

Dovetail Slide Surface Grinding Fixture

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Abstract : We are moving towards progressively agreeable and efficient technique, consequently numerous designers are contributing their development for a few things to make Simple, Easy Handling and Save Time Consumption for Production. Crushing advancements speak to a basic advance in the creation of high included worth and high accuracy parts for key mechanical areas, for example, aviation, car, biomedical, and wind age. While various variables identified with the crushing wheel are significant for enhancing the granulating procedure, there is no uncertainty that the wheel surface geography is the most persuasive factor. Surface geography is instigated not just by the idea of the wheel itself, yet additionally, more significantly, by the dressing procedure. Dressing is intermittently completed so as to recoup the grating limit of the wheel once unreasonable wear of rough corn meal has happened. This task work has a flexible range in wheel dresser, while sliding Diamond dresser can be utilized for instrument making, for creation process like surface pounding, round and hollow granulating, creep-feed crushing procedure. Sliding Diamond dresser is a gadget which is utilized for cleaning grating material surface makes them viably prepared to do crushing procedure once more. Likewise, the high innovation of component utilized in sliding Diamond dresser development guarantee that they can process durable hours and inconvenience free use. This sliding Diamond dresser can be mounted on the table, or close to the side of crushing wheel. The various models accessible are appropriate for different machine-like surface crushing, tube shaped granulating, creep-feed pounding machine, etc.

Key Words – Grinding, Dressing, Jigs, fixtures, Diamond Tool, Dovetail Joint.

1. INTRODUCTION

Substantial business includes one or extra attributes like goliath and noteworthy items; monster and critical instrumentality and offices, (for example, huge instrumentality, mammoth machine devices, and huge structures); or confused of different procedures. Inferable from those variables, noteworthy business includes higher capital force than lightweight business will, and it's conjointly regularly extra intensely cyclic in speculation and work. Transportation and development close by their upstream delivering give organizations are most of huge business all through the business age, nearby some capital-serious creating. Old models from the mid-nineteenth century through the primary twentieth encased steelmaking, big guns creation, train erection, machine building, and furthermore the heavier assortments of mining. From the late nineteenth century through the mid-twentieth, in light of the fact that the {chemical business industry} and electrical industry created, they concerned components of each huge business and light-weight business, that was after a short time conjointly valid for the car business and furthermore the art business. Popular structure (since steel supplanted wood) is considered noteworthy business. Monster frameworks square measure ordinarily normal for noteworthy professional the advancement of high rises and enormous dams all through the post-World War II period, and furthermore the assembling/organization of tremendous rockets and huge breeze turbines through the twenty first century.

A few East Asian nations have confidence in noteworthy business as a piece of their general economies. Among Japanese and Korean organizations with "substantial industry" in their names, a few additionally are creators of area stock and characterizes contractual workers to their few nations' legislatures like Japan's Fuji critical Industries and Korea's Hyundai Rotem, a joint task of Hyundai huge Industries and Daewoo huge Industries

2. IMPORTANTS OF THE DRESSING OPERATIONS

Pounding is a machining procedure which uses granulating wheels containing hard grating particles as the cutting medium. Crushing is perhaps the most punctual procedure learned by human, creatures, and can be followed to Neolithic occasions. As granulating turned into an exactness activity, dressing procedures were created for planning of the working surface of the wheel. A gadget for dressing a sandstone crushing wheel was first licensed by Altschneider in 1860. Essential standards of dressing and truing granulating wheels were set somewhere near Norton in 1905.

The dressing activity accomplishes two purposes. The first is to genuine the wheel surface to get profile exactness and the second is to resharpen or dress the grating grains to improve the cutting capacity. Most dressing activities join the 'truing' and 'dressing' work as one, so the term dressing by and large covers the two capacities. The standard purposes behind reviewing a wheel are:

- a. slow evacuation rate
- b. granulating vibration
- c. workpiece consume
- d. poor surface
- e. loss of structure holding.

Ordinary pounding wheels produced using alumina and silica are only dressed with jewel apparatuses. This is on the grounds that precious stone is the main material hard enough to dress regular abrasives without itself enduring over the top wear. Single point jewel dressing is normally utilized for exactness crushing and accomplishes the best pounding outcomes if the precious stone is sharp. Multi-point precious stone dressing instruments and jewel plate dressers might be utilized to accomplish longer dressing apparatus life since the wear is appropriated over various precious stones. For huge cluster measures and shaped profiles, precious stone impregnated rolls are regularly utilized. Since the precious stone roll expands the full width of the workpiece, dressing is quick. The financial favorable circumstances of a precious stone roll depend on the investment funds in process duration. In any case, precious stone rolls are costly because of the enormous amount of jewel required and the cautious setting required, especially for profiled granulating wheels. There is along these lines a proceeding with necessity to utilize single point precious stone dressing for exactness crushing in group creation. The significance of the dressing procedure lies in the way that a distinction in dressing conditions prompts diverse pounding conduct. The issue of current intrigue is to build up a strategy of accomplishing and keeping up ideal pounding conduct of the crushing wheel. In the event that the dressing activity can prompt increasingly stable conduct of the wheel

3. ABOUT JIGS AND FIXTURES

The most-widely recognized jigs are drill and drilling jigs. These devices are on a very basic level the equivalent. The distinction lies in the size, type, and arrangement of the drill bushings. Exhausting jigs generally have bigger bushings. These bushings may likewise have inside oil sections to keep the exhausting bar greased up. Frequently, exhausting jigs utilize more than one bushing to help the exhausting bar all through the machining cycle. In the shop, drill jigs are the most-broadly utilized type of jig.

Drill jigs are utilized for boring, tapping, remaining, chamfering, counter-drilling, countersinking, and comparative activities. Sporadically, drill jigs additionally used to perform gathering work. In these circumstance, the bushing, manage pin, dowel, or other gathering components at the dance additionally critical to perform dance capacity. jigs are additionally recognized by their fundamental development. The two sorts of jigs, they are open and shut. Open jigs complete procedure on just one, or in some cases two, sides of a work-piece. Shut jigs, then again, work on at least two sides of work-piece. The most-well-known open jigs are format jigs, plate jigs, table jigs, sandwich jigs, and edge plate jigs. Ordinary instances of shut jigs incorporate box jigs, Channel jigs, and leaf jigs. Different types of jigs depend more on the use of the apparatus than on their development for their personality. These incorporate ordering jigs and multi-station jigs. A jig is an exceptional gadget that holds, underpins, or is put on a section to be machined. It is a creation apparatus made with the goal that it finds and holds the work-piece as well as aides the cutting instrument as the activity is performed. Jigs are normally fitted with solidified steel bushings for directing drills or other cutting devices. An apparatus is a gadget for finding, holding and supporting a work-piece during an assembling activity. It is a creation device that finds, holds, and supports the work safely so the required machining activities can be performed.

Apparatuses have an a lot more extensive extent of utilization than ds. These work holders are intended for applications where the cutting devices can't be guided as effectively as a drill. With installations, an edge discoverer, focus discoverer, or gage squares position the shaper. Instances of the more-typical installations incorporate processing apparatuses, machine installations, sawing installations, and pounding installations. Additionally, an apparatus can be utilized in practically any activity that requires an exact relationship in the situation of an instrument to a work-piece.

Apparatuses are fundamental components of creation forms as they are required in a large portion of the mechanized assembling, assessment, and get together tasks. Installations should accurately find a work-piece in a given direction concerning a cutting device estimating gadget, or as for another segment, with respect to example in gathering or welding. Such area must be invariant as in the gadgets must clip and verify the work-piece in that area for the specific handling activity. There are numerous standard work holding gadgets, for example, jaw hurls, machine tight clamps, drill tosses, collets, and so forth which are broadly utilized in workshops and are typically kept in stock for general applications.

4. LITREATURE REVIEW

N. P. Maniar et al. [1] in his work in structure and advancement of installation for CNC clarified that apparatus configuration is one of the most significant plan assignments during process plan for another item improvement since it includes characterizing the areas and directions of parts during get together procedures just as offering physical help, which can extraordinarily influence item dimensional varieties and procedure yield. By and large, apparatus configuration procedure can be separated into three phases.

i. Installation arranging: In the apparatus arranging stage, issues identified with the quantity of installations required, the kind of installations, the direction of apparatus relating to direction, and the joining or machining tasks, which installations need to deal with are distinguished.

ii. Installation arrangement: The apparatus setup organize decides the design of a lot of locators and cinches on a workpiece surface with the end goal that the workpiece is totally limited.

iii. Installation development: Finally, the apparatus development arrange includes building installation segments and afterward introducing them to help the workpiece. In particular, for complex congregations, for example, a car body, a boat structure, and an airplane fuselage, installation format structure, which falls under the space of the apparatus arranging and installation arrangement stages, is an essential concern and it includes altering the plan ostensible of locator positions so as to dispense with mean movements.

In the installation arranging stage, creation necessities show group sizes, sorts of machines, HR, and the general expense. Different prerequisites, for example, quality principles may direct practical contemplations, for example, assessment and resistance particulars. Research right now on creation arranging enhancement procedures, for example, planning models and calculations. In the structure stage, where the vast majority of the archived inquire about has been concentrated, there are two sub stages. During the plan stage, a nitty gritty 'investigation' is analyzed to find and position the workpiece. The following sub stage is 'blend'. This stage can likewise be alluded to as 'apparatus portrayal'. The choice of installation components is required to fulfill the necessities and speak to the apparatus setup. The last stage is get together. There are fundamentally two ways to deal with get together, manual or robotized. Despite the fact that this exploration might be researched outside the domain of apparatus plan, the outcomes can be actualized right now. The scientific categorization of apparatus configuration sorts and composes installation configuration devices and would fill in as a decent characterization for look into headings.

It gives a visual course of action of examinations in the apparatus structure region and gives a point of view comparable to different regions of research. Installation arranging and configuration is characterized right now comprising of the considerable number of errands and data required to plan a work holder to find, hold, and bolster a workpiece during a machining procedure. Apparatus arranging and configuration depends on the experience, aptitudes, and information on the device originator. Despite the fact that considered as a disengaged action, the device architect requires data from going before and succeeding capacities so as to successfully find and hold the workpiece for machining activities. The apparatus structuring and producing is considered as mind boggling process that requests the information on various are-as, for example, geometry, resiliences, measurements, techniques and assembling forms. While structuring this audit work, a great number of writing and titles composed regarding the matter by eminent writers are alluded. All discoveries and ends acquired from the writing survey and the communication with installation originators are utilized as manual for build up the present re-research work.

Poonam D. Chavan et al. [2] in her investigation of an investigation of ring gear runout checking apparatus clarified that installations are generally utilized in enterprises because of their nature of expanding the precision and limiting the operational time. Investigation in assembling incorporates estimating, looking at, testing, or checking at least one qualities of an item or procedure and contrasting the outcomes with indicated prerequisites with decide if is the necessities are met for every trademark. Assessment apparatuses are utilized to check the nature of the workpieces, parts and segments of machines. This paper displays the arrangement as a unique reason 'Runout Checking Fixture', which can be valuable for checking the runout of a segment up to the ideal resilience with expanded accuracy. The segment is starter ring gear which is fitted on the outskirts of flywheel of inside ignition motor.

Installation is a specific reason apparatus which is utilized to encourage creation (machining gathering and investigation tasks) when workpieces are to be delivered on a mass scale. The utilization of apparatus wipes out successive checking, singular stamping, situating and non-uniform quality in the assembling procedure. This expansion profitability and decrease working time. An assessment (qualifying, checking) activity is any assessment of a workpiece that decides if it fulfills the guidelines of value. Measurement review or checking installations raise the effectiveness of crafted by human assessors; improve their working conditions, nature of workpieces, parts and segments of machines. Installations for checking parts are typically utilized at moderate phases of machining (bit by bit assessment) and at the

last phase of machining (acknowledgment investigation) to confirm the precision of measurements, relative situation of surfaces and sufficiency of surface geometry. Measurement examination installations are intended to verify the pre-set exactness and proficiency of the quality control activities and must be helpful I use, basic in development, modest and solid in administration. These installations need not be intended to withstand powers, for example, stun and vibrations, related with machining or with some other creating and gathering forms. They are not related with machining or with some other creating and get together procedures. They are not required to oppose temperatures present in welding, brazing and so on. Clamping powers in a review apparatus are commonly too little to even consider affecting its plan, however they ought not misshape the workpiece.

Satyajeet sing Raijada et al. [3] in his investigation of design of a fixture of connecting rod for boring operation explained that fixtures are normally classified by the type of machine on which they are used. Fixtures can also be recognized by a sub classification. For example, if a fixture is designed to be used on a milling machine, it is called a milling fixture. If the task it is planned to perform is straddle milling, it is called a straddle milling fixture. The same method applies to a lathe fixture that is designed to machine radii. It is called a lathe-radius fixture.

Fixture Design Processes:

- a) Setup planning: Determine no of setups, Determine the work piece orientation and positions determine machining datum features and locating surface.
- b) Fixture planning: Determine locating positions, determine clamping surface, Determine clamping positions.
- c) Unit design: Generate a unit design.
- d) Validation: Trial manufacturing based on modifications.

G. P. Sharma et al. [4] in design related study of fixture explained that fixture is an important element in most of the manufacturing processes and related to machining errors the role of fixture is very crucial. Studies defined to the design of machining fixture are generally of two categories i.e. fixture examination and fixture fusion. While fixture analysis deals with forces and deformations, the fixture synthesis is concerned with the design of fixture configuration to completely immobilize the work part when subjected to external forces. In the fixture examination and fusion, a concern on the conditions for constraining a workpiece is critical. The essential requirement of fixturing is the century-old concept and the same has been extensively studied by Mishra et al (1987) and Markenscoff et al (1990) in the field of robotics with efficient algorithms to synthesize positive grips for bounded polyhedral objects. Chou et al (1989) developed a mathematical theory for automatic configuration of machining fixtures for prismatic parts. The performance of fixture has been analysed on the popular screw theory and engineering mechanics.

K.V.S. Seshendra Kumar [5] et al. in structure of apparatus cutting installation for CNC gear hobbing machine clarified that the bracing of the work piece by utilizing common mechanical work holding gadgets utilizes single work piece for machining in each cycle. Along these lines, this expansion the process duration henceforth diminishes the efficiency. Consequently there was a need to structure a unique work holding gadgets. As indicated by the detail given by the client, about the necessity like most extreme distance across of the clear, number of teeth to be cut, module, and so forth. The apparatus is structured dependent on these parameters. The client utilize the machine device for cluster creation i.e., why the apparatus is additionally structured so that just by changing the upper half piece of the installation, the client can turn on to other clump creation with various detail and separated from this difference in speed, feed by switching the gears agreeing the prerequisite. The issue was to lessen the process duration by diminishing bracing and unclamping time. Since the machining ought to be without vibration to precise machining, the issue has been overwhelmed by impelling the instrument through water driven chamber. Since the machining is done for numerous quantities of employments, it lessens the machining time and henceforth the general assembling lead time. The kind of installations relies upon the segment structure and sort of machine utilized. Shaft type segment require a very surprising sort of finding and driving game plan contrasted with the circle type segment with a finding bore. The kind of apparatus can be assembled into the accompanying classifications as:

1. Finding mandrel and face clamping for circle kinds of rigging spaces with controlled bore for area.
2. Collet sort of shaft type segments having a controlled breadth for area.
3. Apparatus with transporter drive for shaft type segments situated between focus.

Mr. Sagar Kumar et al. [6] in structure and creation of apparatus slicing connection to machine for machining prod gear right now is clarified that planning and manufacture of rigging slicing connection to machine. In the present work, I made

an endeavor to structure and create a connection for an apparatus cutting for a medium obligation machine. This endeavor will decrease the venture for medium and little scope businesses, sub sequent diminish the assembling cost of apparatuses. The connection to machine can play out an ordering component like processing machine and carriage work, back and forth development and sliding on a bed. The connection was mounted on carriage, where we fixed the work piece and a mandrel was intended to hold the cutting instrument. This mandrel was joined to the head stock axle which is the primary hotspot for pivot of the cutting apparatus. The connection was deliberately planned in the wake of examining the best possible systems, power prerequisites and power examination on work material and a cutting instrument.

5. PURPOSE

An installation's basic role is to make a safe mounting point for a workpiece, taking into account support during activity and expanded exactness, accuracy, unwavering quality, and compatibility in the completed parts. It additionally serves to lessen stirring time by permitting fast set-up, and by smoothing the change from part to part. It every now and again diminishes the multifaceted nature of a procedure, taking into account incompetent specialists to perform it and successfully moving the expertise of the apparatus producer to the untalented laborer. Apparatuses likewise take into account a higher level of administrator security by lessening the fixation and exertion required to hold a piece consistent.

Financially the most important capacity of an apparatus is to lessen work costs. Without an apparatus, working a machine or procedure may require at least two administrators; utilizing an installation can dispense with one of the administrators by verifying the workpiece.

We are structure this Top Grinding Dresser Fixture for Dress the granulating wheel Effectively and Economically.

Installations are utilized to safely find (position in a particular area or direction) and bolster the work, guaranteeing that all parts delivered utilizing the apparatus will keep up similarity and compatibility. Utilizing an installation improves the economy of creation by permitting smooth activity and speedy change from part to part, lessening the prerequisite for gifted work by rearranging how workpieces are mounted, and expanding similarity over a creation run.

An installation varies from a dance in that when an apparatus is utilized, the instrument must move comparative with the workpiece; a jig moves the piece while the device stays stationary.

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Installations are basic components of creation forms as they are required in the vast majority of the mechanized assembling, investigation, and get together activities. Installations should accurately find a work-piece in a given direction as for a cutting apparatus estimating gadget o regarding another segment, with respect to occasion in get together or welding. Such area must be invariant as in the gadgets must cinch and verify the work-piece in that area for the specific preparing activity. There are numerous standard works holding gadgets, for example, jaw hurls, machine indecencies, drill tosses, collets, and so on which are broadly utilized in workshops and are typically kept in stock for general applications. Installations are regularly intended for a positive activity to process a particular work-piece and are structured and fabricated exclusively. Dances are like installations yet they find and hold the part as well as guide the cutting devices in boring and exhausting tasks.

These works holding gadgets are altogether known as dances and apparatus. Set squares and sensor or thickness checks are utilized with installations to reference the shaper to the work piece. An apparatus ought to be safely attached to the table of the machine whereupon the work is finished. In spite of the fact that generally utilized on processing machines, installations are additionally intended to hold work for different procedure on the greater part of the standard machine apparatuses. Apparatuses differ in structure from moderately straightforward instruments to costly, confounded gadgets. Installations likewise help to rearrange metalworking tasks performed on uncommon gear. In the structure of an installation, a clear succession of configuration stages is included. They can be assembled into three expansive phases of plan improvement organize One arrangements with data social event and examination. These incorporate item investigation, for example, the investigation of structure determinations, process arranging, looking at the handling gear and thinking about administrator wellbeing and usability. Right now, the basic measurements and achievable datum zones are inspected in detail. Stage Two includes the thought of clipping and finding plans. A bracing plan I concocted so that it

won't meddle with the apparatuses or cutters and are completely good with proposed finding surfaces or regions. The finding plan, utilizing standard components, for example, pins, cushions, and so forth is intended to be steady with bracing and device controlling game plans. Stage Three is the plan of the structure of the installation body outline. This is typically worked around the work-piece as a solitary component which connects the various components utilized for finding, cinching instrument directing, and so on into an indispensable edge work. The above strategies are very broad and can be altered relying upon the overall significance of the different components in accommodating the necessary precision of the workpiece to be found and verified into the fixturing gadget. With the famous adjustment of measured fixturing components, the installation body outline is typically a standard square with fixed varieties of finding and fixing openings or spaces. It turns into a matter of choosing the most reasonable body casing to oblige the different components, offer great help of the work-piece and access to cutters and instruments.

6. IMPORTANT CONSIDERATIONS WHILE DESIGNING JIGS AND FIXTURES

Structuring of dances and apparatuses relies on such a significant number of elements. These components are broke down to get configuration contributions for dances and installations. The rundown of such factors is referenced underneath:

- (a) Study of work-piece and completed part size and geometry.
- (b) Type and limit of the machine, its degree of mechanization.
- (c) Provision of finding gadgets in the machine.
- (d) Available cinching plans in the machine.
- (e) Available ordering gadgets, their precision.
- (f) Evaluation of fluctuation in the exhibition aftereffects of the machine.
- (g) Rigidity and of the machine apparatus viable.
- (h) Study of launching gadgets, security gadgets, and so on.
- (l) Required degree of the precision in the work and quality to be delivered.

7. DESIGN OF JIGS AND FIXTURES

This area clarifies the planning of jigs and installations with a visual interface arranged to show standards. The essential contrast among apparatus and dance is that the previous finds and holds the work piece during machining while the last likewise gives instrument direction notwithstanding area and cinching. The dance might be or may not be attached to the machine table while the installation ought to be absolutely affixed to the machine table the variables influencing the structure choice for dances and apparatuses are additionally clarified. As the underlying cost associated with any new procedure or change of procedure is an additional cost it ought to be legitimized by its profits. Arrangement is considered as non-esteem included time. Arrangement time comprises the time from the last great piece of the old arrangement to the principal great piece of the ne arrangement. The combined yield as far as creation units or the pace of creation, producing time, work required, and simplicity of activity are each significant for arrangement examination. During the structuring stage the specialized focuses, for example, rule and strategy for area, shaper activity on the work, locators and cinches utilized, body plan, and arrangement for chip leeway should each be considered appropriately. For example, the appropriate off-set squares and checks carry the shaper exceptionally near the stopping point in a period, which lessens the complete assembling time during large scale manufacturing. Using the idea of institutionalization, fool sealing will lessen the assembling cost of the dances and installations. So also, reasonable decision of working system of the dances and installations as per the workplace will likewise help diminish the assembling cost. Every one of these focuses are clarified right now the type of visual introduction. Various kinds of dances utilized for penetrating, exhausting, and welding are appeared in the introduction. Correspondingly, different kinds of apparatuses utilized for processing, boring, exhausting, granulating, gathering, and examination are additionally appeared.

A total bit by bit procedural drawing for planning a dance and an installation is appeared, which encourages the client to comprehend the sort of locators and clasps to be utilized and their legitimate arrangement. Different kinds of dances and installations for various tasks are likewise appeared for the client to get acquainted with plan of jigs and apparatuses.

8. CORRECT DESIGN PRINCIPLES

While structuring an installation it is very conceivable, in any event, for an accomplished individual to neglect some fundamental parts of apparatus plan. It isn't fundamental that these sorts of circumstances emerge just because of lesser specialized information. The inclination for finishing the work in a brief timeframe, constantly taking a shot at an equivalent sort of employment, tiring work conditions and bypassing the work may each make these circumstances happen. As a result of inappropriate apparatuses, the requirement for increasingly supervisory or assessment work could emerge. Additionally, lacking data could prompt a more unfortunate plan bargaining item quality. These kinds of disadvantages could be disposed of when adequate nitwit sealing is done, with any methodology. The idea of dances and apparatuses is with the end goal that they must be delivered for each individual sort of item. In spite of the fact that there is nobody apparatus that can fulfill the needs of all machining tasks, the essential standards of installation configuration can be institutionalized. The situating/direction of parts utilizing locators, through the best possible obliging of the fundamental degrees of opportunity would be viewed as of the most noteworthy significance. The best possible utilization of cinches to oppose multi-directional cutting powers, the assistance of successful shaper activity, arrangement of chip leeway and tidy up stipend, simple and repeatable part stacking/emptying can likewise each be institutionalized dependent on huge experience drawn by architects. The individual locators, clasps and surface contact focuses may vary fit as a fiddle, size or different variations yet the working rule of designing a machining installation is unaltered. Drawing up on past encounters can help graph do's and don'ts fittingly. Such outlining has the accompanying points of interest:

1. Could be utilized for fool-sealing.
2. Could be utilized by talented just as semi-gifted work.
3. Accuracy could be guaranteed in any event, when the work is rushed.
4. Supervision and investigation could be made simpler.
5. Considerable time and material could be spared.

This area of the on-line manual gives a quick reference of do's and don'ts in structuring an installation. It is made out of pictorial introductions looking at the right and erroneous methods for fixturing.

9. CORRECT DESIGN PRINCIPLE

Wheel diameter(D) =300mm (minimum)

Speed (N) =2800 rpm

Motor Power (P) =0.95Kw or 950W

We have design the part on above consideration,

Sr. No.	Part Name	Material	No. Quat.
1.	Base Plate	M.S.	01
2.	Dovetail (Male)	GG25	01
3.	Dovetail (Female)	GG25	01
4.	Gibs Pin	M.S.	01
5.	Lever Rod	GG25	01
6.	Thimble	M.S.	01
7.	Thimble plate	M.S.	01
8.	Spring		01
9.	Rod	M.S.	01
10.	Bush		01
11.	Diamond tool	M.S.	01
12.	Lever bracket	GTS35	01

13.	Fitman screw		01
14.	Fit screw	35Mn 6Mb 3	01
15.	Bolt (M10)	35Mn 6Mb 3	08
16.	Bolt (M12)	35Mn 6Mb 3	02

Single point cutting tool, worked as turning operation on grinding wheel for material removal operation.

For Calculation following formulae's are required

So, we have,

$$P = V \times F_c \text{ or } F_t$$

Where, F_t or F_c = Tangential cutting Force, N.

V =Velocity of Wheel, m/sec.

$$V = \frac{\pi DN}{60} \text{ , m/sec}$$

For Tensile Stress calculation (σ_t),

$$\sigma_t = \frac{F}{C/s} \text{ , N/mm}^2$$

Where, F = Resisting force, N.

C/s = Cross Sectional area, mm^2 .

For Bending Stress calculation (σ_b),

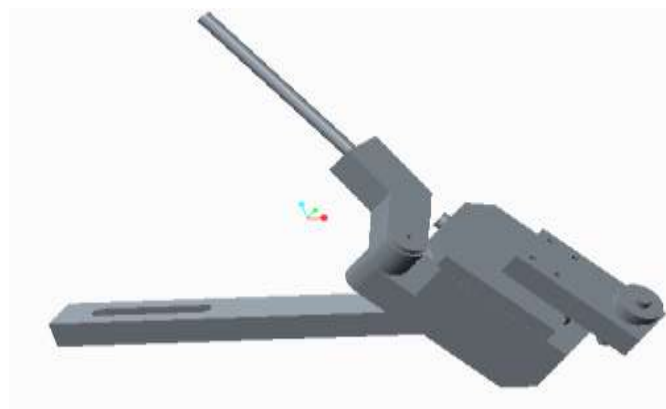
$$\sigma_b = \frac{M \times y}{I}$$

Where, M = Bending moment

$$Y = \frac{t}{2} \text{ t = thickness, mm.}$$

But in case of grinding operation due to material hardness, the force should be taken as 30-40 times than turning force in lathe machine.

10.ACTUAL CAD MODEL



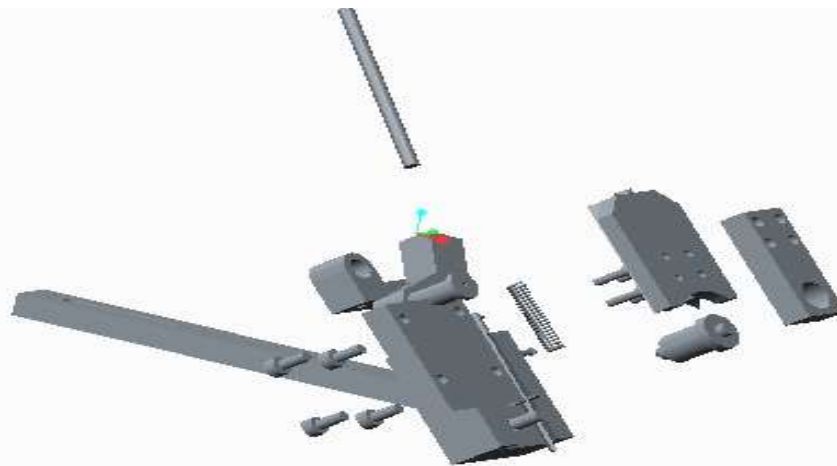
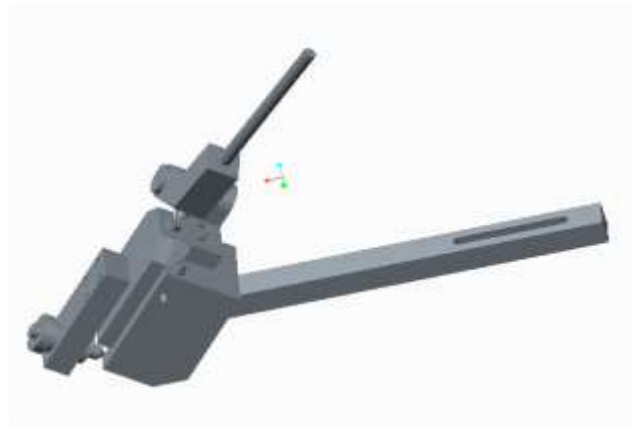


Figure 1 Actual model of Assembly with exploded view

11.RESULTS AND DISCUSSION

Subsequently, we have Fabricated a system for the reason decreased wheel dressing.

This system lessens the require time for dressing and furthermore cost of the dressing.

This system effectively executed in the organization at Sumangal Engg. Work Co.

They are fulfill from this system.

We can utilized this instrument where large scale manufacturing in little scope businesses with low capital expense with compelling working.

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