

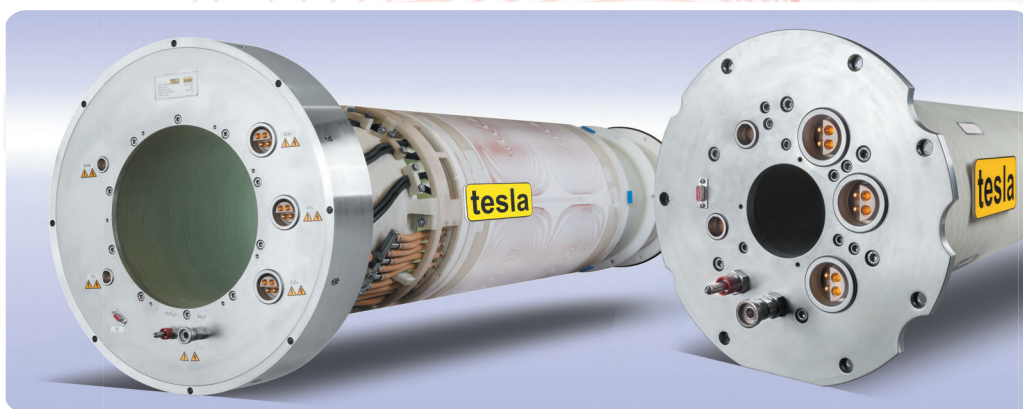


GRADIENT DIVISION

PRE-CLINICAL GRADIENT COILS

Ultra-low eddy current signature, exceptional duty cycle and force balanced with main magnet

With around 40 years of experience in MRI, and over 20,000 gradient coils shipped, Tesla Engineering Ltd. is fully committed to design, supply and field support for pre-clinical gradient coils for new and existing systems. We see many opportunities to help researchers, who seek support for their existing MRI systems, following strategic changes in the supply base.



We have a whole range of state of the art designs of gradient coils for pre-clinical imaging through to ultra wide bore, for virtually all magnet and amplifier combinations. New designs are quickly available on request.

Some examples of pre-clinical gradient coils are shown below:-

| Gradient Description | Unit | T118/60 | T156/90 | T156/100 | T205/120 | T305/210 | T395/290 |
|--|---------|----------------------|-----------|-------------|----------------------|-----------|-------------|
| Internal diameter | mm | 60 | 90 | 100 | 120 | 210 | 290 |
| External diameter | mm | 118 | 156 | 156 | 205 | 305 | 395 |
| Suitable for magnet diameter | mm | > 130 | > 160 | > 160 | > 210 | > 310 | > 400 |
| Suitable as gradient insert for: | | T305/210 T205/120 | N/A | N/A | T395/290 T305/210 | N/A | N/A |
| Diameter of spherical imaging volume | mm | 40 | 60 | 75 | 80 | 120 | 200 |
| Gradient linearity (peak-to-peak) | % | 4.2 | 3.8 | 4.8-7.0 | 4.3 | 4.2 | 5.2 |
| Gradient sensitivity | mT/m/A | 5.3-5.6 | 4.55 | 2.25 | 2.20 | 1.11 | 0.40 |
| Peak current I_{max} | A | 200 | 200 | 200 | 300 | 300 | 300 |
| Peak voltage V_{max} | V | 350 | 350 | 350 | 750 | 750 | 750 |
| Peak gradient strength @ I_{max} | mT/m | 1065-1120 | 912-914 | 451-474 | 661-671 | 343-350 | 121-126 |
| Linear rise-time (0-98%) @ V_{max} | μs | 16-30 | 70-74 | 35-43 | 45-56 | 154-192 | 100-152 |
| Max DC current (3 axes simultaneously) | A | 79 | 65 | 85 | 86 | 74 | 100 |
| Max DC current (X/Y/Z single axes) | A | 88/132/115 | 70/94/160 | 102/108/135 | 97/120/155 | 91/95/141 | 109/131/200 |
| Steady state heat extraction | kW | 1.1 | 1.45 | 2.0 | 2.0 | 4.8 | 6.4 |
| Total number of shim channels | | 6 | 6 | 6 | 6 | 6 | 6 |



Gradient Coil Division

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