

11 Bottom Block

11.1 Bottom Block Dimensions – SX2, SX3, SX4 Hoists

NOTE: Bottom block dimensions on this page for SX5 (except SX5 021 and 041), SX6, and SX7 hoists are no longer valid. Use the bottom block dimensions on next page.

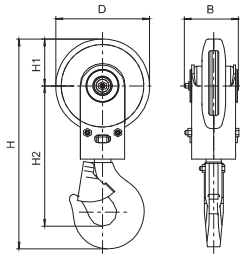


Figure 1

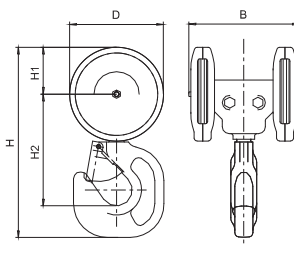


Figure 2

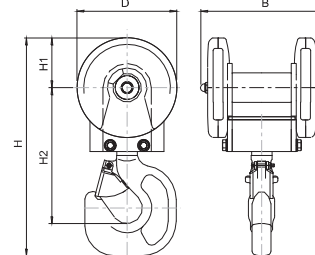


Figure 3

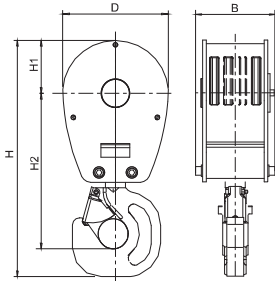


Figure 4

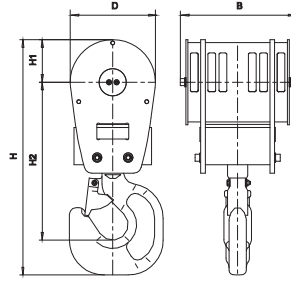


Figure 5

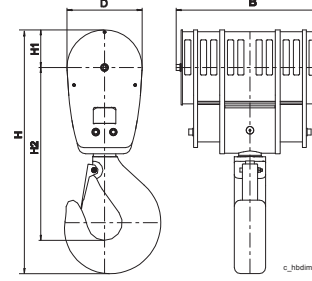


Figure 6

Note 1: H and H2 dimensions listed in table are for standard hook forging type.

| Hoist | Reeving Code | Max. Hoist Duty | Std. Hook Forging Type | Alt. RSN Forging Type | Figure | H [mm] Note 1 | H1 [mm] | H2 [mm] Note 1 | D [mm] | B [mm] | Approx. Weight [kg] |
|-------|--------------|-----------------|------------------------|-----------------------|--------|------------------|---------|-------------------|--------|--------|---------------------|
| SX2/3 | 021 | M6 | RSN 1 V | | 1 | 375 | 84 | 251 | 168 | 108 | 9.3 |
| SX2/3 | 041 | M6 | HBC 1.6 V | RSN 1.6 | 2 | 337 | 84 | 198 | 168 | 221 | 13 |
| SX4 | A2 | M6 | RSN | | 1 | 332 | 83 | 249 | 166 | 108 | 9.3 |
| SX4 | A4 | M6 | HBC 1.6 V | RSN 1.6 | 2 | 337 | 82 | 198 | 166 | 331 | 13 |
| SX4 | 021 | M6 | RSN 1 V | | 1 | 414 | 102 | 272 | 204 | 118 | 14 |
| SX4 | 041 | M6 | HBC 2.5 V | --- | 2 | 426 | 102 | 259 | 204 | 270 | 21.8 |
| SX4 | 041 | M6 | --- | RSN 2.5 | 3 | 452 | 102 | 291 | 204 | 240 | 31 |
| SX5 | 021 | M6 | HBC 2.5 V | RSN 2.5 | 1 | 578 | 142 | 371 | 283 | 132 | 31 |
| SX5 | 041 | M6 | HBC 5 V | --- | 2 | 548 | 142 | 316 | 283 | 376 | 46.5 |
| SX5 | 041 | M6 | --- | RSN 6 | 3 | 604 | 142 | 372 | 283 | 340 | 77 |
| SX5 | 061 | M5 | HBC 5 V | RSN 6 | 4 | 687 | 150 | 447 | 300 | 220 | 89 |
| SX5 | 081 | M4 | HBC 5 V | RSN 6 | 4 | 687 | 150 | 447 | 300 | 220 | 95 |
| SX5 | 022 | M6 | HBC 2.5 V | RSN 4 | 4 | 449 | 110 | 324 | 220 | 165 | 29 |
| SX5 | 042 | M6 | HBC 5 V | RSN 6 | 5 | 608 | 110 | 408 | 220 | 220 | 67 |
| SX5 | 062 | M6 | RSN 6 V | | 5 | 644 | 110 | 448 | 220 | 296 | 78 |
| SX6 | 021 | M6 | HBC 5 V | RSN 6 | 4 | 788 | 198 | 500 | 395 | 219 | 94 |
| SX6 | 041 | M6 | HBC 5 V | RSN 6 | 4 | 788 | 198 | 500 | 395 | 219 | 106 |
| SX6 | 061 | M5 | RSN 10 T | | 4 | 930 | 198 | 625 | 395 | 259 | 182 |
| SX6 | 081 | M4 | RSN 16 T | | 6 | 1067 | 198 | 735 | 395 | 289 | 264 |
| SX6 | 022 | M6 | HBC 5 V | RSN 6 | 4 | 687 | 150 | 447 | 300 | 220 | 90 |
| SX6 | 042 | M6 | HBC 5 V | RSN 6 | 4 | 687 | 150 | 447 | 300 | 220 | 95 |
| SX6 | 062 | M5 | RSN 10 T | | 6 | 844 | 150 | 587 | 300 | 373 | 177 |
| SX6 | 082 | M4 | RSN 16 T | | 6 | 974 | 150 | 690 | 300 | 483 | 292 |
| SX7 | 022 | M6 | HBC 5 V | RSN 6 | 4 | 788 | 198 | 500 | 395 | 219 | 107 |
| SX7 | 042 | M6 | RSN 16 T | | 6 | 1110 | 228 | 735 | 455 | 335 | 309 |
| SX7 | 062 | M5 | RSN 20 T | | 6 | 1221 | 228 | 790 | 455 | 487 | 485 |
| SX7 | 082 | M4 | RSN 25 T | | 6 | 1282 | 228 | 886 | 455 | 579 | 585 |

See Section 4 for Reeving Code definition

11.2 Bottom Block Dimensions – SX5, SX6, SX7 Hoists

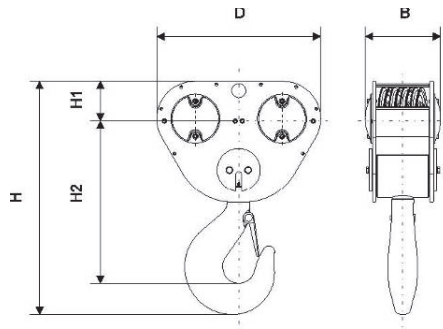


Figure 7

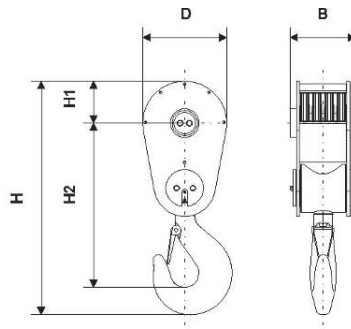


Figure 8

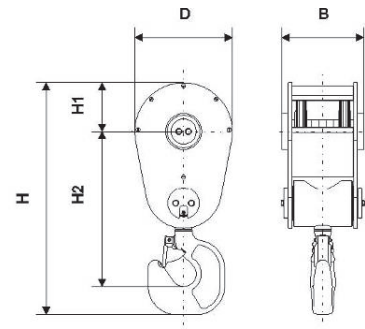


Figure 9

Note 1: H and H2 dimensions listed in table are for standard hook forging type.

| Hoist | Reeving Code | Max. Hoist Duty | Std. Hook Forging Type | Alt. RSN Forging Type | Figure | H [mm] Note 1 | H1 [mm] | H2 [mm] Note 1 | D [mm] | B [mm] | Approx. Weight [kg] |
|-------|--------------|-----------------|------------------------|-----------------------|--------|------------------|---------|-------------------|--------|--------|---------------------|
| SX5 | 061 | M6 | HBC 5 V | RSN 6 | 9 | 740 | 155 | 495 | 310 | 243 | 87 |
| SX5 | 081 | M5 | HBC 5 V | RSN 6 | 9 | 740 | 155 | 495 | 310 | 243 | 92 |
| SX5 | 022 | M6 | HBC 2.5 V | | 9 | 541 | 115 | 361 | 230 | 203 | 38 |
| SX5 | 042 | M6 | RSN 6 V | | 7 | 639 | 120 | 433 | 530 | 243 | 101 |
| SX5 | 062 | M6 | RSN 6 V | | 7 | 639 | 120 | 433 | 530 | 243 | 104 |
| SX5 | 082 | M5 | RSN 6 V | | 7 | 639 | 120 | 433 | 530 | 243 | 111 |
| SX6 | 021 | M6 | HBC 5 V | RSN 6 | 9 | 830 | 205 | 535 | 410 | 280 | 98 |
| SX6 | 041 | M6 | HBC 5 V | RSN 6 | 9 | 830 | 205 | 535 | 410 | 280 | 111 |
| SX6 | 061 | M6 | RSN 10 T | | 8 | 996 | 205 | 684 | 410 | 314 | 181 |
| SX6 | 081 | M5 | RSN 16 T | | 8 | 1126 | 205 | 787 | 410 | 322 | 236 |
| SX6 | 022 | M6 | HBC 5 V | | 9 | 740 | 155 | 495 | 310 | 259 | 78 |
| SX6 | 042 | M6 | RSN 6 V | | 7 | 719 | 160 | 473 | 700 | 312 | 143 |
| SX6 | 062 | M6 | RSN 10 T | | 7 | 861 | 160 | 594 | 700 | 316 | 192 |
| SX6 | 082 | M5 | RSN 16 T | | 7 | 981 | 160 | 687 | 700 | 324 | 299 |
| SX7 | 022 | M6 | RSN 6 V | | 8 | 844 | 205 | 553 | 410 | 280 | 114 |
| SX7 | 042 | M6 | RSN 16 T | | 7 | 1041 | 200 | 707 | 910 | 393 | 332 |
| SX7 | 062 | M6 | RSN 20 T | | 7 | 1130 | 200 | 778 | 910 | 402 | 495 |
| SX7 | 082 | M5 | RSN 25 T | | 7 | 1224 | 200 | 852 | 910 | 411 | 603 |

See Section 4 for Reeving Code definition

New load block design for SX6 & SX7 hoists - effective June 2010

New load block design for SX5 hoists – effective June 2012

Load block design for SX5 021 and 041 hoists has not changed.

11.3 Block Construction

The bottom block is outfitted with either a RSN or HBC hook type as standard. Use the table in the **Bottom Block Dimensions** section to identify the actual hook forging type used in the bottom block for a particular hoist model.

The hook is equipped with a spring-loaded, flipper-type safety latch and is supported on a thrust bearing to allow hook to rotate 360° easily under a load. The material information for the entire bottom block is found in the **Materials** section.

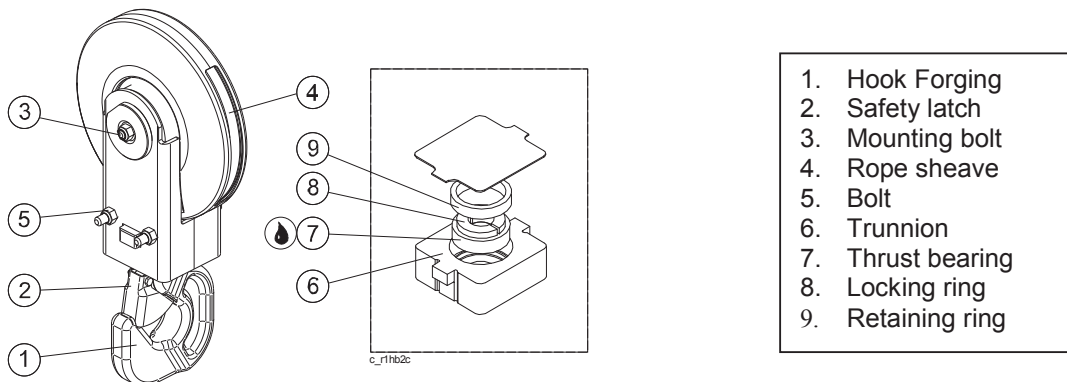


Illustration of a 2-part single bottom block

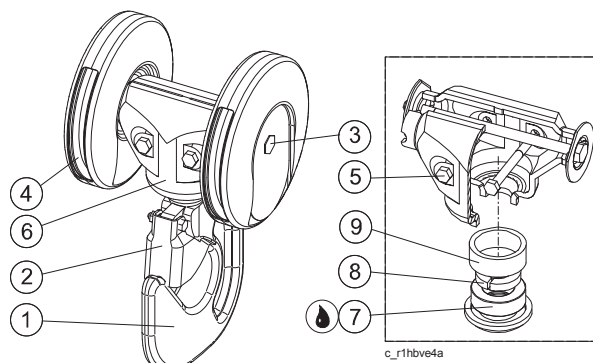
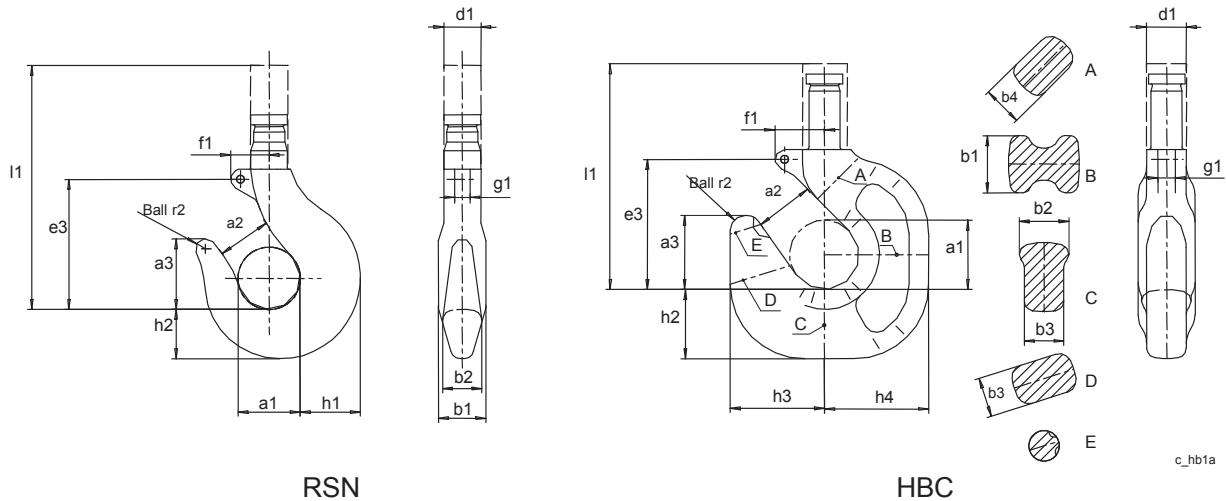


Illustration of a 4-part single bottom block

11.4 RSN and HBC Hook Forging Dimensions

The RSN or HBC hook forging is made from alloy steel. More information on the hook forging material is described in the **Materials** section.



RSN

HBC

c_hb1a

| | RSN hook type | | | | | | | | | | HBC hook type | | |
|----------------|---------------|---------|---------|--------|---------|---------|--------|--------|--------|--------|---------------|---------|-------|
| | RSN 1 | RSN 1.6 | RSN 2.5 | RSN 4 | RSN 5 | RSN 6 | RSN 10 | RSN 16 | RSN 20 | RSN 25 | HBC 1.6 | HBC 2.5 | HBC 5 |
| a ₁ | 50+3 | 56+3 | 63+3 | 71+4 | 80+4 | 90+5 | 112+6 | 140+6 | 160+8 | 180+8 | 56+3 | 63+3 | 80+3 |
| a ₂ | 40+3 | 45+3 | 50+3 | 56+4 | 63+4 | 71+5 | 90+6 | 112+6 | 125+8 | 140+8 | 45+3 | 51+3 | 63+3 |
| a ₃ | 57+3 | 64+3 | 72+3 | 80+4 | 90+4 | 101+5 | 127+6 | 160+6 | 180+8 | 202+8 | 60+3 | 65+3 | 84+3 |
| b ₁ | 38+3 | 45+3 | 53+3 | 63+4 | 71+4 | 80+5 | 100+6 | 125+6 | 140+8 | 160+8 | 46+3 | 52+3 | 75+3 |
| b ₂ | 32+3 | 38+3 | 45+3 | 53+4 | 60+4 | 67+5 | 85+6 | 106+6 | 118+8 | 132+8 | 40+3 | 44+3 | 64+3 |
| b ₃ | - | - | - | - | - | - | - | - | - | - | 32+3 | 37+3 | 59+3 |
| b ₄ | - | - | - | - | - | - | - | - | - | - | 32+3 | 37+3 | 45+2 |
| d ₁ | 30+3 | 36+3 | 42+3 | 48+4 | 53+4 | 60+5 | 75+6 | 95+6 | 106+8 | 118+8 | 38+3 | 44+3 | 55+3 |
| e ₃ | 105+3 | 118+3 | 132+3 | 148+4 | 165+4 | 185+5 | 221+6 | 280+6 | 330+8 | 360+8 | 105+3 | 118+3 | 148+3 |
| f ₁ | 31+1 | 35+1 | 40+1 | 45+2 | 51+2 | 57+2 | 46+3 | 58+3 | 68+3 | 74+3 | 40+1 | 45+2 | 56+2 |
| g ₁ | 12.5+1 | 14+1 | 16+1 | 16+2 | 18+2 | 18+2 | 23+3 | 33+3 | 33+3 | 38+3 | 14+1 | 16+1 | 18+2 |
| h ₁ | 48+3 | 56+3 | 67+3 | 80+4 | 90+4 | 100+5 | 125+6 | 160+6 | 180+8 | 200+8 | - | - | - |
| h ₂ | 40+3 | 48+3 | 58+3 | 67+4 | 75+4 | 85+5 | 106+6 | 132+6 | 150+8 | 170+8 | 56+3 | 65+3 | 90+4 |
| h ₃ | - | - | - | - | - | - | - | - | - | - | 76+3 | 85+3 | 112+4 |
| h ₄ | - | - | - | - | - | - | - | - | - | - | 84+3 | 100+3 | 130+4 |
| l ₁ | 197+3 | 224+3 | 253+3 | 285+4 | 318+4 | 380+5 | 452+6 | 582+6 | 653+8 | 724+8 | 199+3 | 260+3 | 300+4 |
| r ₂ | 50+3 | 56+3 | 63+3 | 71+4 | 80+4 | 90+5 | 112+6 | 140+6 | 160+8 | 180+8 | 56+3 | 63+3 | 80+4 |
| Wgt. | 3.2 kg | 4.5 kg | 6.3 kg | 8.8 kg | 12.3 kg | 17.1 kg | 34 kg | 66 kg | 95 kg | 136 kg | 5.1 kg | 8 kg | 15 kg |

NOTE: All dimensions are in mm and weights are in kilogram in the above table.
 The safety latch decreases dimension a₂ about 5 mm on HBC forging and about 15 mm on RSN forgings.
 The number after the nominal dimension indicates the tolerance. For example, 160+6 means that the actual size could be from 160 mm to 166 mm.

11.5 DIN Hooks – HOK09

This option is used to replace the HBC type hook with the equivalent RSN size hook. The RSN hook can be specified as an alternative to the HBC hook, which is the standard hook type in the bottom blocks of some hoist models. Use the table in the **Bottom Block Dimensions** section to identify the standard hook forging and alternative RSN hook forging on the bottom block for a particular hoist.

NOTE: Replacing the HBC hook with the equivalent RSN hook will increase headroom from standard. The DAS-generated offer drawing from QuoteMaster® will have the actual headroom dimension. If headroom is critical for the application, contact R&M to confirm the accuracy of the headroom dimension.



11.6 Other Hooks – HOK07

Upon R&M's review for compatibility and pricing, oversized DIN hook (RSN or HBC type), or another hook brand such as Bullard, or Crosby can be specified as an alternative to the standard.

11.7 Ramshorn (twin-points) Hooks – HOK03

Upon R&M's review for pricing, a DIN standard (15402) ramshorn hook of equal size to the RSN hook listed for the particular bottom block can be specified as an alternative to the standard single point hook. Each point of the ramshorn hook has a spring-loaded, flipper-type safety latch.

11.8 Sheaves

- Sheave groove is 45° and closely matches the rope diameter
- Sheave bearings are lifetime lubricated
- Ductile iron sheaves
- 240 to 302 BHN
- Pitch diameter of sheaves meets or exceeds ASME H4 recommendation

| Hoist | Reeving | Sheave Pitch ø [mm] Hoist frame | Sheave Pitch ø [mm] Bottom Block | Groove radius [mm] | Wire rope ø [mm] |
|-------------|---------------|---------------------------------|----------------------------------|--------------------|------------------|
| SX2 or SX3 | 2 part single | No upper sheave | 146 | 3.3 | 6.4 |
| | 4 part single | 146 | | | |
| SX4 Special | A2 special | No upper sheave | 146 | 3.3 | 6.7 |
| | A4 special | 146 | | | 6.4 |
| SX4 | 2 part single | No upper sheave | 180 | 4.2 | 8.0 |
| | 4 part single | 180 | | | |
| SX5 | 2 part single | No upper sheave | 248 | 5.8 | 11.0 |
| | 4 part single | 248 | | | |
| | 6 part single | | | | |
| | 8 part single | | | | |
| SX5 | 2 part double | No upper sheave | 180 | 4.2 | 8.0 |
| | 4 part double | 180 | | | |
| | 6 part double | | | | |
| SX6 | 2 part single | No upper sheave | 338 | 8.0 | 15.0 |
| | 4 part single | 338 | | | |
| | 6 part single | | | | |
| | 8 part single | | | | |
| SX6 | 2 part double | No upper sheave | 248 | 5.8 | 11.0 |
| | 4 part double | 248 | 248/288 ¹⁾ | | |
| | 6 part double | | | | |
| | 8 part double | | | | |
| SX7 | 2 part double | No upper sheave | 338 | 8.0 | 15.0 |
| | 4 part double | 338 | 338/398 ¹⁾ | | |
| | 6 part double | | | | |
| | 8 part double | | | | |

¹⁾ The larger diameter sheaves are in the bottom block and are located between the smaller diameter sheaves.