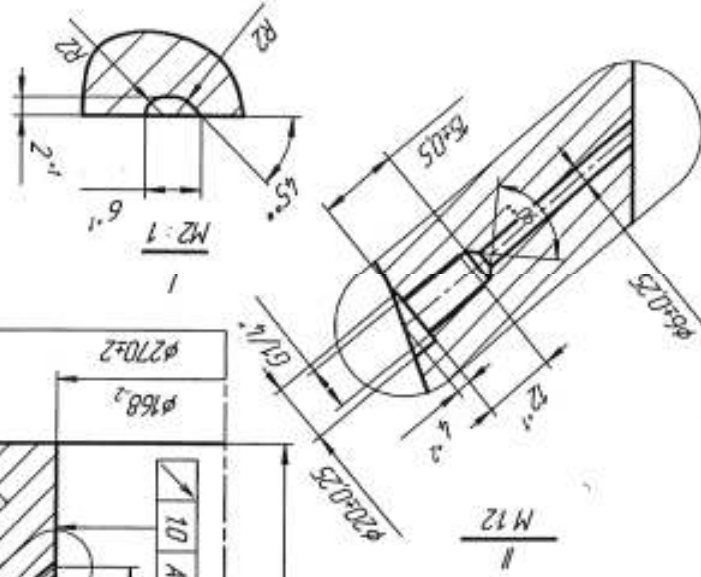
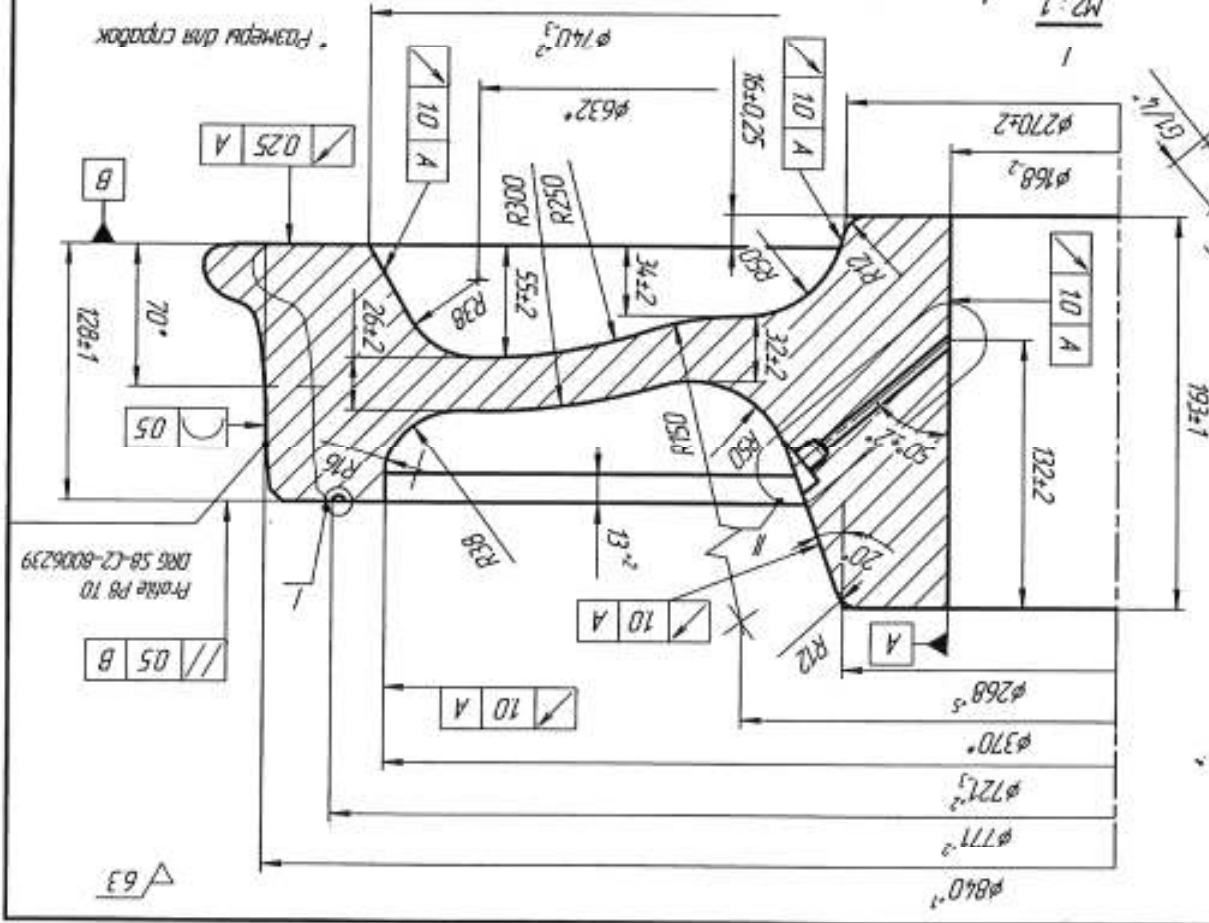


[illegible]

KP-0015-16

Technical Specification No. 97-24-2016, copy No. —
for Delivery of Machined Wheels for Great Britain

Description	Machined wheels ϕ 840 mm.
Standard	BS 5892: Part 3 (actual revision). GM/RT 2466, Edition 3 dated 2010
Method of steelmaking	Electric-furnace melting with vacuum degassing and continuous steel casting
Hydrogen content	2 ppm at the most
Steel grade	RSt
Drawing	No. KP-0015-16 (last revision) (ref. No. CR-CC-230392, revision A)
Mechanical properties	As per standard BS 5892: Part 3 .
1 Tensile strength	860 – 980 N/mm² (rim), 820 N/mm² max (web)
2. Elongation	13 % min (rim) 16 % min (web)
3. Fracture energy (U-shaped notch)	The average value of the three test pieces is 15 J min , the individual value for each of the three test pieces should be as per BS 5892: Part 3
4 Surface hardness distribution on the wheels	Hundred-per-cent of the wheel rims in each batch. Range of the hardness values should be 255-285 HB .
5 Rim section hardness	Control of the rim section hardness is carried out as per p. 8.3.6.2 BS 5892: Part 3 in the points specified at fig. 8 in particular at the depth of 5 mm and 35 mm from the wheel tread surface. The acceptable range of the hardness values should be 255-285 HB .
Residual stresses	as per BS 5892: Part 3 .
Ultrasonic inspection	Hundred-per-cent of the wheel rims axially and radially, the artificial flaw ϕ 2 mm.
Macrostructure	The deep etching method according to ISO 4969 : the availability of any flakes, delaminations, folded and countersunk sinterskins, nonmetallic inclusions, residual shrink holes and other failures of metal integrity is unpermitted.
Microstructure	The coarseness of grain should not exceed the 6-th number as per ISO 643 .
Surface quality	The inspection should be carried out on the samples subjected to a tensile test.
Repeated tests	The superficial defects at visual control are forbidden.
Repeated heat treatment	As per p.10.10 BS 5892: Part 3
Residual unbalance	A single supplementary heat treatment and two supplementary tempers at the most.
Appearance and dimensions	Not more than 75 gm. As per BS 5892: Part 3 and drawing No. KP-0015-16 .
Marking	The marking is branded on a rim end face from the inside of a wheel in cold state with the marking signs being between 6 and 10 mm high and at the least 0.2 mm deep. The distance from an outside hub diameter up to the base of marking signs should make up 10 \pm 2 mm . It is unpermitted to use sharp-edged stamps. The marking should be legible and easy-to-read relative to the wheel center.
Marking order	As per fig. B.6. GM/RT 2466 1. Steel grade: 8T 2. Brand of manufacturing plant: KLW 3. The last two figures of the year of manufacturing 4. Heat number (5 signs) and serial number of a wheel in the heat (3 signs) 5. Place for the Inspector's stamp or QC department's stamp of the manufacturing plant 6. Symbol UT (ultrasonic inspection)
Supplementary marking	The position of a residual imbalance is marked from the inside of a wheel rim with radial strip paint (approximately 15 mm width). The designation of imbalance E2 should be indicated below the end of a strip. Outer diameter with accuracy to two decimal places (point) is stenciled with paint on wheel-rolling circle.

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Coating and packing	<p>As per GM/GN 2498 (actual revision)</p> <p>The wheels are delivered in metal cassettes by 4 in each.</p> <p>The cassette has to have the underframe with 1100x1100 mm size.</p> <p>The wheels are delivered with temporary conservation coating E-Tek 510 characterized by a film-forming inhibited composition. The coating is applied on all of the wheel components except for a hub hole.</p> <p>The wheels are conveyed by covered motor trucks being stored in places protected from weathering. The duration of wheel conservation period shall correspond to the time of delivery.</p>
Warranty	<p>The Manufacturer warrants that the wheels will comply with the requirements of this Technical Specification subject to keeping to the conditions of operation, storage, conveyance and assembly.</p> <p>The Quality Warranty Period is 60 months since the day of bringing into service of the transport vehicles on which the Goods are being operated but 72 months since the date of delivery at the most.</p> <p>The guarantee does not cover to a temporary conservation coating.</p>