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## THE SHOT PEENING AND SOMETHING ADDITIONAL

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### ABSTRACT

*Many metallic parts on the one powerhouse are manufactured to serve in function of production. In many cases they saving energy. Internal stiffening by preset items are in function to have sure work.*

*Round deflected and deformed are more able than normal design.*

*Such items can accept more value and reinforcement if they are Shot peened. Bending and curvature making something additional on th field to be installed in one device something stronger and better.*

### KEY WORDS

*Round deflection, deformation, preset items, Flat bar, Helicoidal, Shot peening and additional.*

In many cases deformed material becoming more resistant and stronger than classic specified in accordance with rules. On the aluminium and steel plate or sheet some local bending, deflection or other growing certain degree of stiffening is increased. On the Fig 1 some preset bar, or helicoidal bending (torsion) becoming stronger than normal material. On the fig 1 plate 1 becoming preset (by torsion) 2. Below the flat bar deforming with 2 and 3. It is clear that 2 and 3 move stronger than 1. Some thing is on the Fig 2 cases 1. 2 and 3 where deformed – preset steel plates becoming more stronger. Same case is with round deflection of steel plates. But if is made shot peening process on these preset plates material becoming still better. The Shot peening decreasing internal stresses in material which are results of technological process. The Shot peening to be treated as one betterment.

Preset steel material easier supports and held resistance of three axes vibrations. It means preset – deformed – fabricated, where is installed decreasing effect of three axes vibrations. We cannot firmly to conclude that is one way of annulation of any vibrations. What is remaining should not be dangerous for installed items of construction. In any case we conclude that we arrive on the certain degree of CALIBRATION of VIBRATIONS. In whole project or construction is build in system and harmonic natural sequence different of AMPLIFIERS, STACKERS, EXPANDERS, DAMPERS, SHAKERS, EXCITERS to keep in desired limited shocks caused by vibrations. Small sizes of vibration can be sometimes very useful for internal structures metallic components. It is not necessary to mention one apparatus for microvibrations for establish internal crystals after welding on some welding joints.

## CAVITATION AND VIBRATION

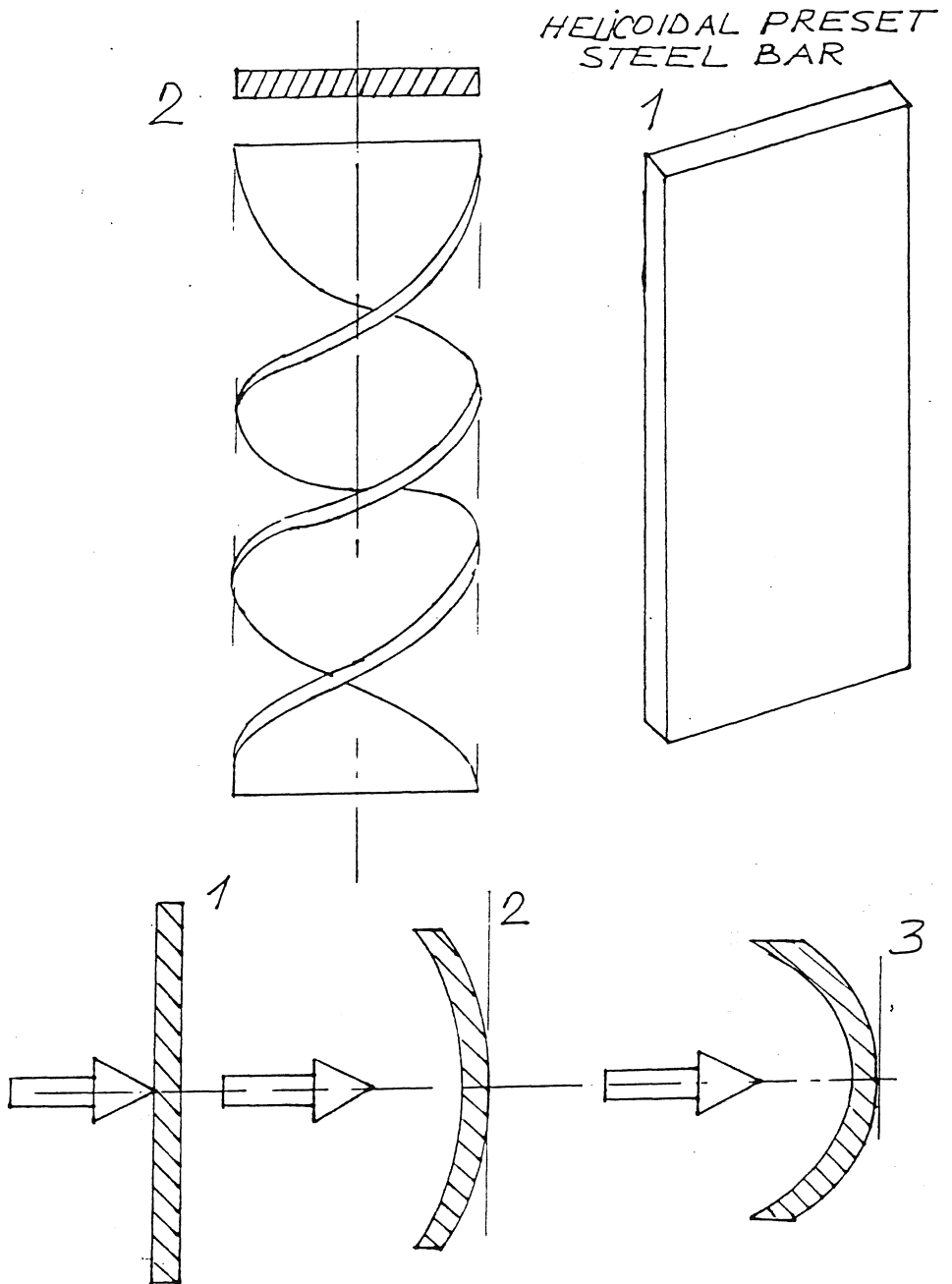
When is commencement of new industrial plant on the all drawings should be clear how is function of it. Is necessary to take additional observance and attention: drawings of workshop with these mains as project. Disaccordance should be discovered before start of equipment installation. Foults and failures in many cases are installed with equipment. As myself was working many years on the site for construction and installation of new hydraulic thermo nuclear powerhouses in Europe and Asia, I know very well how can go revision already approved such workshop drawings and main project. Often occurs that some commission revision vital documentation such failures are passing. On the site appeare directly – discover malfunction despite strong checking and revision. On the worksite review and attention is not never enough; always should be checked each item before fixing by weldements or by bolts or other types of attachments.

I remember very well on the site of one powerhouse on the river during installation of mechanical equipment. Some valves, some flanges, some tightening bolts, some butterfly valves discovered small deviations. It was not failures on the drawings, but failures of manufacturer – workshop.

Butterfly valves were very important for function of whole powerhouse. It was 40 Years ago biggest energetic plant of the world. Some deviotion on the butterfly valves later was discovered on the wings – on two places evidenced cavitation and vibration. In that time better stiffening – repairing reduced vibrations and cavitations because discovered to much oscillations – vibrations – causing the cavitation. Here is useless mention and talk at which way creating vibrations and cavitationsin one energetic plant as is powerhouse on the river. In short speaking to prevent any damage (sometimes disasters) must be checked during equipment installation – followed with necessary civil works to be placed on the piping, bolt joints, supports some STACKERS, EXPANDERS, DAMPERS, SHAKERS, EXCITERS and other necessary FIXTURES.

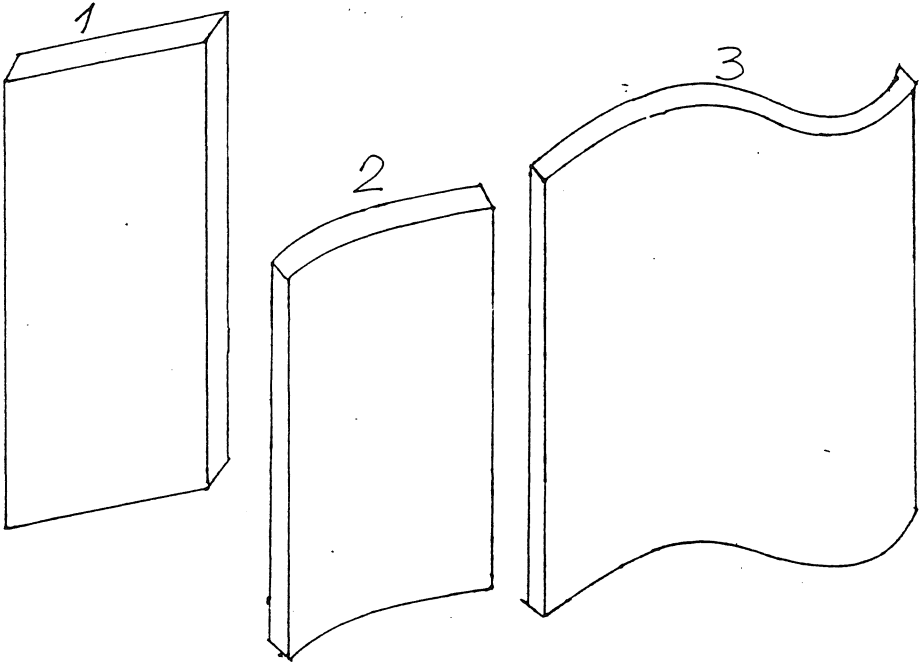
On this way is possible to establish vibration in three axes prevent surprised shocks on the installed item of equipment and diminish CAVITATION. On this way all vibrations will be set in CALIBRATED VIBRATIONS. These calibrated vibrations will not be as RANDOM appearance of this natural PHENOMENON will not INJURIOUS for other equipment of powerhouse. The Shot peening help us to prevent cavitation and prolong life of operation of such equipment. SCRATCHED items on the powerhouse with Shot Peening increasing ENDURANCE LIMIT for operational life of whole plants established in the body – POWERHOUSE – giving the welfare and prosperity to people.

FIG. 1. THE SHOT PEENING AND SOMETHING ADDITIONAL

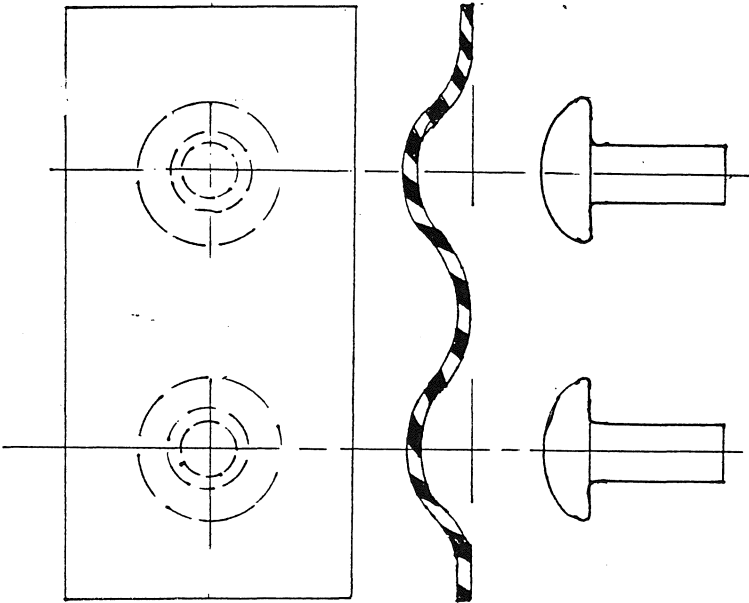


DEFORMING OF FLAT BAR STEEL  
BEFORE SHOT PEENING

FIG.2. THE SHOT PEENING AND SOMETHING ADDITIONAL



DEFORMED-PRESET STEEL PLATES



ROUND DEFLECTION OF STEEL PLATES