

## 1. TIGHTENING TORQUE FOR SCREWS



Please use in heated-up condition the half of the values shown!

max. tightening torque [Nm]									
metric regular thread DIN 13					metric fine thread DIN 13				
	6.9	8.8 / 1.4301	10.9	12.9		6.9	8.8 / 1.4301	10.9	12.9
<b>M 4</b>	2,4	2,9	4,1	4,9					
<b>M 5</b>	5,0	6,0	8,5	10					
<b>M 6</b>	8,5	10	14	17	<b>M 8 x1</b>	23	27	38	45
<b>M 8</b>	21	25	35	41	<b>M 10 x1,25</b>	44	52	73	88
<b>M 10</b>	41	49	6,9	83	<b>M 12 x1,25</b>	80	95	135	160
<b>M 12</b>	72	86	120	145	<b>M 12 x1,5</b>	76	90	125	150
<b>M 14</b>	115	135	190	230	<b>M 14 x1,5</b>	125	150	210	250
<b>M 16</b>	180	210	295	355	<b>M 16 x1,5</b>	190	225	315	380
<b>M 18</b>	245	290	405	485	<b>M 18 x1,5</b>	275	325	460	550
<b>M 20</b>	345	410	580	690	<b>M 20 x1,5</b>	385	460	640	770
<b>M 22</b>	465	550	780	930	<b>M 22 x1,5</b>	520	610	860	1050
<b>M 24</b>	600	710	1000	1200	<b>M 24 x2</b>	650	780	1100	1300
<b>M 27</b>	890	1050	1500	1800	<b>M 27 x2</b>	970	1150	1600	1950
<b>M 30</b>	1200	1450	2000	2400	<b>M 30 x2</b>	1350	1600	2250	2700



Tighten all screws in several steps and in crosswise (alternate) pattern.  
Retighten all screws, nuts and heaterbands after heating-up.  
Always use a torque wrench!  
Lubrication (Anti-seize i.e. AS040P) is recommended on all threads.

## 2. ASSEMBLY ORDER FOR PATTERNED BOLT CONNECTIONS

- screw on bolts in the order shown below with 30% of required torque
- retighten bolts with 60% of required torque
- retighten bolts with 100% of required torque
- retighten bolts again with 100% of required torque and repeat procedure until all screws do not turn anymore.



**Retighten all screws, nuts and heaterbands after heating-up.  
Always use a torque wrench!  
Lubrication (anti-seize) is recommended on all threads.**

