MAINTENANCE TECHNIQUE
UNDERGROUND DRILL RELIABILITY

Product Overview

[August 2022]

MT Sandvik 421 Drilling Block Relief Modification

Document	421 Drilling block Relief Upgrade	Site	N/A
Machine	Sandvik 421	Contact	

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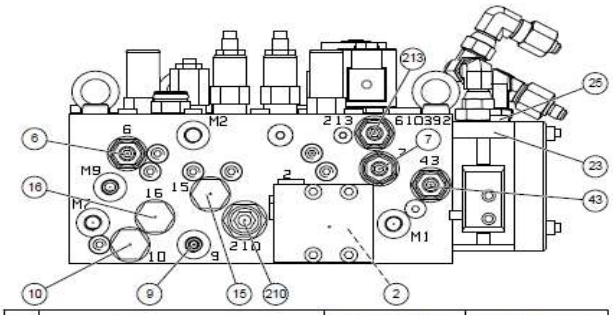
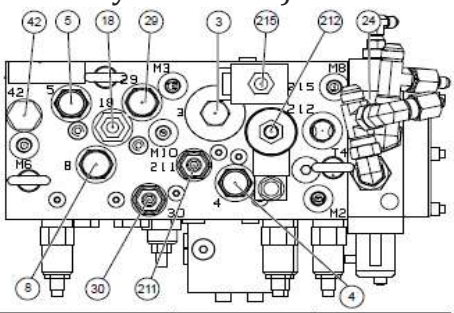
Background

The 421 hydraulic system has 2 reliefs in the THC 561 drilling block and one relief in the boom control valve.
By installing these parts, the system returns to protection by a single relief (in the boom lever block, as used on 420 jumbo), Vastly simplifying the adjustment and fault diagnosis process, while deleting the common occurrence of 211 relief failure.
VALVES
561 Block valve 211 - The main drilling block relief, delete.
561 Block 210 - The boom lever oil supply reducer/relief, delete.
Boom control valve relief Fig 4 - The boom lever block relief.
(requires a delete of pressure reducer 210 so it can function as the new system relief.)



No	Component	Tightening torque [Nm] (for the cap)	Tightening torque [Nm] (for the coil)
2	Percussion line pressure compensator	40	
6	Percussion half-power pressure relief valve	33,9	
7	Percussion max. pressure relief valve	33,9	
9	Orifice		
10	Shuttle valve	33,9	
15	Shuttle valve	33,9	
16	Shuttle valve	33,9	
23	Feed directional valve	22	
25	Max. pressure relief valve for feed line A	40	
43	Pilot pressure regulating valve	33,9	
210	Pressure reducing/relieving valve of the boom circuit	60	
213	Power extractor pressure relief valve (optional)	33,9	

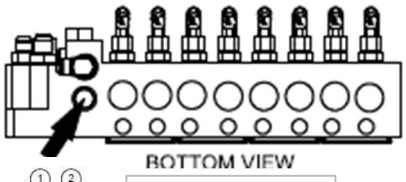


No	Component	Tightening torque [Nm] (for the cap)	Tightening torque [Nm] (for the coil)
3	Percussion main valve	240	
4	Percussion selector valve	33,9	
5	Percussion pressure selector valve	33,9	
8	Rattling on/off valve	33,9	
18	Monitoring valve	33,9	
24	Max. pressure relief valve for feed line B	40	
29	Feed LS line selector valve	33,9	
30	Fast feed max. pressure relief valve	33,9	
42	Shuttle valve	33,9	
211	Main pressure relief valve	33,9	
212	Power extractor pressure selecting valve (optional)	33,9	6,8
215	Power extractor on/off valve (optional)	56	8

Implementing the change and adjusting the system pump and relief settings

Install blanking plug MTBG 007 534 330 to the drilling block main relief port 211 – Top of the block.
Install bypass plug MTBG 006 173 640 to the drilling block boom pressure reducer port 210 – Front of the block.

Fig 4
MAX BOOM
RELIEF



SETTING THE BOOM RELIEF.
Wind the boom relief (fig 4) in fully.

Install a gauge to M1 port on the front of the drilling block.
Wind the pump max adjuster 1 out fully
Wind the pump Min adjuster 2 out fully.

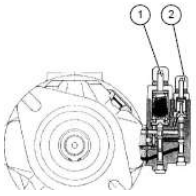


Fig 2
Pump MIN 2
Pump MAX 1

Start the pump - Wind the pump min in fully.
Wind the pump max in slowly until the pump reaches 260bar.
Wind the boom relief (Fig 4) out slowly until you hear it start to hiss, or hear the pump begin to stroke and deliver flow. Wind the relief in 1/4 turn and lock.

Wind the pump max adjuster out to 230bar on your gauge.
Wind the pump min out to 30 bar on your gauge.
Stall boom extension to confirm the pump max loads to 230bar, and returns to 30 bar when in standby.