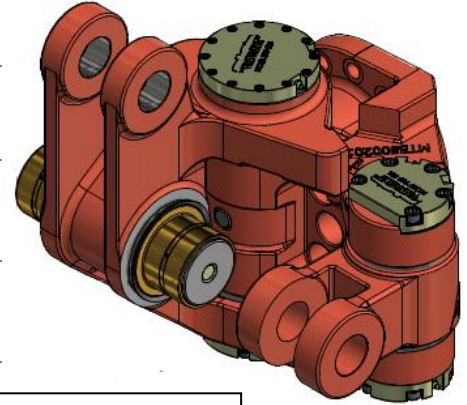


Work Instruction

Document	SB60 MIT DPU INSTALL
Machine/Group	Sandvik SB60 booms
Document No.	MTU10095



Important- Follow all Site standard safety requirements including supporting booms on rated safety stands, lifting and slinging procedures, Isolations and always use the correct equipment for the Task.

Background

The MIT DPU utilizes a unique (MTPAT) Male Interlocking Taper pin system which utilizes greatly increased torsional load capacity and superior working clearances to significantly extend the life of high load pivot point components.

4 key points ensure the unit will reach its intended 12month service life.

- Correct installation and pin tension.
- Pivot seals installed correctly and replaced if damaged
- Grease is applied at least 24hrly and damaged grease points are replaced.
- Shimming of the vertical pin and Cross piece should be carried out as required if end float exceeds 0.5mm

Prep for Install

1. Separate the rollover and feed unit from existing DPU as per site procedure.
2. Remove existing OEM DPU from the inner zoom.
3. Remove existing bushing bearing (OEM Part # 264 333 18 x2 or Maintenance Technique Part # MT 264 333 180 x 2) from the inner zoom and discard.
4. Once bushes are removed, clean the area thoroughly and check inner bearing surface is clean and not oversized see PIC 1.
5. Check the M6 cap retaining threads, re tap if necessary, see PIC 1.
6. Replace bearings in end of swing cylinder and dump cylinder (207 974 08) see PIC 2 and 3.



PIC 1

Clean bores, check for damage and re-tap threads if required.



PIC 2

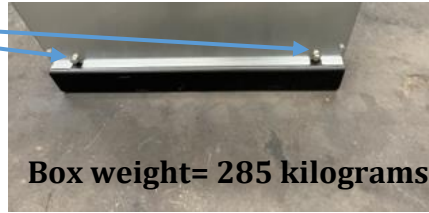
Replace cylinder bearings



PIC 3

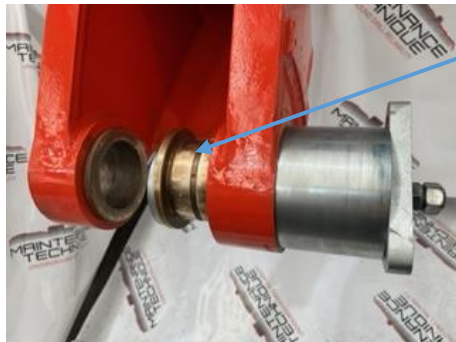
7. **Remove the DPU from the transport box.** Loosen both M12 retaining bolts on each side (18mm head /4 in total) and lift the lid off from the DPU cradle box. The lid weighs 18 kilograms.

Loosen bolts from cradle frame both sides and lift off lid.



8. **Install MT264 333 180 Bronze flange bearings** to the inner zoom with Tool MT264 332 088. Bearings are an interference fit and should be fitted by means that will not damage them. Freezing bearings and the use of the correct installation tools will ensure no damage (see PIC 4) and that bearings are installed hard against the inner zoom. (see PIC 5)

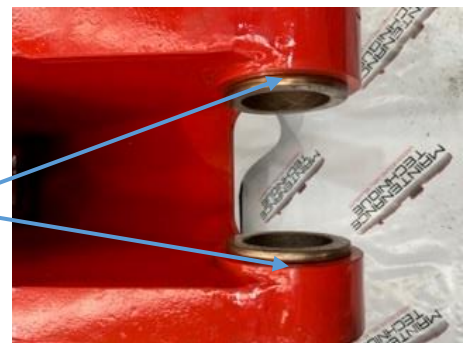
A light lubricant can be used on the outer of the bronze flange bearing.



Care should be taken not to damage bronze bearing during install.

Bronze bearing must be hard up against inner zoom

PIC 4



PIC 5

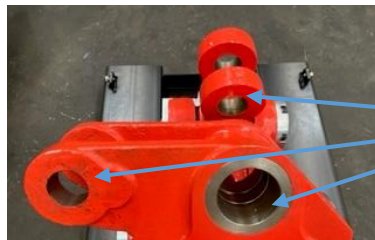
9. **Install Seals MT873 457 490** as per PIC 6

Stretch the seals over the clevis to ensure they are not damaged.



PIC 6

10. **Clean all anti-corrosion compound from inside all bores** Before removing MT DPU from the cradle, **Apply CRC to all bores**



Thoroughly clean all bores of anti-corrosion compound. Solvent can be used.

11. **Install the grease jacking cylinder** - provided Inside the DPU box as shown in PIC 7. This is used to spread the inner zoom to ease installation.

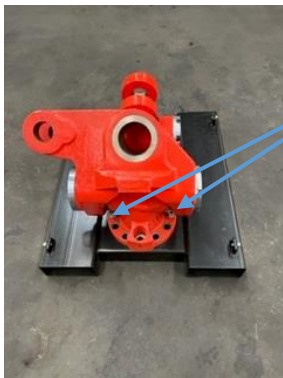
165mm



PIC 7

Place the cylinder so that the bleeder and grease nipple are accessible. Install approximately 165mm from the end of the zoom and pump with grease to spread inner zoom apart and allow DPU to slide into place. After installation of the DPU, loosen the bleeder screw to relieve pressure and remove jacking cylinder.

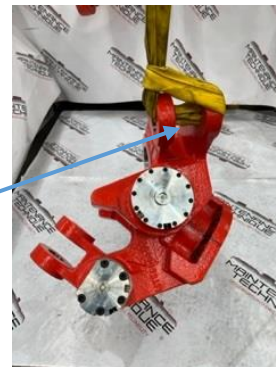
12. **Remove both M16 (24mm spanner) hold down bolts from the cradle see PIC 8 and sling DPU as shown in PIC 9.** When DPU is slung this way, it will align with the inner zoom as per PIC 10.



PIC 8

Remove both hold down bolts.

DPU slung through dump cylinder pivot point will align with inner zoom.
(use edge protection on soft slings)



PIC 9

13. **Carefully manoeuvre DPU into place** lining up with inner zoom as shown in see PIC 10 and 11, continue until bores are lined up as shown in PIC 12.



PIC 10



PIC 11



PIC 12

14. **Interlocking pin MT323 057 580 see PIC 13 is now ready to be installed.** Ensure all bores and pin are clean and **CRC or WD40** is applied. It is very important not to use anti-seize compound on the pin surfaces. Anti-seize may be used on the thread of the bolt only.



PIC 13

MT323 057 580 contains 2 tapered pins, a bolt for tensioning and a special hardened washer.

Only use MT washer for installation of pin.

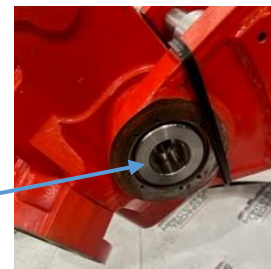
15. **Install both ends of pin into bore and push home.** The pin can be installed in either direction, but it will be easier to torque bolt and retorque later if bolt head side is facing inside toward the other boom. Gently tap pin into place using a copper hammer. The taper will self-align inside the bushes see PIC 14 and 15.



PIC 14

Pin at start of taper

Pin installed fully into taper.



PIC 15

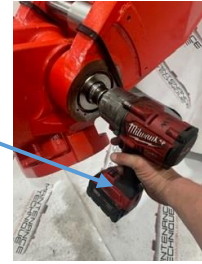
16. **Install the bolt with antiseize on the thread and lubricate the hardened washer** as shown in PIC 16, an impact gun can be used to pull the pin halves together.



PIC 16

Lubricate
hardened
washer

Impact gun for
initial
tensioning.



PIC 17

17. **Tension main bolt to 800Nm, strike the pin with a copper hammer** several times to help seat the tapers. Retention twice after installation.

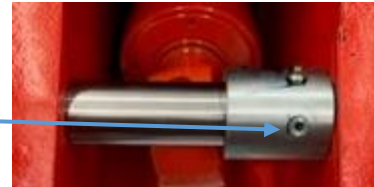
A tension check should be completed after 12 percussion hours or 2 shifts of use. (tension check should be completed at 750Nm)



PIC 18

18. **Carefully loosen bleeder screw** see PIC 19 (5mm allen key) from the grease jacking cylinder and remove the cylinder from the inner zoom. Return Jacking cylinder to MT DPU box.

Bleeder screw



PIC 19

19. **Carefully pull the seal around inner zoom bushing.** WD40/CRC will help seals slide into place. A lever can be used to assist. Make sure seal is correctly installed and not folded or rolled over. See PIC 20 and 21.



PIC 20

Correctly
installed seal

Seal rolled and
crossed over, use
a seal and pick
and roll into
correct position



PIC 21

20. **Install pin covers (MT 264 383 681) to both sides of pins.** Thicker cover to the inside. Covers are fitted with a 50bar grease pressure relief and a BSP plug.



PIC 22

Covers can be installed in any orientation, Maintenance Technique recommends installing covers with the grease relief facing downwards to allow water egress



PIC 23

21. **Move the sling to point shown** in PIC 24 and lift into place to allow DPU dump and swing cylinders to be fitted to the MIT DPU. Always use new pins and collets.



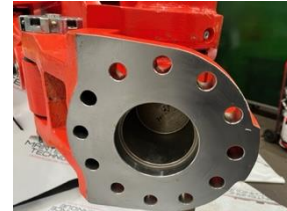
PIC 24

22. Fit new pins to both DPU swing and DPU dump cylinders, tension to 220Nm see PIC 25.



PIC 25

23. Clean anti corrosion coating from the rollover mounting face (PIC 26). Follow site procedures to mount rollover to MIT MPU.

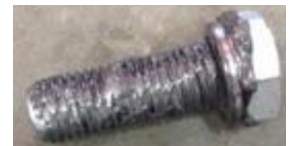


PIC 26

24. Ensure new bolts and machined hardened washers are used when installing the roll over. Tension to the specification below.

SB60 Bolt Kit – DPU/Rollover : MT010 146 60

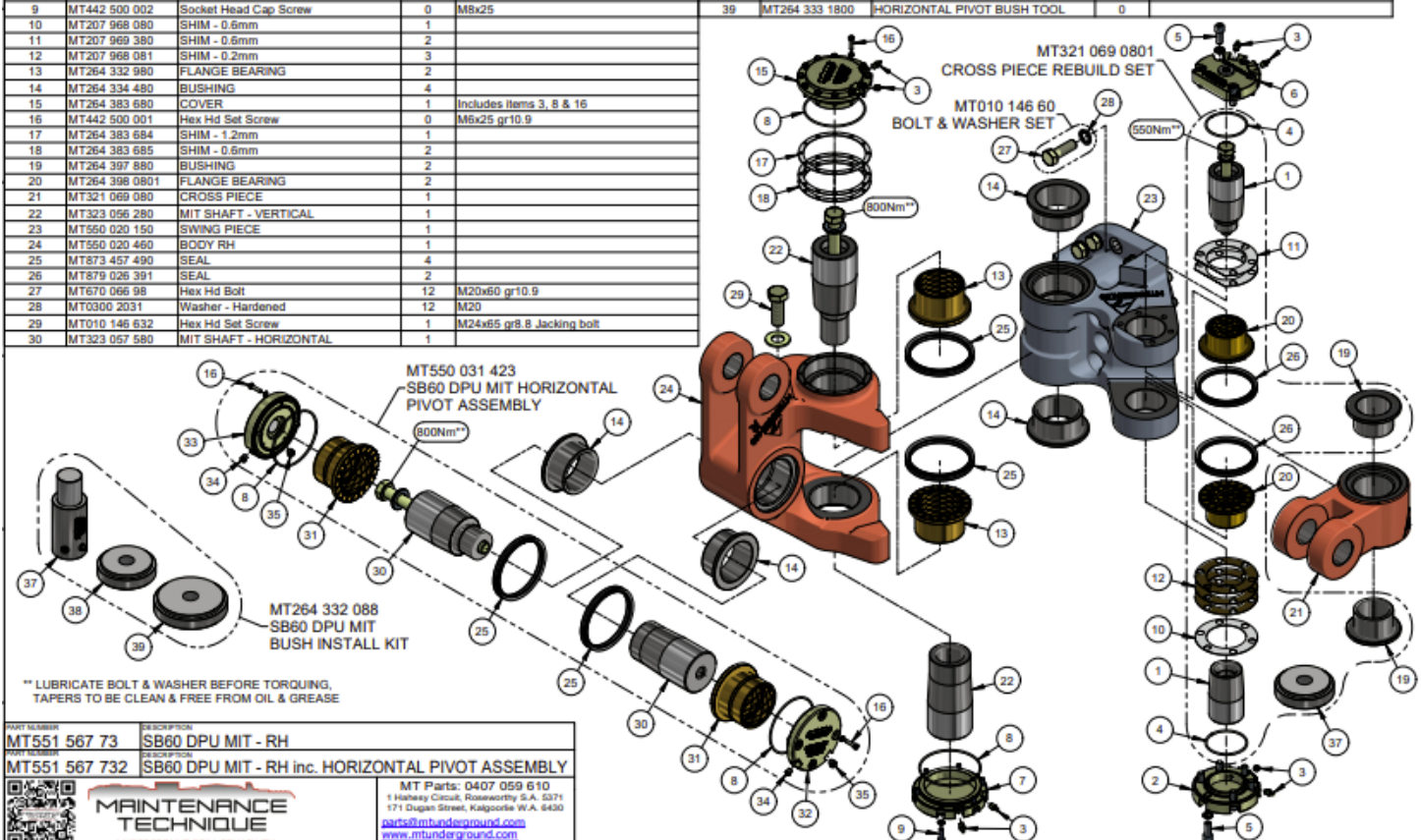
Anti-seize bolt and washer assemblies (as shown)
Ensure washers is adequately lubricated with anti-seize or oil before installing
Initial Bolt Tension: 280Nm (First stage tension)
Final Bolt Tension: 550Nm (Second stage tension)



PIC 27

*Recommended retorque after 12 hours of operations.

ITEM	PART NUMBER	DESCRIPTION	QTY	COMMENTS	ITEM	PART NUMBER	DESCRIPTION	QTY	COMMENTS
1	MT207 908 080	MIT SHAFT - SWING	1		31	MT264 333 180	FLANGE BEARING	2	
2	MT207 908 580	COVER (v02)	1	Includes Items 3, 4 & 5	32	MT264 383 681	COVER	1	Includes Items 8, 16, 34 & 35
3	MT572 102 40	GREASE NIPPLE	0	1/8 BSP	33	MT264 383 682	COVER	1	Includes Items 8, 16, 34 & 35
4	MT800 118 39	O-RING	0		34	MT3128 3151 418	RELIEF VALVE - GREASE	0	40 BAR
5	MT445 821 60	Socket Head Cap Screw	0	M12x30	35	MT865 683 09	SOCKET PLUG	0	1/8 BSP
6	MT207 908 581	COVER (v02)	1	Includes Items 3, 4 & 5	36	MT010 146 631	MIT JACKING BOLT REMOVAL KIT	1	Includes Item 29, M20x55 & M30x100 bolts
7	MT207 939 080	COVER	1	Includes Items 3, 8 & 9	37	MT323 057 5T	HORIZONTAL SHAFT INSTALL TOOL	1	Included with DPU complete
8	MT522 450 80	O-RING	0		38	MT264 398 0880	CROSS PIECE BUSH TOOL	0	
9	MT442 500 002	Socket Head Cap Screw	0	M8x25	39	MT264 333 1800	HORIZONTAL PIVOT BUSH TOOL	0	
10	MT207 968 080	SHIM - 0.5mm	1						
11	MT207 969 380	SHIM - 0.5mm	2						
12	MT207 968 081	SHIM - 0.2mm	3						
13	MT264 332 980	FLANGE BEARING	2						
14	MT264 334 480	BUSHING	4						
15	MT264 383 680	COVER	1	Includes Items 3, 8 & 16					
16	MT442 500 001	Hex Hd Set Screw	0	M6x25 gr10.9					
17	MT264 383 684	SHIM - 1.2mm	1						
18	MT264 383 685	SHIM - 0.6mm	2						
19	MT264 397 880	BUSHING	2						
20	MT264 398 0801	FLANGE BEARING	2						
21	MT321 069 080	CROSS PIECE	1						
22	MT323 056 280	MIT SHAFT - VERTICAL	1						
23	MT550 020 150	SWING PIECE	1						
24	MT550 020 460	BODY RH	1						
25	MT873 457 490	SEAL	4						
26	MT879 026 391	SEAL	2						
27	MT670 066 98	Hex Hd Bolt	12	M20x60 gr10.9					
28	MT0300 2031	Washer - Hardened	12	M20					
29	MT010 146 632	Hex Hd Set Screw	1	M24x65 gr8.8 Jacking bolt					
30	MT323 057 580	MIT SHAFT - HORIZONTAL	1						



MT550 031 423 SB60 DPU MIT HORIZONTAL PIVOT ASSEMBLY
800Nm**

MT264 332 088 SB60 DPU MIT BUSH INSTALL KIT

MT321 069 0801 CROSS PIECE REBUILD SET
550Nm**

MT010 146 60 BOLT & WASHER SET
550Nm**

** LUBRICATE BOLT & WASHER BEFORE TORQUING. TAPERS TO BE CLEAN & FREE FROM OIL & GREASE

PART NUMBER	DESCRIPTION
MT551 567 73	SB60 DPU MIT - RH
MT551 567 732	SB60 DPU MIT - RH inc. HORIZONTAL PIVOT ASSEMBLY

MT Parts: 0407 059 610
1 Hawkey Circuit, Roseworthy S.A. 5371
171 Dugan Street, Kalgoorlie W.A. 6430
parts@mtunderground.com
www.mtunderground.com

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