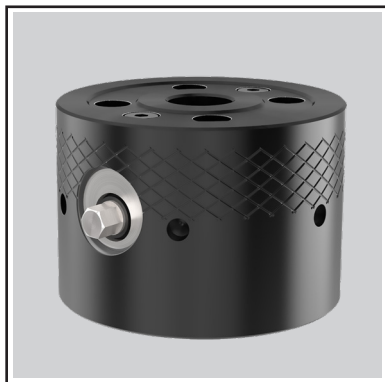


Modular Zero Point System ■ DropZero™

Drop Zero ■ 5 Axis System ■ that locates, clamps and supports a workpiece
Manual Operation ■ Max. Retention Force ■ 2700 lbs



- Reduces setup time and fixturing costs
- Modular design works with all of CLM's 1/2" and 5/8" modular tooling.
- Can also be used with non-modular tooling
- Elevates workpiece for machine spindle clearance
- Access to all 5 sides of the part
- Stackable for added clearance
- Access to all 5 sides of the part

With a few turns of a wrench, new Drop Zero Modular Zero Point System quickly unloads and loads new parts in one setup, all while having access to all five sides of the workpiece. Pull studs (round, diamond, and floating) are mounted directly to a part, and clamp modules can be mounted to any fixture plate and can be stacked for added height. DropZero gives you better part quality due to a completely machined part in one setup, reduced fixturing costs, and simpler tool paths.

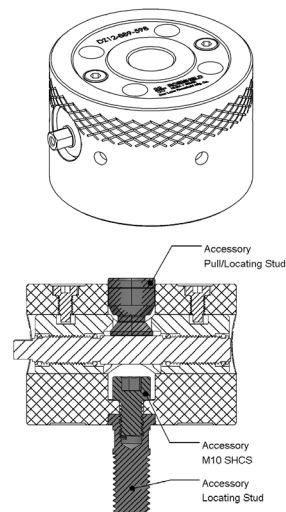
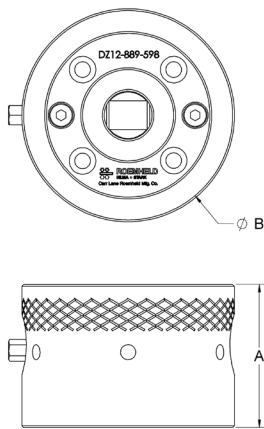
Application Examples



Four Drop Zeros mounted on a Carr Lane Mfg. modular fixturing plate holding an aluminum billet part.



Example of side work for vertical applications.



Operation	Manual
Type	Zero Point Mounting
Retention force (lbs) / Torque (ft-lbs)	2700 lbs/ 45 ft-lbs [12 kN/ 60 Nm]
A (in.)	2.35 ± 0.0004 in [59.8 ± 0.01 mm]
Ø B (in.)	3.50 in [88.9 mm]
Weight (lbs)	5.64 lbs [2.56 kg]
Part No.,	CLR-DZ12-889-598
Pallet Change Repeatability	≤ 0.0004 in [0.01 mm]

Accessories

Part No., housing unit only	CLR-DZ12-889-598-H
Zero point locating stud/screw (1/2-13 UNC-2A)	CLR-DZ12T-500Z
Zero point locating stud/screw (5/8-11 UNC-2A)	CLR-DZ12T-625Z
Socket Head Cap Screw	CLR-M10-1.50X16-SHCS
Clamping spindle	CLR-DZ12M-25
Zero Point pull stud	CLR-DZ12N-20Z
Diamond pull stud	CLR-DZ12N-20D
Floating pull stud	CLR-DZ12N-20F
Floating pull stud without pallet/part locating shoulder	CLR-DZ12N-195
Custom standoff	Available on request
Custom locating bushings	Available on request

Subject to change. For further details, including detailed dimensions and mounting instructions, visit roemheld-usa.com.



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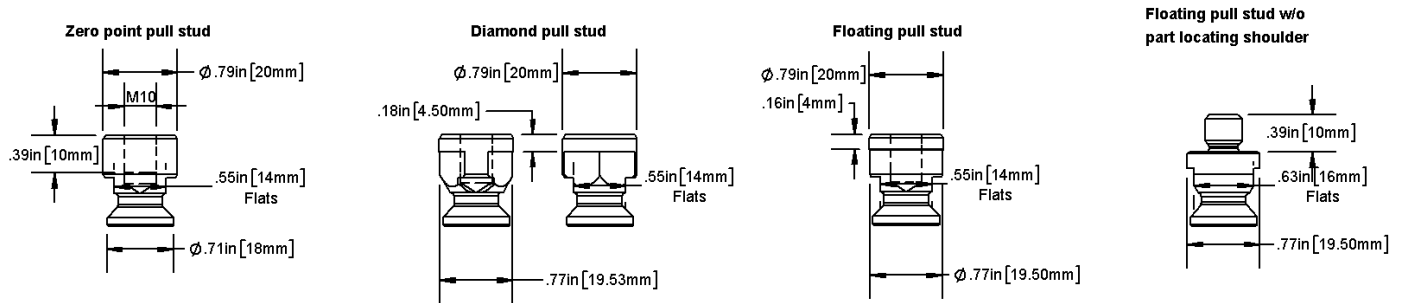
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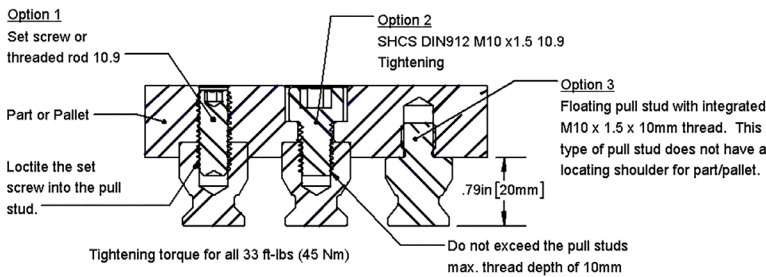
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Engineering — Phone 1-800-827-2526 Web roemheld-usa.com

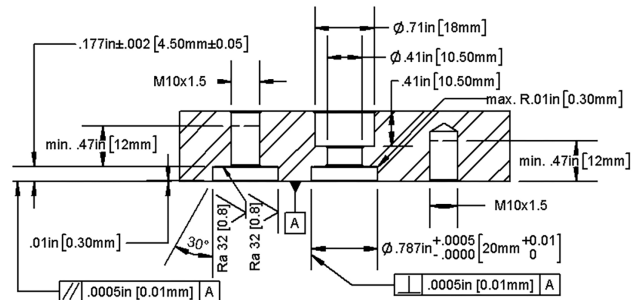
Pull Studs



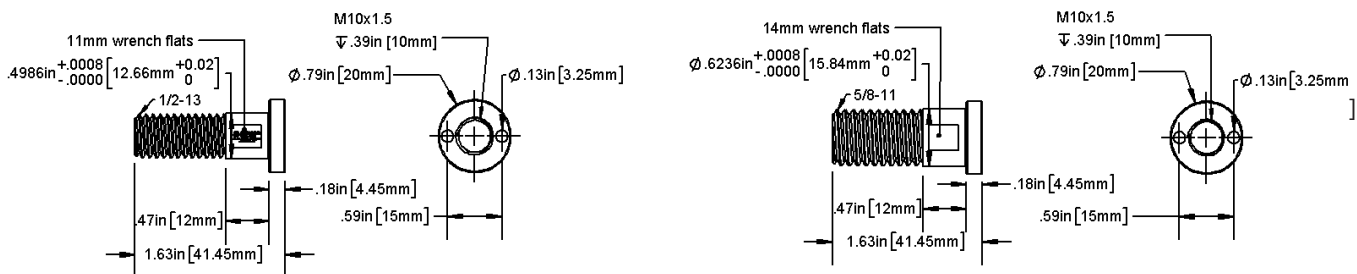
Pull Studs Mounting Options



Pull Studs Mounting Options



Locating Studs for Modular Tooling



Subject to change. For further details, including detailed dimensions and mounting instructions, visit roemheld-usa.com.



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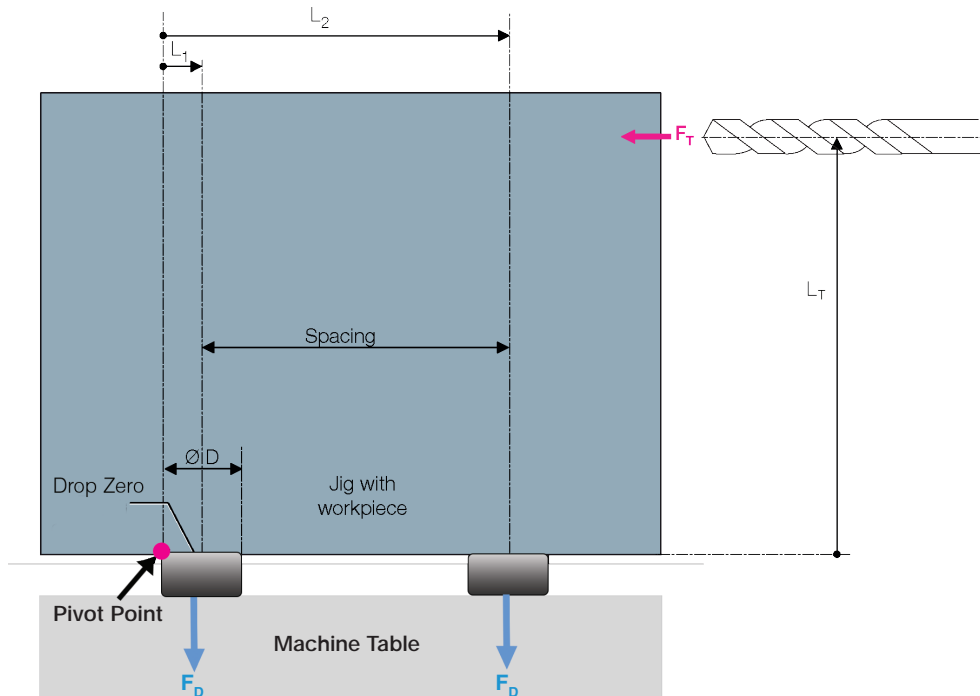
Tilting torque calculation example Benefit from our specialist competence

Example:

DropZero clamps, 4x, with 200 x 200 mm spacing and max. feed thrust force of 7 kN with distance of 400 mm.

Question:

Due to the predominance of roughing work, the system should be checked for 2x safety factor. Is the retention force, number of DropZero clamps and the selected spacing right for this application?



Solution:

$$M_D > 2 \times M_T ?$$

$$M_T = F_V \times L_V = 7,000 \text{ N} \times 0.4 \text{ m}$$

$$M_T = \mathbf{2,800 \text{ Nm}}$$

$$M_D = 2 \times (F_D \times L_1) + 2 \times (F_D \times L_2)$$

$$M_D = 2 \times F_D \times (L_1 + L_2)$$

$$L_1 = \text{ØD} / 2 = 0.0889 / 2 = 0.04445$$

$$L_2 = \text{ØD} / 2 + \text{Spacing} = 0.04445 + 0.20 = 0.24445$$

$$L_1 + L_2 = \text{ØD} + \text{Spacing}$$

$$L_1 + L_2 = 0.0889 \text{ m} + 0.20 \text{ m} = 0.2889 \text{ m}$$

$$M_D = 2 \times F_D \times (L_1 + L_2) = 2 \times 12,000 \text{ N} \times 0.2889 \text{ m}$$

$$M_D = \mathbf{6,933.6 \text{ Nm}}$$

$$M_D / M_T > 2 ?$$

$$M_D / M_T = 6,933 \text{ Nm} / 2,800 \text{ N} \quad M_D / M_T = \mathbf{2.4 > 2} \quad \checkmark$$

With this design, a safety factor of two is provided. (All dimensions to be entered in SI units (meters, Newtons))

M_T : Moment from Feed Thrust Force

M_D : Moment from Retention force

F_T : Feed Thrust Force (7,000 N)

F_D : Retention force (12,000 N)

Spacing = 200 mm = 0.20 m

Ø D: 88.9 mm = 0.0889 m

L_T : 400 mm = 0.40 m

Subject to change. For further details, including detailed dimensions and mounting instructions, visit roemheld-usa.com.



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