

Threaded Rod Roundup

compiled by the Editors at *Fastener Technology International*

Suppliers have responded to our call for the state-of-the-art in threaded rod and threaded rod technology.

Galvanizing Anchor Rods Up to 4000 mm Ready for Use

Information from **Thielco Steel Solutions Group**, Reuver, The Netherlands, says, “Thielco Steel Solution Group has been the go-to expert for the anti-corrosion surface treatment of fasteners. Recent years have shown an explosive increase in demand for hot dip galvanizing of threaded rods up to 10.9, that are used as anchoring in the construction of wind turbines, geotechnics, hydro engineering and generic construction industry. Thielco has responded to this demand by developing a unique production line, specifically for these products, to enable rework-free hot dip galvanizing.



“Proper corrosion protection extends the life of fasteners significantly, thereby contributing to longer maintenance intervals and general life cycles of the construction in which they are applied. With the always increasing requirements for sustainability, it is not unexpected that parts that did traditionally not get any corrosion protection treatment, due to costs or technical limitations, now do need to be treated to meet the demands. Hot dip galvanizing is the obvious way to go—by dipping a steel product in hot, liquid zinc, a zinc layer forms that alloys with the steel, providing a strong protection against corrosion.

“Zooming in on full threaded rods and anchors of M20-M56 up to 4000 mm, the first challenge is to keep the thread clean of zinc residue. Where shorter parts can be centrifuged to sling off excess zinc after dipping to achieve a clean thread, this is not possible with longer products. Up until now, to preserve the function of the thread, it had to be reworked either manually with a steel brush, or re-rolled by a thread rolling machine, adding a process step and damaging the zinc layer.

“Using the new facility, the anchors are instantly and non-mechanically cleaned after galvanizing, inline, while they are still hot. This leaves the zinc layer fully intact and the product is ready to use immediately, ready to be shipped from Thielco to the end customer, if so required.

“As the rods are galvanized horizontally, instead of vertically, there are no differences between in zinc layer thickness on both sides of the product and no drops or sharp edges will form on the lowest point.

“As with all Thielco processes, the risk of hydrogen embrittlement is absent, using adjusted pre-treatment systems, that are constantly measured and documented. Moreover, the process is fully automated and recipe driven, ensuring full replicability of results as well as perfect traceability of each and every production batch.

“Thielco aims to deploy this innovative facility to support the supply chain partners in working leaner and smarter to maintain a strong competitive position in the world. From the strategic location on the Dutch-German border, Thielco serves customers throughout Europe with short lead times and high flexibility.” www.thielco.net

100% Inspection & Sorting of Threads

Alex Bar of **DIMAC Srl**, Tortona (AL), Italy, says, “Threading process requires a 100% analysis of each part before the shipment, in order to guarantee the expected yield from an outstanding product and to prevent major economic consequences in case the part doesn’t meet the application requirements, thus avoiding annoying product recalling campaigns.

“DIMAC solutions for the inspection and sorting of any type of threads on the fasteners are the result of a constant R&D tuned into the concrete customers’ needs and standards of the automotive, aerospace and automatic assembly industries.



“Innovative special controls are the Super Gewinde tool, which features the 360° all around optical in-

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spection of external threads detecting any small and localized thread defect—and the In-Thread-OK function to verify the inner threads' presence and check their quality.

“What’s more, in MCV5 the In-Thread-OK function can be utilized in conjunction with the part programmable ejection option, with which to decide what types of NOK to eject (for example, parts without thread), with a view toward a continuous process improvement.

“An additional tool is the HI-LO thread. Here the DIMAC MCVx vision software includes a special HI-LO thread function, which provides the possibility to calculate the high, low and approximate diameter of a threaded area, along with detecting the theoretical crests and grooves.

“The thread dimensions’ tool calculates the outer, inner and flank diameter, the pitch, the bending and the peaks count, while the thread angle tool searches for thread defects due to the misalignment during the threading process. The thread quality tool allows to check the conformity of a threaded area by some crosschecks while the system automatically controls the thread to evaluate the quality according to the sample quotas and tolerances.

“The angle difference option detects any steep-thread due to rolling dies misalignment. Lines are drawn by the system software on the thread profile in order to merge crests and grooves as well as to calculate the angle difference with respect to the axis of symmetry of the workpiece. Filters are available to exclude threads with any peaks at the edge, which could affect the analysis.

“The calibration method is based on the comparison between the images of OK master samples and NOK samples. To obtain additional technical information, visit the DIMAC Srl website.”

www.dimacsrl.com

Dual-Side Threaded Rod Lines — 50 mpm

Yair Wiesenfeld of Videx Machine Engineering Ltd., located in Yahud, Israel, says, “Videx Machine Engineering Ltd. is offering Dual-Side lines for high-speed production of threaded rods. These Dual-Side lines are comprised of a dual-side straighten and cut machine, which feeds two hi-speed thread rollers, one on each side of the machine.

“The straighten and cut machine feeds and cuts wire at high speed and also diverts the cut-to-length bars to the two sides of the machine, from where they are fed into two high-speed powerful thread rollers. These high-speed thread rollers have been specially

designed to accept these bars and thread them at high speeds.



“The Dual-Side lines are ideal for large-volume production of threaded rod, both for long runs as well as for short batches. The production rates are two to six times higher than in standard lines, utilizing less floor space. The Videx Dual-Side lines provides the best quality as well as eliminate handling or operator intervention.

“Despite being dual sided, each side of the machine is independently operated and controlled, enabling the machine to keep working on one side when the operator changes thread rolling dies on the other side, for example. The Dual-Side machines are also equipped with quick change-over features for bar diameter and length.

“The line is highly reliable and fully mechanical. There are no clutches or hydraulic components, making it quieter and more reliable, requiring minimal maintenance. The cutting operation is performed by a rotating cam, driven by an automotive type gear through a ‘servo’ drive.



“Wire straightening is performed by a straightener which reciprocates during cut-off (same principle as Flying Shear), so it does not damage the wire as it never twists on the wire in one place. The machines

Retaining Rings Roundup

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Suppliers have responded to our call for the state-of-the-art in retaining rings and retaining ring technology.

More Data Collected & Less Time to Control on Retaining Rings

Alex Bar of DIMAC Srl, Tortona (AL), Italy, says, "Retaining rings are crucial for automotive, aerospace, electrical engineering, precision mechanics, optics and electrical industries applications. Pre-eminently safety elements for shafts, bores or bearings, they demand authentic excellence warranty.

"The production process for these parts involves several figures/tools each cycle. Tool wear must be kept under control to prevent the production of defective parts, a real time monitoring through Statistical Process Control (SPC) is the best way to achieve top quality products, forecasting the progress of production and intervening with the logic of continuous improvement.

"The DIMAC SPC-EVO is the automatic mobile unit designed for SPC control of flat parts like retaining rings, directly in the shopfloor beside the production machinery. It is robust and mobile through its pivoting wheels, extremely user friendly and it doesn't require technical skills to be run. The measurement is automatic—fast and accurate like in the metrology room—performed on multiple parts. DIMAC SPC-EVO allows to control between five and 20 parts in a row, which are fed in by interchangeable blisters filled off-line with the parts to be controlled, introducing important savings in time and costs.

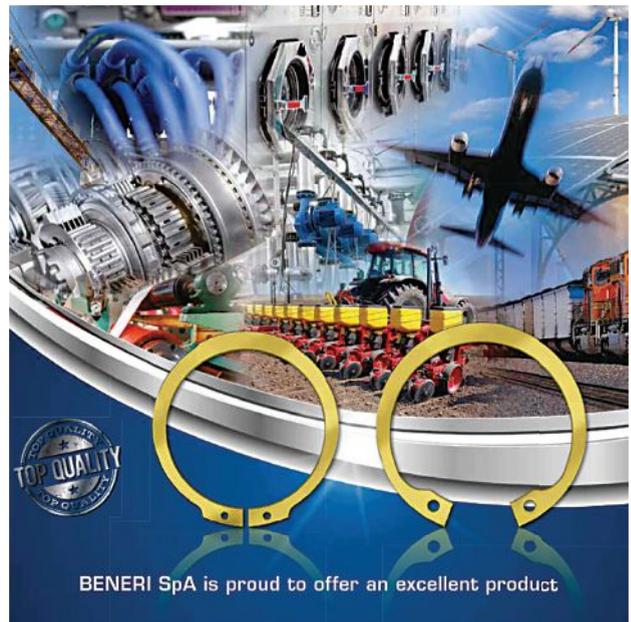


"Parts in the blister are fed into DIMAC SPC-EVO rotary glass table, where SPC dimensional and surface inspection is performed on both faces of each part by high-resolution digital cameras with bi-telecentric optics and dedicated illuminators. Real time display of the measurements trend, defects of aspect and collection of statistic data are shared in real-time with the company ERP system, allowing to detect immediately any deviation from the process trend and to apply the corrective actions." www.dimacsrl.com

New Range of Retaining Rings – Standard Parts Beyond the Standards

Ronny Limonta, Management Assistant at BENERI SpA, Valmadrera (LC), Italy, says, "BENERI SpA has been world leader in the production of Retaining Rings and Washers complying with DIN and American standards since 1958.

"For decades, the manufacturing of standard parts has been our core business," says Patrizia Bernabeo, CEO of the company. "We have always succeed in this and our will is keep going forward in this direction. It is clear that standard norms allow certain tolerances that can't be accepted in some specific applications (robotic or automatic-feeding) and this is the reason for we have invested in a new special line of top quality retaining rings."



"The new range, called 'automotive', includes external and internal retaining rings, axially mounting, both in metric and inch dimensions. The question is: What makes this range different from standard?"

"The regular production process has been deeply improved with several and strict quality checks and selections, with respect to main critical parameters of retaining rings such as diameter, flatness, center distance of the holes and opening," says Eng. Michele Negri, R&D Manager of the company. "The result is a standard-sized retaining ring, provided with extremely tight dimensional tolerances, far beyond standards requirements."

"That's why we say they are Standard parts beyond