Service Manual

530-70, 530-110

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Section 2 - Operator's Manual

Section B - Body and Framework

Section C - Electrics

Section E - Hydraulics

Section F - Transmission

Section G - Brakes

Section H - Steering

Section K - Engine



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Dimensions

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Headlamp Harness

Fig 26. 334/Y7918

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Fault Finding

Control Valve Block

Table 12. Lack of power at all hydraulic functions

Possible Cause	Action
Insufficient hydraulic fluid.	Check for leaks and top up as required.
Hydraulic leaks in system.	Check hoses, renew as required.
Engine performance.	Check engine performance.
MRV setting incorrect.	Check and adjust as required.
Low pump flow.	– Check pump flow. – Check for external leaks, renew seals. – Priority valve sticking. – Renew pump.

Table 13. All mechanically operated hydraulic services slow to operate

Possible Cause	Action
Neutral circuit or low pressure lines leaking, damaged, trapped or kinked.	Check pipe lines and renew as required.
MRV setting incorrect.	Check and adjust as required.
Low pump flow.	– Check pump flow. – Check for external leaks, renew seals. – Priority valve sticking. – Renew pump.

Table 14. One hydraulic service fails to operate or is slow to operate

Possible Cause	Action
Associated service pipe lines leaking, damaged, trapped or kinked.	Check hoses, renew as required.
Associated ram leaking.	Renew seals.
Associated valve block section leaking or not operating.	– Check for leaks, rectify as required. – Check that the control lever is operating the spool, rectify as required.
Associated check valve not opening to allow return of oil to tank.	Check and rectify as required.

Table 15. The engine tends to stall when hydraulics are under load

Possible Cause	Action
MRV valve setting incorrect	Check and adjust as required.
Engine performance.	Check engine performance.

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Operation Overview

Telescopic Operation - 3 Stage Boom

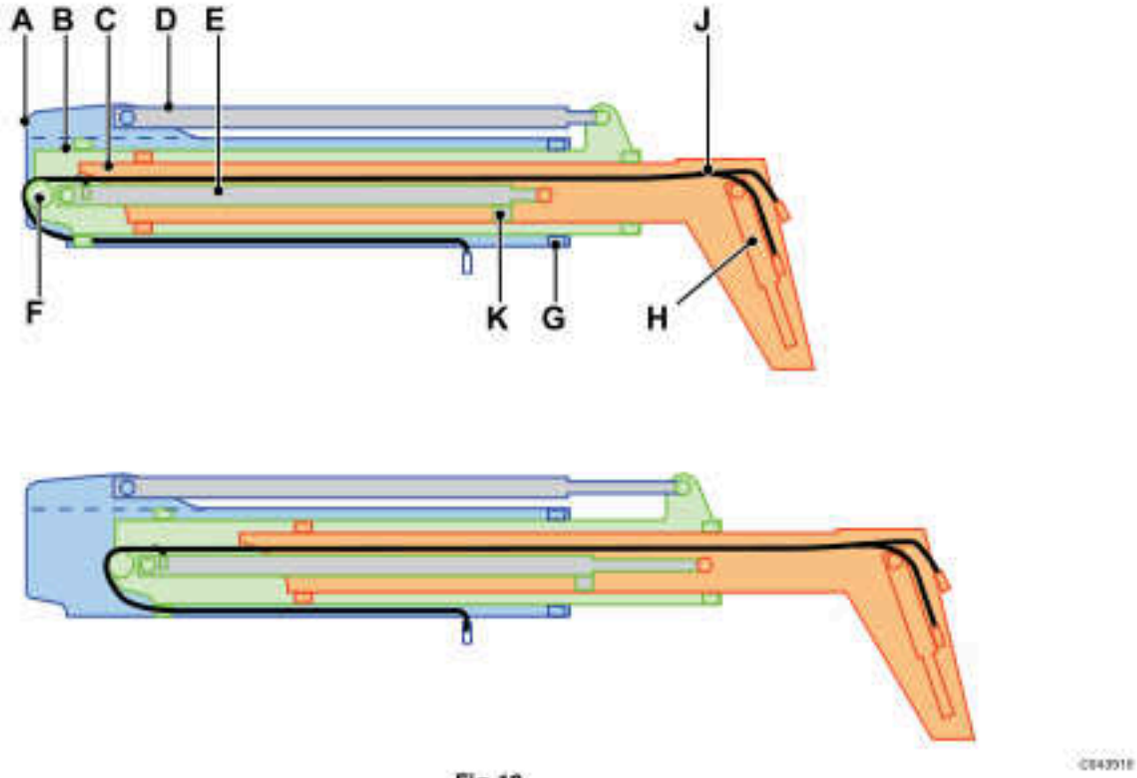


Fig 18.

The telescopic boom consists of three sections, an inner **18-C**, intermediate **18-B** and outer **18-A** section.

When the boom is extended or retracted the inner and outer sections move simultaneously. This is achieved by hydraulically interconnecting the inner and outer extension rams (**18-E** and **18-D**). See ***Section E*** for an explanation of the hydraulic operation.

From the diagrams we can see that the hydraulic hoses **18-J** connected to the tilt ram, auxiliary service and inner extension ram (telescopic services) are arranged to follow the movement of the inner and intermediate boom sections. As the boom extends the hose runs at the bottom of the inner boom are drawn around the guide roller **18-F** and along the top of the inner extension ram **18-E**.

If the inner and intermediate booms move out of phase the telescopic service hoses will be damaged. Should a hose of the incorrect length be fitted damage can also occur.

Important: *To ensure the reliable operation of the telescopic function it is critical that the hoses are routed and fitted correctly.*

To ensure the correct clearances and smooth movement between the boom sections special wear pads **18-G** together with shims are fitted. Wear pads are fitted at the top, bottom and sides at both ends of the boom sections. The inner extension ram is also fitted with a wear pad **18-K** since the inner boom moves in relation to the ram cylinder.

Key ⇨ *Fig 18. (🗋 B-14)*	
A	Outer boom section (coloured blue)
B	Intermediate boom section (coloured green)
C	Inner boom section (coloured orange)
D	Outer extension ram
E	Inner extension ram
F	Hose guide roller
G	Wear pad
H	Tilt ram
J	Example hose routing - auxiliary service
K	Wear pad - inner extension ram

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Auxiliary Relief Valve (ARV)

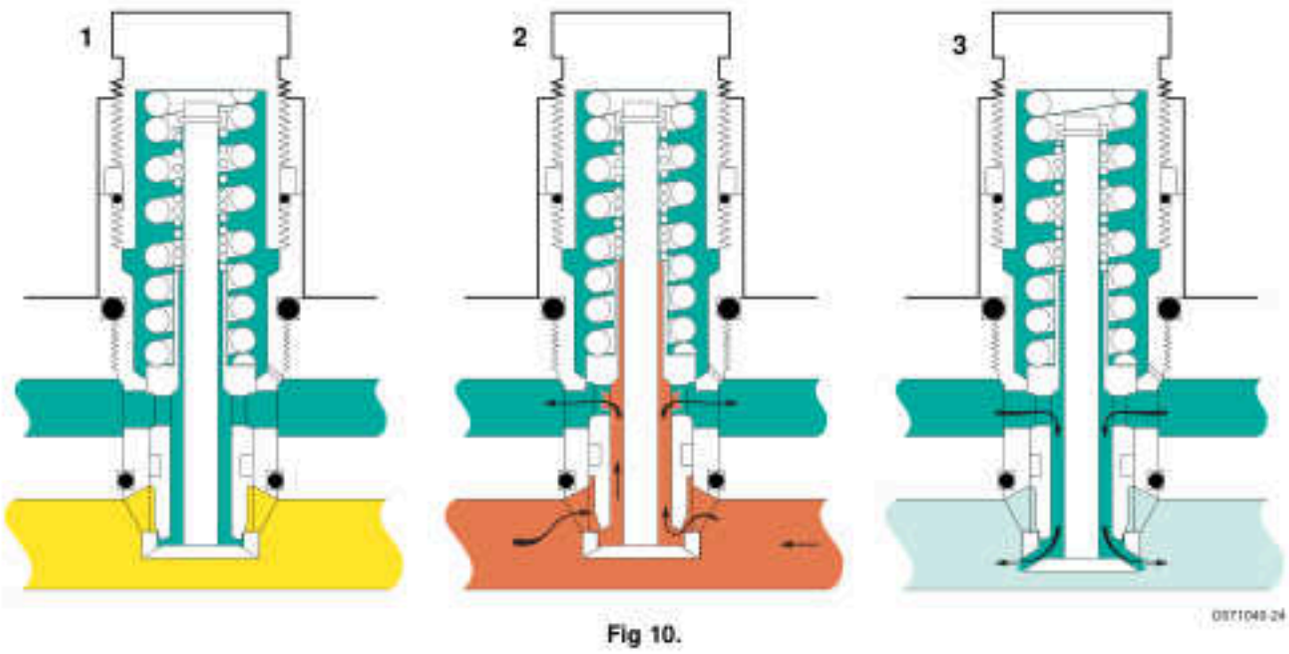


Fig 10.

Operation Overview

The Auxiliary Relief Valves (A.R.V.'s) are situated in the control valve to limit potentially damaging pressures within specified services due to external loadings.

A.R.V.'s may also be used to limit the maximum pressure in a specified service to less than the M.R.V. setting.

1 Valve at Rest:

A service is selected but pressure in the service gallery (yellow) has not reached the setting of the A.R.V. which is held closed by its spring.

Poppet Opens:

The setting of the A.R.V. is exceeded by the service pressure which causes the poppet to rise against spring force allowing the pressure to be vented into the exhaust gallery (green).

Anti-cavitation Mode:

When a service is operated in such a way that low pressure, or cavitation, exists in the service line (light green), the relatively high pressure oil in the exhaust gallery (darker green) acts on the lower poppet and flows into the service gallery to make up the deficiency.

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