THE SHOT PEENING IN THE CLOSED METALLIC CHAMBER

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ABSTRACT

At which way will be performed the Shot Peening Process is presented on the sketch freely designed. By electric motor is driven whole process in this small space protected by metallic shell. Two driving gears doing the rotative motion. Main thing is provided by SNAIL TRANSFER special fabricated for horizontal movement – left – right. Electric motor work going normal others motors except something additional attached – connected THYRISTORS for exact change sense of motor rotation. Item to be treated can be fixed with lower shaft driven by gear. It is fixed by two flanges on the left – right side with flanges and bolts. That means this axle is removable – down to make space for further process of Shot Peening. Flexible elastic pipes connected with moving box of Snail Transfer. As well in this area is very important system of lubrication, dust removing by suction and protection of becoming dust. Whole device can be very small and can brought by hands depending of user wishes scientific research laboratory or Workshop in manufacturing process.

KEY WORDS

Snail Transfer, left – right horizontal moving, Rotation, Lower axle, Shot Peening media, compressed air flexible plastic pipes, Thyristors – limitators, lubrication suction, protection of dust, electric motor, gears flanges, bolts, metallic box, guide with lubrication, valves, suction pipes for dust, jets for media.

This device for vessel peening by water is one principle solution. It size can dependently of items to be treated for peening. Can have fixed place in one manufacturing area, as well can be made small size to be removed from one to other place in workshop or laboratory for testing. Finally speaking this device can be with minimal device staying in laboratory table with small weight transferible by hands from one to desirable place.

This device is one closed metallic chamber for special shot peening to have good satisfied results. On fig 1 is presented two small shafts. One is directly connected with electric motor item 11. Operation going with two gears item 5 and 10. This gear is item 3 made by Helicoidals serving for moving left – right item 1 is indicated as mobile box. Many mechanisms are installed gear for snail transfer and limitators thyristor for turn and return of this mobile box item 1 and
item 2 is guide – one line for assuring one quide lubricating without obstacles. Over this mobile box two out lets are shot peening media. Lower shaft item 13 is placed under jets out let blasting media. Below is placed one plate item 13 what collecting dust and distructed shots. For protection of internal surface from the strong dust. These two plates item 6 and item 8 for protection of all items in this closed chamber. On the fig 2 is one section to better see how is looking this chamber. On the top of this chamber is placed flexibele pipes item 16 because chamber mobile item 1 (fig 1). Process of shot peening going on this way that mobile box with two jets commencing going left – right with thyristors. These thyristor returing sense of rotation of electric motor it usual item using in many cases in construction in electric construction installed in manufacturing are. For example in transformer station where coming insulation with SF6 gas in one chamber to be more safe in function. On the Fig 3 is presented driving parts for shot peening it enough fixed – attached some parts of metal with this shaft. They make rotation with some metallic parts in same time they are under active two blasting by jets and making Shot peening.

If is not necessary items for rotation with lower shaft we can disconnect it and removes down Peening media falling in this case on the small metallic platform.

If is necessary to check whole procedure on the shell of chamber can be installed some glasses to see how is going procedure during normal function. Shell of chamber serving and protecting working area from dense dust coming over two jets. Dimension of this device can be different depends od size items to be treated by shot peening. For small workshops and research laboratory can be very small and easy for transfer by hands.
LIST OF INDICATED ITEMS OF THE SKETCHES

1 MOBILE BOX
2 LONGITUDINAL GUIDE
3 SNAIL TRANSFER
4 ATTACHMENT PIECE
5 TRANSFER GEAR
6 UPPER WEARING PLATES
7 HOUSING UPPER
8 PROTECTION SHEETS
9 JET FOR A MEDIA PEENING
10 DRIVING GEARS
11 ELECTRIC MOTOR
12 FIXED PLATFORM
13 REMOVABLE SHAFT
14 VERTICAL GIRDER
15 ATTACHMENT PIECE
16 FLEXIBLE PIPES
17 SHELL OF UPPER PART
18 BOTTOM PLATE & SIDE PLATE
19 THYRISTOR CONNECTION
20 PIECES FOR CONNECT & ATTACH.
21 SUCTION
22 LUBRICATION

Fig. 2. Closed chamber for shot peening section A-A
Fig. 3. Driving parts in the chamber for shot peening