

# Service Bulletin

**RTA-45**

**03.06.99**

**Technical Information to all Owners / Operators  
of Sulzer RTA Diesel Engines**

## Tightening Instructions for Screws and Waisted Studs

<b>SULZER RTA90C</b>	Maintenance	0352-2/A1
<b>Tightening Instructions for Normal Screws</b>		
This table is valid for all screws that are not considered in group 0352-1.		
<b>Attention</b>	These tightening instructions are valid only if: a) the screws are made of the 8.8 material. b) the threads have been lubricated with oil.	
<b>Remark</b>	It is recommended to lubricate the threads for screws which come into contact with 'hot parts' like exhaust pipings, expansion pieces, etc. with a heat-resisting lubricant, e.g. THREAD GARD.	
<b>Screw thread</b>	<b>Tightening torque Nm</b>	
M8	20	
M10	40	
M12	70	
M14	110	
M16	170	
M18	250	
M20	350	
M22	450	
M24	600	
M27	900	
M30	1200	
M33	1600	
M36	2100	
M39	2500	
M42	2900	
M45	3300	
M48	3700	
M52	4100	
M56	4600	
M60	5200	

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### Contents:

Page

1. Introduction	1
2. Tightening Instructions for Normal Screws	1
3. Tightening Instructions for Waisted Studs	2
4. Service Bulletins Published for Large Bore RTA-Type Engines	3

## 1. INTRODUCTION

This Service Bulletin informs you about the tightening values for screws and waisted studs on RTA engines which are not covered in the earlier Maintenance Manuals.

Please insert this Service Bulletin to the following section of your **Maintenance Manual**:

**Section 013** for RTA 38, RTA 48, RTA 58, RTA 68, RTA 76, RTA 84 and RTA 84M engines

**Section 0352** for RTA 52(U), RTA 62(U), RTA 72(U), RTA 84C(U), RTA 48T, RTA 58T and RTA 84T engines

**Section 0352–2/A1**      The information given in this Service Bulletin is already contained in this section.

*This Service Bulletin should be kept in a separate file in the control room. The respective pages or tables of the Service Bulletin with modifications to the Operating Manual, Maintenance Manual or Code Book should be copied and filed in the respective Manual or Book.*

## 2. TIGHTENING INSTRUCTIONS FOR NORMAL SCREWS

This table is valid for remaining connections not mentioned in section 013 or 0352.

Thread	Tightening Torque [Nm]	Thread	Tightening Torque [Nm]
M8	20	M30	1200
M10	40	M33	1600
M12	70	M36	2100
M14	110	M39	2500
M16	170	M42	2900
M18	250	M45	3300
M20	350	M48	3700
M22	450	M52	4100
M24	600	M56	4600
M27	900	M60	5200

These values are valid for **8.8** quality material screws (or equivalent).  
The threads are to be lubricated with **oil**.

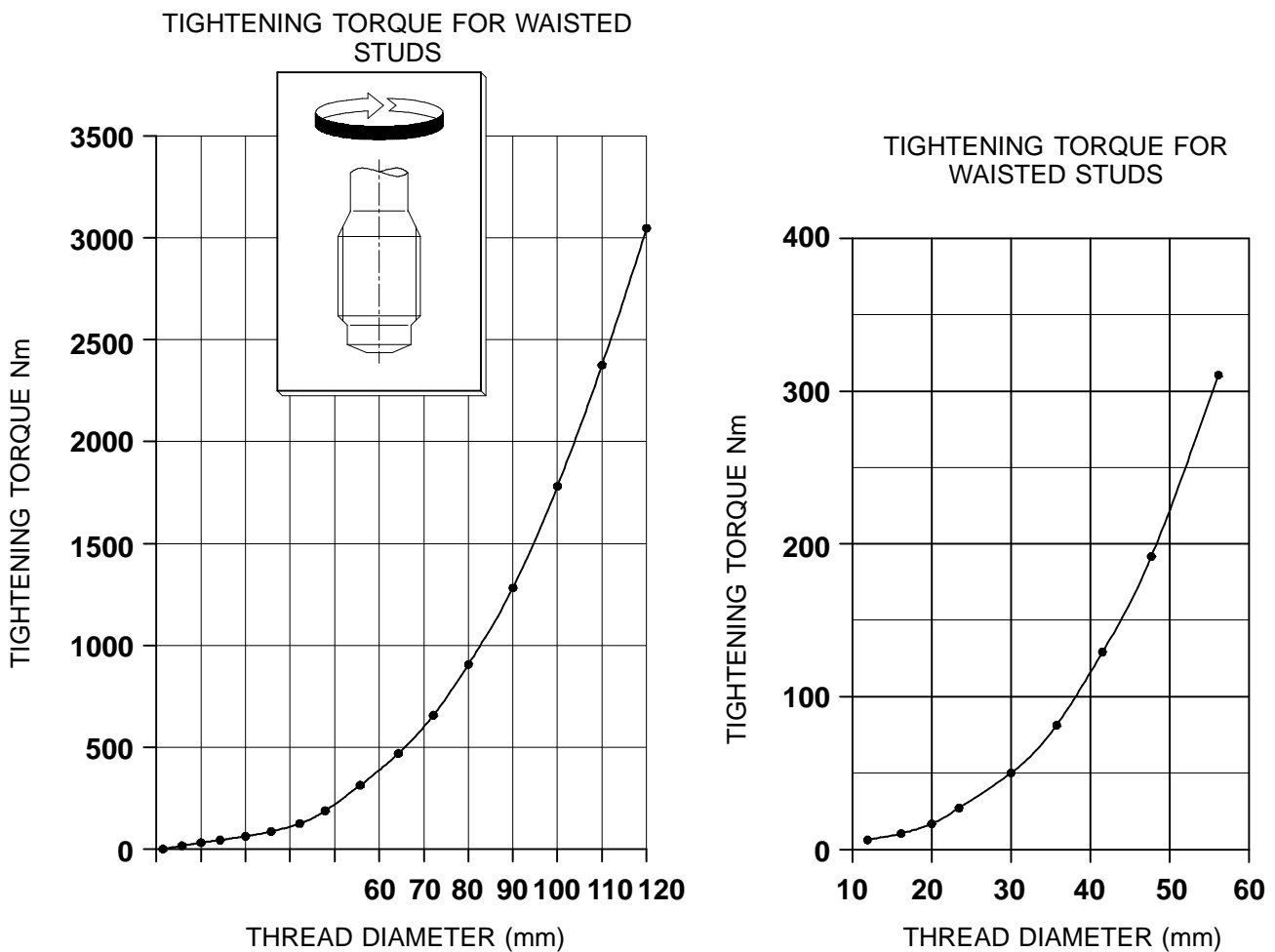
It is recommended to lubricate the threads for screws which come into contact with 'hot parts' like exhaust pipe, expansion pieces, etc. with a heat resistant lubricant, e.g. **THREAD GUARD™**.

### 3. TIGHTENING INSTRUCTIONS FOR WAISTED STUDS

Waisted studs must be tightened according to the values in the following diagram.

**Note:** Before fitting a waisted stud clean and degrease the stud thread and the tapped hole. Screw in the stud right to the bottom of the tapped hole, and tighten. Always utilize a stud driver or two nuts. Tools like a pipe wrench which would damage the stud shank must never be used.

For the protection of the stud in the cylinder jacket and cylinder cover, fill the annular space above the thread with a non-hardening sealing compound. For more information in this context please refer to the Service Bulletin R-2 “Fitting / Replacement of Waisted Studs”.



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#### 4. SERVICE BULLETINS PUBLISHED FOR LARGE BORE RTA–TYPE ENGINES

We have so far published the following Service Bulletins which are valid for Large Bore RTA–Type Engines (RTA 48T to RTA 96C):

<b>RTA–1</b>	dated 01.03.88	<b>Recommendation Concerning Piston Running Behaviour</b>
<b>RTA–2</b>	dated 05.10.88	<b>Water Drain from Charge Air Receiver and Charge Air Temperature</b>
<b>RTA–3.4</b>	dated 30.03.98	<b>Fuel Injection Nozzles</b>
<b>RTA–4</b>	dated 20.11.89	<b>Oil Damping for Short Tie Rods</b>
<b>RTA–8</b>	dated 15.06.92	<b>RTA–Cylinder Liners and Reinforced Water Guide Jackets</b>
<b>RTA–9</b>	dated 20.07.92	<b>Cylinder Cover with Erosion / Corrosion Resistant Cladding</b>
<b>RTA–10</b>	dated 28.10.92	<b>RTA ”–8 Series” Engines / Piston Skirt in Two Parts</b>
<b>RTA–11</b>	dated 31.03.93	<b>Fuel Injection Pump Regulating Linkage</b>
<b>RTA–14</b>	dated 30.11.93	<b>System Oil Care and Maintenance</b>
<b>RTA–15</b>	dated 10.02.94	<b>Elastic Studs on RTA-Type Engines</b>
<b>RTA–16.1</b>	dated 20.02.98	<b>Retrofit for Piston Rod Stuffing Boxes for RTA ”-8 Series” Engines</b>
<b>RTA–17.1</b>	dated 28.02.95	<b>Circulation Valve to Fuel Injection Valve</b>
<b>RTA–18.1</b>	dated 27.08.98	<b>Running-in of Cylinder Liners and Piston Rings</b>
<b>RTA–19</b>	dated 28.10.94	<b>Oil Supply Monitoring for Geislinger Torsional Vibration Damper</b>
<b>RTA–20</b>	dated 30.11.94	<b>Rotational Safety Studs for Roller Guide of Fuel Pump and Exhaust Valve Actuator</b>
<b>RTA–21</b>	dated 10.04.95	<b>Improvement of Starting Behaviour (For engines with DENIS–1 and DENIS–5 Control Systems only!)</b>
<b>RTA–22.1</b>	dated 28.11.96	<b>Waisted Bolts for Piston Crown Spraying Plate of RTA 84C, 84CU, 84M and 84T Type Engines</b>
<b>RTA–24.2</b>	dated 18.05.99	<b>VTR..4 Turbochargers After Sales Service Information issued by ABB</b>
<b>RTA–26</b>	dated 03.01.96	<b>Loss of Material on Piston Crowns due to High Temperature Corrosion and Erosion (Watercooled Pistons)</b>
<b>RTA–27</b>	dated 26.04.96	<b>Plastic Water Separator</b>
<b>RTA–28</b>	dated 31.05.96	<b>Improvement of the Engine Control System</b>
<b>RTA–29</b>	dated 21.10.96	<b>Improved Oil Supply to the Integrated Axial Detuner equipped with Internal Oil Supply Line</b>
<b>RTA–30</b>	dated 27.11.96	<b>Improvement of starting behaviour on RTA engines equipped with Type PGA200 and PGA EG200 Woodward Governors</b>
<b>RTA–31</b>	dated 23.01.97	<b>Alphabetical Index of Topics of Service Bulletins</b>
<b>RTA–33</b>	dated 11.04.97	<b>Crank Pin Bearing Shell</b>
<b>RTA–34</b>	dated 28.11.97	<b>Fuel Injection System Modification and Maintenance</b>
<b>RTA–35</b>	dated 20.02.98	<b>Retrofit for Piston Rod Stuffing Boxes for RTA ”-2 Series” Engines</b>
<b>RTA–36</b>	dated 25.02.98	<b>Reconditioning of Piston Rods of RTA “-2 Series” Engines</b>
<b>RTA–37</b>	dated 25.02.98	<b>Reconditioning of Piston Rods of RTA “-8 Series” Engines</b>
<b>RTA–38</b>	dated 26.02.98	<b>Piston Crown Loss of Material on Combustion Side</b>
<b>RTA–39</b>	dated 31.03.98	<b>Overhaul and Reconditioning of Pistons</b>
<b>RTA–42</b>	dated 25.09.98	<b>Templates for Exhaust Valve Seat and Spindle</b>
<b>RTA–43</b>	dated 20.01.99	<b>Piston Rings</b>
<b>RTA–44</b>	dated 26.02.99	<b>Tightening Instructions for Plunger Guide Nipple</b>
<b>RTA–45</b>	dated 18.06.99	<b>Tightening Instructions for Screws and Waisted Studs</b>

Should you not be in possession of the above mentioned documentation suitable for your plant, kindly contact your local Wärtsilä NSD representative for your copy.