

NEW COIL VARIANT FOR MAGNETIC CONTROL

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ABSTRACT

The classical longitudinal magnetizing system with coaxial coils is the simplified solution, the only obvious disadvantage of this system being concerned with the ties of insertion pull out of the pipes into the system, possible only along the axial direction. The suggested original system with the independent coils arranged parallel to the axis of the pipes on the outside has small dimensions as well as an easier way to insert / pull out the welded pipes, developing a uniform magnetic field having values in the necessary range. The designed systems were developed and experimented too in the laboratories of the "Robotics and Welding Department" within the Faculty of Mechanics of "Dunarea de Jos" University of Galati. The new suggested system may be very useful due to the fact that it is made up two semi-shells for the local magnetizing and demagnetizing of some pipelines or tubes when they are magnetically controlled.

KEYWORDS: Magnetic control, magnetizing system, coil

REFERENCES

- [1] Almeida P. F., Barata I., Barros P. *Ensaio não destrutivo*. Publicação do ISQ – Instituto de Soldadura e Qualidade Lisboa Portugal, 1992.
- [2] Georgescu V., Iordachescu D., Constantin E. *New longitudinal magnetizing system for nondestructive magnetic control*. Proceedings of the 10.th International Metallurgy and Materials Congress, may 2000 Istanbul, Turkey Volume I pag.627-632.
- [3] Georgescu V., Georgescu B., Iordachescu M. *Control nedistructiv*. ISBN 973-9428-75-4 Editura Lux Libris, Brasov, 2001.
- [4] Iordachescu D., Georgescu B., Iordachescu M., Scutelnicu E., Blasco M. *Magnetarc welding - equipment peculiarities and joint characteristics*. Proceedings of the IIW International Conference Welding & Materials, "Technical, economic and ecological aspects", Dubrovnic, Croatia, 01-08 July 2007, ISBN 978-953-7518-00-4, pag. 367-376.
- [5] Georgescu V., Mircea O., Andreescu F., Georgescu B. *Sudarea prin presiune*. ISBN 973-9428-34-7 Editura Lux Libris, Brasov 2002.
- [6] Mocanu D. R., Safta V., s.a. *Inercarea materialelor vol.3-Controlul nedistructiv al metalelor*. Editura Tehnica, Bucuresti, 1986.
- [7] Safta V.I., Safta V.I. *Defectoscopie nedistructiva industrială*. Editura Sudura, Timisoara, 2001.
- [8] *** HELLING *Kommanditgesellschaft für industrieprodukte und anlagenbau (GMBH&CO) Hamburg* – Product catalogue – Nondestructive testing Group 13 Magnetic Flux Leakage Methods.
- [9] *** MAGNAFLUX CORPORATION. *Informative bulletins testing systems*. Chicago, USA.