



**Product Specification Catalogue**

# **SUPERIOR SOLUTIONS UNMATCHED VALUE**

**Selling trust with tools**





## INTRODUCTION

VE TO Clamping Systems Pvt Ltd, manufactures world class CLAMPING ELEMENTS, TOOL ROOM ACCESSORIES & CUSTOMIZED CLAMPING SOLUTIONS. Started with an idea of providing standard clamping systems for the Plastic Injection Moulding Machines, Sheet Metal Presses, Die Casting Machines and other Tool Room Industry. Today, we are proud to introduce ourselves as one of the leading manufacturer of Clamping Elements. The quest to stay ahead in the rapidly evolving market has made VE TO constantly develop new Product range as per compliance with different demands & needs of our consumers. From conceptualization to execution, from drawing to production, there's just one single largest force that drives us, our CUSTOMERS. We have grown from a small setup to an established brand name just because of customers. Our range of clamps are sold at economical prices in the market to our respected clients.

## COMPANY PURPOSE, VISION & MISSION

### MISSION — — —



### — — — VISION

"To exceed customer expectation in quality, delivery and cost through continuous improvement and customer satisfaction."

"To be the supplier of choice in every industry we serve."

### PURPOSE

"Continues Value Creation for Customers"



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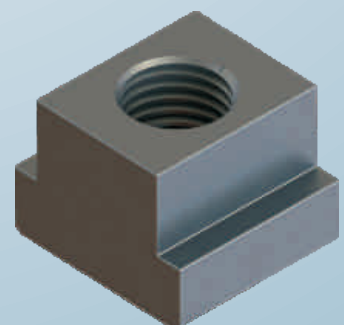
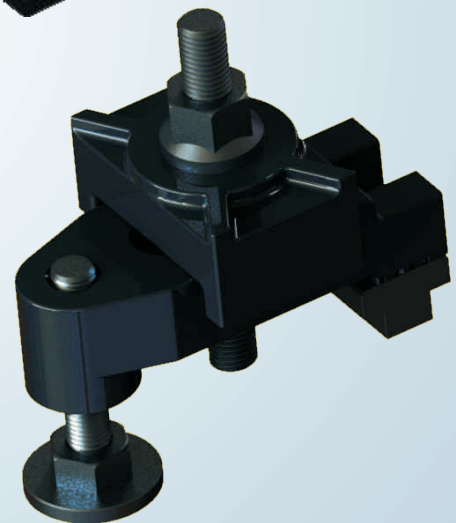
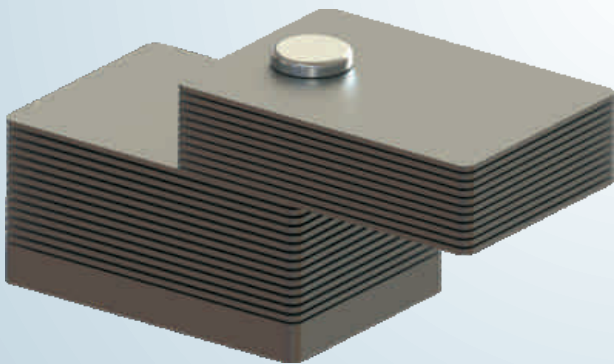
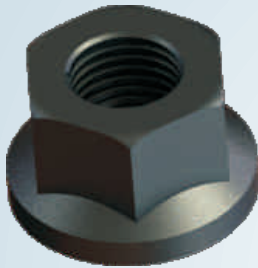
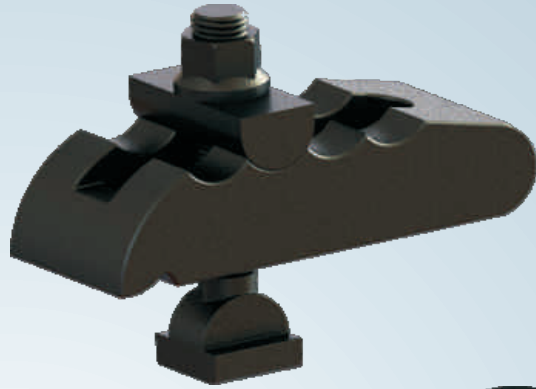
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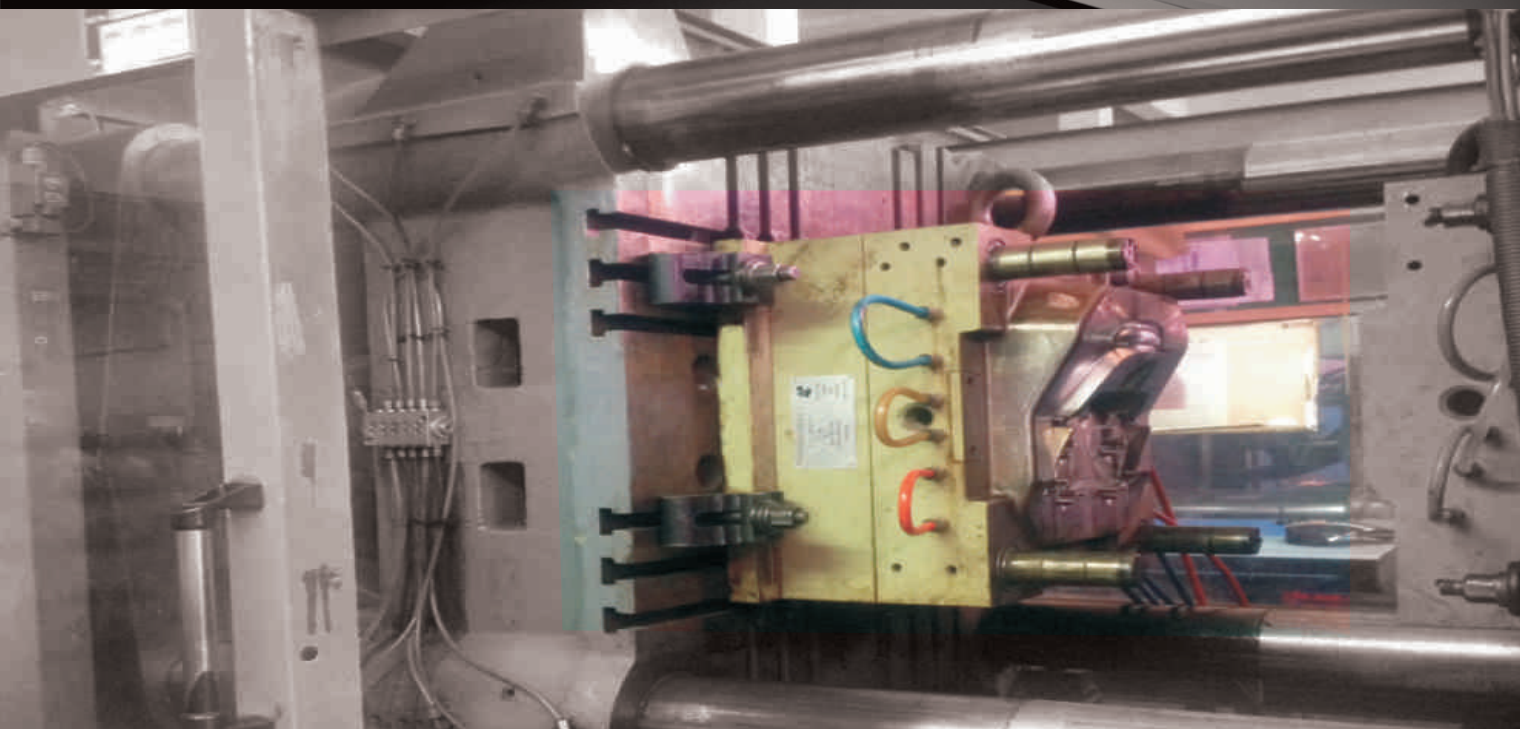
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## COMPLETE RANGE

## Selling trust with tools

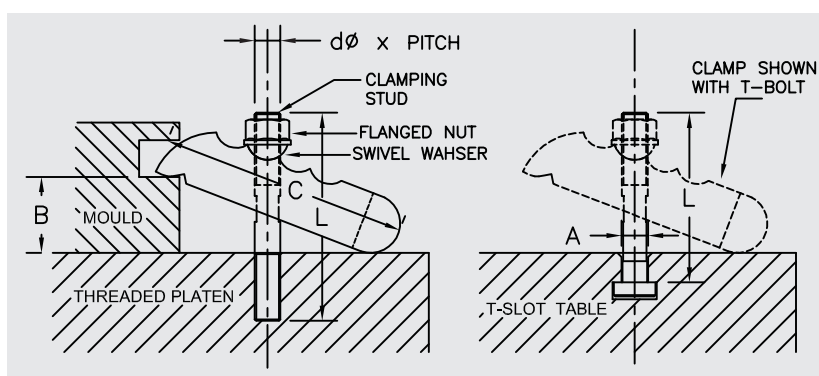




## MOULD CLAMP

### For Plastic Injection Moulding & Pressure Die Casting Machines

It is one of the conventional type clamping system made up of S.G.I steel in 500/7 grade. Used in clamping of heavy moulds on plastic injection moulding machines and pressure die casting machines. Its adjustable swivel washer adjust the height automatically with the help of grooved curve on upper portion of clamp. It comes with threaded Stud or T-bolt as suitable.



### MOULD CLAMP - WITH T - BOLT

| MODEL   | dØ x PITCH X L          | T-SLOT SIZE A | CLAMPING RANGE B | LENGTH OF CLAMP C | BREADTH OF CLAMP |
|---------|-------------------------|---------------|------------------|-------------------|------------------|
| VMC-12T | T-BOLT M12 X 1.75 X 125 | 12            | 0-35             | 110               | 50               |
| VMC-14T | T-BOLT M12 X 1.75 X 125 | 14            | 0-35             | 110               | 50               |
| VMC-16T | T-BOLT M16 X 2.0 X 130  | 16            | 0-40             | 135               | 60               |
| VMC-18T | T-BOLT M16 X 2.0 X 130  | 18            | 0-40             | 135               | 60               |
| VMC-20T | T-BOLT M20 X 2.5 X 150  | 20            | 0-50             | 160               | 70               |
| VMC-22T | T-BOLT M20 X 2.5 X 150  | 22            | 0-50             | 160               | 70               |
| VMC-24T | T-BOLT M24 X 3.0 X 210  | 24            | 0-60             | 180               | 80               |
| VMC-28T | T-BOLT M24 X 3.0 X 210  | 28            | 0-60             | 180               | 80               |

### MOULD CLAMP - WITH "STUD WITH SLOT" (MOULD STUD)

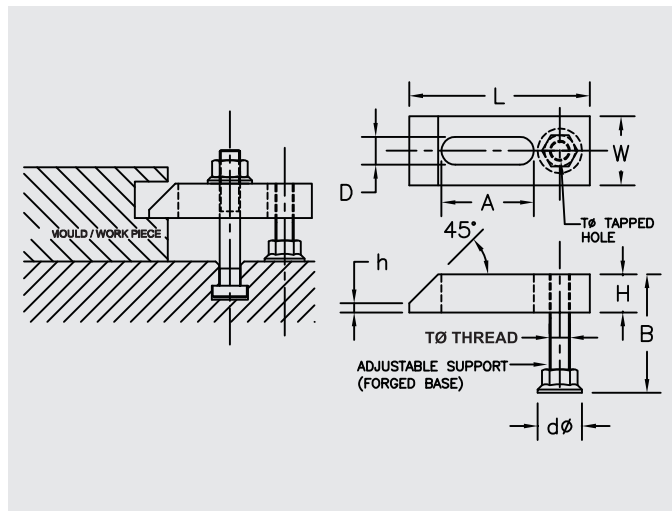
| MODEL   | dØ x PITCH X L        | CLAMPING RANGE B | LENGTH OF CLAMP C | BREADTH OF CLAMP |
|---------|-----------------------|------------------|-------------------|------------------|
| VMC-12S | STUD M12 X 1.75 X 100 | 0-35             | 110               | 50               |
| VMC-16S | STUD M16 X 2.0 X 125  | 0-40             | 135               | 60               |
| VMC-20S | STUD M20 X 2.5 X 150  | 0-50             | 160               | 70               |
| VMC-24S | STUD M24 X 3.0 X 200  | 0-60             | 180               | 80               |

## TAPPED END CLAMP-WITH ADJUSTABLE SUPPORT

### Hardened & Tempered, Black Finish

Tapped End Clamps are most useful clamps for injection moulding or pressure die casting machine where mould / die is clamped in vertical position, these clamp have adjustable support to adjust the thickness of mould plate.

(Note : T-Bolt or Stud with Nut, Washer etc to be ordered separately.)



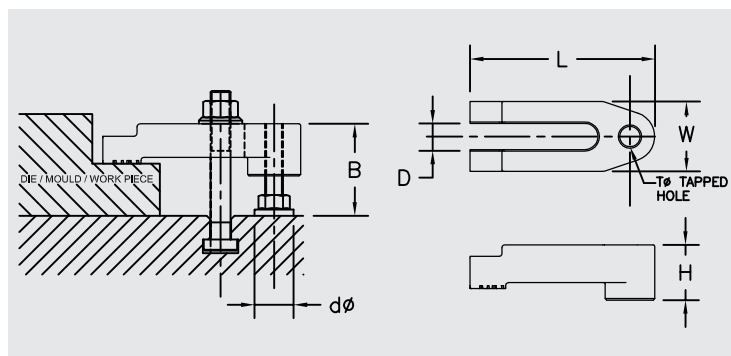
### For Plastic Injection Moulding & Pressure Die Casting Machines

| MODEL   | D SUITABLE FOR BOLT | L   | A   | W  | H  | h  | TØ TAPPED HOLE | dØ | B Max |
|---------|---------------------|-----|-----|----|----|----|----------------|----|-------|
| VTEC-12 | M12                 | 110 | 55  | 38 | 18 | 6  | M12            | 30 | 60    |
| VTEC-16 | M16                 | 125 | 60  | 48 | 24 | 8  | M16            | 35 | 85    |
| VTEC-20 | M20                 | 160 | 80  | 60 | 30 | 10 | M20            | 38 | 90    |
| VTEC-24 | M24                 | 200 | 110 | 72 | 38 | 10 | M24            | 40 | 100   |

## U-TYPE SPECIAL MOULD CLAMP

### For Plastic Injection Moulding & Pressure Die Casting Machines

It is one of the conventional type clamping system made up of S.G.I steel in 500/7 grade. Used in clamping of heavy moulds on plastic injection moulding machines and pressure die casting machines. It comes with forged stopper bolt for the height adjustment and special washer at top of clamp to move the bolt in slot at desired portion. It is used to clamp different sizes of moulds on same machine through it height adjustment feature. It helps save the time of the operator while changing the mould on machine therefore increase the productivity.



### CLAMP - WITH T-BOLT

| MODEL    | T-Bolt                  | D SUITABLE FOR BOLT | CLAMPING RANGE B | LENGTH OF CLAMP L | BREADTH OF CLAMP W |
|----------|-------------------------|---------------------|------------------|-------------------|--------------------|
| VTUC-12T | T-BOLT M12 X 1.75 X 125 | 12                  | 0-60             | 120               | 47                 |
| VTUC-14T | T-BOLT M12 X 1.75 X 125 | 14                  | 0-60             | 120               | 47                 |
| VTUC-16T | T-BOLT M16 X 2.0 X 150  | 16                  | 0-80             | 130               | 50                 |
| VTUC-18T | T-BOLT M16 X 2.0 X 150  | 18                  | 0-80             | 130               | 50                 |
| VTUC-20T | T-BOLT M20 X 2.5 X 150  | 20                  | 0-90             | 160               | 60                 |
| VTUC-22T | T-BOLT M20 X 2.5 X 150  | 22                  | 0-90             | 160               | 60                 |
| VTUC-24T | T-BOLT M24 X 3.0 X 210  | 24                  | 0-95             | 200               | 73                 |
| VTUC-28T | T-BOLT M24 X 3.0 X 210  | 28                  | 0-95             | 200               | 73                 |

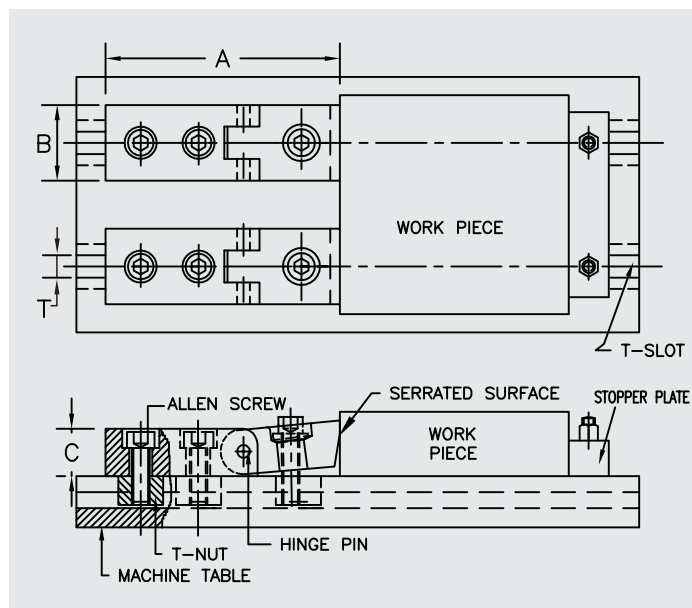
### CLAMP - WITH "STUD WITH SLOT" (MOULD STUD)

| MODEL    | Stud with Slot | D SUITABLE FOR BOLT | CLAMPING RANGE B | LENGTH OF CLAMP L | BREADTH OF CLAMP W |
|----------|----------------|---------------------|------------------|-------------------|--------------------|
| VTUC-12S | M12 x 100      | 12                  | 0-60             | 120               | 47                 |
| VTUC-16S | M16 x 125      | 16                  | 0-80             | 130               | 50                 |
| VTUC-20S | M20 x 175      | 20                  | 0-90             | 160               | 60                 |
| VTUC-24S | M24 x 200      | 24                  | 0-95             | 200               | 73                 |

## LOW HEIGHT PINCH CLAMP

**For Machining Center, Milling, Shaping, Planning, Jig-Boring Etc.**

Used in machining centre, milling, shaping, planning, jig boring, etc. This clamp is useful for job clamping where complete top surface of job is to be machined in one setting & hence can be clamped only from side faces. When serrated front portion is pressed against the job by tightening the front bolt, it gives a downward as well as forward clamping force. It is made up of hardened steel & supplied with hardened T-nuts & Standard Bolts.



| MODEL  | SUITABLE FOR T-SLOT SIZE T | TOTAL LENGTH A | BREADTH B | HEIGHT C |
|--------|----------------------------|----------------|-----------|----------|
| VPC-12 | 12                         | 115            | 30        | 15       |
| VPC-14 | 14                         | 115            | 30        | 15       |
| VPC-16 | 16                         | 145            | 38        | 18       |
| VPC-18 | 18                         | 145            | 38        | 18       |
| VPC-20 | 20                         | 180            | 48        | 24       |
| VPC-22 | 22                         | 180            | 48        | 24       |
| VPC-24 | 24                         | 180            | 48        | 24       |
| VPC-28 | 28                         | 180            | 48        | 24       |

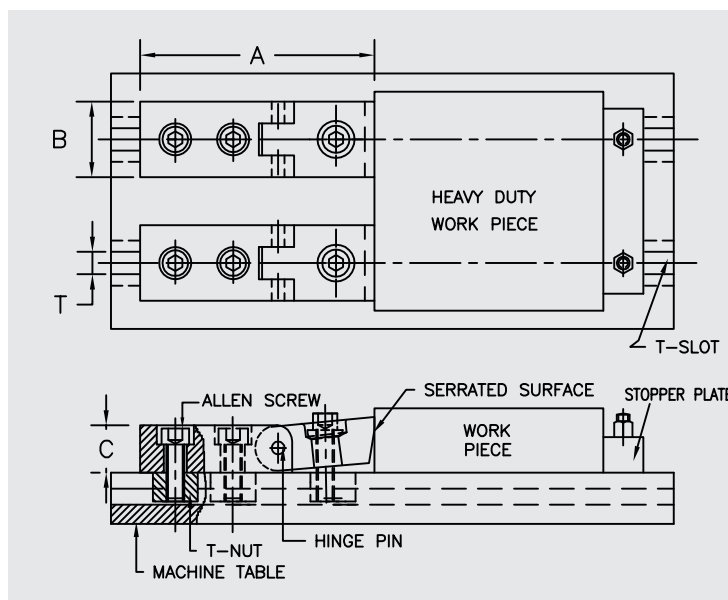
## HEAVY DUTY PINCH CLAMP

**For Machining Center, Milling, Planning, Plano-Milling Etc.**

These Clamps are offered in heavier version of the above clamp for clamping heavy blocks. Basic function is same but this is used for clamping from sides of heavy blocks or thicker plates for facing top face in one setting. It is made up of hardened steel & supplied with T-Nuts & Standard Bolts.

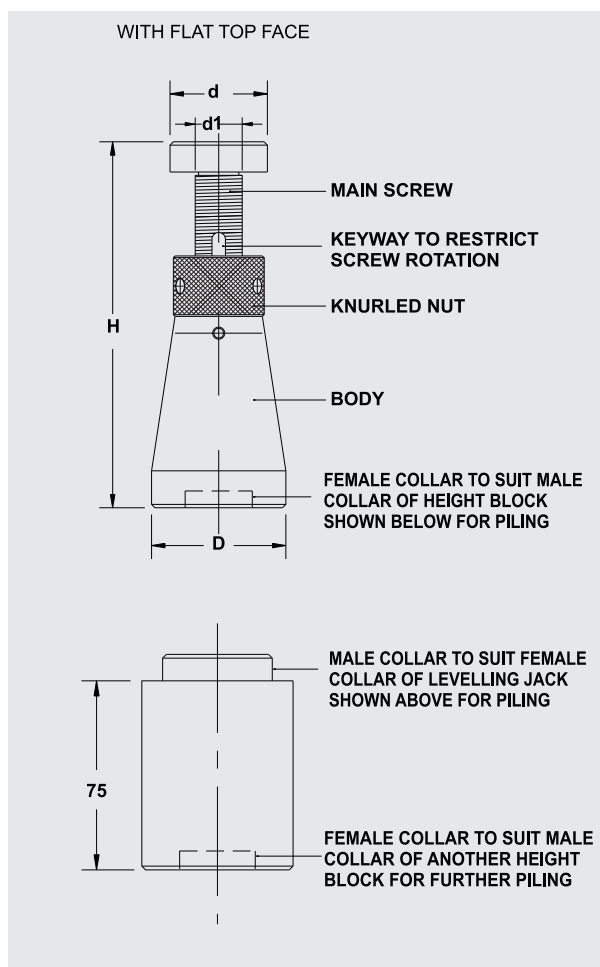


| MODEL   | SUITABLE FOR T-SLOT SIZE T | TOTAL LENGTH A | BREADTH B | HEIGHT C |
|---------|----------------------------|----------------|-----------|----------|
| VHDP-18 | 18                         | 185            | 60        | 38       |
| VHDP-20 | 20                         | 185            | 60        | 38       |
| VHDP-22 | 22                         | 185            | 60        | 38       |
| VHDP-24 | 24                         | 185            | 60        | 38       |
| VHDP-28 | 28                         | 185            | 60        | 38       |



## LEVELLING JACKS & HEIGHT BLOCKS

Levelling jack can be used as an adjustable support block for clamps and as a stopper or levelling block in fixtures or machines, as well as for levelling surface plates or other heavy duty work pieces. Its unique design does not allow the levelling screw to rotate while adjustment, hence makes it suitable for fine level adjustment.



LEVELLING JACK

| MODEL | H MIN. AT CLOSED POSITION | H MAX. AT OPEN POSITION | DIA AT BOTTOM D | DIA AT TOP d | DIA OF SCREW d1 | TYPE OF TOP FACE |
|-------|---------------------------|-------------------------|-----------------|--------------|-----------------|------------------|
| VLJ-1 | 75                        | 100                     | 55              | 38           | M-24            | FLAT             |
| VLJ-2 | 100                       | 150                     | 55              | 38           | M-24            | FLAT             |



HEIGHT BLOCK FOR LEVELLING JACK

| MODEL    | EFFECTIVE HEIGHT INCREASE WITH ONE HEIGHT BLOCK |
|----------|-------------------------------------------------|
| VHBLJ-75 | 75                                              |

## LEVELLING JACK- HEAVY DUTY

Levelling jack-heavy duty is a heavier version of levelling jack with a heavy body and levelling screw & knurled nut. This jack is specially designed for heavy castings & machines. This is also available with flat head levelling screw.

| MODEL  | H MIN. AT CLOSED POSITION | H MAX. AT OPEN POSITION | DIA AT BOTTOM D | DIA AT TOP d | DIA OF SCREW d1 | TYPE OF TOP FACE |
|--------|---------------------------|-------------------------|-----------------|--------------|-----------------|------------------|
| VLJ-HD | 160                       | 230                     | 75              | 50           | 32Ø             | FLAT             |

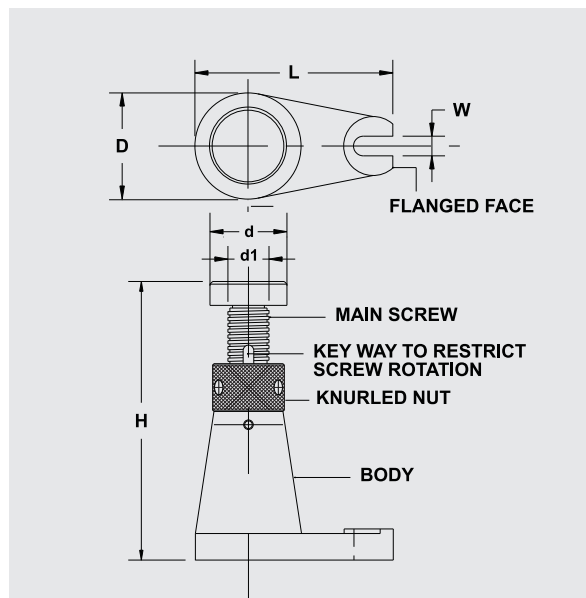
## HEIGHT BLOCK FOR LEVELLING JACK-HEAVY DUTY

As in case of levelling jacks, height block for levelling jack-heavy duty model VHBLJ-HD-75 is available for piling with levelling jack heavy duty.

| MODEL       | EFFECTIVE HEIGHT INCREASE WITH ONE HEIGHT BLOCK |
|-------------|-------------------------------------------------|
| VHBLJ-HD-75 | 75                                              |

## LEVELLING JACK-HEAVY DUTY-FLANGE MOUNTING

Levelling Jack-Heavy Duty-Flange Mounting is same as VLJ-HD but with flanged base for mounting on machine bed for additional rigidity.



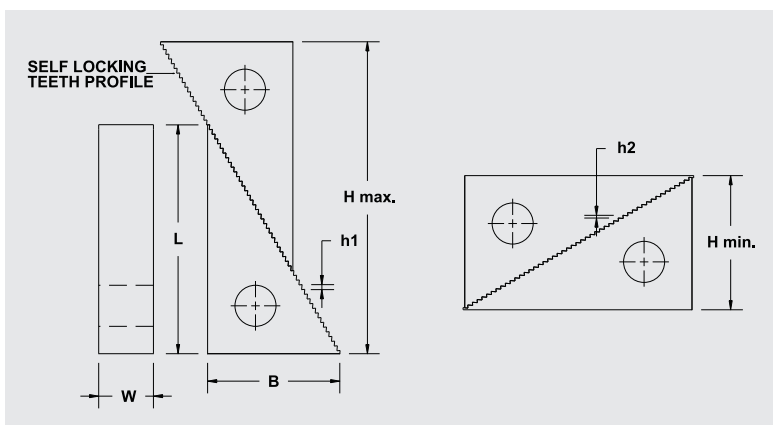
| MODEL     | H MIN. AT CLOSED POSITION | H MAX. AT OPEN POSITION | DIA AT BOTTOM D | L   | MOUNTING SLOT WIDTH W | DIA AT TOP d | DIA OF SCREW d1 | TYPE OF TOP FACE |
|-----------|---------------------------|-------------------------|-----------------|-----|-----------------------|--------------|-----------------|------------------|
| VLJ-HD-FB | 160                       | 230                     | 75              | 130 | 18                    | 50           | 32Ø             | FLAT             |

## STEP BLOCKS

Step Blocks are used as adjustable supporting Blocks at the rear of the clamps while clamping the workpiece. Different heights can be achieved by using combination of two different sizes of step Blocks. Available in pairs. (Pair consists of 2 identical Step Blocks) Combination of two Step Blocks of same or different sizes is kept as support under one Strap Clamp. But in case of use of Step Blocks with Stepped Strap Clamp, only one Step Block of suitable size is kept as support under one stepped strap clamp.



Step Block - Heavy duty is different then step block above in width only, more width enables use on bigger T-Slots and also with bigger sizes of Stepped Strap Clamps



### STEP BLOCK

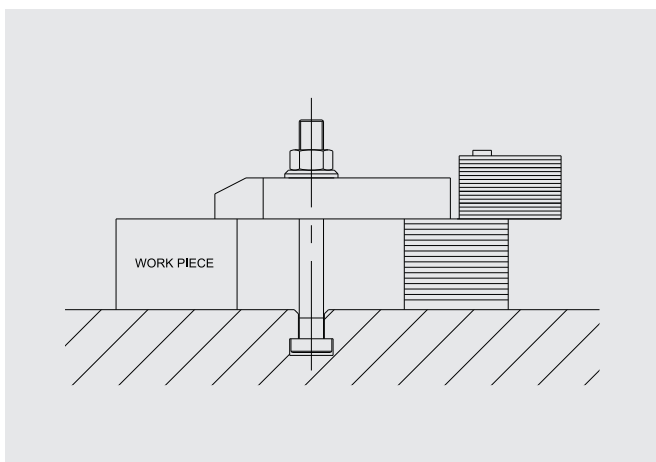
| MODEL | L   | B  | W  | HEIGHT ADJUSTMENT |        | HEIGHT OF STEP h1 | HEIGHT OF STEP h2 |
|-------|-----|----|----|-------------------|--------|-------------------|-------------------|
|       |     |    |    | H min.            | H max. |                   |                   |
| VSb-1 | 30  | 18 | 28 | 20                | 42     | 2.7               | 1.6               |
| VSb-2 | 66  | 38 | 28 | 38                | 95     | 2.7               | 1.6               |
| VSb-3 | 117 | 68 | 28 | 70                | 180    | 2.7               | 1.6               |

### STEP BLOCK-HEAVY DUTY

| MODEL | L   | B  | W  | HEIGHT ADJUSTMENT |        | HEIGHT OF STEP h1 | HEIGHT OF STEP h2 |
|-------|-----|----|----|-------------------|--------|-------------------|-------------------|
|       |     |    |    | H min.            | H max. |                   |                   |
| VSb-4 | 66  | 38 | 47 | 38                | 95     | 2.7               | 1.6               |
| VSb-5 | 117 | 68 | 47 | 70                | 180    | 2.7               | 1.6               |
| VSb-6 | 156 | 92 | 47 | 94                | 230    | 2.7               | 1.6               |

## ADJUSTABLE SUPPORT PLATES

Adjustable support plates are used as adjustable support at the rear of the clamp. It comprises of number of plates each 2 mm thick hinged together. Desired height is achieved very easily by swinging aside the required number of plates and using the remaining as support block.

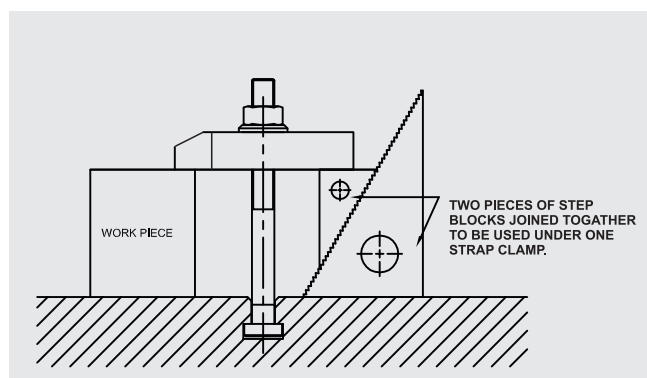


| MODEL     | MAXIMUM HEIGHT | PLATE THICKNESS | PLATE OVERALL SIZE | SIZE OF CLAMP REST AREA |
|-----------|----------------|-----------------|--------------------|-------------------------|
| VASP-250  | 50             | 2               | 50 X 35            | 25 X 35                 |
| VASP-2100 | 100            | 2               | 50 X 35            | 25 X 35                 |
| VASP-2150 | 150            | 2               | 50 X 35            | 25 X 35                 |

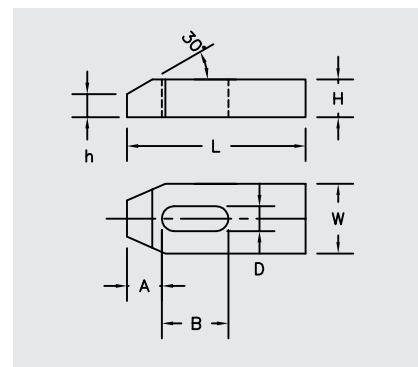
## STRAP CLAMP

### Hardened & Tempered, Black Finish

These clamp are widely used for holding press tool and huge casting/dies while machining.



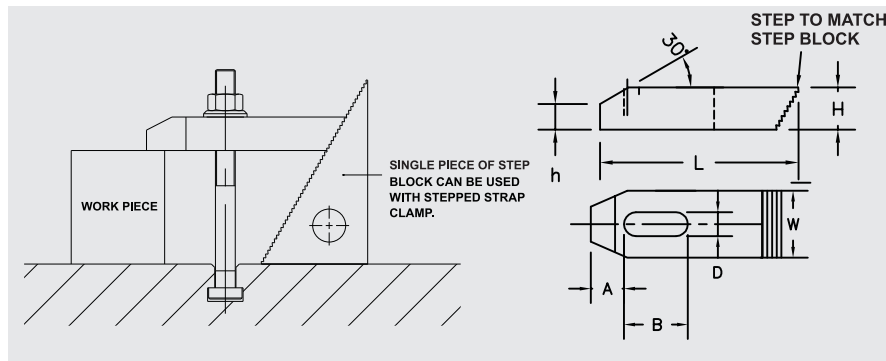
| MODEL      | D SUITABLE FOR BOLT | L   | W  | H  | A  | B   | h  |
|------------|---------------------|-----|----|----|----|-----|----|
| VSC-8-60   | M8                  | 60  | 24 | 12 | 13 | 22  | 7  |
| VSC-10-80  | M10                 | 80  | 30 | 15 | 15 | 30  | 9  |
| VSC-12-100 | M12                 | 100 | 38 | 18 | 21 | 40  | 12 |
| VSC-12-125 | M12                 | 125 | 38 | 18 | 21 | 50  | 12 |
| VSC-14-125 | M14                 | 125 | 48 | 24 | 26 | 45  | 15 |
| VSC-16-125 | M16                 | 125 | 48 | 24 | 26 | 45  | 15 |
| VSC-16-160 | M16                 | 160 | 48 | 24 | 26 | 65  | 15 |
| VSC-20-160 | M20                 | 160 | 60 | 30 | 30 | 60  | 18 |
| VSC-24-200 | M24                 | 200 | 72 | 38 | 35 | 80  | 21 |
| VSC-30-250 | M30                 | 250 | 72 | 48 | 45 | 100 | 28 |



## STEPPED STRAP CLAMP

### Hardened & Tempered, Black Finish

These Stepped Strap Clamps have teeth at rear matching to that of Step Blocks to be used as support. Unlike other clamps, single piece of step block (not a pair) can be used as support with Stepped Strap Clamp.



| MODEL       | D SUITABLE FOR BOLT | L   | W  | H  | A  | B   | h  |
|-------------|---------------------|-----|----|----|----|-----|----|
| VSSC-12-65  | M12                 | 65  | 30 | 15 | 15 | 25  | 9  |
| VSSC-12-100 | M12                 | 100 | 38 | 18 | 21 | 50  | 12 |
| VSSC-12-150 | M12                 | 150 | 38 | 18 | 21 | 90  | 12 |
| VSSC-16-75  | M16                 | 75  | 38 | 18 | 21 | 30  | 12 |
| VSSC-16-125 | M16                 | 125 | 48 | 24 | 26 | 70  | 15 |
| VSSC-16-160 | M16                 | 160 | 48 | 24 | 26 | 90  | 15 |
| VSSC-20-160 | M20                 | 160 | 60 | 31 | 30 | 85  | 18 |
| VSSC-24-200 | M24                 | 200 | 75 | 38 | 35 | 100 | 21 |

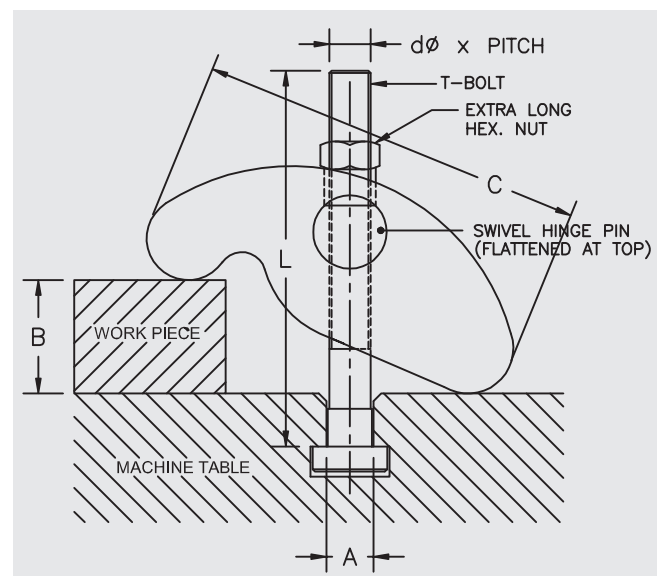
## UNIVERSAL STRAP CLAMP

### For Power Presses, Milling, Drilling, Shaping, Boring Etc.

It is made up of S.G.I steel in 500/7 grade. It is used on T-slot beds of Various machines like milling, drilling, sheet metal presses, shaper, boring machine etc. It's front portion holds the die and rear portion adjust on the bed of the machine with its design itself.



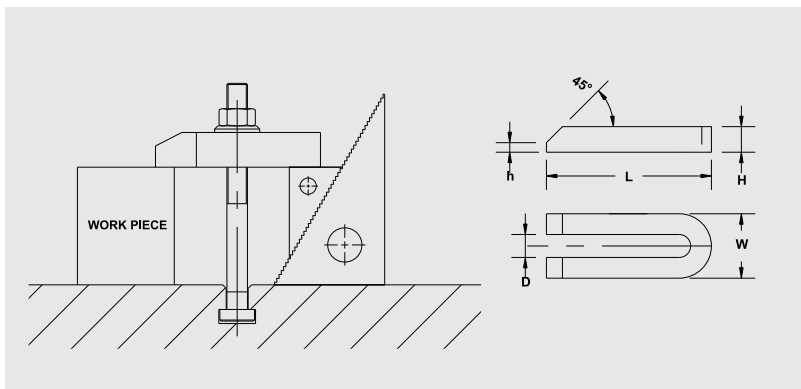
| MODEL    | T-SLOT SIZE A | dØ x PITCH X L   | CLAMPING RANGE B | LENGTH OF CLAMP C | BREATH OF CLAMP |
|----------|---------------|------------------|------------------|-------------------|-----------------|
| VUSC-12T | 12            | M12 X 1.75 X 125 | 0-60             | 105               | 42              |
| VUSC-14T | 14            | M12 X 1.75 X 125 | 0-60             | 105               | 42              |
| VUSC-16T | 16            | M16 X 2.0 X 130  | 0-80             | 130               | 50              |
| VUSC-18T | 18            | M16 X 2.0 X 130  | 0-80             | 130               | 50              |
| VUSC-20T | 20            | M20 X 2.5 X 150  | 0-100            | 160               | 55              |
| VUSC-22T | 22            | M20 X 2.5 X 150  | 0-100            | 160               | 55              |
| VUSC-24T | 24            | M24 X 3.0 X 210  | 0-120            | 190               | 65              |
| VUSC-28T | 28            | M24 X 3.0 X 210  | 0-120            | 190               | 65              |



## U-CLAMP

### Hardened & Tempered, Black Finish

U - Clamp are widely used for repetitive clamping applications frequent insertion and removal of part being clamped



| MODEL      | D SUITABLE FOR BOLT | L   | H  | W  | h  |
|------------|---------------------|-----|----|----|----|
| VUC-12-160 | M12                 | 160 | 24 | 38 | 6  |
| VUC-16-200 | M16                 | 200 | 30 | 48 | 8  |
| VUC-20-250 | M20                 | 250 | 38 | 62 | 10 |
| VUC-24-250 | M24                 | 250 | 38 | 62 | 10 |

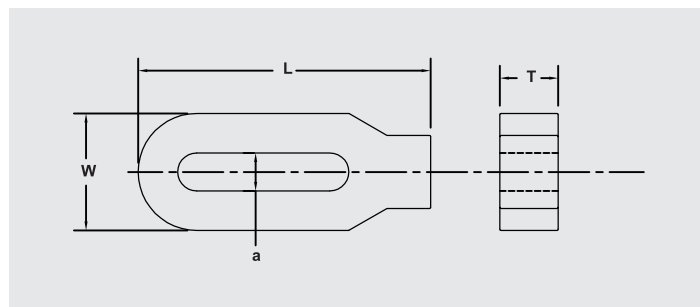
## HEAVY DUTY-SPL. LONG CLAMP

### Hardened & Tempered, Black Finish

These clamps are used for clamping medium to heavy jobs on machine beds horizontally.

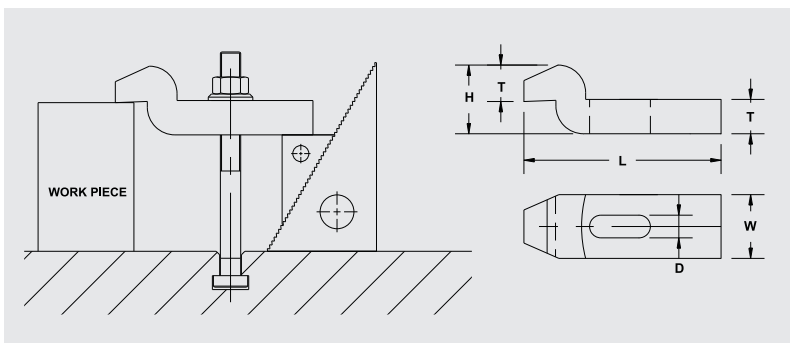
For Horizontal Boring, Milling Machine, Radial Drill, Plano-Milling Etc.

| MODEL          | L   | W  | T  | a  |
|----------------|-----|----|----|----|
| VHD-SLC 24-200 | 200 | 78 | 38 | 26 |
| VHD-SLC 24-400 | 400 | 78 | 38 | 26 |
| VHD-SLC 24-600 | 600 | 78 | 38 | 26 |
| VHD-SLC 30-200 | 200 | 78 | 38 | 32 |
| VHD-SLC 30-400 | 400 | 98 | 48 | 32 |
| VHD-SLC 30-600 | 600 | 98 | 48 | 32 |



## GOOSE NECK CLAMP

Goose neck clamp are made up of S.G.I Steel in 500/7 grade. Used in holding of press tool and huge castings/dies while machining.

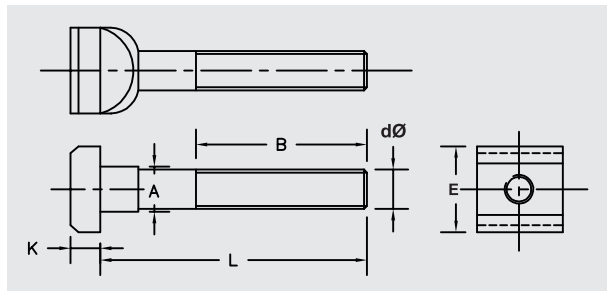


| MODEL   | D SUITABLE FOR BOLT | L   | H  | W  | T  |
|---------|---------------------|-----|----|----|----|
| VGNC-12 | M12                 | 125 | 40 | 40 | 20 |
| VGNC-16 | M16                 | 160 | 50 | 50 | 25 |
| VGNC-20 | M20                 | 200 | 60 | 60 | 30 |
| VGNC-24 | M24                 | 250 | 80 | 70 | 40 |

## T-BOLT

**Forged Head, Hardened & Tempered,  
High Tensile Steel, Black Finish**

Application : Clamping Works / Fixtures / Press Tools.

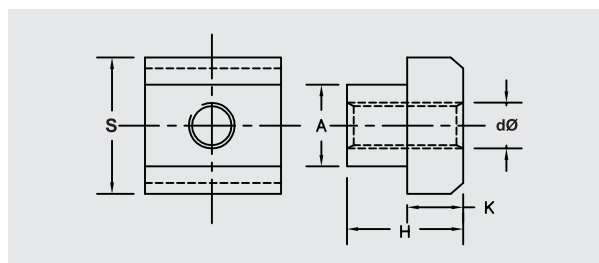


| MODEL        | A SUITABLE<br>T-SLOT SIZE | dØ<br>THREAD SIZE | L   | B   | E  | K  |
|--------------|---------------------------|-------------------|-----|-----|----|----|
| VTB-1212-80  | 12                        | M12               | 80  | 40  | 18 | 7  |
| VTB-1212-100 |                           |                   | 100 | 60  |    |    |
| VTB-1212-160 |                           |                   | 160 | 100 |    |    |
| VTB-1214-80  | 14                        | M12               | 80  | 55  | 22 | 8  |
| VTB-1214-100 |                           |                   | 100 | 65  |    |    |
| VTB-1214-125 |                           |                   | 125 | 80  |    |    |
| VTB-1214-160 |                           |                   | 160 | 100 |    |    |
| VTB-1214-200 |                           |                   | 200 | 125 |    |    |
| VTB-1214-250 |                           |                   | 250 | 155 |    |    |
| VTB-1616-100 | 16                        | M16               | 100 | 65  | 25 | 9  |
| VTB-1616-130 |                           |                   | 130 | 80  |    |    |
| VTB-1616-160 |                           |                   | 160 | 100 |    |    |
| VTB-1616-200 |                           |                   | 200 | 125 |    |    |
| VTB-1618-80  | 18                        | M16               | 80  | 55  | 28 | 10 |
| VTB-1618-100 |                           |                   | 100 | 65  |    |    |
| VTB-1618-130 |                           |                   | 130 | 80  |    |    |
| VTB-1618-160 |                           |                   | 160 | 100 |    |    |
| VTB-1618-200 |                           |                   | 200 | 125 |    |    |
| VTB-1618-250 |                           |                   | 250 | 155 |    |    |
| VTB-1618-290 |                           |                   | 290 | 175 |    |    |
| VTB-2020-110 | 20                        | M20               | 110 | 70  | 32 | 12 |
| VTB-2020-150 |                           |                   | 150 | 95  |    |    |
| VTB-2020-210 |                           |                   | 210 | 130 |    |    |
| VTB-2020-315 | 22                        | M20               | 315 | 210 | 35 | 14 |
| VTB-2022-110 |                           |                   | 110 | 70  |    |    |
| VTB-2022-150 |                           |                   | 150 | 95  |    |    |
| VTB-2022-210 |                           |                   | 210 | 130 |    |    |
| VTB-2022-250 |                           |                   | 250 | 155 |    |    |
| VTB-2022-285 |                           |                   | 285 | 170 |    |    |
| VTB-2424-150 | 24                        | M24               | 150 | 95  | 40 | 16 |
| VTB-2424-210 |                           |                   | 210 | 130 |    |    |
| VTB-2428-110 |                           |                   | 110 | 65  | 44 | 18 |
| VTB-2428-150 | 28                        | M24               | 150 | 95  |    |    |
| VTB-2428-210 |                           |                   | 210 | 130 |    |    |
| VTB-2428-250 |                           |                   | 250 | 155 |    |    |
| VTB-2428-300 |                           |                   | 300 | 200 |    |    |
| VTB-2428-350 |                           |                   | 350 | 230 |    |    |
| VTB-2428-450 |                           |                   | 450 | 300 |    |    |
| VTB-3036-250 | 36                        | M30               | 250 | 150 | 54 | 22 |
| VTB-3036-320 |                           |                   | 320 | 200 |    |    |

## T-NUT

**Hardened & Tempered, Black Finish**

Application : For use along with studs for work holdings, fixtures, etc,



| MODEL      | A SUITABLE<br>T-SLOT SIZE | dØ<br>THREAD SIZE | H  | K  | S  |
|------------|---------------------------|-------------------|----|----|----|
| VTN-8-6    | 8                         | M6                | 10 | 6  | 13 |
| VTN-10-8   | 10                        | M8                | 12 | 6  | 15 |
| VTN-12-10* | 12                        | M10               | 14 | 7  | 18 |
| VTN-14-10  | 14                        | M10               | 16 | 8  | 22 |
| VTN-14-12* | 14                        | M12               | 16 | 8  | 22 |
| VTN-16-12  | 16                        | M12               | 18 | 9  | 25 |
| VTN-16-14* | 16                        | M14               | 18 | 9  | 25 |
| VTN-18-12  | 18                        | M12               | 20 | 10 | 28 |
| VTN-18-16* | 18                        | M16               | 20 | 10 | 28 |

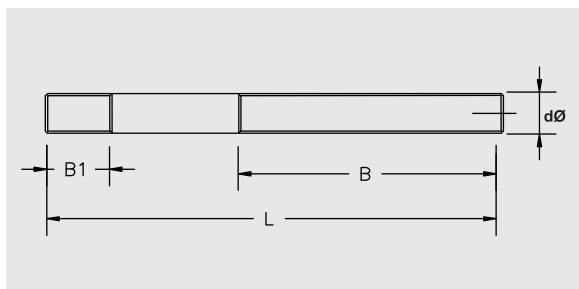
| MODEL      | A SUITABLE<br>T-SLOT SIZE | dØ<br>THREAD SIZE | H  | K  | S  |
|------------|---------------------------|-------------------|----|----|----|
| VTN-20-16  | 20                        | M16               | 24 | 12 | 32 |
| VTN-22-16  | 22                        | M16               | 28 | 14 | 35 |
| VTN-22-20* | 22                        | M20               | 28 | 14 | 35 |
| VTN-24-20  | 24                        | M20               | 32 | 16 | 40 |
| VTN-28-24  | 28                        | M24               | 36 | 18 | 44 |
| VTN-36-24  | 36                        | M24               | 44 | 22 | 54 |
| VTN-36-30  | 36                        | M30               | 44 | 22 | 54 |

\* marked models are not recommended for heavy duty use because of less wall thickness outside the threading.

## CLAMPING STUD (FOR USE WITH T-NUTS)

### Hardened & Tempered, High Tensile Steel, Black Finish

These Studs are meant to be used with T-nuts to be tightened on smaller threaded length B1 shown in figure below and longer threaded length B shown in figure below is to accommodate Clamp/Nut/Washer etc.



| MODEL      | dØ<br>THREAD SIZE | L   | B1 | B   |
|------------|-------------------|-----|----|-----|
| VCS-8-75   | M8                | 75  | 11 | 48  |
| VCS-8-100  |                   | 100 |    | 63  |
| VCS-8-150  |                   | 150 |    | 95  |
| VCS-10-75  | M10               | 75  | 13 | 48  |
| VCS-10-100 |                   | 100 |    | 63  |
| VCS-10-150 |                   | 150 |    | 95  |
| VCS-10-200 |                   | 200 |    | 125 |
| VCS-12-75  | M12               | 75  | 15 | 48  |
| VCS-12-100 |                   | 100 |    | 63  |
| VCS-12-125 |                   | 125 |    | 75  |
| VCS-12-150 |                   | 150 |    | 95  |
| VCS-12-175 |                   | 175 |    | 110 |
| VCS-12-200 |                   | 200 |    | 125 |
| VCS-12-250 |                   | 250 |    | 160 |
| VCS-12-300 |                   | 300 |    | 190 |
| VCS-14-100 | M14               | 100 | 17 | 63  |
| VCS-14-150 |                   | 150 |    | 95  |
| VCS-14-200 |                   | 200 |    | 125 |
| VCS-14-250 |                   | 250 |    | 160 |

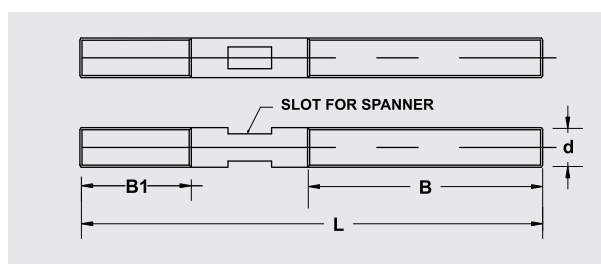
| MODEL      | dØ<br>THREAD SIZE | L   | B1 | B   |
|------------|-------------------|-----|----|-----|
| VCS-16-75  | M16               | 75  | 19 | 50  |
| VCS-16-100 |                   | 100 |    | 63  |
| VCS-16-125 |                   | 125 |    | 75  |
| VCS-16-150 |                   | 150 |    | 95  |
| VCS-16-175 |                   | 175 |    | 110 |
| VCS-16-200 |                   | 200 |    | 125 |
| VCS-16-250 |                   | 250 |    | 160 |
| VCS-16-300 |                   | 300 |    | 190 |
| VCS-20-100 | M20               | 100 | 27 | 60  |
| VCS-20-150 |                   | 150 |    | 95  |
| VCS-20-200 |                   | 200 |    | 125 |
| VCS-20-250 |                   | 250 |    | 160 |
| VCS-20-300 |                   | 300 |    | 190 |
| VCS-20-400 |                   | 400 |    | 250 |
| VCS-20-500 |                   | 500 |    | 250 |
| VCS-24-150 | M24               | 150 | 35 | 95  |
| VCS-24-200 |                   | 200 |    | 120 |
| VCS-24-250 |                   | 250 |    | 160 |
| VCS-24-300 |                   | 300 |    | 190 |
| VCS-24-400 |                   | 400 |    | 250 |
| VCS-24-500 |                   | 500 |    | 250 |
| VCS-30-150 | M30               | 150 | 43 | 95  |
| VCS-30-200 |                   | 200 |    | 120 |
| VCS-30-250 |                   | 250 |    | 160 |
| VCS-30-300 |                   | 300 |    | 190 |
| VCS-30-400 |                   | 400 |    | 250 |
| VCS-30-500 |                   | 500 |    | 250 |

## STUD WITH SLOT (MOULD STUD)

### Hardened & Tempered, High Tensile Steel, Black Finish

These Studs are used on machine beds having tapped holes. They have longer threaded length on one side for longer insertion in the tapped holes of moulding machines. These studs have a flattened middle portion for tightening and loosening with the help of an open ended spanner.

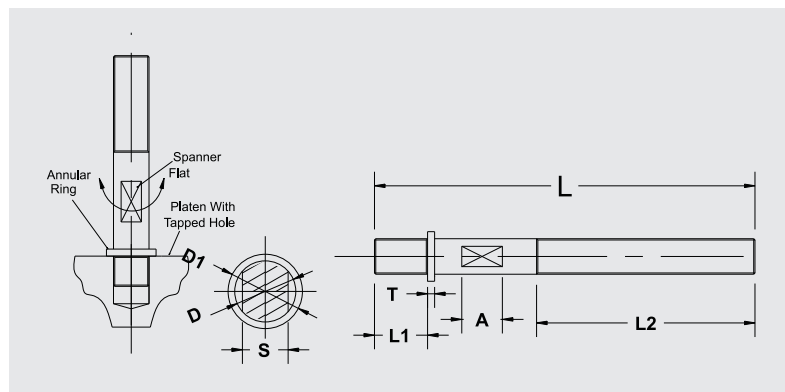
| MODEL       | dØ<br>THREAD SIZE | L   | B1 | B   |
|-------------|-------------------|-----|----|-----|
| VCSB-12-100 | M12               | 100 | 30 | 40  |
| VCSB-12-125 |                   | 125 |    | 50  |
| VCSB-12-150 |                   | 150 |    | 65  |
| VCSB-12-175 |                   | 175 |    | 80  |
| VCSB-16-125 | M16               | 125 | 40 | 50  |
| VCSB-16-150 |                   | 150 |    | 65  |
| VCSB-16-175 |                   | 175 |    | 80  |
| VCSB-16-200 |                   | 200 |    | 100 |
| VCSB-20-150 | M20               | 150 | 50 | 60  |
| VCSB-20-175 |                   | 175 |    | 70  |
| VCSB-20-200 |                   | 200 |    | 80  |
| VCSB-24-175 | M24               | 175 | 60 | 70  |
| VCSB-24-200 |                   | 200 |    | 80  |
| VCSB-24-225 |                   | 225 |    | 90  |



## CLAMPING STUD WITH ANNULAR RING & SPANNER FLAT SECTION

### Hardened & Tempered, High Tensile Steel, Black Finish

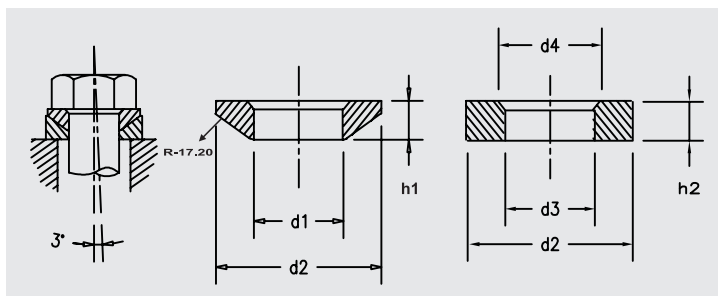
As the name suggest these studs have an added feature of annular ring after the shorter length of threading along with flattened middle portion for tightening & loosening with the help of an open end spanner



| MODEL       | D X L     | L1 | L2  | S  | D1 | T | A  |
|-------------|-----------|----|-----|----|----|---|----|
| VCSFR-12125 | M12 X 125 | 25 | 60  | 10 | 14 | 4 | 10 |
| VCSFR-12160 | M12 X 160 | 25 | 90  | 10 | 14 | 4 | 10 |
| VCSFR-16125 | M16 X 125 | 35 | 60  | 13 | 20 | 5 | 10 |
| VCSFR-16160 | M16 X 160 | 35 | 80  | 13 | 20 | 5 | 10 |
| VCSFR-16200 | M16 X 200 | 35 | 100 | 13 | 20 | 5 | 10 |
| VCSFR-20160 | M20 X 160 | 45 | 80  | 17 | 24 | 5 | 10 |
| VCSFR-20200 | M20 X 200 | 45 | 100 | 17 | 24 | 5 | 10 |
| VCSFR-24160 | M24 X 160 | 55 | 70  | 22 | 28 | 6 | 10 |
| VCSFR-24200 | M24 X 200 | 55 | 110 | 22 | 28 | 6 | 10 |

## SPHERICAL WASHER WITH CONICAL SEAT

Spherical Washer are used for clamping on non parallel surfaces. It's a washer with one radius surface, which is designed to be used in conjunction with a matching nuts in order to correct for up to several degree of misalignment between parts.

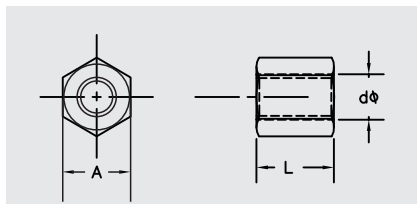


| MODEL    | SIZE | d1   | d2 | h1  | d3 | d4   | h2  |
|----------|------|------|----|-----|----|------|-----|
| VSWCS-8  | M8   | 8.4  | 17 | 3.2 | 10 | 14.5 | 3.5 |
| VSWCS-10 | M10  | 10.5 | 21 | 4.0 | 12 | 18.5 | 4.2 |
| VSWCS-12 | M12  | 13   | 24 | 4.6 | 15 | 20   | 5.0 |
| VSWCS-16 | M16  | 17   | 30 | 5.3 | 19 | 26   | 6.2 |
| VSWCS-20 | M20  | 21   | 36 | 6.3 | 24 | 31   | 7.5 |
| VSWCS-24 | M24  | 25   | 44 | 8.2 | 28 | 37   | 9.5 |

## EXTRA LONG NUT

### Hardened and Tempered, Black Finish

These nuts have longer life as they have more number of threads than ordinary nuts.



| MODEL   | d Ø<br>THREAD SIZE | L<br>TOTAL LENGTH | A<br>Hex Size |
|---------|--------------------|-------------------|---------------|
| VELN-8  | M8                 | 12                | 13            |
| VELN-10 | M10                | 15                | 17            |
| VELN-12 | M12                | 18                | 19            |
| VELN-14 | M14                | 21                | 24            |
| VELN-16 | M16                | 24                | 24            |
| VELN-20 | M20                | 30                | 30            |
| VELN-24 | M24                | 36                | 36            |
| VELN-30 | M30                | 45                | 45            |



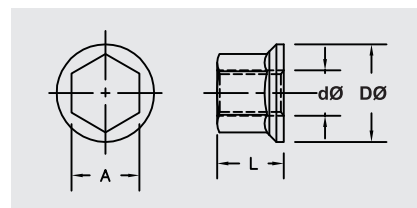
## FLANGED NUT

### Forged, Hardened and Tempered, High Tensile Steel, Black Finish

These nuts have Flanged Face for larger face contact with the surface to be tightened on.



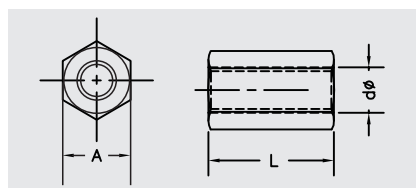
| MODEL  | dØ<br>THREAD SIZE | DØ | A  | L  |
|--------|-------------------|----|----|----|
| VFN-12 | M12               | 25 | 19 | 18 |
| VFN-16 | M16               | 32 | 24 | 24 |
| VFN-20 | M20               | 40 | 30 | 30 |
| VFN-24 | M24               | 47 | 36 | 36 |
| VFN-30 | M30               | 60 | 45 | 40 |



## EXTENSION NUT

### Hardened and Tempered, Black Finish

These nuts are used to couple the studs with studs or T-Bolts in order to increase their length.



| MODEL  | dØ<br>THREAD SIZE | L<br>Total Length | A<br>Hex Size |
|--------|-------------------|-------------------|---------------|
| VEN-8  | M8                | 24                | 13            |
| VEN-10 | M10               | 30                | 17            |
| VEN-12 | M12               | 36                | 19            |
| VEN-14 | M14               | 42                | 24            |
| VEN-16 | M16               | 48                | 24            |
| VEN-20 | M20               | 60                | 30            |
| VEN-24 | M24               | 72                | 36            |
| VEN-30 | M30               | 90                | 45            |

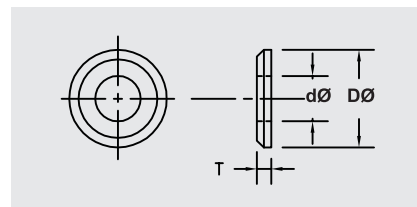


## PLAIN WASHER

### Case Hardened, Black Finish



| MODEL  | dØ SUITABLE<br>FOR BOLT | T<br>THICKNESS | DØ<br>OUTER DIA |
|--------|-------------------------|----------------|-----------------|
| VPW-8  | M8                      | 4              | 23              |
| VPW-10 | M10                     | 4              | 28              |
| VPW-12 | M12                     | 5              | 35              |
| VPW-14 | M14                     | 6              | 40              |
| VPW-16 | M16                     | 7              | 45              |
| VPW-20 | M20                     | 7              | 48              |
| VPW-24 | M24                     | 9              | 60              |
| VPW-30 | M30                     | 11             | 70              |

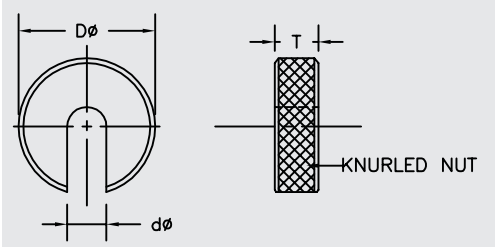




## C-WASHER

**Case Hardened, Black Finish**

C-Washer have knurled outside diameter for easy gripping while quick insertion or removal.

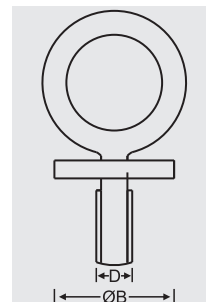


| MODEL  | dø SUITABLE FOR BOLT | T THICKNESS | Dø OUTER DIA |
|--------|----------------------|-------------|--------------|
| VCW-10 | M10                  | 9           | 40           |
| VCW-14 | M14                  | 11          | 63           |
| VCW-20 | M20                  | 11          | 80           |
| VCW-30 | M30                  | 14          | 100          |



## EYE BOLT (IS 4190:1984)

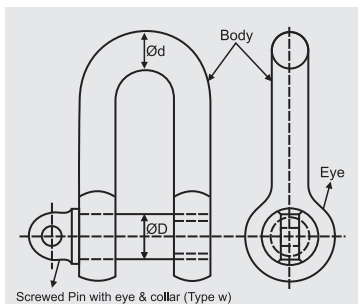
**Forged Hardened & Tempered,  
High Tensile Steel, Black Finish/Zinc Plated**



| Model<br>Size | M12  | M16  | M20  | M24  | M30  | M36  | M42  | M48  |
|---------------|------|------|------|------|------|------|------|------|
| ØB            | 28   | 34   | 40   | 48   | 56   | 67   | 80   | 95   |
| D             | M12  | M16  | M20  | M24  | M30  | M36  | M42  | M48  |
| WLL           | 0.40 | 0.63 | 1.00 | 1.60 | 2.50 | 4.00 | 6.30 | 8.00 |

## DEE-SHACKLE (IS 2415:2004)

**Forged Hardened & Tempered,  
High Tensile Steel, Black Finish/Zinc Plated**

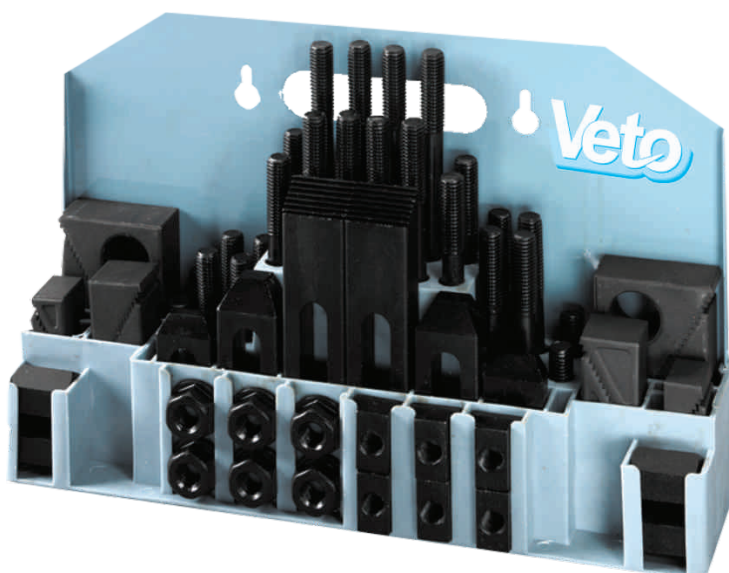


| Size<br>WLL | 1 T | 2 T  | 3 T | 4 T  | 5 T | 8 T | 10 T | 12.5 T | 16 T |
|-------------|-----|------|-----|------|-----|-----|------|--------|------|
| ØD (mm)     | 16  | 22.4 | 28  | 31.5 | 36  | 45  | 50   | 56     | 63   |
| Ød (mm)     | 14  | 20   | 25  | 28   | 32  | 40  | 45   | 50     | 56   |



## CLAMPING KIT - 58 PIECE (WITH STEP BLOCKS & STEPPED STRAP CLAMPS)

VE TO Clamping kit - 58 Piece is available in an attractive powder coated metallic rack which can be hanged on machine or a wall or kept on a table. Each kit consists of all important clamping elements required to clamp a variety of work pieces. Following table shows the contents of each model of clamping kit suitable for different T-Slot sizes. All the items of clamping kit are taken from our range of products given in this catalogue.



| MODEL                       | VCK-58-1412<br>T-SLOT SIZE 14 MM                                                                                                | VCK-58-1612<br>T-SLOT SIZE 16 MM                                                                                                | VCK-58-1812<br>T-SLOT SIZE 18 MM                                                                                                | VCK-58-1816<br>T-SLOT SIZE 18 MM                                                                                                |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| CONTENTS                    |                                                                                                                                 |                                                                                                                                 |                                                                                                                                 |                                                                                                                                 |
| <b>T-NUTS</b>               | VTN-14-12- 6 Nos.                                                                                                               | VTN-16-12- 6 Nos.                                                                                                               | VTN-18-12- 6 Nos.                                                                                                               | VTN-18-16- 6 Nos.                                                                                                               |
| <b>CLAMPING STUDS</b>       | VCS-12-75- 4 Nos.<br>VCS-12-100- 4 Nos.<br>VCS-12-125- 4 Nos.<br>VCS-12-150- 4 Nos.<br>VCS-12-175- 4 Nos.<br>VCS-12-200- 4 Nos. | VCS-12-75- 4 Nos.<br>VCS-12-100- 4 Nos.<br>VCS-12-125- 4 Nos.<br>VCS-12-150- 4 Nos.<br>VCS-12-175- 4 Nos.<br>VCS-12-200- 4 Nos. | VCS-12-75- 4 Nos.<br>VCS-12-100- 4 Nos.<br>VCS-12-125- 4 Nos.<br>VCS-12-150- 4 Nos.<br>VCS-12-175- 4 Nos.<br>VCS-12-200- 4 Nos. | VCS-16-75- 4 Nos.<br>VCS-16-100- 4 Nos.<br>VCS-16-125- 4 Nos.<br>VCS-16-150- 4 Nos.<br>VCS-16-175- 4 Nos.<br>VCS-16-200- 4 Nos. |
| <b>FLANGED NUTS</b>         | VFN-12- 6 Nos.                                                                                                                  | VFN-12- 6 Nos.                                                                                                                  | VFN-12- 6 Nos.                                                                                                                  | VFN-16- 6 Nos.                                                                                                                  |
| <b>EXTENSION NUTS</b>       | VEN-12- 4 Nos.                                                                                                                  | VEN-12- 4 Nos.                                                                                                                  | VEN-12- 4 Nos.                                                                                                                  | VEN-16- 4 Nos.                                                                                                                  |
| <b>STEPPED STRAP CLAMPS</b> | VSSC-12-65- 2 Nos.<br>VSSC-12-100- 2 Nos.<br>VSSC-12-150- 2 Nos.                                                                | VSSC-12-65- 2 Nos.<br>VSSC-12-100- 2 Nos.<br>VSSC-12-150- 2 Nos.                                                                | VSSC-12-65- 2 Nos.<br>VSSC-12-100- 2 Nos.<br>VSSC-12-150- 2 Nos.                                                                | VSSC-16-75- 2 Nos.<br>VSSC-16-125- 2 Nos.<br>VSSC-16-160- 2 Nos.                                                                |
| <b>STEP BLOCKS</b>          | VSF-1-2 PAIRS (4 Nos.)<br>VSF-2-2 PAIRS (4 Nos.)<br>VSF-3-2 PAIRS (4 Nos.)                                                      | VSF-1-2 PAIRS (4 Nos.)<br>VSF-2-2 PAIRS (4 Nos.)<br>VSF-3-2 PAIRS (4 Nos.)                                                      | VSF-1-2 PAIRS (4 Nos.)<br>VSF-2-2 PAIRS (4 Nos.)<br>VSF-3-2 PAIRS (4 Nos.)                                                      | VSF-1-2 PAIRS (4 Nos.)<br>VSF-2-2 PAIRS (4 Nos.)<br>VSF-3-2 PAIRS (4Nos.)                                                       |
| <b>TOTAL NO. OF PIECES</b>  | 58 PIECES                                                                                                                       | 58 PIECES                                                                                                                       | 58 PIECES                                                                                                                       | 58 PIECES                                                                                                                       |

## CLAMPING KIT - 34 PIECE (WITH ADJUSTABLE SUPPORT PLATES & STRAP CLAMPS)

VE TO Clamping kit - 34 Piece is economical clamping kit housed in an elegant wooden box. Following table shows the contents of each model of clamping kit suitable different T-Slot sizes. All Items of clamping kit are taken from our range of products given in this catalogue.



| MODEL<br>CONTENTS            | VCK-34-1412<br>T-SLOT SIZE 14 MM                                                    | VCK-34-1612<br>T-SLOT SIZE 16 MM                                                    | VCK-34-1812<br>T-SLOT SIZE 18 MM                                                    |
|------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| T-NUTS                       | VTN-14-12- 4 Nos.                                                                   | VTN-16-12- 4 Nos.                                                                   | VTN-18-12- 4 Nos.                                                                   |
| CLAMPING STUDS               | VCS-12-75- 4 Nos.<br>VCS-12-100- 4 Nos.<br>VCS-12-150- 4 Nos.<br>VCS-12-200- 4 Nos. | VCS-12-75- 4 Nos.<br>VCS-12-100- 4 Nos.<br>VCS-12-150- 4 Nos.<br>VCS-12-200- 4 Nos. | VCS-12-75- 4 Nos.<br>VCS-12-100- 4 Nos.<br>VCS-12-150- 4 Nos.<br>VCS-12-200- 4 Nos. |
| FLANGED NUTS                 | VFN-12- 4 Nos.                                                                      | VFN-12- 4 Nos.                                                                      | VFN-12- 4 Nos.                                                                      |
| EXTENSION NUTS               | VEN-12- 2 Nos.                                                                      | VEN-12- 2 Nos.                                                                      | VEN-12- 2 Nos.                                                                      |
| STRAP CLAMPS                 | VSC-12-100- 2 Nos.<br>VSC-12-125- 2 Nos.                                            | VSC-12-100- 2 Nos.<br>VSC-12-125- 2 Nos.                                            | VSC-12-100- 2 Nos.<br>VSC-12-125- 2 Nos.                                            |
| ADJUSTABLE<br>SUPPORT PLATES | VASP-250- 2 Nos.<br>VASP-2100- 2 Nos.                                               | VASP-250- 2 Nos.<br>VASP-2100- 2 Nos.                                               | VASP-250- 2 Nos.<br>VASP-2100- 2 Nos.                                               |
| TOTAL NO. OF PIECES          | 34 PIECES                                                                           | 34 PIECES                                                                           | 34 PIECES                                                                           |



**Product Specification Catalogue**

# **SUPERIOR SOLUTIONS UNMATCHED VALUE**

**Selling trust with tools**





## INTRODUCTION

VE TO Clamping Systems Pvt Ltd, manufactures world class CLAMPING ELEMENTS, TOOL ROOM ACCESSORIES & CUSTOMIZED CLAMPING SOLUTIONS. Started with an idea of providing standard clamping systems for the Plastic Injection Moulding Machines, Sheet Metal Presses, Die Casting Machines and other Tool Room Industry. Today, we are proud to introduce ourselves as one of the leading manufacturer of Clamping Elements. The quest to stay ahead in the rapidly evolving market has made VE TO constantly develop new Product range as per compliance with different demands & needs of our consumers. From conceptualization to execution, from drawing to production, there's just one single largest force that drives us, our CUSTOMERS. We have grown from a small setup to an established brand name just because of customers. Our range of clamps are sold at economical prices in the market to our respected clients.

## COMPANY PURPOSE, VISION & MISSION

### MISSION — — —



### — — — VISION

"To exceed customer expectation in quality, delivery and cost through continuous improvement and customer satisfaction."

"To be the supplier of choice in every industry we serve."

### PURPOSE

"Continues Value Creation for Customers"

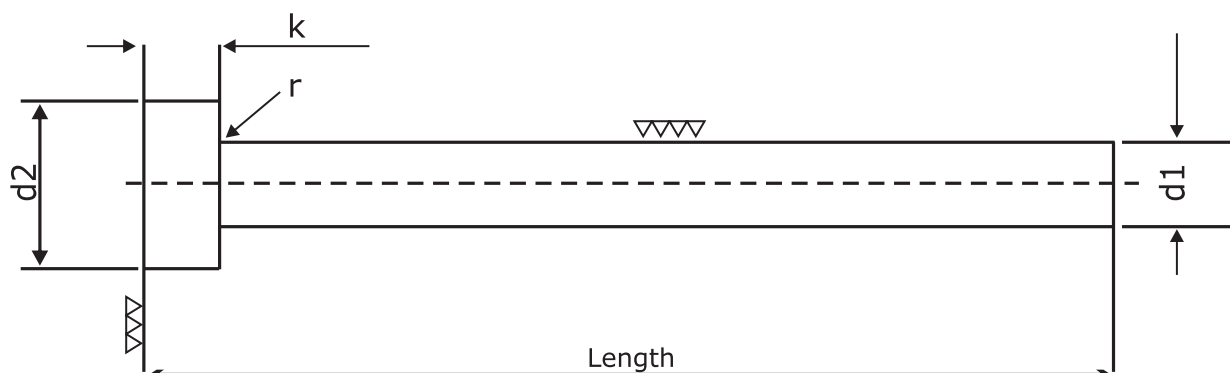
# EJECTOR PINS

**Selling trust with tools**



## EJECTOR PINS (DIN 1530)

Raw Material: Through Hardened & Ground Steel For Plastic Moulds And Hot Die Steel For Die Casting Dies.



| d1 (g6)  | 2.0 | 2.5 | 3.0 | 4.0 | 5.0  | 6.0  | 8.0  | 10.0 | 12.5 |
|----------|-----|-----|-----|-----|------|------|------|------|------|
| k (0.05) | 2.0 | 2.0 | 3.0 | 3.0 | 3.0  | 3.0  | 5.0  | 5.0  | 7.0  |
| d2 (0.2) | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 10.0 | 10.0 | 14.0 | 16.0 |
| r        |     | 0.2 | 0.3 | 0.3 | 0.3  | 0.3  | 0.5  | 0.5  | 0.8  |

### Length

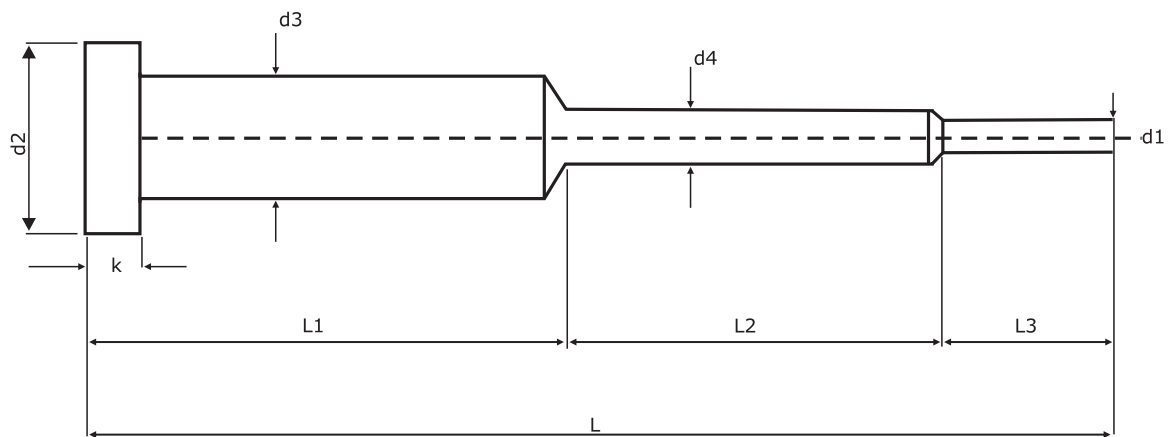
|     |   |   |   |   |   |   |   |   |   |
|-----|---|---|---|---|---|---|---|---|---|
| 100 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 125 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 160 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 200 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 250 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 300 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 350 | ● | ● | ● | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 400 | ● | ● | ● | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 450 | ● | ● | ● | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 500 | ● | ● | ● | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

✓ = Ex-stock

● = Against Order

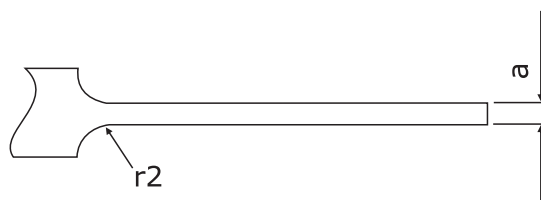
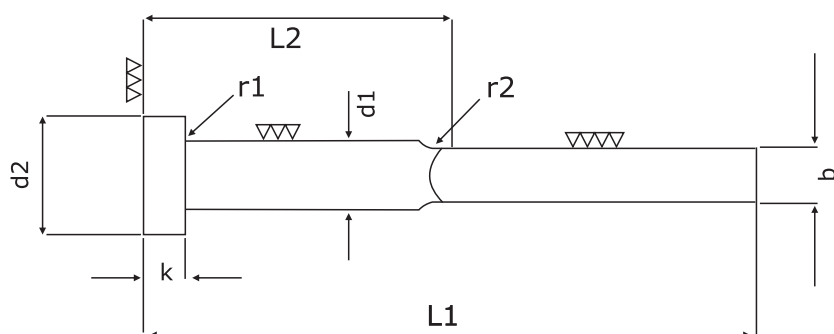
Note : d1 = Body Dia, k = Head Length, d2 = Head Dia, r = Radius  
All Dimensions are in mm

## FOR CUSTOMIZED STEP EJECTOR PINS



| d1 | d4 | d3 | d2 | k | L1 | L2 | L3 | L |
|----|----|----|----|---|----|----|----|---|
|    |    |    |    |   |    |    |    |   |

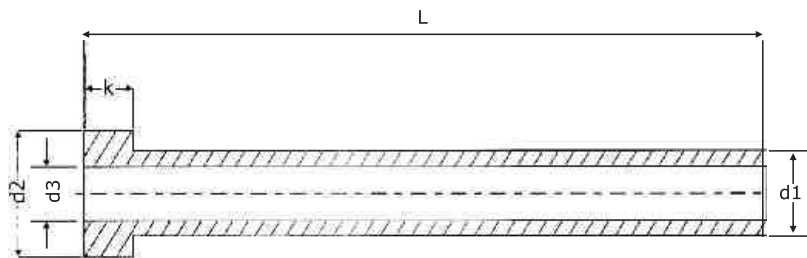
## FOR CUSTOMIZED BLADE EJECTOR PINS



| d1 | d2 | a | b | k | L1 | L2 | r1 | r2 |
|----|----|---|---|---|----|----|----|----|
|    |    |   |   |   |    |    |    |    |

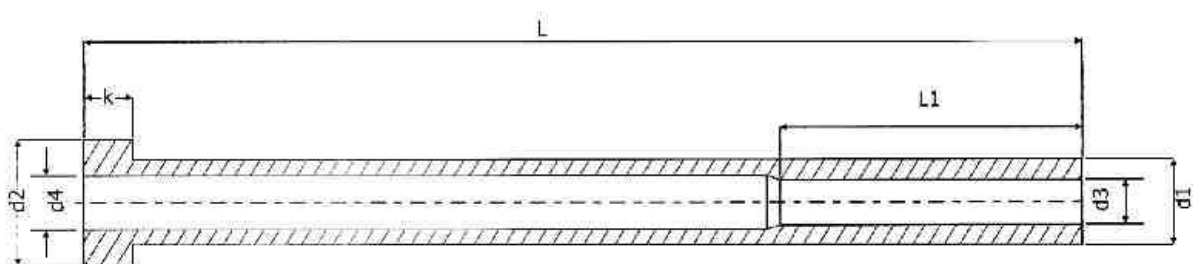
Please specify tolerance for all dimension

## FOR CUSTOMIZED EJECTOR SLEEVES



| d1 | d3 | d2 | k | L |
|----|----|----|---|---|
|    |    |    |   |   |

## FOR CUSTOMIZED STEP EJECTOR SLEEVES



| d1 | d3 | d4 | d2 | k | L1 | L |
|----|----|----|----|---|----|---|
|    |    |    |    |   |    |   |

Please specify tolerance for all dimension

## INTRODUCTION

Toggle clamp is a simple Mechanism which hold instantly, the Toggle Clamp Consists of a handle to operate arm to reach the work piece, linkages for multiplying the applied force, and a base for mounting at the workplace on it's base. The handle is operated which thereby moves the clamping arm to hold the work piece. A required clamping force is achieved and exerted on the work piece. Under this action the Toggle Holds the works piece firmly and positively.

There are two types of clamp forces to consider when determining which clamp to use :  
Holding force & Clamping Force

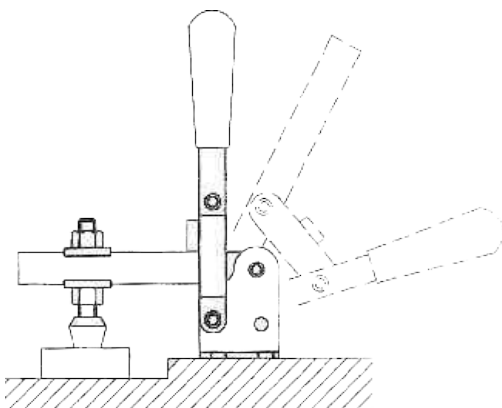
The **Holding force** is the maximum that the clamp can withstand before deformation (the reactionary force)

The **Clamping Force** is the force that the clamp will exert on the components or work piece. It is dependent on the effort applied to the clamp.

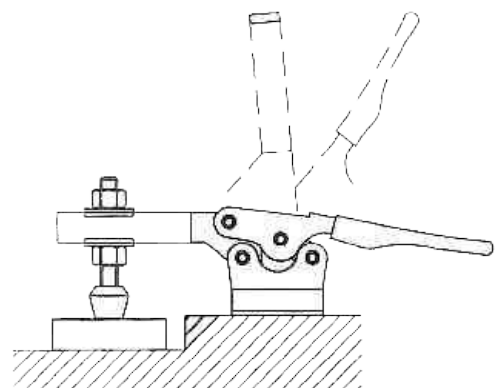
Types of Toggle Action :

### HOLD DOWN ACTION

Vertical Handle



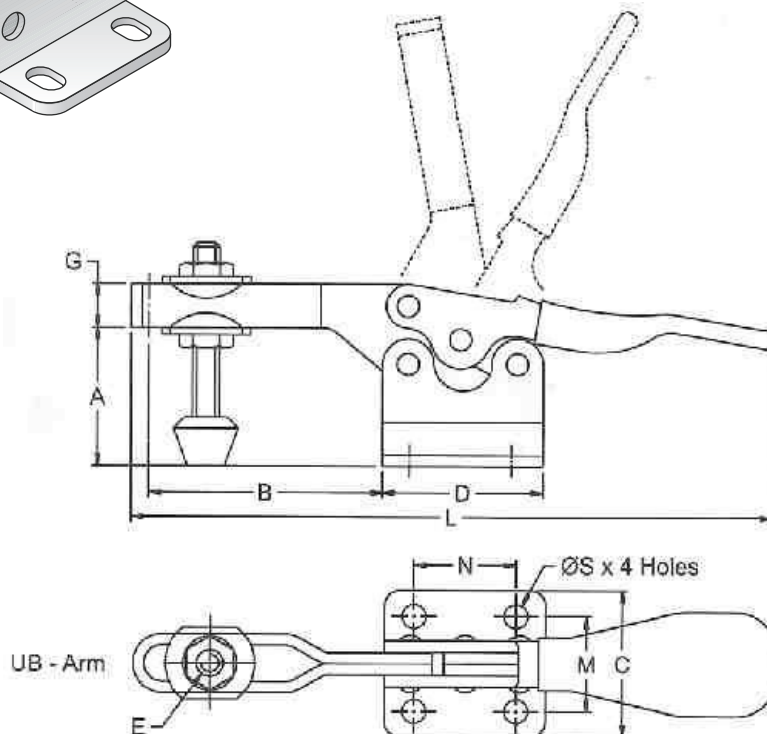
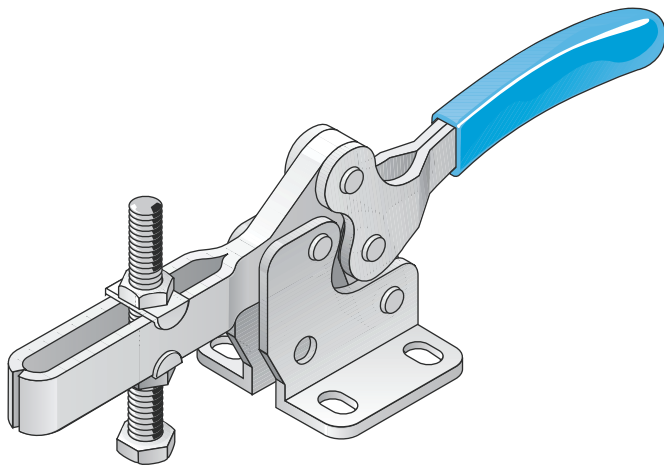
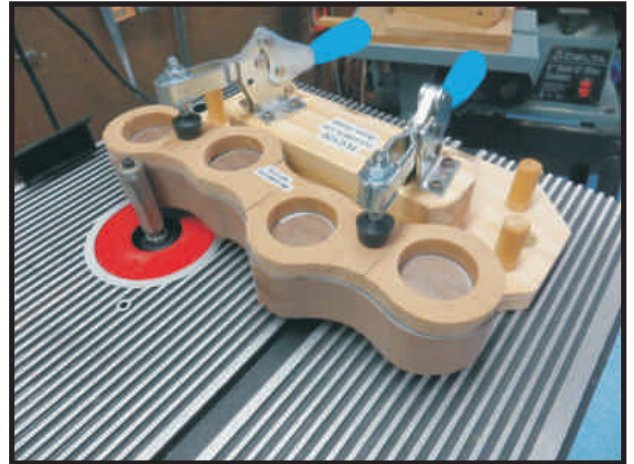
Horizontal Handle



## HORIZONTAL HOLD DOWN ACTION - FLANGED BASE

Low height design of these hold down toggle clamp required less overhead clearance as the handle remain in horizontal position while clamping.

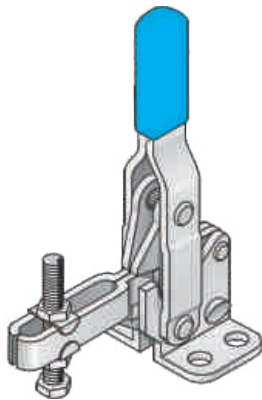
Material : Heavy Gauge Steel  
Finishing Zinc Plated



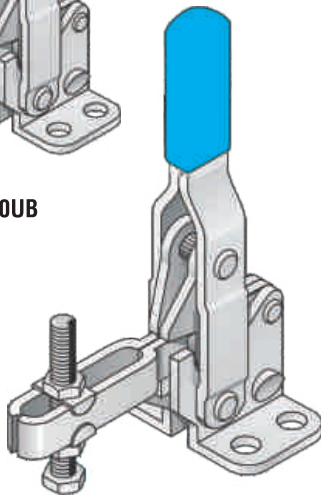
| MODEL NO. | A  | B  | Mounting Base |    | Spindle<br>Dia E | G  | L   | Mounting Dimensions |    |     |
|-----------|----|----|---------------|----|------------------|----|-----|---------------------|----|-----|
|           |    |    | C             | D  |                  |    |     | M                   | N  | ØS  |
| H-2672UB  | 26 | 72 | 41            | 38 | M6               | 13 | 165 | 27                  | 26 | 5.5 |

## VERTICAL HOLD DOWN ACTION - FLANGED BASE

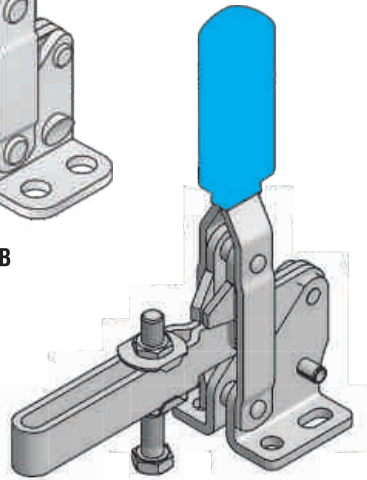
These Toggle clamp have flanged base with holes for mounting on the fixture plate. Handle remain in the vertical position in clamping. 'U' Bar arm enable one or more spindles to be moved in to any desired position along the arm



VTC 2340UB

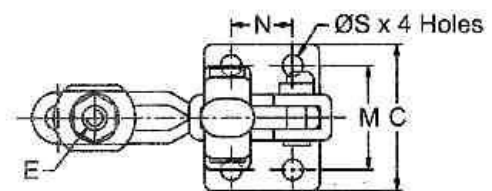
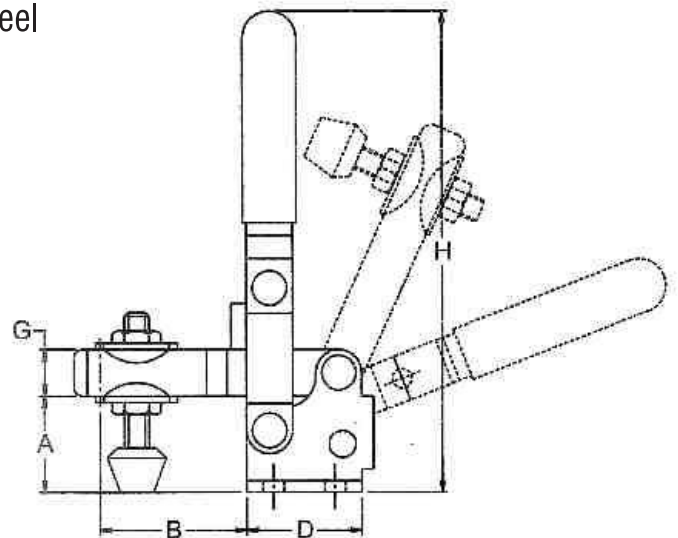


VTC 3274UB

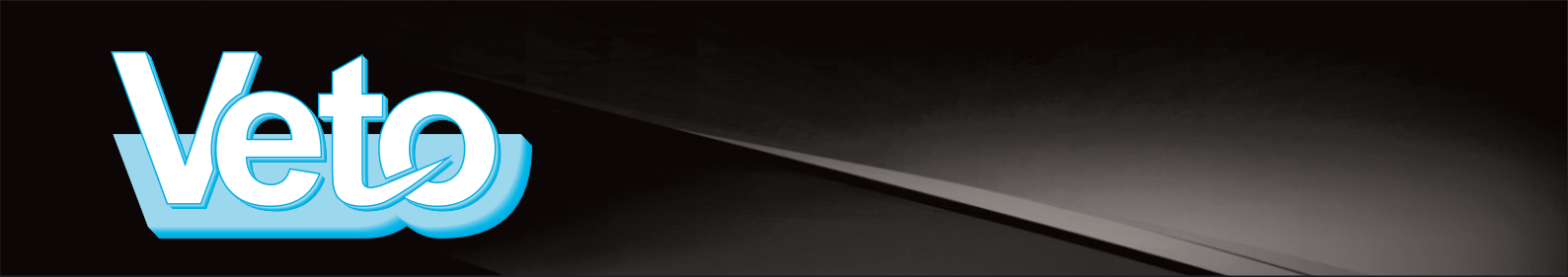


VTC 32107UB

Material : Heavy Gauge Steel  
Finishing Zinc Plated

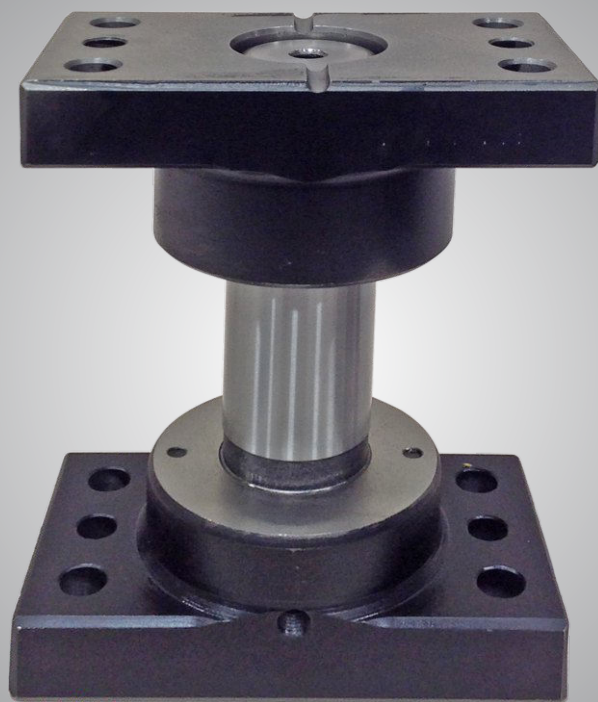


| MODEL NO.   | A  | B     | Mounting Base |      | Spindle<br>Dia E | G    | H   | Mounting Dimensions |      |     |
|-------------|----|-------|---------------|------|------------------|------|-----|---------------------|------|-----|
|             |    |       | C             | D    |                  |      |     | M                   | N    | ØS  |
| VTC 2340UB  | 23 | 40    | 40            | 25.5 | M6               | 11   | 103 | 27                  | 12.5 | 5.5 |
| VTC 3274UB  | 32 | 74    | 45            | 35   | M8               | 17.5 | 175 | 32                  | 19   | 7.1 |
| VTC 32107UB | 32 | 107.5 | 45            | 35   | M8               | 17.5 | 175 | 32                  | 19   | 7.1 |



## Notes

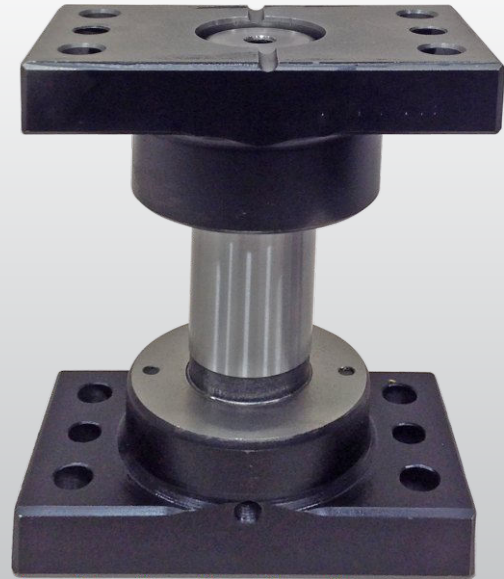
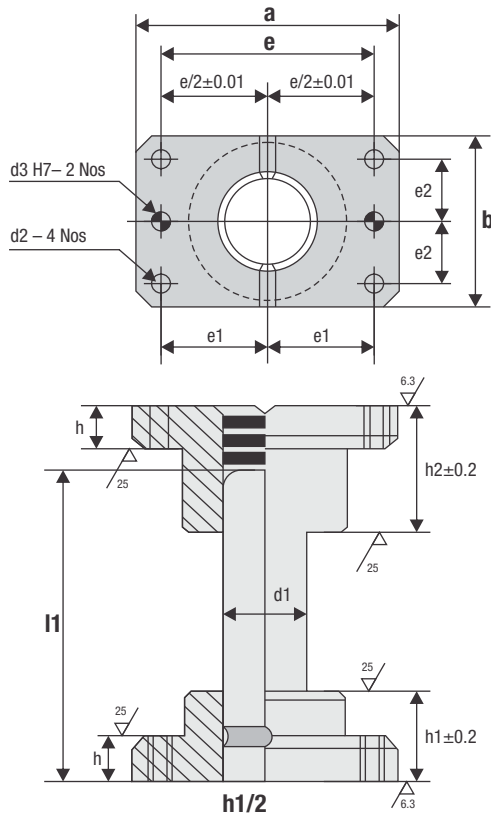
New  
Product



Oilless  
Guide Post

# Oilless Guide Post With Dowel Holes

4031.70



4031.70.

|            |         |         |          |          |          |          |          |
|------------|---------|---------|----------|----------|----------|----------|----------|
| d1         | 20      | 25      | 32       | 38       | 50       | 60       | 80       |
| d2         | 6.6     | 9       | 11       | 11       | 14       | 18       | 22       |
| d3H7       | 6       | 8       | 8        | 10       | 10       | 13       | 16       |
| a          | 74      | 84      | 100      | 130      | 155      | 190      | 230      |
| b          | 44      | 48      | 58       | 75       | 90       | 120      | 150      |
| e          | 56      | 66      | 76       | 100      | 125      | 150      | 190      |
| e1         | 28      | 33      | 38       | 50       | 62.5     | 75       | 90       |
| e2         | 15      | 15      | 18       | 22       | 30       | 40       | 55       |
| h          | 15      | 20      | 20       | 25       | 25       | 30       | 35       |
| h1         | 30      | 30      | 40       | 50       | 65       | 75       | 100      |
| h2         | 40      | 45      | 50       | 60       | 85       | 100      | 130      |
| h1         | 30      | 30      | 40       | 50       | 65       | 75       | 100      |
| Screw Size | M6 x 30 | M8 x 35 | M10 x 40 | M10 x 45 | M12 x 50 | M16 x 60 | M20 x 75 |
| Dowel Size | 6 x 20  | 8 x 30  | 8 x 30   | 10 x 40  | 10 x 40  | 13 x 50  | 16 x 50  |

|     |   |   |   |   |   |   |   |
|-----|---|---|---|---|---|---|---|
| l1  |   |   |   |   |   |   |   |
| 80  | • | • |   |   |   |   |   |
| 90  | • | • | • |   |   |   |   |
| 100 | • | • | • |   |   |   |   |
| 110 | • | • | • | • |   |   |   |
| 120 | • | • | • | • |   |   |   |
| 130 | • | • | • | • |   |   |   |
| 140 | • | • | • | • |   |   |   |
| 150 | • | • | • | • |   |   |   |
| 160 | • | • | • | • | • |   |   |
| 170 |   | • | • | • | • |   |   |
| 180 |   | • | • | • | • | • |   |
| 200 |   | • | • | • | • | • |   |
| 220 |   |   | • | • | • | • |   |
| 250 |   |   | • | • | • | • | • |
| 280 |   |   |   | • | • | • | • |
| 300 |   |   |   | • | • | • | • |
| 350 |   |   |   |   | • | • | • |
| 400 |   |   |   |   |   | • | • |
| 450 |   |   |   |   |   |   | • |

## Execution :

### Oilless Guide Post consisting of:

Oilless Guide Flange, Guide Pillar, Retaining Flange, Hexagon Socket Head Cap Screws, DIN 912/ISO 4762, Dowel Pins with Internal Extracting Thread ~ ISO 8735

## Material :

### Guide Bush :

Special Cast Iron with non liquid Lubricant

### Guide Pillar :

Steel, surface hardened  
Surface hardness: 60 + 3 HRC  
Hardness penetration depth: 2 + 1.6 mm

### Retaining Bush :

Special Cast Iron with non liquid Lubricant

## Note:

Perpendicularity of guide pillar with reference to retaining flange is  $\leq 0.02/100$  length.

## Ordering Code (example) :

Oilless Guide Post = 4031.70.

d1 = 50 mm = 050.

l1 = 200 mm = 200

Order No = 4031.70.050.200



**1L**

Extra Light load



ISO 10243

**1S**

Light load



ISO 10243

**2S**

Medium load

| L <sub>0</sub><br>Free length<br>mm | Item Code | R<br>Rate<br>N/mm | XLL 35%<br>S <sub>1</sub> F <sub>1</sub> |           | Max 50%<br>S <sub>2</sub> F <sub>2</sub> |           | Item Code | R<br>Rate<br>N/mm | XLL 30%<br>S <sub>1</sub> F <sub>1</sub> |           | Max 40%<br>S <sub>2</sub> F <sub>2</sub> |           | Item Code | R<br>Rate<br>N/mm | XLL 25%<br>S <sub>1</sub> F <sub>1</sub> |           | Max 37.5%<br>S <sub>2</sub> F <sub>2</sub> |           |
|-------------------------------------|-----------|-------------------|------------------------------------------|-----------|------------------------------------------|-----------|-----------|-------------------|------------------------------------------|-----------|------------------------------------------|-----------|-----------|-------------------|------------------------------------------|-----------|--------------------------------------------|-----------|
|                                     |           |                   | Stroke<br>mm                             | Load<br>N | Stroke<br>mm                             | Load<br>N |           |                   | Stroke<br>mm                             | Load<br>N | Stroke<br>mm                             | Load<br>N |           |                   | Stroke<br>mm                             | Load<br>N | Stroke<br>mm                               | Load<br>N |

● (D) Housing Ø mm 10

● (d) Rod Ø mm 5

| Wire Section 2,1 x 0,9 |         |     |       |    |       |     | Wire Section 1,7 x 1,1 |      |      |     |       |     |         | Wire Section 1,8 x 1,2 |      |     |       |     |  |  |
|------------------------|---------|-----|-------|----|-------|-----|------------------------|------|------|-----|-------|-----|---------|------------------------|------|-----|-------|-----|--|--|
| 25                     | 1L10025 | 8,5 | 8,8   | 74 | 12,5  | 106 | 1S10025                | 10,0 | 7,5  | 75  | 10,0  | 100 | 2S10025 | 16,0                   | 6,3  | 100 | 9,4   | 150 |  |  |
| 32                     | 1L10032 | 6,5 | 11,2  | 73 | 16,0  | 104 | 1S10032                | 8,5  | 9,6  | 82  | 12,8  | 109 | 2S10032 | 13,0                   | 8,0  | 104 | 12,0  | 156 |  |  |
| 38                     | 1L10038 | 5,5 | 13,3  | 73 | 19,0  | 105 | 1S10038                | 6,8  | 11,4 | 78  | 15,2  | 103 | 2S10038 | 11,9                   | 9,5  | 113 | 14,3  | 170 |  |  |
| 44                     | 1L10045 | 5,0 | 15,4  | 77 | 22,0  | 110 | 1S10045                | 6,0  | 13,2 | 79  | 17,6  | 106 | 2S10045 | 10,3                   | 11,0 | 113 | 16,5  | 170 |  |  |
| 51                     | 1L10050 | 4,5 | 17,9  | 80 | 25,5  | 115 | 1S10050                | 5,0  | 15,3 | 77  | 20,4  | 102 | 2S10050 | 8,9                    | 12,8 | 113 | 19,1  | 170 |  |  |
| 64                     | 1L10065 | 3,3 | 22,4  | 74 | 32,0  | 106 | 1S10065                | 4,3  | 19,2 | 83  | 25,6  | 110 | 2S10065 | 7,5                    | 16,0 | 120 | 24,0  | 180 |  |  |
| 76                     | 1L10075 | 3,2 | 26,6  | 85 | 38,0  | 122 | 1S10075                | 3,2  | 22,8 | 73  | 30,4  | 97  | 2S10075 | 5,3                    | 19,0 | 101 | 28,5  | 151 |  |  |
| 305                    | 1L10303 | 0,6 | 106,8 | 64 | 152,5 | 92  | 1S10303                | 1,1  | 91,5 | 101 | 122,0 | 134 | 2S10303 | 1,6                    | 76,3 | 122 | 114,4 | 183 |  |  |

● (D) Housing Ø mm 12,5

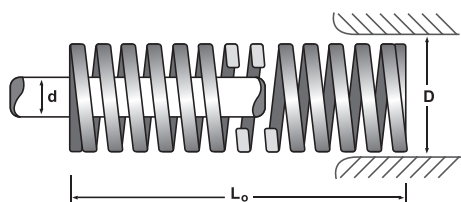
● (d) Rod Ø mm 6,3

| Wire Section 2,5 x 1,2 |         |      |       |     |       |     | Wire Section 2,3 x 1,5 |      |      |     |       |     |         | Wire Section 2,5 x 1,7 |      |     |       |     |  |  |
|------------------------|---------|------|-------|-----|-------|-----|------------------------|------|------|-----|-------|-----|---------|------------------------|------|-----|-------|-----|--|--|
| 25                     | 1L13025 | 15,5 | 8,8   | 136 | 12,5  | 194 | 1S13025                | 17,9 | 7,5  | 134 | 10,0  | 179 | 2S13025 | 30,0                   | 6,3  | 188 | 9,4   | 281 |  |  |
| 32                     | 1L13032 | 12,2 | 11,2  | 137 | 16,0  | 195 | 1S13032                | 16,4 | 9,6  | 157 | 12,8  | 210 | 2S13032 | 24,8                   | 8,0  | 198 | 12,0  | 298 |  |  |
| 38                     | 1L13038 | 10,3 | 13,3  | 137 | 19,0  | 196 | 1S13038                | 13,6 | 11,4 | 155 | 15,2  | 207 | 2S13038 | 21,4                   | 9,5  | 203 | 14,3  | 305 |  |  |
| 44                     | 1L13045 | 8,7  | 15,4  | 134 | 22,0  | 191 | 1S13045                | 12,1 | 13,2 | 160 | 17,6  | 213 | 2S13045 | 18,5                   | 11,0 | 204 | 16,5  | 305 |  |  |
| 51                     | 1L13050 | 7,5  | 17,9  | 134 | 25,5  | 191 | 1S13050                | 11,4 | 15,3 | 174 | 20,4  | 233 | 2S13050 | 15,5                   | 12,8 | 198 | 19,1  | 296 |  |  |
| 64                     | 1L13065 | 5,8  | 22,4  | 130 | 32,0  | 186 | 1S13065                | 9,3  | 19,2 | 179 | 25,6  | 238 | 2S13065 | 12,1                   | 16,0 | 194 | 24,0  | 290 |  |  |
| 76                     | 1L13075 | 4,7  | 26,6  | 125 | 38,0  | 179 | 1S13075                | 7,1  | 22,8 | 162 | 30,4  | 216 | 2S13075 | 10,2                   | 19,0 | 194 | 28,5  | 291 |  |  |
| 89                     | 1L13090 | 4,1  | 31,2  | 128 | 44,5  | 182 | 1S13090                | 5,4  | 26,7 | 144 | 35,6  | 192 | 2S13090 | 8,4                    | 22,3 | 187 | 33,4  | 280 |  |  |
| 102                    | 1L13101 | 3,6  | 35,7  | 129 | 51,0  | 184 | 1S13101                | 4,6  | 30,6 | 141 | 40,8  | 188 | 2S13101 | 7,1                    | 25,5 | 181 | 38,3  | 272 |  |  |
| 305                    | 1L13303 | 1,2  | 106,8 | 128 | 152,5 | 183 | 1S13303                | 1,4  | 91,5 | 128 | 122,0 | 171 | 2S13303 | 2,1                    | 76,3 | 160 | 114,4 | 240 |  |  |

● (D) Housing Ø mm 16

● (d) Rod Ø mm 8

| Wire Section 3,4 x 1,2 |         |      |       |     |       |     | Wire Section 3,2 x 1,7 |      |      |     |       |     |         | Wire Section 3,2 x 2,0 |      |     |       |     |  |  |
|------------------------|---------|------|-------|-----|-------|-----|------------------------|------|------|-----|-------|-----|---------|------------------------|------|-----|-------|-----|--|--|
| 25                     | 1L16025 | 20,2 | 8,8   | 177 | 12,5  | 253 | 1S16025                | 23,4 | 7,5  | 176 | 10,0  | 234 | 2S16025 | 49,4                   | 6,3  | 309 | 9,4   | 463 |  |  |
| 32                     | 1L16032 | 14,4 | 11,2  | 161 | 16,0  | 230 | 1S16032                | 22,9 | 9,6  | 220 | 12,8  | 293 | 2S16032 | 37,1                   | 8,0  | 297 | 12,0  | 445 |  |  |
| 38                     | 1L16038 | 12,3 | 13,3  | 164 | 19,0  | 234 | 1S16038                | 19,3 | 11,4 | 220 | 15,2  | 293 | 2S16038 | 33,9                   | 9,5  | 322 | 14,3  | 483 |  |  |
| 44                     | 1L16045 | 10,6 | 15,4  | 163 | 22,0  | 233 | 1S16045                | 17,1 | 13,2 | 226 | 17,6  | 301 | 2S16045 | 30,0                   | 11,0 | 330 | 16,5  | 495 |  |  |
| 51                     | 1L16050 | 8,9  | 17,9  | 159 | 25,5  | 227 | 1S16050                | 15,7 | 15,3 | 240 | 20,4  | 320 | 2S16050 | 26,4                   | 12,8 | 337 | 19,1  | 505 |  |  |
| 64                     | 1L16065 | 7,0  | 22,4  | 157 | 32,0  | 224 | 1S16065                | 10,7 | 19,2 | 205 | 25,6  | 274 | 2S16065 | 20,5                   | 16,0 | 328 | 24,0  | 492 |  |  |
| 76                     | 1L16075 | 5,8  | 26,6  | 154 | 38,0  | 220 | 1S16075                | 10,0 | 22,8 | 228 | 30,4  | 304 | 2S16075 | 17,8                   | 19,0 | 338 | 28,5  | 507 |  |  |
| 89                     | 1L16090 | 4,8  | 31,2  | 150 | 44,5  | 214 | 1S16090                | 8,6  | 26,7 | 230 | 35,6  | 306 | 2S16090 | 15,2                   | 22,3 | 338 | 33,4  | 507 |  |  |
| 102                    | 1L16101 | 4,0  | 35,7  | 143 | 51,0  | 204 | 1S16101                | 7,8  | 30,6 | 239 | 40,8  | 318 | 2S16101 | 13,5                   | 25,5 | 344 | 38,3  | 516 |  |  |
| 115                    | 1L16115 | 3,9  | 40,3  | 157 | 57,5  | 224 | 1S16115                | 7,0  | 34,5 | 242 | 46,0  | 322 | 2S16115 | 12,0                   | 28,8 | 345 | 43,1  | 518 |  |  |
| 127                    |         |      |       |     |       |     |                        |      |      |     |       |     |         |                        |      |     |       |     |  |  |
| 152                    |         |      |       |     |       |     |                        |      |      |     |       |     |         |                        |      |     |       |     |  |  |
| 305                    | 1L16303 | 1,5  | 106,8 | 160 | 152,5 | 229 | 1S16303                | 2,5  | 91,5 | 229 | 122,0 | 305 | 2S16303 | 4,8                    | 76,3 | 366 | 114,4 | 549 |  |  |



L<sub>0</sub> Free length mm

D Housing Ø mm

d Rod Ø mm

R Load, in Newton (N)  
necessary to deflect the spring by mm 1  
(1N = 0,102 kg 1kg=9,81 N)



ISO 10243  
**3S**

Heavy load



ISO 10243  
**4S**

Extra Heavy load



**5S**

Super Heavy load

| L <sub>0</sub><br>Free length<br>mm | R<br>Rate<br>N/mm | XLL 20%<br>S <sub>1</sub> F <sub>1</sub> |           | Max 30%<br>S <sub>2</sub> F <sub>2</sub> |           | R<br>Rate<br>N/mm | XLL 17%<br>S <sub>1</sub> F <sub>1</sub> |           | Max 25%<br>S <sub>2</sub> F <sub>2</sub> |           | R<br>Rate<br>N/mm | XLL 10%<br>S <sub>1</sub> F <sub>1</sub> |           | Max 15%<br>S <sub>2</sub> F <sub>2</sub> |           |
|-------------------------------------|-------------------|------------------------------------------|-----------|------------------------------------------|-----------|-------------------|------------------------------------------|-----------|------------------------------------------|-----------|-------------------|------------------------------------------|-----------|------------------------------------------|-----------|
|                                     |                   | Stroke<br>mm                             | Load<br>N | Stroke<br>mm                             | Load<br>N |                   | Stroke<br>mm                             | Load<br>N | Stroke<br>mm                             | Load<br>N |                   | Stroke<br>mm                             | Load<br>N | Stroke<br>mm                             | Load<br>N |

● (D) Housing Ø mm 10

● (d) Rod Ø mm 5

|     |         | Wire Section 1,8 x 1,4 |      |     |      |     |         | Wire Section 1,9 x 1,5 |      |     |      |     |         |       | Wire Section 2,2 x 2,7 |     |      |     |  |
|-----|---------|------------------------|------|-----|------|-----|---------|------------------------|------|-----|------|-----|---------|-------|------------------------|-----|------|-----|--|
| 25  | 3S10025 | 22,1                   | 5,0  | 111 | 7,5  | 166 | 4S10025 | 36,8                   | 4,3  | 156 | 6,3  | 230 | 5S10025 | 167,0 | 2,5                    | 418 | 3,8  | 626 |  |
| 32  | 3S10032 | 17,5                   | 6,4  | 112 | 9,6  | 168 | 4S10032 | 27,9                   | 5,4  | 152 | 8,0  | 223 | 5S10032 | 130,0 | 3,2                    | 416 | 4,8  | 624 |  |
| 38  | 3S10038 | 17,1                   | 7,6  | 130 | 11,4 | 195 | 4S10038 | 23,7                   | 6,5  | 153 | 9,5  | 225 | 5S10038 | 105,0 | 3,8                    | 399 | 5,7  | 599 |  |
| 44  | 3S10045 | 15,0                   | 8,8  | 132 | 13,2 | 198 | 4S10045 | 19,2                   | 7,5  | 144 | 11,0 | 211 | 5S10044 | 86,0  | 4,4                    | 378 | 6,6  | 568 |  |
| 51  | 3S10050 | 12,8                   | 10,2 | 131 | 15,3 | 196 | 4S10050 | 16,5                   | 8,7  | 143 | 12,8 | 210 | 5S10051 | 79,0  | 5,1                    | 403 | 7,7  | 604 |  |
| 64  | 3S10065 | 10,7                   | 12,8 | 137 | 19,2 | 205 | 4S10065 | 13,2                   | 10,9 | 144 | 16,0 | 211 | 5S10064 | 62,0  | 6,4                    | 397 | 9,6  | 595 |  |
| 76  | 3S10075 | 7,5                    | 15,2 | 114 | 22,8 | 171 | 4S10075 | 10,9                   | 12,9 | 141 | 19,0 | 207 | 5S10076 | 51,0  | 7,6                    | 388 | 11,4 | 581 |  |
| 305 | 3S10303 | 2,1                    | 61,0 | 128 | 91,5 | 192 | 4S10303 | 2,6                    | 51,9 | 135 | 76,3 | 198 |         |       |                        |     |      |     |  |

● (D) Housing Ø mm 12,5

● (d) Rod Ø mm 6,3

|     |         | Wire Section 2,4 x 2,0 |      |     |      |     | Wire Section 2,3 x 2,2 |      |      |     |      |     |         | Wire Section 2,8 x 3,4 |      |     |      |      |
|-----|---------|------------------------|------|-----|------|-----|------------------------|------|------|-----|------|-----|---------|------------------------|------|-----|------|------|
| 25  | 3S13025 | 42,1                   | 5,0  | 211 | 7,5  | 316 | 4S13025                | 58,5 | 4,3  | 249 | 6,3  | 366 | 5S13025 | 288,0                  | 2,5  | 720 | 3,8  | 1080 |
| 32  | 3S13032 | 33,2                   | 6,4  | 212 | 9,6  | 319 | 4S13032                | 43,9 | 5,4  | 239 | 8,0  | 351 | 5S13032 | 216,0                  | 3,2  | 691 | 4,8  | 1037 |
| 38  | 3S13038 | 29,3                   | 7,6  | 223 | 11,4 | 334 | 4S13038                | 36,0 | 6,5  | 233 | 9,5  | 342 | 5S13038 | 176,0                  | 3,8  | 669 | 5,7  | 1003 |
| 44  | 3S13045 | 24,6                   | 8,8  | 216 | 13,2 | 325 | 4S13045                | 30,3 | 7,5  | 227 | 11,0 | 333 | 5S13044 | 149,0                  | 4,4  | 656 | 6,6  | 983  |
| 51  | 3S13050 | 19,6                   | 10,2 | 200 | 15,3 | 300 | 4S13050                | 26,2 | 8,7  | 227 | 12,8 | 334 | 5S13051 | 128,0                  | 5,1  | 653 | 7,7  | 979  |
| 64  | 3S13065 | 15,0                   | 12,8 | 192 | 19,2 | 288 | 4S13065                | 21,2 | 10,9 | 231 | 16,0 | 339 | 5S13064 | 100,0                  | 6,4  | 640 | 9,6  | 960  |
| 76  | 3S13075 | 13,2                   | 15,2 | 201 | 22,8 | 301 | 4S13075                | 17,1 | 12,9 | 221 | 19,0 | 325 | 5S13076 | 84,0                   | 7,6  | 638 | 11,4 | 958  |
| 89  | 3S13090 | 11,4                   | 17,8 | 203 | 26,7 | 304 | 4S13090                | 14,5 | 15,1 | 219 | 22,3 | 323 | 5S13089 | 71,0                   | 8,9  | 632 | 13,4 | 948  |
| 102 | 3S13101 | 9,4                    | 20,4 | 192 | 30,6 | 288 | 4S13101                | 12,5 | 17,3 | 217 | 25,5 | 319 | 5S13102 | 61,0                   | 10,2 | 622 | 15,3 | 933  |
| 305 | 3S13303 | 2,8                    | 61,0 | 171 | 91,5 | 256 | 4S13303                | 4,3  | 51,9 | 223 | 76,3 | 328 |         |                        |      |     |      |      |

● (D) Housing Ø mm 16

● (d) Rod Ø mm 8

|     |         | Wire Section 3,0 x 2,4 |      |     |      |     |         | Wire Section 3,2 x 2,5 |      |     |      |     |         | Wire Section 3,5 x 4,6 |      |      |      |      |
|-----|---------|------------------------|------|-----|------|-----|---------|------------------------|------|-----|------|-----|---------|------------------------|------|------|------|------|
| 25  | 3S16025 | 75,7                   | 5,0  | 379 | 7,5  | 568 | 4S16025 | 118,0                  | 4,3  | 502 | 6,3  | 738 |         |                        |      |      |      |      |
| 32  | 3S16032 | 52,8                   | 6,4  | 338 | 9,6  | 507 | 4S16032 | 89,0                   | 5,4  | 484 | 8,0  | 712 | 5S16032 | 449,0                  | 3,2  | 1437 | 4,8  | 2155 |
| 38  | 3S16038 | 48,5                   | 7,6  | 369 | 11,4 | 553 | 4S16038 | 72,1                   | 6,5  | 466 | 9,5  | 685 | 5S16038 | 363,0                  | 3,8  | 1379 | 5,7  | 2069 |
| 44  | 3S16045 | 42,8                   | 8,8  | 377 | 13,2 | 565 | 4S16045 | 60,9                   | 7,5  | 456 | 11,0 | 670 | 5S16044 | 309,0                  | 4,4  | 1360 | 6,6  | 2039 |
| 51  | 3S16050 | 37,1                   | 10,2 | 378 | 15,3 | 568 | 4S16050 | 52,3                   | 8,7  | 453 | 12,8 | 667 | 5S16051 | 256,0                  | 5,1  | 1306 | 7,7  | 1958 |
| 64  | 3S16065 | 30,3                   | 12,8 | 388 | 19,2 | 582 | 4S16065 | 41,2                   | 10,9 | 448 | 16,0 | 659 | 5S16064 | 203,0                  | 6,4  | 1299 | 9,6  | 1949 |
| 76  | 3S16075 | 25,8                   | 15,2 | 392 | 22,8 | 588 | 4S16075 | 34,1                   | 12,9 | 441 | 19,0 | 648 | 5S16076 | 166,0                  | 7,6  | 1262 | 11,4 | 1892 |
| 89  | 3S16090 | 21,7                   | 17,8 | 386 | 26,7 | 579 | 4S16090 | 29,5                   | 15,1 | 446 | 22,3 | 656 | 5S16089 | 139,0                  | 8,9  | 1237 | 13,4 | 1856 |
| 102 | 3S16101 | 19,3                   | 20,4 | 394 | 30,6 | 591 | 4S16101 | 25,6                   | 17,3 | 444 | 25,5 | 653 | 5S16102 | 114,0                  | 10,2 | 1163 | 15,3 | 1744 |
| 115 | 3S16115 | 17,0                   | 23,0 | 391 | 34,5 | 587 | 4S16115 | 22,8                   | 19,6 | 446 | 28,8 | 656 | 5S16115 | 105,0                  | 11,5 | 1208 | 17,3 | 1811 |
| 127 |         |                        |      |     |      |     |         |                        |      |     |      |     | 5S16127 | 94,0                   | 12,7 | 1194 | 19,1 | 1791 |
| 152 |         |                        |      |     |      |     |         |                        |      |     |      |     | 5S16152 | 69,0                   | 15,2 | 1049 | 22,8 | 1573 |
| 305 | 3S16303 | 7,1                    | 61,0 | 433 | 91,5 | 650 | 4S16303 | 8,4                    | 51,9 | 436 | 76,3 | 641 | 5S16305 | 37,0                   | 30,5 | 1129 | 45,8 | 1693 |

XLL% Long Life deflection

S<sub>1</sub> Deflection mm

F<sub>1</sub> Load N

Max % Max working deflection

S<sub>2</sub> Deflection mm

F<sub>2</sub> Load N



**1L**

Extra Light load



ISO 10243

**1S**

Light load



ISO 10243

**2S**

Medium load

$L_0$

Free length  
mm

| Item Code    | Rate<br>N/mm | XLL 35%      |           | Max 50%      |           | Item Code    | Rate<br>N/mm | XLL 30%      |           | Max 40%      |           | Item Code    | Rate<br>N/mm | XLL 25%      |           | Max 37.5%    |           |
|--------------|--------------|--------------|-----------|--------------|-----------|--------------|--------------|--------------|-----------|--------------|-----------|--------------|--------------|--------------|-----------|--------------|-----------|
|              |              | $S_1$        | $F_1$     | $S_2$        | $F_2$     |              |              | $S_1$        | $F_1$     | $S_2$        | $F_2$     |              |              | $S_1$        | $F_1$     | $S_2$        | $F_2$     |
| Stroke<br>mm | Load<br>N    | Stroke<br>mm | Load<br>N | Stroke<br>mm | Load<br>N | Stroke<br>mm | Load<br>N    | Stroke<br>mm | Load<br>N | Stroke<br>mm | Load<br>N | Stroke<br>mm | Load<br>N    | Stroke<br>mm | Load<br>N | Stroke<br>mm | Load<br>N |

● (D) Housing Ø mm 20

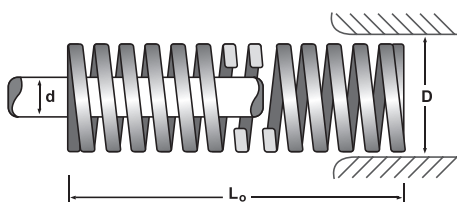
● (d) Rod Ø mm 10

| Wire Section 4,0 x 1,7 |         |      |       |     |       |     | Wire Section 4,0 x 2,1 |      |      |     |       |     |         | Wire Section 4,0 x 2,4 |      |     |       |     |  |  |
|------------------------|---------|------|-------|-----|-------|-----|------------------------|------|------|-----|-------|-----|---------|------------------------|------|-----|-------|-----|--|--|
| 25                     | 1L19025 | 32,1 | 8,8   | 281 | 12,5  | 401 | 1S19025                | 55,8 | 7,5  | 419 | 10,0  | 558 | 2S19025 | 98,0                   | 6,3  | 613 | 9,4   | 919 |  |  |
| 32                     | 1L19032 | 24,7 | 11,2  | 277 | 16,0  | 395 | 1S19032                | 45,0 | 9,6  | 432 | 12,8  | 576 | 2S19032 | 72,6                   | 8,0  | 581 | 12,0  | 871 |  |  |
| 38                     | 1L19038 | 20,7 | 13,3  | 275 | 19,0  | 393 | 1S19038                | 33,3 | 11,4 | 380 | 15,2  | 506 | 2S19038 | 56,0                   | 9,5  | 532 | 14,3  | 798 |  |  |
| 44                     | 1L19045 | 17,8 | 15,4  | 274 | 22,0  | 392 | 1S19045                | 30,0 | 13,2 | 396 | 17,6  | 528 | 2S19045 | 47,5                   | 11,0 | 523 | 16,5  | 784 |  |  |
| 51                     | 1L19050 | 15,3 | 17,9  | 273 | 25,5  | 390 | 1S19050                | 24,5 | 15,3 | 375 | 20,4  | 500 | 2S19050 | 41,7                   | 12,8 | 532 | 19,1  | 798 |  |  |
| 64                     | 1L19065 | 12,1 | 22,4  | 271 | 32,0  | 387 | 1S19065                | 20,0 | 19,2 | 384 | 25,6  | 512 | 2S19065 | 32,3                   | 16,0 | 517 | 24,0  | 775 |  |  |
| 76                     | 1L19075 | 10,2 | 26,6  | 271 | 38,0  | 388 | 1S19075                | 16,0 | 22,8 | 365 | 30,4  | 486 | 2S19075 | 25,1                   | 19,0 | 477 | 28,5  | 715 |  |  |
| 89                     | 1L19090 | 8,6  | 31,2  | 268 | 44,5  | 383 | 1S19090                | 14,0 | 26,7 | 374 | 35,6  | 498 | 2S19090 | 22,0                   | 22,3 | 490 | 33,4  | 734 |  |  |
| 102                    | 1L19101 | 7,5  | 35,7  | 268 | 51,0  | 383 | 1S19101                | 12,0 | 30,6 | 367 | 40,8  | 490 | 2S19101 | 19,8                   | 25,5 | 505 | 38,3  | 757 |  |  |
| 115                    | 1L19115 | 6,7  | 40,3  | 270 | 57,5  | 385 | 1S19115                | 10,9 | 34,5 | 376 | 46,0  | 501 | 2S19115 | 18,1                   | 28,8 | 520 | 43,1  | 781 |  |  |
| 127                    | 1L19126 | 6,1  | 44,5  | 271 | 63,5  | 387 | 1S19126                | 9,5  | 38,1 | 362 | 50,8  | 483 | 2S19126 | 16,6                   | 31,8 | 527 | 47,6  | 791 |  |  |
| 139                    | 1L19140 | 5,5  | 48,7  | 268 | 69,5  | 382 | 1S19140                | 8,4  | 41,7 | 350 | 55,6  | 467 | 2S19140 | 15,1                   | 34,8 | 525 | 52,1  | 787 |  |  |
| 152                    | 1L19151 | 5,1  | 53,2  | 271 | 76,0  | 388 | 1S19151                | 7,5  | 45,6 | 342 | 60,8  | 456 | 2S19151 | 13,2                   | 38,0 | 502 | 57,0  | 752 |  |  |
| 305                    | 1L19303 | 2,5  | 106,8 | 267 | 152,5 | 381 | 1S19303                | 4,0  | 91,5 | 366 | 122,0 | 488 | 2S19303 | 6,1                    | 76,3 | 465 | 114,4 | 698 |  |  |

● (D) Housing Ø mm 25

● (d) Rod Ø mm 12,5

| Wire Section 5,4 x 2,2 |         |      |       |     |       |     | Wire Section 5,3 x 2,7 |       |      |     |       |      |         | Wire Section 5,3 x 3,1 |      |     |       |      |  |  |
|------------------------|---------|------|-------|-----|-------|-----|------------------------|-------|------|-----|-------|------|---------|------------------------|------|-----|-------|------|--|--|
| 25                     | 1L26025 | 52,7 | 8,8   | 461 | 12,5  | 659 | 1S26025                | 100,0 | 7,5  | 750 | 10,0  | 1000 | 2S26025 | 147,0                  | 6,3  | 919 | 9,4   | 1378 |  |  |
| 32                     | 1L26032 | 40,0 | 11,2  | 448 | 16,0  | 640 | 1S26032                | 80,3  | 9,6  | 771 | 12,8  | 1028 | 2S26032 | 118,0                  | 8,0  | 944 | 12,0  | 1416 |  |  |
| 38                     | 1L26038 | 33,3 | 13,3  | 443 | 19,0  | 633 | 1S26038                | 62,0  | 11,4 | 707 | 15,2  | 942  | 2S26038 | 93,0                   | 9,5  | 884 | 14,3  | 1325 |  |  |
| 44                     | 1L26045 | 28,6 | 15,4  | 440 | 22,0  | 629 | 1S26045                | 52,9  | 13,2 | 698 | 17,6  | 931  | 2S26045 | 80,8                   | 11,0 | 889 | 16,5  | 1333 |  |  |
| 51                     | 1L26050 | 24,7 | 17,9  | 441 | 25,5  | 630 | 1S26050                | 44,0  | 15,3 | 673 | 20,4  | 898  | 2S26050 | 68,6                   | 12,8 | 875 | 19,1  | 1312 |  |  |
| 64                     | 1L26065 | 19,4 | 22,4  | 435 | 32,0  | 621 | 1S26065                | 35,2  | 19,2 | 676 | 25,6  | 901  | 2S26065 | 53,0                   | 16,0 | 848 | 24,0  | 1272 |  |  |
| 76                     | 1L26075 | 16,3 | 26,6  | 434 | 38,0  | 619 | 1S26075                | 28,0  | 22,8 | 638 | 30,4  | 851  | 2S26075 | 43,2                   | 19,0 | 821 | 28,5  | 1231 |  |  |
| 89                     | 1L26090 | 13,9 | 31,2  | 433 | 44,5  | 619 | 1S26090                | 24,0  | 26,7 | 641 | 35,6  | 854  | 2S26090 | 38,2                   | 22,3 | 850 | 33,4  | 1275 |  |  |
| 102                    | 1L26101 | 12,1 | 35,7  | 432 | 51,0  | 617 | 1S26101                | 21,1  | 30,6 | 646 | 40,8  | 861  | 2S26101 | 33,0                   | 25,5 | 842 | 38,3  | 1262 |  |  |
| 115                    | 1L26115 | 10,8 | 40,3  | 435 | 57,5  | 621 | 1S26115                | 18,7  | 34,5 | 645 | 46,0  | 860  | 2S26115 | 28,0                   | 28,8 | 805 | 43,1  | 1208 |  |  |
| 127                    | 1L26126 | 9,8  | 44,5  | 436 | 63,5  | 622 | 1S26126                | 16,7  | 38,1 | 636 | 50,8  | 848  | 2S26126 | 25,9                   | 31,8 | 822 | 47,6  | 1233 |  |  |
| 139                    | 1L26140 | 8,9  | 48,7  | 433 | 69,5  | 619 | 1S26140                | 15,3  | 41,7 | 638 | 55,6  | 851  | 2S26140 | 23,2                   | 34,8 | 806 | 52,1  | 1209 |  |  |
| 152                    | 1L26151 | 8,1  | 53,2  | 431 | 76,0  | 616 | 1S26151                | 14,0  | 45,6 | 638 | 60,8  | 851  | 2S26151 | 20,8                   | 38,0 | 790 | 57,0  | 1186 |  |  |
| 178                    | 1L26176 | 6,9  | 62,3  | 430 | 89,0  | 614 | 1S26176                | 12,5  | 53,4 | 668 | 71,2  | 890  | 2S26176 | 17,8                   | 44,5 | 792 | 66,8  | 1188 |  |  |
| 203                    | 1L26202 | 6,1  | 71,1  | 433 | 101,5 | 619 | 1S26202                | 10,4  | 60,9 | 633 | 81,2  | 844  | 2S26202 | 15,8                   | 50,8 | 802 | 76,1  | 1203 |  |  |
| 305                    | 1L26303 | 4,0  | 106,8 | 427 | 152,5 | 610 | 1S26303                | 7,0   | 91,5 | 641 | 122,0 | 854  | 2S26303 | 10,2                   | 76,3 | 778 | 114,4 | 1167 |  |  |



$L_0$  Free length mm

D Housing Ø mm

d Rod Ø mm

R Load, in Newton (N)  
necessary to deflect the spring by mm 1  
(1N = 0,102 kg 1kg=9,81 N)



ISO 10243

**3S**



ISO 10243

**4S**



**5S**

Heavy load

Extra Heavy load

Super Heavy load

| L <sub>0</sub><br>Free length<br>mm | Item Code | R<br>Rate<br>N/mm | XLL 20%<br>S <sub>1</sub> F <sub>1</sub> |           | Max 30%<br>S <sub>2</sub> F <sub>2</sub> |           | Item Code | R<br>Rate<br>N/mm | XLL 17%<br>S <sub>1</sub> F <sub>1</sub> |           | Max 25%<br>S <sub>2</sub> F <sub>2</sub> |           | Item Code | R<br>Rate<br>N/mm | XLL 10%<br>S <sub>1</sub> F <sub>1</sub> |           | Max 15%<br>S <sub>2</sub> F <sub>2</sub> |           |
|-------------------------------------|-----------|-------------------|------------------------------------------|-----------|------------------------------------------|-----------|-----------|-------------------|------------------------------------------|-----------|------------------------------------------|-----------|-----------|-------------------|------------------------------------------|-----------|------------------------------------------|-----------|
|                                     |           |                   | Stroke<br>mm                             | Load<br>N | Stroke<br>mm                             | Load<br>N |           |                   | Stroke<br>mm                             | Load<br>N | Stroke<br>mm                             | Load<br>N |           |                   | Stroke<br>mm                             | Load<br>N | Stroke<br>mm                             | Load<br>N |

● (D) Housing Ø mm 20

● (d) Rod Ø mm 10

| Wire Section 4,0 x 3,2 |         |       |      |      |      |      | Wire Section 4,1 x 3,7 |       |      |      |      |      |         | Wire Section 4,1 x 5,9 |      |      |      |      |  |  |
|------------------------|---------|-------|------|------|------|------|------------------------|-------|------|------|------|------|---------|------------------------|------|------|------|------|--|--|
| 25                     | 3S19025 | 216,0 | 5,0  | 1080 | 7,5  | 1620 | 4S19025                | 293,0 | 4,3  | 1245 | 6,3  | 1831 |         |                        |      |      |      |      |  |  |
| 32                     | 3S19032 | 168,0 | 6,4  | 1075 | 9,6  | 1613 | 4S19032                | 224,0 | 5,4  | 1219 | 8,0  | 1792 |         |                        |      |      |      |      |  |  |
| 38                     | 3S19038 | 129,0 | 7,6  | 980  | 11,4 | 1471 | 4S19038                | 177,0 | 6,5  | 1143 | 9,5  | 1682 |         |                        |      |      |      |      |  |  |
| 44                     | 3S19045 | 112,0 | 8,8  | 986  | 13,2 | 1478 | 4S19045                | 149,0 | 7,5  | 1115 | 11,0 | 1639 | 5S19044 | 452,0                  | 4,4  | 1989 | 6,6  | 2893 |  |  |
| 51                     | 3S19050 | 94,0  | 10,2 | 959  | 15,3 | 1438 | 4S19050                | 128,0 | 8,7  | 1110 | 12,8 | 1632 | 5S19051 | 378,0                  | 5,1  | 1928 | 7,7  | 2892 |  |  |
| 64                     | 3S19065 | 72,1  | 12,8 | 923  | 19,2 | 1384 | 4S19065                | 99,0  | 10,9 | 1077 | 16,0 | 1584 | 5S19064 | 301,0                  | 6,4  | 1926 | 9,6  | 2890 |  |  |
| 76                     | 3S19075 | 59,7  | 15,2 | 907  | 22,8 | 1361 | 4S19075                | 81,7  | 12,9 | 1056 | 19,0 | 1552 | 5S19076 | 247,0                  | 7,6  | 1877 | 11,4 | 2816 |  |  |
| 89                     | 3S19090 | 50,5  | 17,8 | 899  | 26,7 | 1348 | 4S19090                | 69,5  | 15,1 | 1052 | 22,3 | 1546 | 5S19089 | 208,0                  | 8,9  | 1851 | 13,4 | 2777 |  |  |
| 102                    | 3S19101 | 44,2  | 20,4 | 902  | 30,6 | 1353 | 4S19101                | 60,6  | 17,3 | 1051 | 25,5 | 1545 | 5S19102 | 188,0                  | 10,2 | 1918 | 15,3 | 2876 |  |  |
| 115                    | 3S19115 | 38,4  | 23,0 | 883  | 34,5 | 1325 | 4S19115                | 53,0  | 19,6 | 1036 | 28,8 | 1524 | 5S19115 | 159,0                  | 11,5 | 1829 | 17,3 | 2743 |  |  |
| 127                    | 3S19126 | 34,1  | 24,5 | 866  | 38,1 | 1299 | 4S19126                | 47,5  | 21,6 | 1026 | 31,8 | 1508 | 5S19127 | 146,0                  | 12,7 | 1854 | 19,1 | 2781 |  |  |
| 139                    | 3S19140 | 31,0  | 27,8 | 862  | 41,7 | 1293 | 4S19140                | 43,0  | 23,6 | 1016 | 34,8 | 1494 |         |                        |      |      |      |      |  |  |
| 152                    | 3S19151 | 28,2  | 30,4 | 3857 | 45,6 | 1286 | 4S19151                | 39,0  | 25,8 | 1008 | 38,0 | 1482 | 5S19152 | 121,0                  | 15,2 | 1839 | 22,8 | 2759 |  |  |
| 305                    | 3S19303 | 15,0  | 61,0 | 915  | 91,5 | 1373 | 4S19303                | 21,2  | 51,9 | 1099 | 76,3 | 1617 | 5S19305 | 60,0                   | 30,5 | 1830 | 45,8 | 2745 |  |  |

● (D) Housing Ø mm 25

● (d) Rod Ø mm 12,5

| Wire Section 5,6 x 4,1 |         |       |      |      |      |      | Wire Section 5,6 x 4,6 |       |      |      |      |      |         | Wire Section 5,7 x 7,4 |      |      |      |      |  |  |
|------------------------|---------|-------|------|------|------|------|------------------------|-------|------|------|------|------|---------|------------------------|------|------|------|------|--|--|
| 25                     | 3S26025 | 375,0 | 5,0  | 1875 | 7,5  | 2813 | 4S26025                | 488,0 | 4,3  | 2098 | 6,3  | 3074 |         |                        |      |      |      |      |  |  |
| 32                     | 3S26032 | 297,0 | 6,4  | 1901 | 9,6  | 2851 | 4S26032                | 374,4 | 5,4  | 2037 | 8,0  | 2995 |         |                        |      |      |      |      |  |  |
| 38                     | 3S26038 | 219,0 | 7,6  | 1664 | 11,4 | 2497 | 4S26038                | 346,0 | 6,5  | 2235 | 9,5  | 3287 |         |                        |      |      |      |      |  |  |
| 44                     | 3S26045 | 187,0 | 8,8  | 1646 | 13,2 | 2468 | 4S26045                | 244,0 | 7,5  | 1825 | 11,0 | 2684 | 5S25044 | 1158,0                 | 4,4  | 5095 | 6,6  | 7643 |  |  |
| 51                     | 3S26050 | 156,0 | 10,2 | 1591 | 15,3 | 2387 | 4S26050                | 207,5 | 8,7  | 1799 | 12,8 | 2646 | 5S25051 | 933,0                  | 5,1  | 4758 | 7,7  | 7137 |  |  |
| 64                     | 3S26065 | 123,0 | 12,8 | 1574 | 19,2 | 2362 | 4S26065                | 161,0 | 10,9 | 1752 | 16,0 | 2576 | 5S25064 | 730,0                  | 6,4  | 4672 | 9,6  | 7008 |  |  |
| 76                     | 3S26075 | 99,0  | 15,2 | 1505 | 22,8 | 2257 | 4S26075                | 130,8 | 12,9 | 1690 | 19,0 | 2485 | 5S25076 | 556,0                  | 7,6  | 4226 | 11,4 | 6338 |  |  |
| 89                     | 3S26090 | 84,0  | 17,2 | 1495 | 26,7 | 2243 | 4S26090                | 110,5 | 15,1 | 1672 | 22,3 | 2459 | 5S25089 | 462,0                  | 8,9  | 4112 | 13,4 | 6168 |  |  |
| 102                    | 3S26101 | 73,0  | 20,4 | 1489 | 30,6 | 2234 | 4S26101                | 96,3  | 17,3 | 1670 | 25,5 | 2456 | 5S25102 | 390,0                  | 10,2 | 3978 | 15,3 | 5967 |  |  |
| 115                    | 3S26115 | 65,0  | 23,0 | 1495 | 34,5 | 2243 | 4S26115                | 85,7  | 19,6 | 1675 | 28,8 | 2464 | 5S25115 | 360,0                  | 11,5 | 4140 | 17,3 | 6210 |  |  |
| 127                    | 3S26126 | 57,7  | 24,5 | 1466 | 38,1 | 2198 | 4S26126                | 76,3  | 21,6 | 1647 | 31,8 | 2423 | 5S25127 | 326,0                  | 12,7 | 4140 | 19,1 | 6210 |  |  |
| 139                    | 3S26140 | 52,7  | 27,8 | 1465 | 41,7 | 2198 | 4S26140                | 69,5  | 23,6 | 1642 | 34,8 | 2415 |         |                        |      |      |      |      |  |  |
| 152                    | 3S26151 | 47,8  | 30,4 | 1453 | 45,6 | 2180 | 4S26151                | 63,5  | 25,8 | 1641 | 38,0 | 2413 | 5S25152 | 255,0                  | 15,2 | 3876 | 22,8 | 5814 |  |  |
| 178                    | 3S26176 | 41,0  | 35,6 | 1460 | 53,4 | 2189 | 4S26176                | 53,9  | 30,3 | 1631 | 44,5 | 2399 | 5S25178 | 230,0                  | 17,8 | 4094 | 26,7 | 6141 |  |  |
| 203                    | 3S26202 | 35,8  | 40,6 | 1453 | 60,9 | 2180 | 4S26202                | 47,0  | 34,5 | 1622 | 50,8 | 2385 | 5S25203 | 202,0                  | 20,3 | 4101 | 30,5 | 6151 |  |  |
| 305                    | 3S26303 | 22,9  | 61,0 | 1397 | 91,5 | 2095 | 4S26303                | 30,9  | 51,9 | 1602 | 76,3 | 2356 | 5S25305 | 136,0                  | 30,5 | 4148 | 45,8 | 6222 |  |  |

XLL% Long Life deflection

S<sub>1</sub> Deflection mm

F<sub>1</sub> Load N

Max % Max working deflection

S<sub>2</sub> Deflection mm

F<sub>2</sub> Load N

**DIE SPRINGS**



**1L**

Extra Light load



ISO 10243

**1S**

Light load



ISO 10243

**2S**

Medium load

| L <sub>0</sub><br>Free length<br>mm | Item Code | R<br>Rate<br>N/mm | XLL 35%<br>S <sub>1</sub> F <sub>1</sub> |           | Max 50%<br>S <sub>2</sub> F <sub>2</sub> |           | Item Code | R<br>Rate<br>N/mm | XLL 30%<br>S <sub>1</sub> F <sub>1</sub> |           | Max 40%<br>S <sub>2</sub> F <sub>2</sub> |           | Item Code | R<br>Rate<br>N/mm | XLL 25%<br>S <sub>1</sub> F <sub>1</sub> |           | Max 37.5%<br>S <sub>2</sub> F <sub>2</sub> |           |
|-------------------------------------|-----------|-------------------|------------------------------------------|-----------|------------------------------------------|-----------|-----------|-------------------|------------------------------------------|-----------|------------------------------------------|-----------|-----------|-------------------|------------------------------------------|-----------|--------------------------------------------|-----------|
|                                     |           |                   | Stroke<br>mm                             | Load<br>N | Stroke<br>mm                             | Load<br>N |           |                   | Stroke<br>mm                             | Load<br>N | Stroke<br>mm                             | Load<br>N |           |                   | Stroke<br>mm                             | Load<br>N | Stroke<br>mm                               | Load<br>N |

● (D) Housing Ø mm 32

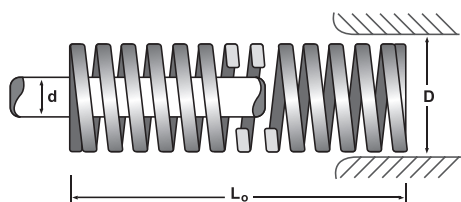
● (d) Rod Ø mm 16

| Wire Section 6,4 x 2,7 |         |      |       |     |       |     | Wire Section 6,7 x 3,3 |      |      |      |       |      |         | Wire Section 6,6 x 4,0 |      |      |       |      |  |  |
|------------------------|---------|------|-------|-----|-------|-----|------------------------|------|------|------|-------|------|---------|------------------------|------|------|-------|------|--|--|
| 38                     | 1L32038 | 43,8 | 13,3  | 583 | 19,0  | 832 | 1S32038                | 94,0 | 11,4 | 1072 | 15,2  | 1429 | 2S32038 | 185,0                  | 9,5  | 1758 | 14,3  | 2636 |  |  |
| 44                     | 1L32045 | 37,5 | 15,4  | 578 | 22,0  | 825 | 1S32045                | 79,5 | 13,2 | 1049 | 17,6  | 1399 | 2S32045 | 158,0                  | 11,0 | 1738 | 16,5  | 2607 |  |  |
| 51                     | 1L32050 | 32,3 | 17,9  | 577 | 25,5  | 824 | 1S32050                | 67,0 | 15,3 | 1025 | 20,4  | 1367 | 2S32050 | 134,0                  | 12,8 | 1709 | 19,1  | 2563 |  |  |
| 64                     | 1L32065 | 25,4 | 22,4  | 569 | 32,0  | 813 | 1S32065                | 53,0 | 19,2 | 1018 | 25,6  | 1357 | 2S32065 | 99,0                   | 16,0 | 1584 | 24,0  | 2376 |  |  |
| 76                     | 1L32075 | 21,3 | 26,6  | 567 | 38,0  | 809 | 1S32075                | 44,0 | 22,8 | 1003 | 30,4  | 1338 | 2S32075 | 80,5                   | 19,0 | 1530 | 28,5  | 2294 |  |  |
| 89                     | 1L32090 | 18,1 | 31,2  | 564 | 44,5  | 805 | 1S32090                | 37,2 | 26,7 | 993  | 35,6  | 1324 | 2S32090 | 69,1                   | 22,3 | 1537 | 33,4  | 2306 |  |  |
| 102                    | 1L32101 | 15,8 | 35,7  | 564 | 51,0  | 806 | 1S32101                | 32,0 | 30,6 | 979  | 40,8  | 1306 | 2S32101 | 58,8                   | 25,5 | 1499 | 38,3  | 2249 |  |  |
| 115                    | 1L32115 | 13,9 | 40,3  | 559 | 57,5  | 799 | 1S32115                | 29,0 | 34,5 | 1001 | 46,0  | 1334 | 2S32115 | 51,5                   | 28,8 | 1481 | 43,1  | 2221 |  |  |
| 127                    | 1L32126 | 12,6 | 44,5  | 560 | 63,5  | 800 | 1S32126                | 25,0 | 38,1 | 953  | 50,8  | 1270 | 2S32126 | 44,8                   | 31,8 | 1422 | 47,6  | 2134 |  |  |
| 139                    | 1L32140 | 11,4 | 48,7  | 555 | 69,5  | 792 | 1S32140                | 23,0 | 41,7 | 959  | 55,6  | 1279 | 2S32140 | 42,3                   | 34,8 | 1470 | 52,1  | 2205 |  |  |
| 152                    | 1L32151 | 10,5 | 53,2  | 559 | 76,0  | 798 | 1S32151                | 21,5 | 45,6 | 980  | 60,8  | 1307 | 2S32151 | 37,8                   | 38,0 | 1436 | 57,0  | 2155 |  |  |
| 178                    | 1L32176 | 8,9  | 62,3  | 554 | 89,0  | 792 | 1S32176                | 18,2 | 53,4 | 972  | 71,2  | 1296 | 2S32176 | 32,5                   | 44,5 | 1446 | 66,8  | 2169 |  |  |
| 203                    | 1L32202 | 7,8  | 71,1  | 554 | 101,5 | 792 | 1S32202                | 15,8 | 60,9 | 962  | 81,2  | 1283 | 2S32202 | 28,9                   | 50,8 | 1467 | 76,1  | 2200 |  |  |
| 254                    | 1L32252 | 6,2  | 88,9  | 551 | 127,0 | 787 | 1S32252                | 12,5 | 76,2 | 953  | 101,6 | 1270 | 2S32252 | 21,4                   | 63,5 | 1359 | 95,3  | 2038 |  |  |
| 305                    | 1L32303 | 5,2  | 106,8 | 555 | 152,5 | 793 | 1S32303                | 10,3 | 91,5 | 942  | 122,0 | 1257 | 2S32303 | 18,3                   | 76,3 | 1395 | 114,4 | 2093 |  |  |

● (D) Housing Ø mm 40

● (d) Rod Ø mm 20

| Wire Section 7,8 x 3,4 |         |      |       |     |       |      | Wire Section 8,0 x 4,0 |      |      |      |       |      |         | Wire Section 8,1 x 4,8 |      |      |       |      |  |  |
|------------------------|---------|------|-------|-----|-------|------|------------------------|------|------|------|-------|------|---------|------------------------|------|------|-------|------|--|--|
| 51                     | 1L38050 | 50,8 | 17,9  | 907 | 25,5  | 1295 | 1S38050                | 92,0 | 15,3 | 1408 | 20,4  | 1877 | 2S38050 | 181,6                  | 12,8 | 2315 | 19,1  | 3473 |  |  |
| 64                     | 1L38065 | 39,7 | 22,4  | 889 | 32,0  | 1270 | 1S38065                | 73,0 | 19,2 | 1402 | 25,6  | 1869 | 2S38065 | 140,0                  | 16,0 | 2240 | 24,0  | 3360 |  |  |
| 76                     | 1L38075 | 33,1 | 26,6  | 880 | 38,0  | 1258 | 1S38075                | 63,0 | 22,8 | 1436 | 30,4  | 1915 | 2S38075 | 108,0                  | 19,0 | 2052 | 28,5  | 3078 |  |  |
| 89                     | 1L38090 | 28,1 | 31,2  | 875 | 44,5  | 1250 | 1S38090                | 51,0 | 26,7 | 1362 | 35,6  | 1816 | 2S38090 | 90,7                   | 22,3 | 2018 | 33,4  | 3027 |  |  |
| 102                    | 1L38101 | 24,5 | 35,7  | 875 | 51,0  | 1250 | 1S38101                | 43,0 | 30,6 | 1316 | 40,8  | 1754 | 2S38101 | 81,0                   | 25,5 | 2066 | 38,3  | 3098 |  |  |
| 115                    | 1L38115 | 21,6 | 40,3  | 869 | 57,5  | 1242 | 1S38115                | 39,6 | 34,5 | 1366 | 46,0  | 1822 | 2S38115 | 71,8                   | 28,8 | 2064 | 43,1  | 3096 |  |  |
| 127                    | 1L38126 | 19,5 | 44,5  | 867 | 63,5  | 1238 | 1S38126                | 37,0 | 38,1 | 1410 | 50,8  | 1880 | 2S38126 | 62,7                   | 31,8 | 1991 | 47,6  | 2986 |  |  |
| 139                    | 1L38140 | 17,8 | 48,7  | 866 | 69,5  | 1237 | 1S38140                | 32,0 | 41,7 | 1334 | 55,6  | 1779 | 2S38140 | 57,5                   | 34,8 | 1998 | 52,1  | 2997 |  |  |
| 152                    | 1L38151 | 16,3 | 53,2  | 867 | 76,0  | 1239 | 1S38151                | 28,0 | 45,6 | 1277 | 60,8  | 1702 | 2S38151 | 51,6                   | 38,0 | 1961 | 57,0  | 2941 |  |  |
| 160                    |         |      |       |     |       |      |                        |      |      |      |       |      | 2S38160 | 47,5                   | 40,0 | 1900 | 60,0  | 2850 |  |  |
| 178                    | 1L38176 | 13,8 | 62,3  | 860 | 89,0  | 1228 | 1S38176                | 25,2 | 53,4 | 1346 | 71,2  | 1794 | 2S38176 | 44,1                   | 44,5 | 1962 | 66,8  | 2944 |  |  |
| 203                    | 1L38202 | 12,1 | 71,1  | 860 | 101,5 | 1228 | 1S38202                | 22,7 | 60,9 | 1382 | 81,2  | 1843 | 2S38202 | 36,7                   | 50,8 | 1863 | 76,1  | 2794 |  |  |
| 254                    | 1L38252 | 9,7  | 88,9  | 862 | 127,0 | 1232 | 1S38252                | 17,0 | 76,2 | 1295 | 101,6 | 1727 | 2S38252 | 30,1                   | 63,5 | 1911 | 95,3  | 2867 |  |  |
| 305                    | 1L38303 | 8,0  | 106,8 | 854 | 152,5 | 1220 | 1S38303                | 14,8 | 91,5 | 1354 | 122,0 | 1806 | 2S38303 | 24,6                   | 76,3 | 1876 | 114,4 | 2814 |  |  |



L<sub>0</sub> Free length mm

D Housing Ø mm

d Rod Ø mm

R Load, in Newton (N)  
necessary to deflect the spring by mm 1  
(1N = 0,102 kg 1kg=9,81 N)



ISO 10243

**3S**

Heavy load



ISO 10243

**4S**

Extra Heavy load



**5S**

Super Heavy load

| L <sub>0</sub><br>Free length<br>mm | Item Code | R<br>Rate<br>N/mm | XLL 20%<br>S <sub>1</sub> F <sub>1</sub> |           | Max 30%<br>S <sub>2</sub> F <sub>2</sub> |           | Item Code | R<br>Rate<br>N/mm | XLL 17%<br>S <sub>1</sub> F <sub>1</sub> |           | Max 25%<br>S <sub>2</sub> F <sub>2</sub> |           | Item Code | R<br>Rate<br>N/mm | XLL 10%<br>S <sub>1</sub> F <sub>1</sub> |           | Max 15%<br>S <sub>2</sub> F <sub>2</sub> |           |
|-------------------------------------|-----------|-------------------|------------------------------------------|-----------|------------------------------------------|-----------|-----------|-------------------|------------------------------------------|-----------|------------------------------------------|-----------|-----------|-------------------|------------------------------------------|-----------|------------------------------------------|-----------|
|                                     |           |                   | Stroke<br>mm                             | Load<br>N | Stroke<br>mm                             | Load<br>N |           |                   | Stroke<br>mm                             | Load<br>N | Stroke<br>mm                             | Load<br>N |           |                   | Stroke<br>mm                             | Load<br>N | Stroke<br>mm                             | Load<br>N |

● (D) Housing Ø mm 32

● (d) Rod Ø mm 16

| Wire Section 6,9 x 5,3 |         |       |      |      |      |      | Wire Section 7,2 x 5,6 |       |      |      |      |      |         | Wire Section 7,4 x 8,8 |      |      |      |      |  |  |
|------------------------|---------|-------|------|------|------|------|------------------------|-------|------|------|------|------|---------|------------------------|------|------|------|------|--|--|
| 38                     | 3S32038 | 388,0 | 7,6  | 2949 | 11,4 | 4423 | 4S32038                | 528,2 | 6,5  | 3412 | 9,5  | 5018 |         |                        |      |      |      |      |  |  |
| 44                     | 3S32045 | 324,0 | 8,8  | 2851 | 13,2 | 4277 | 4S32045                | 424,4 | 7,5  | 3175 | 11,0 | 4668 | 5S32044 | 1300,0                 | 4,4  | 5720 | 6,6  | 8580 |  |  |
| 51                     | 3S32050 | 272,0 | 10,2 | 2774 | 15,3 | 4162 | 4S32050                | 353,0 | 8,7  | 3061 | 12,8 | 4501 | 5S32051 | 1150,0                 | 5,1  | 5865 | 7,7  | 8798 |  |  |
| 64                     | 3S32065 | 212,0 | 12,8 | 2714 | 19,2 | 4070 | 4S32065                | 269,2 | 10,9 | 2929 | 16,0 | 4307 | 5S32064 | 887,0                  | 6,4  | 5677 | 9,6  | 8515 |  |  |
| 76                     | 3S32075 | 172,0 | 15,2 | 2614 | 22,8 | 3922 | 4S32075                | 218,5 | 12,9 | 2823 | 19,0 | 4152 | 5S32076 | 733,0                  | 7,6  | 5571 | 11,4 | 8356 |  |  |
| 89                     | 3S32090 | 141,0 | 17,8 | 2510 | 26,7 | 3765 | 4S32090                | 180,3 | 15,1 | 2728 | 22,3 | 4012 | 5S32089 | 612,0                  | 8,9  | 5447 | 13,4 | 8170 |  |  |
| 102                    | 3S32101 | 122,0 | 20,4 | 2489 | 30,6 | 3733 | 4S32101                | 155,0 | 17,3 | 2688 | 25,5 | 3953 | 5S32102 | 544,0                  | 10,2 | 5549 | 15,3 | 8323 |  |  |
| 115                    | 3S32115 | 107,0 | 23,0 | 2461 | 34,5 | 3692 | 4S32115                | 140,0 | 19,6 | 2737 | 28,8 | 4025 | 5S32115 | 494,0                  | 11,5 | 5681 | 17,3 | 8522 |  |  |
| 127                    | 3S32126 | 93,0  | 25,4 | 2362 | 38,1 | 3543 | 4S32126                | 124,0 | 21,6 | 2677 | 31,8 | 3937 | 5S32127 | 432,0                  | 12,7 | 5486 | 19,1 | 8230 |  |  |
| 139                    | 3S32140 | 86,0  | 27,8 | 2391 | 41,7 | 3586 | 4S32140                | 112,0 | 23,6 | 2647 | 34,8 | 3898 |         |                        |      |      |      |      |  |  |
| 152                    | 3S32151 | 78,0  | 30,4 | 2371 | 45,6 | 3557 | 4S32151                | 102,0 | 25,8 | 2636 | 38,0 | 3876 | 5S32152 | 356,0                  | 15,2 | 5411 | 22,8 | 8117 |  |  |
| 178                    | 3S32176 | 67,2  | 35,6 | 2392 | 53,4 | 3588 | 4S32176                | 88,2  | 30,3 | 2669 | 44,5 | 3925 | 5S32178 | 304,0                  | 17,8 | 5411 | 26,7 | 8117 |  |  |
| 203                    | 3S32202 | 59,1  | 40,6 | 2399 | 60,9 | 3599 | 4S32202                | 76,0  | 34,5 | 2623 | 50,8 | 3857 | 5S32203 | 265,0                  | 20,3 | 5380 | 30,5 | 8069 |  |  |
| 254                    | 3S32252 | 46,4  | 50,8 | 2357 | 76,2 | 3536 | 4S32252                | 60,8  | 43,2 | 2625 | 63,5 | 3861 | 5S32254 | 214,0                  | 25,4 | 5436 | 38,1 | 8153 |  |  |
| 305                    | 3S32303 | 38,0  | 61,0 | 2318 | 91,5 | 3477 | 4S32303                | 49,0  | 51,9 | 2541 | 76,3 | 3736 | 5S32305 | 177,0                  | 30,5 | 5399 | 45,8 | 8098 |  |  |

● (D) Housing Ø mm 40

● (d) Rod Ø mm 20

| Wire Section 8,4 x 6,2 |         |       |      |      |      |      | Wire Section 8,7 x 7,3 |       |      |      |      |      |         | Wire Section 8,4 x 10,9 |      |      |      |       |  |  |
|------------------------|---------|-------|------|------|------|------|------------------------|-------|------|------|------|------|---------|-------------------------|------|------|------|-------|--|--|
| 51                     | 3S38050 | 350,0 | 10,2 | 3570 | 15,3 | 5355 | 4S38050                | 628,0 | 8,7  | 5445 | 12,8 | 8007 |         |                         |      |      |      |       |  |  |
| 64                     | 3S38065 | 269,0 | 12,8 | 3443 | 19,2 | 5165 | 4S38065                | 487,0 | 10,9 | 5299 | 16,0 | 7792 | 5S38064 | 1228,0                  | 6,4  | 7859 | 9,6  | 11789 |  |  |
| 76                     | 3S38075 | 219,0 | 15,2 | 3329 | 22,8 | 4993 | 4S38075                | 379,0 | 12,9 | 4897 | 19,0 | 7201 | 5S38076 | 1017,0                  | 7,6  | 7729 | 11,4 | 11594 |  |  |
| 89                     | 3S38090 | 190,0 | 17,8 | 3382 | 26,7 | 5073 | 4S38090                | 321,0 | 15,1 | 4857 | 22,3 | 7142 | 5S38089 | 880,0                   | 8,9  | 7832 | 13,4 | 11748 |  |  |
| 102                    | 3S38101 | 163,0 | 20,4 | 3325 | 30,6 | 4988 | 4S38101                | 281,0 | 17,3 | 4873 | 25,5 | 7166 | 5S38102 | 762,0                   | 10,2 | 7772 | 15,3 | 11659 |  |  |
| 115                    | 3S38115 | 142,0 | 23,0 | 3266 | 34,5 | 4899 | 4S38115                | 245,0 | 19,6 | 4790 | 28,8 | 7044 | 5S38115 | 679,0                   | 11,5 | 7809 | 17,3 | 11713 |  |  |
| 127                    | 3S38126 | 128,0 | 25,4 | 3251 | 38,1 | 4877 | 4S38126                | 221,0 | 21,6 | 4771 | 31,8 | 7017 | 5S38127 | 622,0                   | 12,7 | 7899 | 19,1 | 11849 |  |  |
| 139                    | 3S38140 | 115,0 | 27,8 | 3197 | 41,7 | 4796 | 4S38140                | 195,0 | 23,6 | 4602 | 34,8 | 6786 |         |                         |      |      |      |       |  |  |
| 152                    | 3S38151 | 105,0 | 30,4 | 3192 | 45,6 | 4788 | 4S38151                | 168,0 | 25,8 | 4341 | 38,0 | 6384 | 5S38152 | 509,0                   | 15,2 | 7737 | 22,8 | 11605 |  |  |
| 160                    |         |       |      |      |      |      |                        |       |      |      |      |      |         |                         |      |      |      |       |  |  |
| 178                    | 3S38176 | 89,0  | 35,6 | 3168 | 53,4 | 4753 | 4S38176                | 150,0 | 30,3 | 4545 | 44,5 | 6675 | 5S38178 | 429,0                   | 17,8 | 7636 | 26,7 | 11454 |  |  |
| 203                    | 3S38202 | 77,0  | 40,6 | 3126 | 60,9 | 4689 | 4S38202                | 132,0 | 34,5 | 4555 | 50,8 | 6699 | 5S38203 | 374,0                   | 20,3 | 7592 | 30,5 | 11388 |  |  |
| 254                    | 3S38252 | 61,0  | 50,8 | 3099 | 76,2 | 4648 | 4S38252                | 107,0 | 43,2 | 4620 | 63,5 | 6795 | 5S38254 | 296,0                   | 25,4 | 7518 | 38,1 | 11278 |  |  |
| 305                    | 3S38303 | 51,0  | 61,0 | 3111 | 91,5 | 4667 | 4S38303                | 87,8  | 51,9 | 4552 | 76,3 | 6695 | 5S38305 | 246,0                   | 30,5 | 7503 | 45,8 | 11255 |  |  |

XLL% Long Life deflection

S<sub>1</sub> Deflection mm

F<sub>1</sub> Load N

Max % Max working deflection

S<sub>2</sub> Deflection mm

F<sub>2</sub> Load N



**1L**

Extra Light load



ISO 10243

**1S**

Light load



ISO 10243

**2S**

Medium load

| L <sub>0</sub><br>Free length<br>mm | Item Code | R<br>Rate<br>N/mm | XLL 35%<br>S <sub>1</sub> F <sub>1</sub> |           | Max 50%<br>S <sub>2</sub> F <sub>2</sub> |           | Item Code | R<br>Rate<br>N/mm | XLL 30%<br>S <sub>1</sub> F <sub>1</sub> |           | Max 40%<br>S <sub>2</sub> F <sub>2</sub> |           | Item Code | R<br>Rate<br>N/mm | XLL 25%<br>S <sub>1</sub> F <sub>1</sub> |           | Max 37.5%<br>S <sub>2</sub> F <sub>2</sub> |           |
|-------------------------------------|-----------|-------------------|------------------------------------------|-----------|------------------------------------------|-----------|-----------|-------------------|------------------------------------------|-----------|------------------------------------------|-----------|-----------|-------------------|------------------------------------------|-----------|--------------------------------------------|-----------|
|                                     |           |                   | Stroke<br>mm                             | Load<br>N | Stroke<br>mm                             | Load<br>N |           |                   | Stroke<br>mm                             | Load<br>N | Stroke<br>mm                             | Load<br>N |           |                   | Stroke<br>mm                             | Load<br>N | Stroke<br>mm                               | Load<br>N |

● (D) Housing Ø mm 50

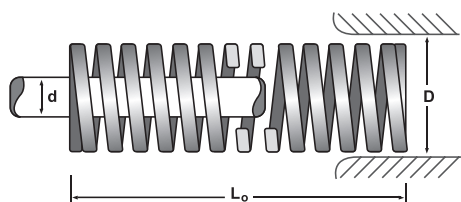
● (d) Rod Ø mm 25

| Wire Section 10,7 x 4,4 |         |      |       |      |       |      | Wire Section 11,1 x 5,5 |       |      |      |       |      |         | Wire Section 10,9 x 6,0 |      |      |       |      |  |  |
|-------------------------|---------|------|-------|------|-------|------|-------------------------|-------|------|------|-------|------|---------|-------------------------|------|------|-------|------|--|--|
| 64                      | 1L51065 | 80,2 | 22,4  | 1796 | 32,0  | 2566 | 1S51065                 | 156,0 | 19,2 | 2995 | 25,6  | 3994 | 2S51065 | 209,0                   | 16,0 | 3344 | 24,0  | 5016 |  |  |
| 76                      | 1L51075 | 66,9 | 26,6  | 1780 | 38,0  | 2542 | 1S51075                 | 125,0 | 22,8 | 2850 | 30,4  | 3800 | 2S51075 | 168,0                   | 19,0 | 3192 | 28,5  | 4788 |  |  |
| 89                      | 1L51090 | 56,6 | 31,2  | 1763 | 44,5  | 2519 | 1S51090                 | 109,0 | 26,7 | 2910 | 35,6  | 3880 | 2S51090 | 140,0                   | 22,3 | 3115 | 33,4  | 4673 |  |  |
| 102                     | 1L51101 | 49,3 | 35,7  | 1760 | 51,0  | 2514 | 1S51101                 | 94,0  | 30,6 | 2876 | 40,8  | 3835 | 2S51101 | 119,0                   | 25,5 | 3035 | 38,3  | 4552 |  |  |
| 115                     | 1L51115 | 43,5 | 40,3  | 1751 | 57,5  | 2501 | 1S51115                 | 81,0  | 34,5 | 2795 | 46,0  | 3726 | 2S51115 | 106,0                   | 28,8 | 3048 | 43,1  | 4571 |  |  |
| 127                     | 1L51126 | 39,3 | 44,5  | 1747 | 63,5  | 2496 | 1S51126                 | 71,0  | 38,1 | 2705 | 50,8  | 3607 | 2S51126 | 97,0                    | 31,8 | 3080 | 47,6  | 4620 |  |  |
| 139                     | 1L51140 | 35,8 | 48,7  | 1742 | 69,5  | 2488 | 1S51140                 | 66,5  | 41,7 | 2773 | 55,6  | 3697 | 2S51140 | 87,0                    | 34,8 | 3023 | 52,1  | 4535 |  |  |
| 152                     | 1L51151 | 32,8 | 53,2  | 1745 | 76,0  | 2493 | 1S51151                 | 60,0  | 45,6 | 2736 | 60,8  | 3648 | 2S51151 | 80,0                    | 38,0 | 3040 | 57,0  | 4560 |  |  |
| 160                     |         |      |       |      |       |      |                         |       |      |      |       |      | 2S51160 | 76,0                    | 40,0 | 3040 | 60,0  | 4560 |  |  |
| 178                     | 1L51176 | 27,8 | 62,3  | 1732 | 89,0  | 2474 | 1S51176                 | 52,0  | 53,4 | 2777 | 71,2  | 3702 | 2S51176 | 69,5                    | 44,5 | 3093 | 66,8  | 4639 |  |  |
| 203                     | 1L51202 | 24,2 | 71,1  | 1719 | 101,5 | 2456 | 1S51202                 | 44,0  | 60,9 | 2680 | 81,2  | 3573 | 2S51202 | 59,8                    | 50,8 | 3035 | 76,1  | 4552 |  |  |
| 229                     |         |      |       |      |       |      | 1S51229                 | 38,2  | 68,7 | 2624 | 91,6  | 3499 | 2S51229 | 50,9                    | 57,3 | 2914 | 85,9  | 4371 |  |  |
| 254                     | 1L51252 | 19,2 | 88,9  | 1707 | 127,0 | 2438 | 1S51252                 | 35,0  | 76,2 | 2667 | 101,6 | 3556 | 2S51252 | 43,9                    | 63,5 | 2788 | 95,3  | 4181 |  |  |
| 305                     | 1L51303 | 16,0 | 106,8 | 1708 | 152,5 | 2440 | 1S51303                 | 28,5  | 91,5 | 2608 | 122,0 | 3477 | 2S51303 | 38,6                    | 76,3 | 2943 | 114,4 | 4415 |  |  |

● (D) Housing Ø mm 63

● (d) Rod Ø mm 38

| Wire Section 11,4 x 5,1 |         |      |       |      |       |      | Wire Section 11,6 x 7,7 |       |      |      |       |      |         | Wire Section 11,5 x 9,3 |       |      |       |      |  |  |
|-------------------------|---------|------|-------|------|-------|------|-------------------------|-------|------|------|-------|------|---------|-------------------------|-------|------|-------|------|--|--|
| 76                      | 1L63075 | 57,8 | 26,6  | 1537 | 38,0  | 2196 | 1S63075                 | 189,0 | 22,8 | 4309 | 30,4  | 5746 | 2S63075 | 312,0                   | 19,0  | 5928 | 28,5  | 8892 |  |  |
| 89                      | 1L63090 | 51,4 | 31,2  | 1601 | 44,5  | 2287 | 1S63090                 | 158,0 | 26,7 | 4219 | 35,6  | 5625 | 2S63090 | 260,0                   | 22,3  | 5785 | 33,4  | 8678 |  |  |
| 102                     | 1L63101 | 44,4 | 35,7  | 1585 | 51,0  | 2264 | 1S63101                 | 131,0 | 30,6 | 4009 | 40,8  | 5345 | 2S63101 | 221,0                   | 25,5  | 5636 | 38,3  | 8453 |  |  |
| 115                     | 1L63115 | 41,6 | 40,3  | 1674 | 57,5  | 2392 | 1S63115                 | 116,0 | 34,5 | 4002 | 46,0  | 5336 | 2S63115 | 187,0                   | 28,8  | 5376 | 43,1  | 8064 |  |  |
| 127                     | 1L63126 | 33,2 | 44,5  | 1476 | 63,5  | 2108 | 1S63126                 | 103,0 | 38,1 | 3924 | 50,8  | 5232 | 2S63126 | 168,0                   | 31,8  | 5334 | 47,6  | 8001 |  |  |
| 152                     | 1L63151 | 27,4 | 53,2  | 1458 | 76,0  | 2082 | 1S63151                 | 84,3  | 45,6 | 3844 | 60,8  | 5125 | 2S63151 | 136,0                   | 38,0  | 5168 | 57,0  | 7752 |  |  |
| 160                     |         |      |       |      |       |      |                         |       |      |      |       |      | 2S63160 | 128,0                   | 40,0  | 5120 | 60,0  | 7680 |  |  |
| 178                     | 1L63176 | 24,0 | 62,3  | 1495 | 89,0  | 2136 | 1S63176                 | 71,5  | 53,4 | 3818 | 71,2  | 5091 | 2S63176 | 114,0                   | 44,5  | 5073 | 66,8  | 7610 |  |  |
| 203                     | 1L63202 | 21,0 | 71,1  | 1492 | 101,5 | 2132 | 1S63202                 | 61,7  | 60,9 | 3758 | 81,2  | 5010 | 2S63202 | 100,0                   | 50,8  | 5075 | 76,1  | 7613 |  |  |
| 229                     |         |      |       |      |       |      |                         |       |      |      |       |      | 2S63229 | 89,2                    | 57,3  | 5107 | 85,9  | 7660 |  |  |
| 254                     | 1L63252 | 16,4 | 88,9  | 1458 | 127,0 | 2083 | 1S63252                 | 47,0  | 76,2 | 3581 | 101,6 | 4775 | 2S63252 | 78,4                    | 63,5  | 4978 | 95,3  | 7468 |  |  |
| 305                     | 1L63303 | 13,6 | 106,8 | 1452 | 152,5 | 2074 | 1S63303                 | 38,2  | 91,5 | 3495 | 122,0 | 4660 | 2S63303 | 64,7                    | 76,3  | 4933 | 114,4 | 7400 |  |  |
| 315                     |         |      |       |      |       |      |                         |       |      |      |       |      | 2S63315 | 62,8                    | 78,8  | 4946 | 118,1 | 7418 |  |  |
| 400                     |         |      |       |      |       |      |                         |       |      |      |       |      | 2S63400 | 48,5                    | 100,0 | 4850 | 150,0 | 7275 |  |  |



L<sub>0</sub> Free length mm

D Housing Ø mm

d Rod Ø mm

R Load, in Newton (N)  
necessary to deflect the spring by mm 1  
(1N = 0,102 kg 1kg=9,81 N)



ISO 10243

**3S**

Heavy load



ISO 10243

**4S**

Extra Heavy load



**5S**

Super Heavy load

| L <sub>0</sub><br>Free length<br>mm | Item Code | R<br>Rate<br>N/mm | XLL 20%<br>S <sub>1</sub> F <sub>1</sub> |           | Max 30%<br>S <sub>2</sub> F <sub>2</sub> |           | Item Code | R<br>Rate<br>N/mm | XLL 17%<br>S <sub>1</sub> F <sub>1</sub> |           | Max 25%<br>S <sub>2</sub> F <sub>2</sub> |           | Item Code | R<br>Rate<br>N/mm | XLL 10%<br>S <sub>1</sub> F <sub>1</sub> |           | Max 15%<br>S <sub>2</sub> F <sub>2</sub> |           |
|-------------------------------------|-----------|-------------------|------------------------------------------|-----------|------------------------------------------|-----------|-----------|-------------------|------------------------------------------|-----------|------------------------------------------|-----------|-----------|-------------------|------------------------------------------|-----------|------------------------------------------|-----------|
|                                     |           |                   | Stroke<br>mm                             | Load<br>N | Stroke<br>mm                             | Load<br>N |           |                   | Stroke<br>mm                             | Load<br>N | Stroke<br>mm                             | Load<br>N |           |                   | Stroke<br>mm                             | Load<br>N | Stroke<br>mm                             | Load<br>N |

● (D) Housing Ø mm 50

● (d) Rod Ø mm 25

| Wire Section 11,3 x 7,4 |         |       |      |      |      |      | Wire Section 11,4 x 9,1 |       |      |      |      |       |         | Wire Section 11,8 x 13,4 |      |       |      |       |  |  |
|-------------------------|---------|-------|------|------|------|------|-------------------------|-------|------|------|------|-------|---------|--------------------------|------|-------|------|-------|--|--|
| 64                      | 3S51065 | 413,0 | 12,8 | 5286 | 19,2 | 7930 | 4S51065                 | 709,0 | 10,9 | 7714 | 16,0 | 11344 | 5S50064 | 1980,0                   | 6,4  | 12672 | 9,6  | 19008 |  |  |
| 76                      | 3S51075 | 339,0 | 15,2 | 5153 | 22,8 | 7729 | 4S51075                 | 572,0 | 12,9 | 7390 | 19,0 | 10868 | 5S50076 | 1811,0                   | 7,6  | 13764 | 11,4 | 20645 |  |  |
| 89                      | 3S51090 | 288,0 | 17,8 | 5126 | 26,7 | 7690 | 4S51090                 | 475,0 | 15,1 | 7187 | 22,3 | 10569 | 5S50089 | 1410,0                   | 8,9  | 12549 | 13,4 | 18824 |  |  |
| 102                     | 3S51101 | 245,0 | 20,4 | 4998 | 30,6 | 7497 | 4S51101                 | 405,0 | 17,3 | 7023 | 25,5 | 10328 | 5S50102 | 1215,0                   | 10,2 | 12393 | 15,3 | 18590 |  |  |
| 115                     | 3S51115 | 215,0 | 23,0 | 4945 | 34,5 | 7418 | 4S51115                 | 352,0 | 19,6 | 6882 | 28,8 | 10120 | 5S50115 | 1076,0                   | 11,5 | 12374 | 17,3 | 18561 |  |  |
| 127                     | 3S51126 | 192,0 | 25,4 | 4877 | 38,1 | 7315 | 4S51126                 | 316,0 | 21,6 | 6822 | 31,8 | 10033 | 5S50127 | 968,0                    | 12,7 | 12294 | 19,1 | 18440 |  |  |
| 139                     | 3S51140 | 168,0 | 27,8 | 4670 | 41,7 | 7006 | 4S51140                 | 289,0 | 23,6 | 6829 | 34,8 | 10043 |         |                          |      |       |      |       |  |  |
| 152                     | 3S51151 | 154,0 | 30,4 | 4682 | 45,6 | 7022 | 4S51151                 | 239,0 | 25,8 | 6176 | 38,0 | 9082  | 5S50152 | 806,0                    | 15,2 | 12251 | 22,8 | 18377 |  |  |
| 160                     |         |       |      |      |      |      |                         |       |      |      |      |       |         |                          |      |       |      |       |  |  |
| 178                     | 3S51176 | 134,0 | 35,6 | 4770 | 53,4 | 7156 | 4S51176                 | 216,0 | 30,3 | 6536 | 44,5 | 9612  | 5S50178 | 698,0                    | 17,8 | 12424 | 26,7 | 18637 |  |  |
| 203                     | 3S51202 | 117,0 | 40,6 | 4750 | 60,9 | 7125 | 4S51202                 | 187,0 | 34,5 | 6453 | 50,8 | 9490  | 5S50203 | 612,0                    | 20,3 | 12424 | 30,5 | 18635 |  |  |
| 229                     |         |       |      |      |      |      |                         |       |      |      |      |       |         |                          |      |       |      |       |  |  |
| 254                     | 3S51252 | 89,0  | 50,8 | 4521 | 76,2 | 6782 | 4S51252                 | 153,0 | 43,2 | 6607 | 63,5 | 9716  | 5S50254 | 472,0                    | 25,4 | 11989 | 38,1 | 17983 |  |  |
| 305                     | 3S51303 | 73,0  | 61,0 | 4453 | 91,5 | 6680 | 4S51303                 | 127,0 | 51,9 | 6585 | 76,3 | 9684  | 5S50305 | 388,0                    | 30,5 | 11834 | 45,8 | 17751 |  |  |

● (D) Housing Ø mm 63

● (d) Rod Ø mm 38

| Wire Section 11,2 x 12,9 |         |       |      |      |      |       | Wire Section 11,8 x 13,4 |       |      |       |      |       |         | Wire Section 11,8 x 17,8 |      |       |      |       |  |  |
|--------------------------|---------|-------|------|------|------|-------|--------------------------|-------|------|-------|------|-------|---------|--------------------------|------|-------|------|-------|--|--|
| 76                       | 3S63075 | 630,0 | 15,2 | 9576 | 22,8 | 14364 | 4S63075                  | 842,0 | 12,9 | 10879 | 19,0 | 15998 |         |                          |      |       |      |       |  |  |
| 89                       | 3S63090 | 485,0 | 17,8 | 8633 | 26,7 | 12950 | 4S63090                  | 726,0 | 15,1 | 10984 | 22,3 | 16154 | 5S63089 | 1517,0                   | 12,6 | 19172 | 17,8 | 27003 |  |  |
| 102                      | 3S63101 | 434,0 | 20,4 | 8854 | 30,6 | 13280 | 4S63101                  | 656,0 | 17,3 | 11375 | 25,5 | 16728 | 5S63102 | 1295,0                   | 14,5 | 18757 | 20,9 | 27078 |  |  |
| 115                      | 3S63115 | 384,0 | 23,0 | 8832 | 34,5 | 13248 | 4S63115                  | 534,0 | 19,6 | 10440 | 28,8 | 15353 | 5S63115 | 1070,0                   | 17,5 | 18704 | 25,1 | 26825 |  |  |
| 127                      | 3S63126 | 349,0 | 25,4 | 8865 | 38,1 | 13297 | 4S63126                  | 480,0 | 21,6 | 10363 | 31,8 | 15240 | 5S63127 | 979,0                    | 19,1 | 18650 | 27,3 | 26732 |  |  |
| 152                      | 3S63151 | 276,0 | 30,4 | 8390 | 45,6 | 12586 | 4S63151                  | 396,0 | 25,8 | 10233 | 38,0 | 15048 | 5S63152 | 775,0                    | 24,3 | 18848 | 34,2 | 26505 |  |  |
| 160                      |         |       |      |      |      |       |                          |       |      |       |      |       |         |                          |      |       |      |       |  |  |
| 178                      | 3S63176 | 237,0 | 35,6 | 8437 | 53,4 | 12656 | 4S63176                  | 335,0 | 30,3 | 10137 | 44,5 | 14908 | 5S63178 | 630,0                    | 29,4 | 18503 | 41,8 | 26353 |  |  |
| 203                      | 3S63202 | 210,0 | 40,6 | 8526 | 60,9 | 12789 | 4S63202                  | 297,0 | 34,5 | 10249 | 50,8 | 15073 | 5S63203 | 546,0                    | 33,9 | 18510 | 48,5 | 26490 |  |  |
| 229                      |         |       |      |      |      |       |                          |       |      |       |      |       |         |                          |      |       |      |       |  |  |
| 254                      | 3S63252 | 165,0 | 50,8 | 8382 | 76,2 | 12573 | 4S63252                  | 235,0 | 43,2 | 10147 | 63,5 | 14923 | 5S63254 | 423,0                    | 44,5 | 18802 | 62,2 | 26323 |  |  |
| 305                      | 3S63303 | 134,0 | 61,0 | 8174 | 91,5 | 12261 | 4S63303                  | 194,0 | 51,9 | 10059 | 76,3 | 14793 | 5S63305 | 349,0                    | 53,4 | 18628 | 74,7 | 26079 |  |  |
| 315                      |         |       |      |      |      |       |                          |       |      |       |      |       |         |                          |      |       |      |       |  |  |
| 400                      |         |       |      |      |      |       |                          |       |      |       |      |       |         |                          |      |       |      |       |  |  |

XLL% Long Life deflection

S<sub>1</sub> Deflection mm

F<sub>1</sub> Load N

Max % Max working deflection

S<sub>2</sub> Deflection mm

F<sub>2</sub> Load N

**DIE SPRINGS**



**Product Specification Catalogue**

# **SUPERIOR SOLUTIONS UNMATCHED VALUE**

**Selling trust with tools**





## INTRODUCTION

VE TO Clamping Systems Pvt Ltd, manufactures world class CLAMPING ELEMENTS, TOOL ROOM ACCESSORIES & CUSTOMIZED CLAMPING SOLUTIONS. Started with an idea of providing standard clamping systems for the Plastic Injection Moulding Machines, Sheet Metal Presses, Die Casting Machines and other Tool Room Industry. Today, we are proud to introduce ourselves as one of the leading manufacturer of Clamping Elements. The quest to stay ahead in the rapidly evolving market has made VE TO constantly develop new Product range as per compliance with different demands & needs of our consumers. From conceptualization to execution, from drawing to production, there's just one single largest force that drives us, our CUSTOMERS. We have grown from a small setup to an established brand name just because of customers. Our range of clamps are sold at economical prices in the market to our respected clients.

## COMPANY PURPOSE, VISION & MISSION

### MISSION — — —



### — — — VISION

"To exceed customer expectation in quality, delivery and cost through continuous improvement and customer satisfaction."

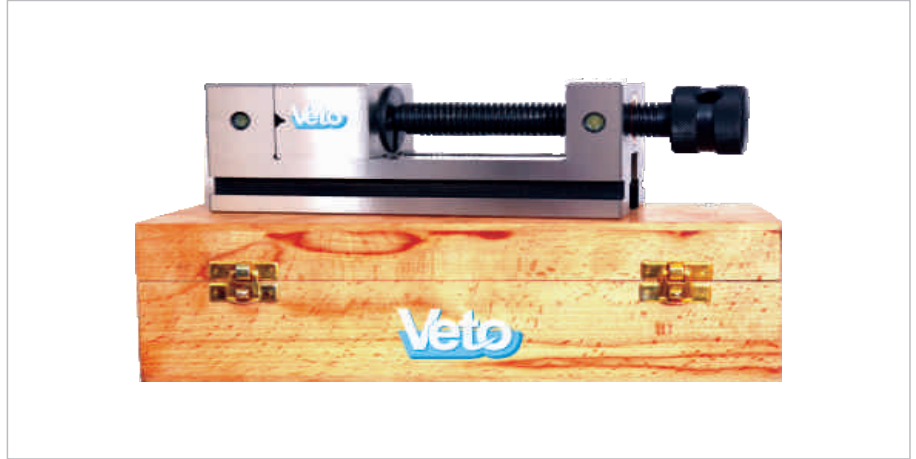
"To be the supplier of choice in every industry we serve."

### PURPOSE

"Continues Value Creation for Customers"

# TOOL ROOM ACCESSORIES

**Selling trust with tools**





## GRINDING VICES (HARDENED & GROUND)



## GRINDING VICE-LEAD SCREW TYPE



## GRINDING VICE-PIN TYPE



## FEATURES

- Tool makers Vice- a must for every TOOL ROOM.
- One-piece construction made of Tool Steel-hardened tempered & precision ground.
- Can be used on the base or sides.
- Ideal for tool making, grinding, jig boring etc.
- Accurate to within 8 microns.
- Available as Pin Type or Screw Type

| MODEL           | OVERALL LENGTH | OVERALL HEIGHT | OVERALL WIDTH | JAW DEPTH | MAX JAW OPENING |
|-----------------|----------------|----------------|---------------|-----------|-----------------|
| VSV-55 (En-31)  | 160            | 60             | 55            | 30        | 60              |
| VSV-75 (En-31)  | 205            | 70             | 75            | 40        | 80              |
| VSV-100 (En-31) | 240            | 90             | 100           | 45        | 105             |
| VSV-55          | 160            | 60             | 55            | 30        | 60              |
| VSV-75          | 200            | 70             | 75            | 40        | 80              |
| VSV-95          | 235            | 90             | 95            | 45        | 105             |
| VSV-150         | 300            | 96             | 150           | 48        | 150             |

| MODEL           | OVERALL LENGTH | OVERALL HEIGHT | OVERALL WIDTH | JAW DEPTH | MAX JAW OPENING |
|-----------------|----------------|----------------|---------------|-----------|-----------------|
| VPV-55 (En-31)  | 160            | 54             | 55            | 28        | 80              |
| VPV-75 (En-31)  | 185            | 64             | 75            | 35        | 100             |
| VPV-100 (En-31) | 235            | 90             | 100           | 45        | 125             |
| VPV-55          | 160            | 54             | 55            | 28        | 80              |
| VPV-75          | 178            | 64             | 75            | 35        | 100             |
| VPV-95          | 235            | 90             | 95            | 45        | 125             |
| VPV-150         | 330            | 94             | 150           | 48        | 175             |

## PRECISION SINE VICE



### FEATURES

- One-piece construction made of Tool Steel-hardened, tempered & precision ground.
- Accurate to within 8 microns.
- Hardened & Tempered to 52-56 HRC.
- Centre to centre distance controlled to within 5 Microns.
- Available as Pin Type or Screw Type.



### PRECISION SINE VICE-LEAD SCREW TYPE



| MODEL    | OVERALL LENGTH | OVERALL HEIGHT | OVERALL WIDTH | JAW DEPTH | MAX JAW OPENING | C.D. OF ROLLERS |
|----------|----------------|----------------|---------------|-----------|-----------------|-----------------|
| VSSV-75T | 205            | 100            | 75            | 40        | 85              | 150             |

### PRECISION SINE VICE- PIN TYPE



| MODEL    | OVERALL LENGTH | OVERALL HEIGHT | OVERALL WIDTH | JAW DEPTH | MAX JAW OPENING | C.D. OF ROLLERS |
|----------|----------------|----------------|---------------|-----------|-----------------|-----------------|
| VSPV-75T | 195            | 102            | 75            | 40        | 105             | 150             |

## MILLING MACHINE VICE



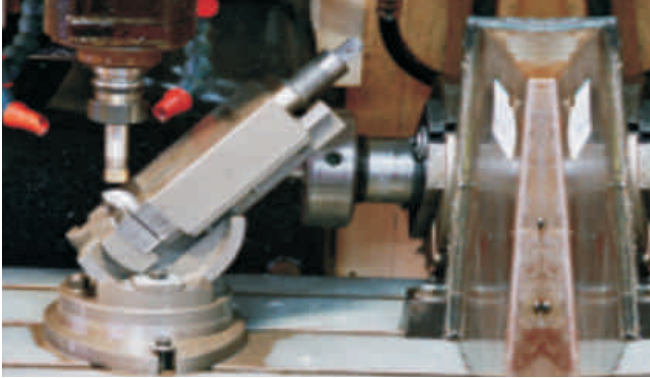
### FEATURES

- Most popular machine vice
- Useful in milling, jig boring, shaping & grinding applications.
- Available with & without swivel base.
- Manufactured from close grained high tensile cast iron.
- All fasteners are high tensile.
- Jaws are fully hardened to 50-55 HRC.



| MODEL    | JAW WIDTH | JAW DEPTH | MAX JAW OPENING |
|----------|-----------|-----------|-----------------|
| VMMV-100 | 100       | 40        | 100             |
| VMMV-150 | 150       | 55        | 150             |
| VMMV-200 | 200       | 60        | 200             |

## ANGULAR VICES



### FEATURES

- Ideal where jobs require machining at an angle.
- Useful in milling, jig boring, shaping & grinding applications.
- Available as TWO WAY & THREE WAY ANGLE VICE (Tilt & Swivel)
- Manufactured from close grained high tensile cast iron.
- All fasteners are high tensile.
- Jaws are fully hardened to 50-55 HRC.
- Hold Down slots are provided for secure clamping of vice on the machine table.

### TWO WAY ANGEL VICE (TILT AND SWIVEL)

| MODEL        | JAW WIDTH | JAW DEPTH | MAX OPENING | TOTAL HEIGHT |
|--------------|-----------|-----------|-------------|--------------|
| VMMV-100(2W) | 100       | 45        | 100         | 160          |
| VMMV-150(2W) | 150       | 54        | 150         | 200          |

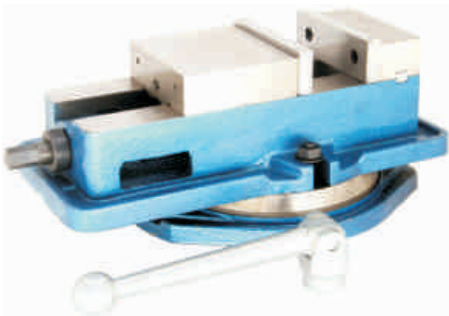


### THREE WAY ANGEL VICE (TILT AND SWIVEL)

| MODEL        | JAW WIDTH | JAW DEPTH | MAX OPENING | TOTAL HEIGHT |
|--------------|-----------|-----------|-------------|--------------|
| VMMV-100(3W) | 100       | 45        | 100         | 190          |



## ANGLE LOCK DOWN PRECISION MACHINE VICE



### FEATURES

- Hardened Bed
- Unbreakable ductile iron cast body
- No work place tilt after clamping
- All parts interchangeable and available as spares.
- High Clamping force can be achieved by effortless handle movement which eliminates hammering on handle.

| MODEL      | JAW WIDTH | JAW DEPTH | MAX OPENING(STD.) | MAX OPENING(REVERSED) | TOTAL HEIGHT |
|------------|-----------|-----------|-------------------|-----------------------|--------------|
| VALPMV-100 | 100       | 36        | 105               | 270                   | 135          |
| VALPMV-160 | 160       | 47        | 155               | 360                   | 160          |

## TWO PIECE VICE

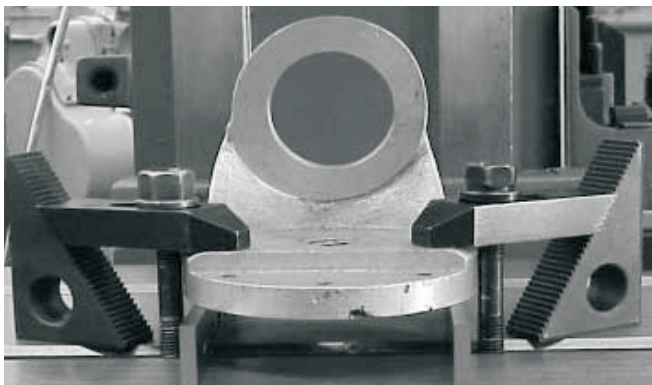


### FEATURES

- Useful in Milling, Planning Plano Milling, Machining Centres or Jig boring Machines.
- Two Piece construction makes it versatile to hold any size of job which can be accommodated on the machine table.
- Hardened & Ground jaws made of Tool Steel.
- Most suitable for machining of big & heavy work pieces.

| MODEL    | JAW WIDTH | JAW DEPTH | TRAVEL OF MOVABLE JAW | TOTAL LENGTH |
|----------|-----------|-----------|-----------------------|--------------|
| VTPV-150 | 150       | 75        | 15                    | 329          |
| VTPV-200 | 200       | 82        | 15                    | 355          |

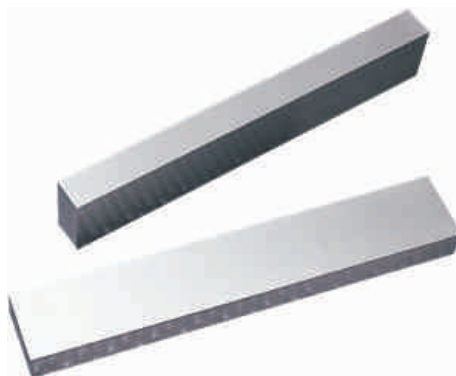
## STEEL PARALLELS (HARDENED & GROUND)



### FEATURES :

- Steel parallels are used as precision packing supports under jobs or fixtures.
- Made from special alloy steel, hardened & tempered.
- Precision Ground in matched pairs.
- Parallelism within 8 microns upto 200mm length

| MODEL  | LENGTH | HEIGHT | WIDTH |
|--------|--------|--------|-------|
| VSP-10 | 150    | 20     | 10    |
| VSP-15 | 150    | 25     | 15    |
| VSP-20 | 200    | 45     | 20    |
| VSP-25 | 250    | 55     | 25    |
| VSP-30 | 300    | 60     | 30    |
| VSP-45 | 300    | 75     | 45    |



**Note: Precision Steel Parallels set (4 or 8 nos) can be customized as per customer's requirement**

## MAGNETIC V-BLOCKS



### FEATURES

- Magnetic V-Blocks are precision ground V-Blocks with high power magnets.
- “V” are hardened 55-60 HRC for increased wear resistance.
- Accuracy controlled to within 8 microns

| MODEL    | LENGTH | HEIGHT | WIDTH |
|----------|--------|--------|-------|
| VMVB-100 | 100    | 95     | 75    |
| VMVB-150 | 150    | 95     | 75    |

## ANGLE PLATE- SLOTTED

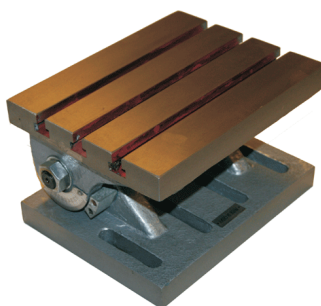


### FEATURES

- Angle Plate is L-shaped piece of high quality cast iron with slots to facilitate the clamping of work piece.
- All clamping slots are machined for uniformity.
- Accuracy in parallelism & squareness within 15 microns per 200mm length.

| MODEL   | LENGTH | HEIGHT | WIDTH |
|---------|--------|--------|-------|
| VAP-150 | 150    | 125    | 110   |
| VAP-175 | 175    | 135    | 110   |
| VAP-200 | 200    | 150    | 125   |
| VAP-250 | 250    | 200    | 150   |

## SWIVEL ANGLE PLATES



### FEATURES

- Used for setting a job at an angle quickly & correctly.
- Useful in milling, drilling, shaping & grinding applications.
- Flatness of working face within 0.012/300mm & T-Slots parallels to edges within 0.05/300mm

| MODEL      | W x L x H   | SUITABLE FOR T - NUT |
|------------|-------------|----------------------|
| VSAP - 125 | 125x150x113 | 12-10                |
| VSAP - 150 | 150x200x135 | 12-10                |
| VSAP - 200 | 200x250x170 | 12-10                |
| VSAP - 250 | 250x300x205 | 14-12                |

## TILTING TABLES



### FEATURES

- Used for operations where angular setting of the job is required.
- Swivel face as machined T-Slots along the length and swings upto 45° on either side.
- Flatness of working face within 0.05/300mm. Table top & base parallel within 0.05/300mm

| MODEL     | W x L x H   | SUITABLE FOR T - NUT |
|-----------|-------------|----------------------|
| VTT - 125 | 125x150x113 | 12-10                |
| VTT - 175 | 150x200x135 | 12-10                |
| VTT - 250 | 200x250x170 | 14-12                |