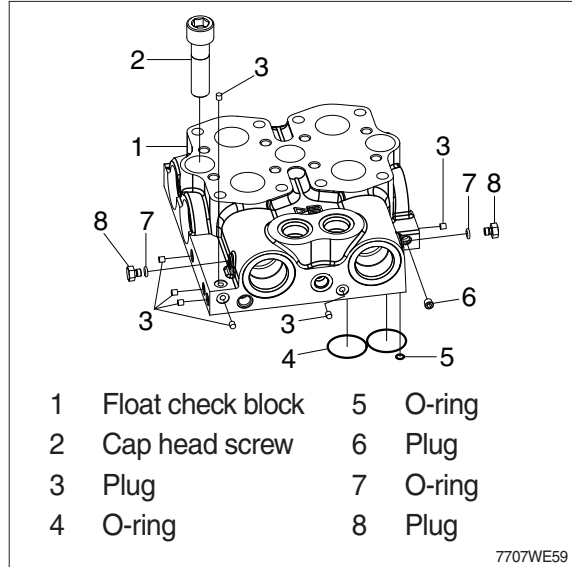
Replacement assemblies are supplied factory set.



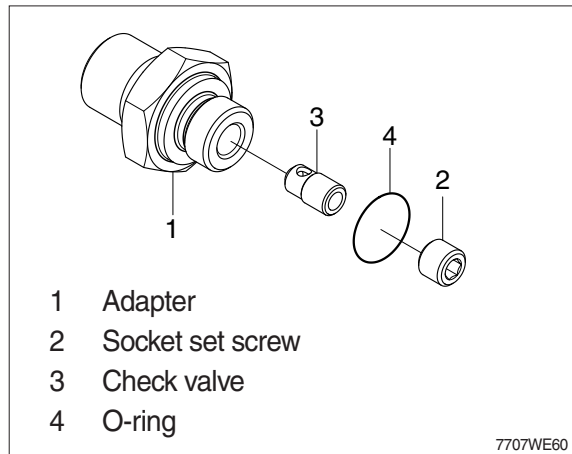
- | | | | | | |
|---|------------------|----|--------------|----|----------------------|
| 1 | Socket set screw | 6 | Back up ring | 11 | O-ring |
| 2 | Lock nut | 7 | Back up ring | 12 | Logic seat and spool |
| 3 | Spring body | 8 | O-ring | 15 | Plug |
| 4 | Spring | 9 | O-ring | 16 | O-ring |
| 5 | Spring retainer | 10 | O-ring | 17 | Spring guide |

(9) PILOT OPERATED FLOAT CHECK BLOCK ASSEMBLY (Item 11)

Remove the three retaining screws (2) and lift the block from the main housing. Do not slide the block across the face as this may damage the sealing face and seals.

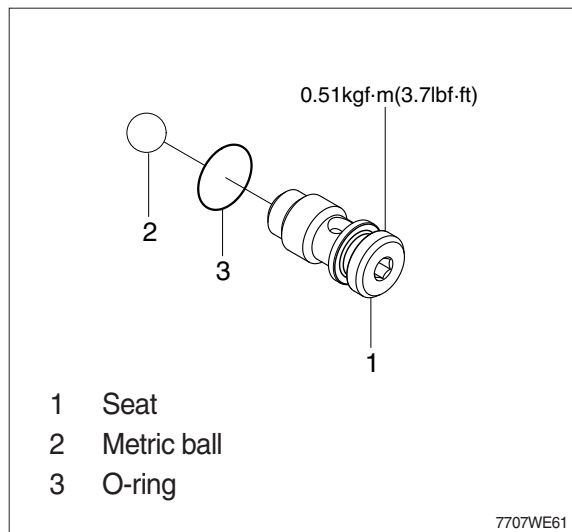


(10) ADAPTER+ORIFICE SCREW+CHECK VALVE (Item 12)



(11) SHUTTLE VALVE ASSEMBLY (Item 13)

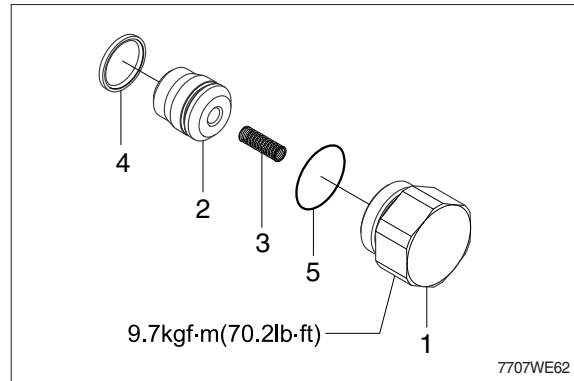
This is non servicable item and a replacement unit should be fitted. Inspect seat in float check block for damage before refitting.



(12) A/C CHECK VALVE ASSEMBLY (Item 14)

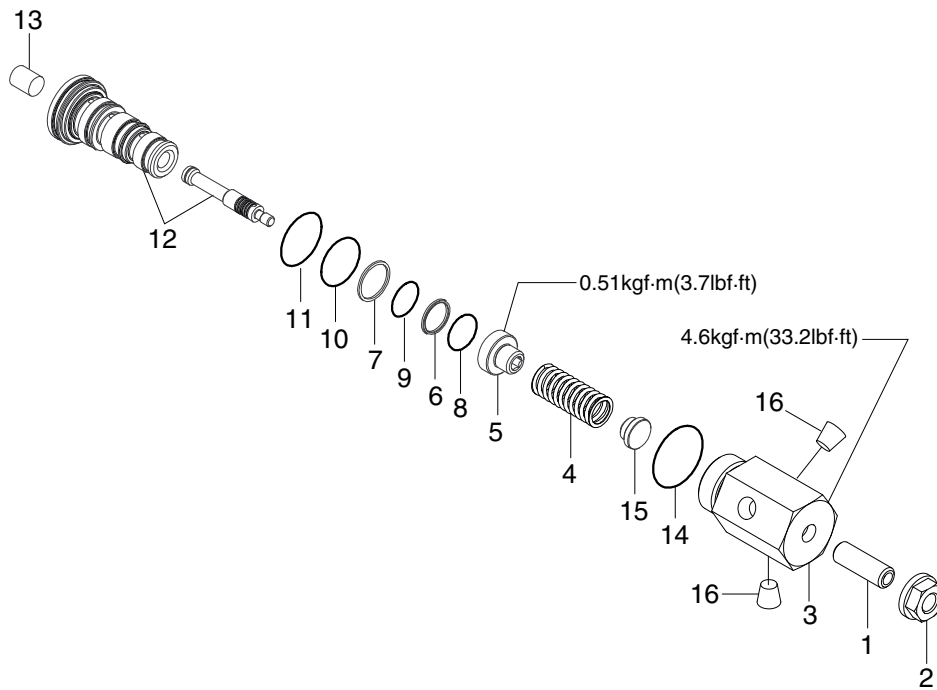
This is a non servicable item and a replacement unit should be fitted. Inspect seat in float check block for damage before refitting.

- | | |
|---------------|---------------|
| 1 Body | 4 Piston seal |
| 2 Check valve | 5 O-ring |
| 3 Spring | |



(13) PILOT VALVE ASSEMBLY (Item 17)

The replacement of this item requires that the float check block is first removed from the valve. This is a non servicable item and a replacement unit should be fitted. The logic spool is individually sized to the housing bore in item 12. Replacement assemblies are supplied factory set.



- | | | |
|--------------------|----------------|-------------------------|
| 1 Socket set screw | 7 Back up ring | 12 Logic seat and spool |
| 2 Hexagon nut | 8 O-ring | 13 Plug |
| 3 Spring body | 9 O-ring | 14 O-ring |
| 4 Spring | 10 O-ring | 15 Spring guide |
| 5 Spring retainer | 11 O-ring | 16 Plug |
| 6 Back up ring | | |