

INSTALLATION TECHNOLOGIES

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ISO-9001 Certified



Established in 1935 as a subsidiary of The Felters Company, UNISORB is the leading specialist in engineering and manufacturing products and systems to ensure proper machinery installation.

UNISORB'S growth can be attributed to the development of machinery installation systems to solve problems in specific applications. Experience has shown that no one product or system is "best" for all applications under all conditions. Installation related factors (e.g., installation and leveling time)

and the extent of vibration, shock, deflections and noise to be corrected in the operating environment must be considered in each application.

UNISORB has the only engineering staff devoted exclusively to the design and implementation of complete machinery installation systems. From concept to final installation, UNISORB'S experienced staff of designers, application engineers and field engineers assures you of optimum performance of your mounted equipment.

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UNISORB® INSTALLATION TECHNOLOGIES

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VIBRATION DAMPENING QUALITIES OF ENGINEERED FELT

For thousands of years, man has used felted fiber to absorb shock and vibration. UNISORB has chosen felt pads for use under the feet of many types of machines because of its ability to effectively isolate against transmitted shock and vibration, and because of its predictability. UNISORB RED-LINE PADS are also highly resistant or impervious to most industrial chemicals, oils and moisture. Life expectancy, in most cases, will exceed that of the machinery with which they are installed.

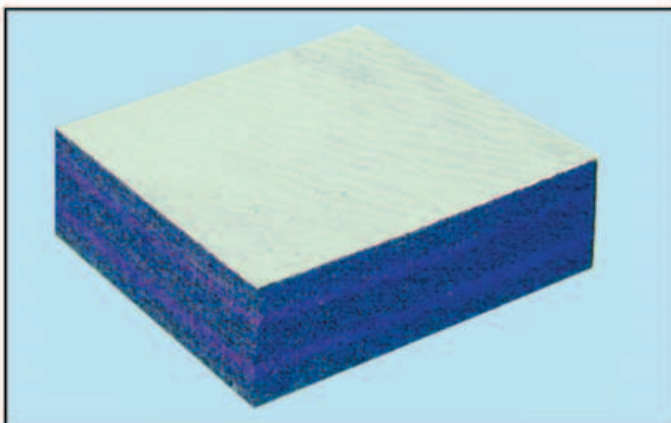
UNISORB RED-LINE PADS SATISFY OSHA REQUIREMENTS

UNISORB RED-LINE PADS and anchor bolts satisfy OSHA requirements for machinery installation. Proper use of these products will:

- Improve the efficiency of production equipment
- Provide safer, more desirable environment for workers
- Reduce down time and extend the operating life of machinery
- Prevent floor damage

Harmful effects of vibration and noise may cause serious impairment to the efficiency of your workers and the overall effectiveness of your production machinery.

RED-LINE ANCHOR PADS



**BONDED PAD
ILLUSTRATED**

Reduced vibration contributes to more efficient operation and longer life of costly machinery. UNISORB'S job-engineered RED-LINE ANCHOR PADS substantially reduce vibration transmission and keep light and medium-duty machines from "creeping" or "walking" without the use of anchor bolts and will materially reduce transmitted noise. Installations are fast, easy and inexpensive.

HOW TO SPECIFY UNISORB VIBRATION ISOLATION PADS

UNISORB RED-LINE and RED-LINE ANCHOR PADS Type H, HB, E, EB, D and DB have long been the standard for achieving superior results in the toughest shock/vibration applications. These pads are 100% wool fiber and are suitable for normal industrial environments being unaffected by exposure to oils, cutting fluids and coolants.

UNISORB RED-LINE and RED-LINE ANCHOR PADS Type S, SB, F and FB are manufactured from 100% man-made fibers offering excellent performance at a lower cost. Types S, SB, F and FB pads are recommended for use in wet or "exposed to weather" applications or where strong concentrations of acids or bases will be encountered.

Both families of pad materials may be expected to outlive the machinery on which they are installed.

Use either of the following formulas to determine the proper pad material from the chart below:

$$\frac{\text{Weight (lbs. per mach. foot)}}{\text{Foot length (in.) X Width (in.)}} = \text{Pounds per square inch (psi)}$$

$$\frac{\text{Weight (kg per mach. foot)}}{\text{Foot length (cm) X Width (cm)}} = \text{kilograms per square centimeter (kg/cm}^2\text{)}$$

PAD TYPE SELECTION				
Load Range	0-50 psi (0-3.5 kg/cm ²)	50-100 psi (3.5-7.0 kg/cm ²)	100-250 psi (7.0-17.5 kg/cm ²)	Over 250 psi (Over 17.5 kg/cm ²)
Extra Light	Neoprene H-1/4 (6.4mm) S-1/2 (12.7mm)	Neoprene E-1/2 (12.7mm) S-1/2 (12.7mm)	D-1/2 (12.7mm) F-1/2 (12.7mm)	Titan-1/2 (12.7mm)
Normal	H-1/2 (12.7mm) S-1/2 (12.7mm)	E-1/2 (12.7mm) F-1/2 (12.7mm)	D-1/2 (12.7mm) F-1/2 (12.7mm)	Titan-1/2 (12.7mm)
Walking Normal	HB-1/2 (12.7mm) SB-1/2 (12.7mm)	EB-1/2 (12.7mm) FB-1/2 (12.7mm)	DB-1/2 (12.7mm) FB-1/2 (12.7mm)	Titan-1/2 (12.7mm)
Normal Heavy Impact	E-1 (25.4mm) S-1 (25.4mm)	E-1 (25.4mm) F-1 (25.4mm)	D-1 (25.4mm) F-1 (25.4mm)	Titan-1 (25.4mm)
Walking Heavy Impact	EB-1 (25.4mm) SB-1 (25.4mm)	EB-1 (25.4mm) FB-1 (25.4mm)	DB-1 (25.4mm) FB-1 (25.4mm)	Titan-1 (25.4mm)
Severe Horizontal	S-1/2 (12.7mm) H-1/2 (12.7mm) + Adhesive	F-1/2 (12.7mm) E-1/2 (12.7mm) + Adhesive	F-1/2 (12.7mm) D-1/2 (12.7mm) + Adhesive	Titan-1/2 (12.7mm) + Adhesive

RED-LINE PADS **TYPE H, E, D, S & F**

Available in a variety of densities and thicknesses to fit machine load requirements, RED-LINE PADS provide effective, low cost vibration control for machinery. Available in standard sheets of 36" X 60" (914.4mm X 1524mm) for wool and 36" X 72" (914.4mm X 1828.8mm) for non-wool. Consult the factory for quotations on cut-to-size prices.

RED-LINE ANCHOR PADS **TYPE HB, EB, DB, SB & FB**

The nylon-bonded surface of RED-LINE ANCHOR PADS provides a high coefficient of friction to effectively prevent machinery from "creeping" and "walking". These pads are not affected by most oils and solutions found in manufacturing plants. Available in standard sheets of 36" X 60" (914.4mm X 1524mm) for wool and 36" X 72" (914.4mm X 1828.8mm) for non-wool. Consult the factory for quotations on cut-to-size prices. When properly installed, RED-LINE ANCHOR PADS conform to OSHA requirements for machine anchoring.

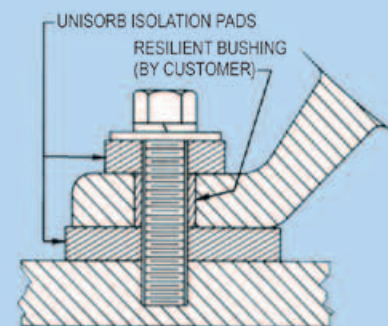
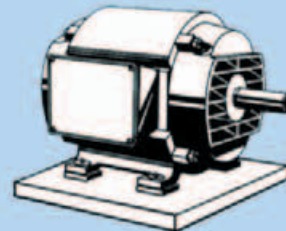
VIBRATION ANALYSIS SERVICES

UNISORB provides vibration analyzation services as part of its overall engineering assistance program to meet every customer's machinery installation need. Our engineers are thoroughly trained in the use of state of the art vibration analyzing equipment and are experienced in analysis of technical data collected for every machinery shock and vibration installation problem. Solving difficult machinery installation problems by providing comprehensive engineered solutions is our primary mission. Contact Unisorb Engineering Department for details.



PRODUCT APPLICATIONS

BOLT-THROUGH APPLICATIONS



This basic approach has been applied satisfactorily to equipment from 1/4 horsepower electric motors to 2,000 ton capacity stamping presses. The machine foot is completely isolated from contact with either the mounting structure or anchor bolt by isolation material. Elastomeric tubing (of the appropriate size) is used for the resilient bushing around the anchor bolt.

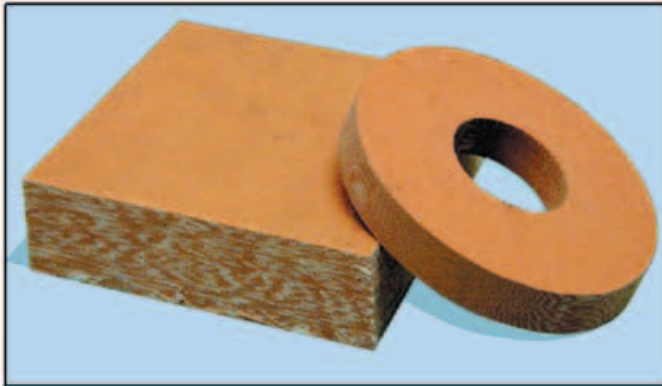
CASE HISTORY

UNISORB was contacted by a company planning to relocate 41 assorted cold headers, bolt makers and nut forming machines from one plant to another. We recommended the use of Type D-1/2 RED-LINE PADS with adhesive for proper machine installation but our proposal was initially rejected by the customer as being too expensive. They selected a competitive non-felt material which was lower in cost.

Almost as soon as the machines were installed and operating the company began to experience failure in the installations. A significant number of machines had "walked" off their pads, and in some cases were stopped only by the walls of the factory.

We were again contacted and our recommendation was to reinstall at least some of the machines on RED-LINE PADS. Once our installation was completed and the results observed, the company requested that all of the pads in the plant be replaced. Our approach to the correct application of pads is now the approved standard method with the company.

TITAN SHOCK PADS FOR EXTREME LOADINGS AND HEAVIEST IMPACTS



MANUFACTURED TO MILITARY SPECIFICATION MIL-C-882 E

TYPICAL APPLICATIONS

- Ball mills
- Compressors
- Forging hammers
- Heavy presses
- Impact generating machine shop equipment
- Presses
- Pumps
- Structural bearings
- Central air conditioning
- Foundry equipment (jolters, shakeouts, etc.)
- Generators
- Hydraulic hammers
- Motors
- Printing presses
- Refrigeration equipment
- Textile machinery

TITAN SHOCK PAD SPECIFICATIONS

CONSTRUCTION:	Laminated plies of oil resistant neoprene-frictioned fabric. All plies laid straight with a continuous ply of frictioned duck on each cover side. 64 plies of frictioned duck per one inch (25.4mm) thickness.
MAXIMUM SIZE:	Mill run sheet sizes 1/8" (3.2mm) through 11/32" (8.7mm) thick: 48" (1219mm) wide: 1/2" (12.7mm) thick and over: 48" (1219mm) X 14.5' (4420mm).
THICKNESS TOLERANCE:	Plus or minus 5%
TENSILE STRENGTH:	4000 psi (279.9 kg/cm ²) minimum
HEAT RESISTANCE:	No visible change after 72 hours at 160° F. (71° C.)
COMPRESSION STRENGTH:	Up to 1800 psi (126.0 kg/cm ²) perpendicular to the plane of the laminations.
DENSITY:	0.0487 lbs. per in. ³ (0.0014 kg per cm ³)
DUROMETER:	Shore A 90 plus or minus 5

Impact shock and vibration can do costly damage to machines, mounting devices and floors, and noise may reduce efficiency of operating personnel. TITAN SHOCK PADS offer an easy, economical way to solve these problems.

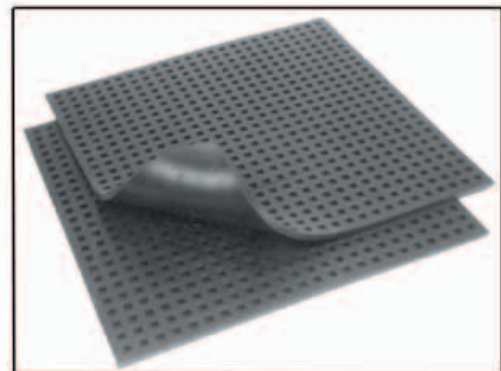
Made of a tough textile base laminated with a specially formulated oil resistant neoprene compound, these multi-ply pads provide protection and vibration isolation needed for machines and equipment, ranging in size from presses to forging hammers. TITAN SHOCK PADS protect floors and machine mountings against damaging impact shock while absorbing vibration and dampening structure-borne noise.

TYPICAL DEFLECTION

Load	7 Ply 1/8" (3.2mm) Thick	14 Ply 15/64" (6.0mm) Thick	21 Ply 11/32" (8.7mm) Thick	31 Ply 1/2" (12.7mm) Thick	39 Ply 5/8" (15.9mm) Thick	48 Ply 3/4" (19.1mm) Thick	64 Ply 1" (24.7mm) Thick
50 psi (3.5 kg/cm ²)	.001 in. (.025mm)	.003 in. (.076mm)	.005 in. (.127mm)	.006 in. (.152mm)	.008 in. (.203mm)	.010 in. (.254mm)	.012 in. (.305mm)
100 psi (7.0 kg/cm ²)	.002 in. (.051mm)	.005 in. (.127mm)	.007 in. (.178mm)	.010 in. (.254mm)	.013 in. (.330mm)	.015 in. (.381mm)	.021 in. (.533mm)
200 psi (14.0 kg/cm ²)	.003 in. (.076mm)	.008 in. (.203mm)	.012 in. (.305mm)	.017 in. (.432mm)	.021 in. (.533mm)	.025 in. (.635mm)	.034 in. (.864mm)
500 psi (35.0 kg/cm ²)	.004 in. (.102mm)	.014 in. (.356mm)	.021 in. (.533mm)	.031 in. (.787mm)	.038 in. (.965mm)	.046 in. (1.168mm)	.061 in. (1.549mm)
1000 psi (70.0 kg/cm ²)	.006 in. (.152mm)	.022 in. (.559mm)	.032 in. (.813mm)	.047 in. (1.194mm)	.058 in. (1.473mm)	.070 in. (1.778mm)	.093 in. (2.362mm)
2000 psi (140.0 kg/cm ²)	.008 in. (.203mm)	.033 in. (.838mm)	.048 in. (1.219mm)	.070 in. (1.778mm)	.088 in. (2.235mm)	.105 in. (2.667mm)	.140 in. (3.556mm)

Thicknesses other than standard are available.

NEOPRENE PADS FOR MACHINES WITH FLOOR LOADING 5 TO 125 PSI (2.4 TO 60.6 kg/cm²)



The smooth edge design of the low cost oil-resistant UNISORB NEOPRENE PAD prevents oil, grease, and dirt from accumulating beneath the load-bearing surface of the pad. Available in 18" X 18" X 5/16" (457.2mm X 457.2mm X 7.9mm). Stiffness is 60 durometer.

UNISORB® LEVEL-RITE® MACHINERY MOUNTS



U.S. PATENT NO. 5,794,912

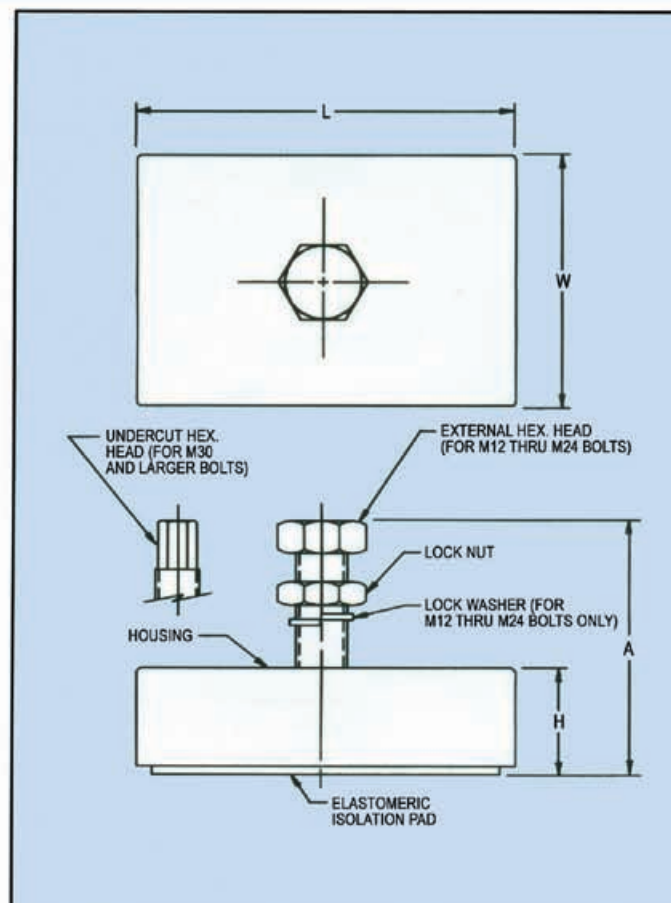
FULL
1-3/8"
(35mm)
ADJUSTMENT
RANGE

UNISORB'S line of LEVEL-RITE mounts are superbly engineered, unbreakable, and perfectly suited for general purpose machine leveling and isolation usage. Both the housing and impact plate of the UNISORB LEVEL-RITE mounts are made of ductile iron, conforming to Foundry Spec. 65-45-12. Every UNISORB LEVEL-RITE mount provides an overall height adjustment of 1-3/8 inches (35mm)- well beyond all similar products around the world. Additionally, UNISORB LEVEL-RITE mounts yield optimum performance, even with floors that are uneven.

The isolation pads of all UNISORB LEVEL-RITE mounts are made from proprietary elastomers. The unique internal design eliminates the interdependence between vertical and horizontal stiffness found in other mount designs. This unique design ensures that each mounting point presents consistent vertical and horizontal load deflection characteristics, regardless of adjustment height. LEVEL-RITE mounts are unmatched in controlling extreme machine induced dynamic loads, thus eliminating excessive machine motion and preventing failures typical of most other general purpose mounts.

The LEVEL-RITE mount features a high strength, grade 5 hex. head adjusting bolt that will withstand punishment which would shear off most other bolts. LEVEL-RITE mounts feature adjusting bolts with metric threads. The finer thread pitch provides greater accuracy in adjustment. Special bolt lengths and configurations are available on request.

The rectangular shape of the UNISORB LEVEL-RITE mounts provides another important advantage. While providing greater resistance to walking than circular mounts, the straight leading edge surface on the rectangular mounts has proven to be more geometrically stable. This helps eliminate pad roll and entrapment of coolants and oils beneath



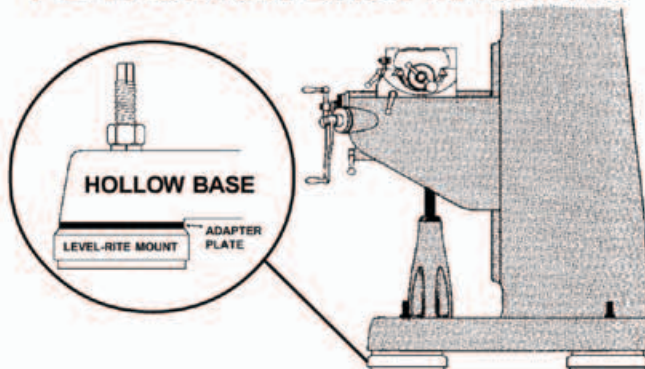
the pad. The exceptionally high coefficient of friction provided by these elastomeric pads also prevents machine walking.

Mount loadings are expressed in pounds and kilograms as shown in the chart below. To determine the approximate load applied by a particular machine, divide the total weight by the number of mounting points. Note that in certain cases, where weight distribution may load one or more mounts significantly more than others, special consideration is required. When machinery generating high impact is being mounted, reduce the mount rating by 25% to assure maximum performance.

SPECIFICATIONS									
LEVEL-RITE MOUNT	PRODUCT CODE	MAX. LOAD lbs./kg	A in./mm	L in./mm	W in./mm	H MIN./MAX.		STANDARD BOLT SIZE	MAX. MACH. FOOT TH. in./mm
						in.	mm		
LR-2500	574200	2500/1136	7.78/198	5.50/140	3.50/89	2.50/3.88	64/99	M12 x 1.75 x 150	2.27/58
LR-5000	574300	5000/2273	7.77/197	7.00/178	4.50/114	2.50/3.88	64/99	M16 x 2 x 150	2.08/53
LR-7500	574400	7500/3409	7.88/200	8.00/203	5.00/127	2.50/3.88	64/99	M20 x 1.5 x 150	1.91/49
LR-12000	574500	12000/5455	9.94/252	8.00/203	5.88/149	2.50/3.88	64/99	M24 x 2 x 150	3.65/93
LR-16000	574600	16000/7273	10.32/262	10.00/254	7.88/200	3.25/4.62	83/117	M24 x 2 x 150	3.40/86
LR-25000	574700	25000/11364	10.74/273	12.50/318	9.00/229	3.50/4.88	89/124	M30 x 2 x 200	3.53/90
LR-35000	574800	35000/15909	11.09/282	16.00/406	12.50/318	4.50/5.88	114/149	M36 x 2 x 250	4.52/115

For mounts with higher load capacities contact UNISORB Engineering.

LEVEL-RITE® MACHINERY MOUNTS FOR HOLLOW BASE MACHINES



Designed for hollow bases as found on certain models of mills, lathes, grinders and other machines. Provides vibration control, leveling and support.

Kit includes mounts with special length adjusting screws and adapter plates. Specify distance between bolt holes when ordering. Standard kits accommodate these distances:

BP-2500 Kit 19.25" - 20.75" (489 mm - 527 mm)
BP-5000 Kit 23.25" - 24.75" (591 mm - 629 mm)
BP-5000S Kit 25.25" - 26.75" (641 mm - 679 mm)

Other spacings are available on request.

LR-200 AND LR-500



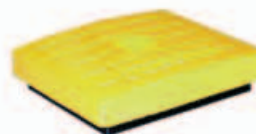
The LR-200 and LR-500 are designed for lighter equipment applications. The LR-200 is for loadings up to 250 lbs. (114 kg) per mount and the LR-500 is for up to 500 lbs. (227 kg). Both models have steel bases, elastomeric isolation pads, and built-in leveling screws.

R SERIES

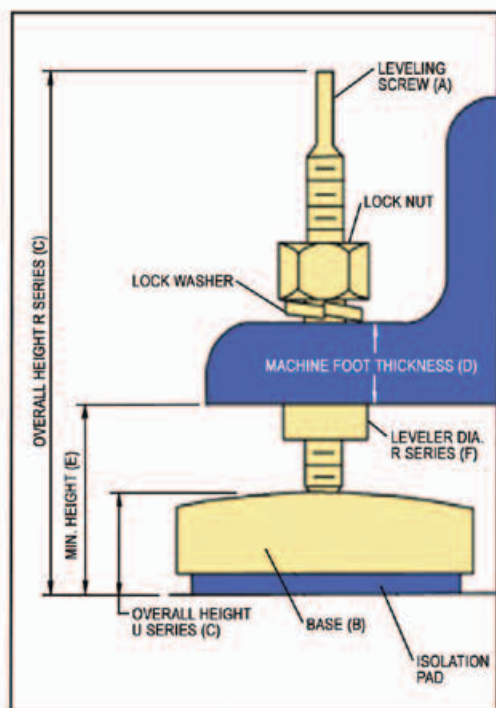


The R Series are self-contained leveling mounts with 1/2" (12.7mm) thick elastomeric pads for all types of machinery. Rugged cast iron and anodized steel construction with a free-floating leveling screw offer vertical adjustments of up to 2" (50mm). They will also compensate for pitched or uneven floors.

U SERIES



The U Series self-contained mounts with elastomeric pads are designed to accept machinery leveling screws and are supplied without leveling accessories. Their rugged, heavy duty construction is designed for precision and finishing equipment.



SPECIFICATIONS

MODEL	MAX LOAD lbs./kg	A	B in./mm	C in./mm	D in./mm	E in./mm	F in./mm
LR-200	250/114	5/16-18	2.13/54 DIA.	3.50/89	2.50/64	.56/14	1.25/32
LR-500	500/227	3/8-16	3.50/89 DIA.	4.50/114	2.75/70	.63/16	2.50/64
R9	900/409	M12x1.75	3x3/76x76	7.00/178	2.75/70	1.75/44	1.75/44
R16	1600/727	M16x2	4x4/102x102	7.00/178	2.75/70	1.75/44	1.75/44
R28	2800/1273	M16x2	4x4/102x102	7.00/178	2.75/70	1.75/44	1.75/44
R36	3600/1636	M24x3	6x6/152x152	7.50/191	2.75/70	2.63/67	2.25/57
R48	4800/2182	M16x2	4x4/102x102	7.00/178	2.75/70	1.75/44	1.75/44
R100	10800/4909	M24x3	6x6/152x152	7.50/191	2.75/70	2.63/67	2.25/57
U9	900/409	-	3x3/76x76	1.00/25	-	-	-
U16	1600/727	-	4x4/102x102	1.00/25	-	-	-
U28	2800/1273	-	4x4/102x102	1.00/25	-	-	-
U36	3600/1636	-	6x6/152x152	1.50/38	-	-	-
U48	4800/2182	-	4x4/102x102	1.00/25	-	-	-
U100	10800/4909	-	6x6/152x152	1.50/38	-	-	-

UNISORB® Quantum PM™ Press Mounts



Quantum PM Press Mounts FOR HEAVY DUTY PRESSES

UNISORB *Quantum PM Press Mounts* for heavy duty presses eliminate the need to anchor machines to the floor. They solve impact-shock and vibration problems while providing precision leveling and alignment for trouble-free operation.

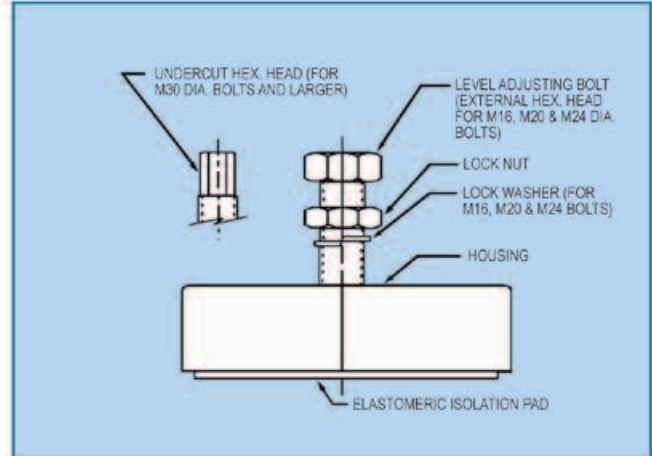
They have extra heavy-duty construction with broad bases and larger diameter leveling bolts. Designed for use with reciprocating or impact machinery, they provide close tolerance leveling adjustment. The mounts come with appropriately designed resilient isolation pads.

These self-contained leveling mounts simplify machinery installation. No drilling, lagging, adhesives, or shims are required. Accurate leveling is obtained simply by turning the leveling bolt. Once adjusted, a lock nut holds the adjustment secure. *Quantum PM Press Mounts* absorb shock and vibration while reducing noise. When properly installed, they eliminate excessive gib wear, die damage and other alignment related problems. They meet OSHA standards for anchoring machinery.

By properly utilizing UNISORB *Quantum PM Press Mounts*, excessive press motion can be eliminated and uneven weight distribution can be compensated for to prevent frame distortion, which is a major cause of early machine failure.

Quantum PM Press Mounts can usually be installed on existing shop floors. Heavy, unbroken concrete floors, preferably reinforced and resting on a good base, are desirable. Isolation features of the press mounts result in elimination of floor damage. At the same time they reduce interference of nearby equipment due to press shock and vibration.

A variety of shock pads, bolt lengths and bolt diameters are available to meet the requirements of almost any press application. Contact UNISORB Engineering for recommendations.



SPECIFICATIONS							
MOUNT SIZE	LENGTH		WIDTH		HEIGHT (MIN.)*		ADJUSTING BOLT DIA.
	in.	mm	in.	mm	in.	mm	
PM-61	7.00	178	4.50	114	2.50	64	M16 - M24
PM-81	8.00	203	5.88	149	2.50	64	M20 - M30
PM-101	10.00	254	7.88	200	3.25	83	M20 - M36
PM-121	12.50	318	9.00	229	3.50	89	M24 - M42
PM-161	16.00	406	12.50	318	4.50	114	M30 - M56
PM-201	20.00	508	16.00	406	6.00	152	M42 - M80
PM-261	26.00	660	22.00	559	7.50	191	M64 - M100
PM-301	30.00	762	24.00	610	9.50	241	M80 - M110
PM-321	32.00	813	24.00	610	10.50	267	M80 - M130
PM-351	35.00	889	20.00	508	11.00	279	M80 - M130
PM-381	38.00	965	25.50	648	13.00	330	M100 - M150
PM-421	42.00	1067	24.00	610	14.75	375	M100 - M150
PM-481	48.00	1219	36.00	914	15.50	394	M130 - M180

*Top of mount housing to floor.

Summary of Benefits

- Reduce installation costs
- Easy leveling and fast, accurate alignment
- Control shock and vibration
- Increase die life and decrease press wear
- Minimize expensive downtime and maintenance
- Achieve better press productivity
- Rugged high strength mount construction
- All elastomeric isolation pad configurations
- Elimination of anchor bolts
- Reduce need for special foundations
- Reduce operator fatigue
- Reduce motor loads
- Uneven floors accommodated
- Press "walking" prevented

For more information see our Quantum PM Press Mount Catalog available at www.unisorb.com.

UNISORB® Quantum IM™ Mounts DIE TURNOVER PADS



U.S. Patent No. 5,794,912

UNISORB'S line of **Quantum IM Mounts** offers substantial improvements over older models, and a quantum leap over the competition. These dynamic patented designs incorporate several features highlighted by the following.

UNISORB Quantum IM Mount features:

- Ductile iron housing (ASTM 65-45-12)
- Constant horizontal natural frequency
- Unequaled height adjustment range of 1 3/8" (35mm)
- High durometer anti-walking elastomeric pads
- Hex. head metric bolts (Grade 8.8)
- Electro-powder coat finish
- Competitive pricing worldwide

UNISORB **Quantum IM Mounts** provide optimum leveling and alignment in minutes, without anchoring either the machine or the mounts to the floor. Designed especially for injection molding and die casting machines, UNISORB **Quantum IM Mounts** dampen both vertical and horizontal impacts found in reciprocating machines. UNISORB **Quantum IM Mounts** meet applicable OSHA requirements.

UNISORB Quantum IM Mount benefits:

- Increased equipment life
- Simplified machine installation
- Fast, accurate alignment
- Reduced shock and vibration
- Elimination of anchor bolts
- Uneven floors accommodated
- Machine "walking" prevented
- Horizontal impact capabilities

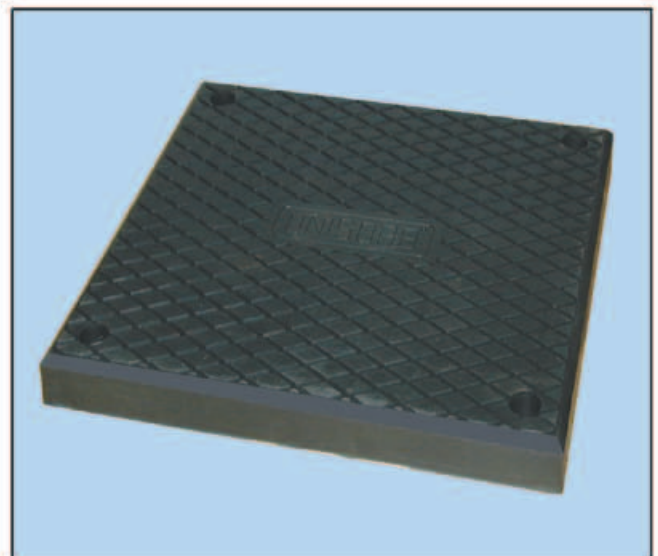
NOTE

**FULL
1 3/8"
(35MM)
HEIGHT
ADJUST.
RANGE**

SPECIFICATIONS

MOUNT SIZE	LENGTH		WIDTH		HEIGHT (MIN.)*		ADJUSTING BOLT DIA.
	in.	mm	in.	mm	in.	mm	
IM-51	5.50	140	3.50	89	2.50	64	M12 - M16
IM-61	7.00	178	4.50	114	2.50	64	M16 - M24
IM-71	8.00	203	5.00	127	2.50	64	M20 - M24
IM-81	8.00	203	5.88	149	2.50	64	M20 - M30
IM-101	10.00	254	7.88	200	3.25	83	M24 - M42
IM-121	12.50	318	9.00	229	3.50	89	M24 - M48
IM-161	16.00	406	12.50	318	4.50	114	M30 - M56

UNISORB DIE TURNOVER PADS



UNISORB DTP-24-250

UNISORB Die Turnover Pads are designed to replace creosote wood blocks or other flooring methods in die manufacture or repair areas. The 2' x 2' x 2 1/2" thick (610mm x 610mm x 64mm thick) pads provide a convenient size for handling and placement in floors for die handling areas. Pads are fastened to the floor using UNISORB Capsule Anchors for a long lasting installation.

UNISORB® RK FIXATOR® ANCHORING/ALIGNMENT SYSTEM

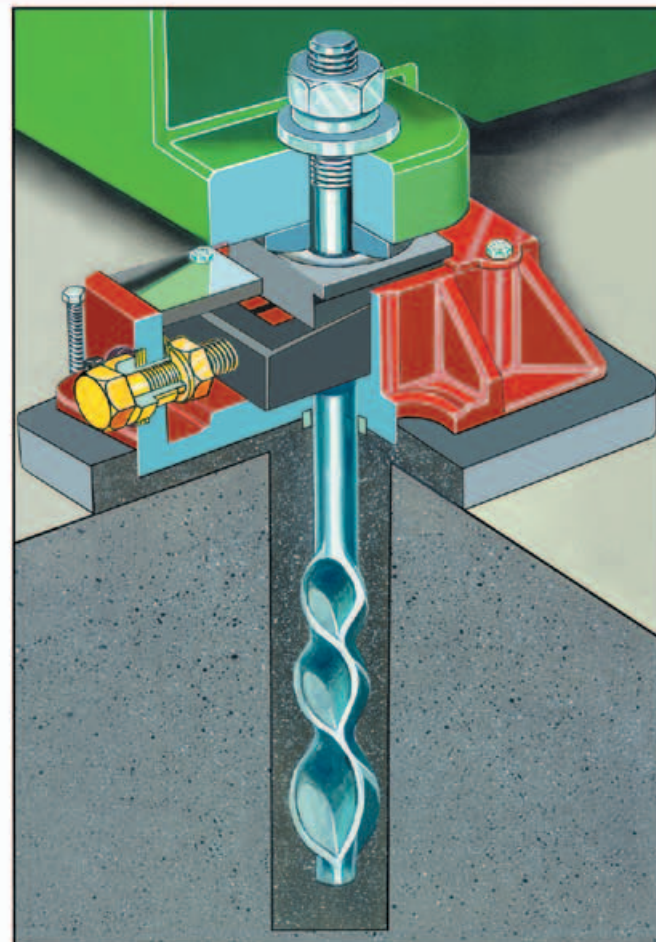
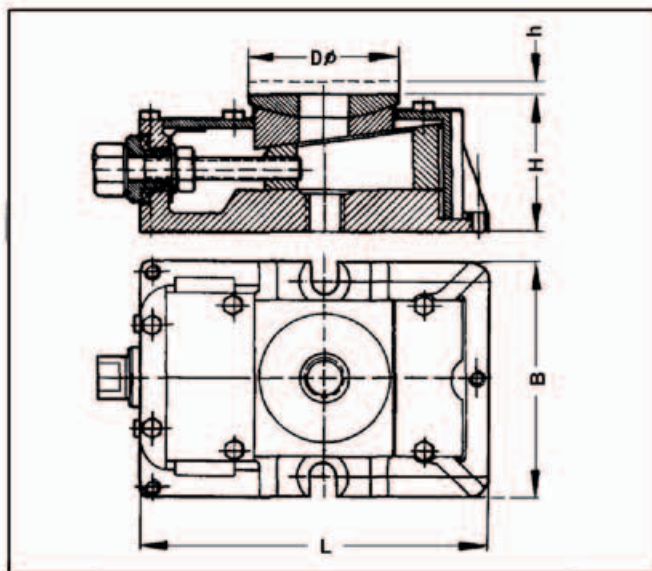
*Note: All Fixator information in this catalog
pertains to machine tool applications. Call
UNISORB about the use of Fixators for Power
Generation equipment*

RK FIXATOR SYSTEMS level and align machinery to tolerances of 0.0001" (0.0025mm), and make it possible to vary adjustments at any time, even under maximum loads requiring only a small hand wrench to adjust. Time consuming work and production losses normally associated with alignments are eliminated.

While affording the most rigid machine-to-foundation connection available, other benefits include a built-in compensation for uneven areas in foundations and machine bases. True vertical lift, made possible by a 3-piece wedge design to eliminate lateral movement as machines are raised or lowered, makes the RK FIXATOR the state of the art anchoring/alignment system.

INTEGRATED SYSTEM DESIGN

Though similar in appearance to conventional wedge-type leveling equipment, RK FIXATOR SYSTEMS differ significantly in concept and application. The RK FIXATOR is not a conventional leveling wedge system, and should not be treated as one. **Alignment adjustments are made after anchor nuts have been tightened.** In this way, the anchor bolts are tightened uniformly to predictable stress levels by adjusting the RK FIXATOR basic unit upward prior to the final alignment procedure, eliminating the customary torquing of anchor nuts. This gives substantial savings in time and effort normally required for the installation of sophisticated machine tools.



RK FIXATORS SAVE MONEY BY:

- Allowing faster completion of new installations
- Decreasing frequency of, and shorten time required for future realignments
- Maintaining machine accuracy for longer time periods
- Decreasing required maintenance
- Ensuring maximum machine productivity

BASIC DIMENSIONS					
MODEL NO.	D ø in./mm	L in./mm	B in./mm	H in./mm	h in./mm
RKI	2.36/60	6.89/175	4.13/105	2.17/55	.20/5
RKII	2.95/75	7.01/178	4.72/120	2.95/75	.20/5
RKIII	3.54/90	8.66/220	5.91/150	3.74/95	.24/6
RKIV	4.33/110	10.83/275	7.09/180	4.53/115	.31/8
RKV	5.91/150	13.58/345	9.06/230	5.31/135	.39/10
RKVI	7.87/200	16.54/420	10.63/270	6.50/165	.51/13

LOAD RANGES (PER MOUNT)		
MODEL NO.	*RECOMMENDED MACHINE DEAD WEIGHT lbs./N	MAXIMUM ALLOWABLE LIFTING LOAD lbs./N
RKI	2200/10000	20000/90000
RKII	4400/20000	26500/120000
RKIII	8900/40000	53500/240000
RKIV	13400/60000	80500/360000
RKV	26900/120000	157000/700000
RKVI	44900/200000	224500/1000000

*Contact UNISORB Engineering for application assistance.

For RK Fixator options and other detailed information see our UNISORB Fixator System Catalog available at www.unisorb.com.

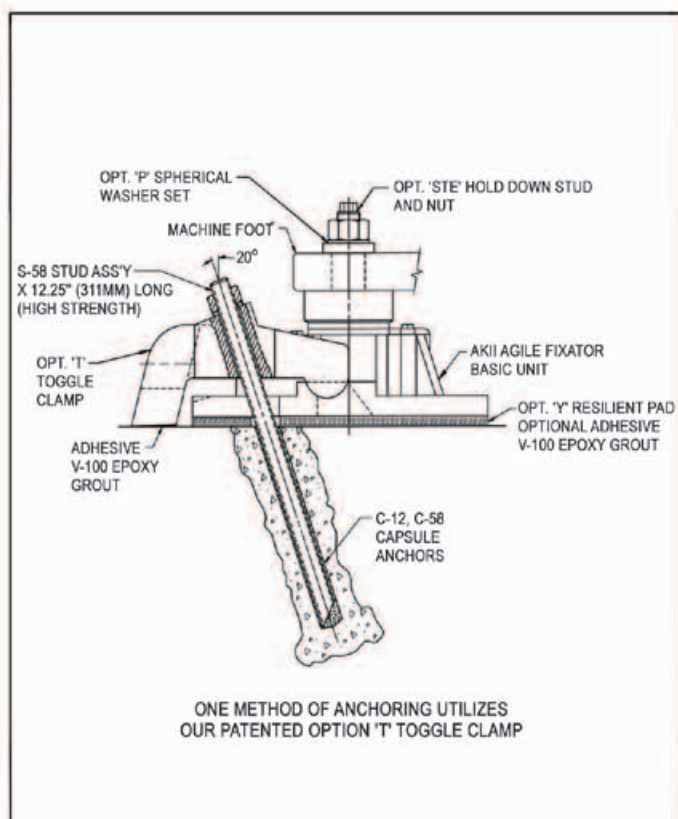
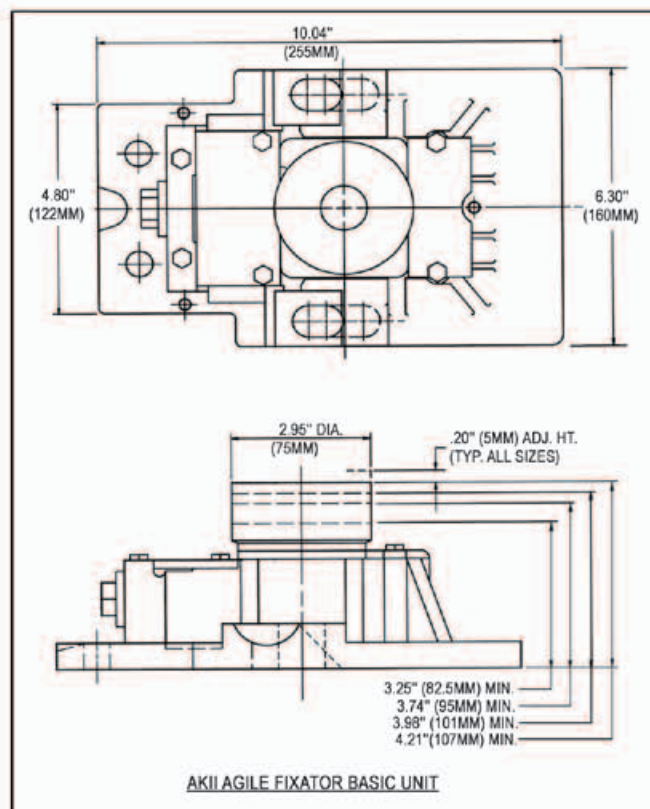


UNISORB'S Model AKII Agile Fixator has been developed specifically to meet industry's demand for a cost effective, truly "agile" machinery installation system.

The AKII Agile Fixator is intended for use in anchorless or anchored applications and offers the capability to be quickly converted from one to the other without disturbing or removing the machine base. The system can be used with resilient pads of varying stiffness and thickness to produce the vibration isolation load deflection characteristics required by the machine builder or user.

The AKII Agile Fixator's basic design incorporates the well-proven adjusting mechanism and clamping nut torque retention system of the Fixator into an updated overall mount design that permits installation in any of six fundamentally different ways.

The system may be easily converted to an anchored variation if required at a later date by the simple application of one of three available anchoring techniques.



Pre-lay out or core drilling is not required as the anchor holes are simply drilled through the mount base after installation. The use of the optional toggle clamp permits this to be accomplished even when overhanging machine components prevent access to the center or side anchor locations.

- No special foundation requirements
- Final installation approach may be determined on the job site
- The necessity for anchor layout drawings is eliminated
- Core drilling is eliminated (unless preferred)
- Anchored and non-anchored locations may be intermixed where necessary and are served by the same mounting system. Only one system needs to be specified



Expand your project team with UNISORB'S proven expertise.

- Industry's most experienced staff in machinery installation design
- Worldwide experience in all types of equipment
- Services ranging from conceptual design assistance to full turnkey project management
- Proven track record of innovative solutions to a wide range of installation problems
- Proven cost effective on both large and small projects

UNISORB'S engineering staff, the most experienced in the industry, can provide services ranging from conceptual design to complete construction ready packages including construction management and inspection services. Whether providing a simple design review or a complete turnkey package, our staff is uniquely qualified to identify the critical elements of your project, and assure that they receive the attention they deserve. Our decades of experience creating cost effective, successful installations is at your disposal in producing a quality installation which will impact your machine's performance throughout its useful life.

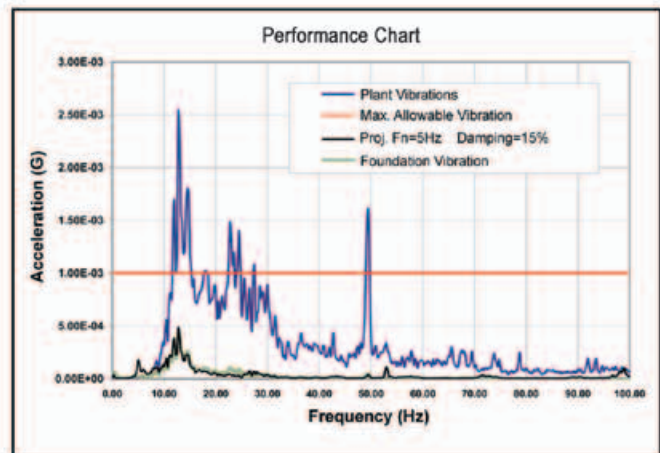


General design including civil/structural engineering



Construction documents and coordination

UNISORB provides engineered construction documents for general contractors to use for bidding and construction. These include complete project specifications to assure that critical construction issues are identified and completely defined. Also included is a detailed list of criteria for the inspection and approval process. This documentation assures a smooth, delay free project. We will provide complete construction management, coordination of contractors, and inspection services as desired, assuring minimum project completion times.



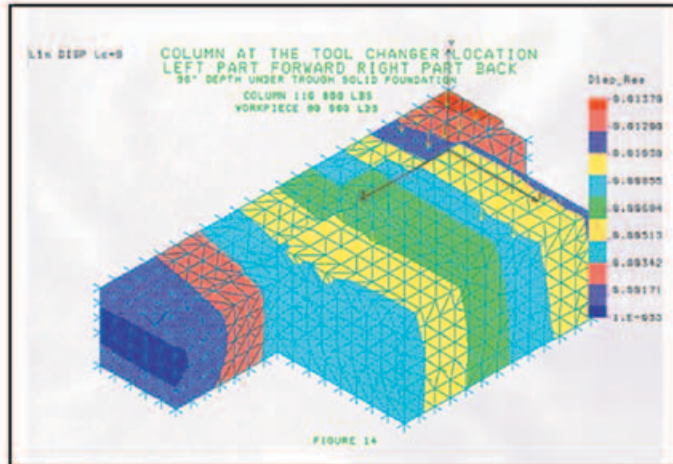
Site qualifications

UNISORB'S assistance with site qualifications assures that the performance of the finished installation is predictable. On site environmental vibration analysis, coupled with interpretation of basic soils and other data provides a basis for assuring that an acceptable shock and vibration environment is established without overspending or designing solutions to nonexistent problems.



UNISORB® VIBRALASTIC™ ISOLATION MOUNTS

PROFESSIONAL ENGINEERING SERVICES (CONT.)



Advanced engineering services

For more complex and critical installations where both machine and foundation are subject to large dynamic operating forces, UNISORB can provide detailed structural analysis including computer modeling and finite element analysis. This assures that unwanted bending and twisting in either the machine or foundation doesn't produce unexpected modes of vibration which adversely affect machine performance. These services are not restricted to new installations, and are often very useful in resolving problems with existing machines.

Why choose UNISORB? Bottom line...UNISORB will help get your equipment up and running faster, better and for less cost. It's our business and we are the leader! Our daily involvement in projects like yours eliminates long learning curves and assures that performance critical issues are addressed and not left to chance. Whether our involvement is at the design review or full turnkey project level, UNISORB is your best choice. Call us now at 888-4-UNISORB to discuss your project today.



Construction ready package



U.S. Patent No. 77/763,106

UNISORB presents Vibralastic Isolation Mounts, designed and engineered to provide vibration isolation for a wide variety of applications. Vibration has long been the cause of many problems within the mechanical world and has affected the performance and longevity of all types of equipment. When properly applied the line of Vibralastic Isolation Mounts will eliminate a very high percentage of vibrations transmitted to sensitive equipment. The mounts can also be applied to vibration sources to eliminate the transmission of disturbing vibrations to the surrounding environment.

Vibralastic mounts are available in a number of standard and stock configurations and have a wide range of load capacities. The mount line is specifically rated with precise deflection characteristics providing very predictable natural frequencies. The mounts are comprised of carbon steel and a blend of natural and synthetic rubbers to meet the industry's exacting specifications. The proprietary rubber blend, shape and durometer are the key to the predictability of the isolation properties of the mounts.

Standard configurations:

- Type 'VA' Mounts
- Type 'VE' Mounts
- Type 'VM' Mounts
- Type 'VAB' Mounts
- Type 'V-TO' & 'V-BU' Mounts
- Type 'VB' Mounts

Cross-reference chart and full catalog available upon request from UNISORB. An electronic version of our full Vibralastic catalog is also available on our web site at www.unisorb.com.

UNISORB® POWER GENERATION ENGINEERED PRODUCTS



Since 1982 UNISORB Installation Technologies has been a supplier of anchoring/alignment systems, leveling devices and grouting materials for steam turbine installations. Our strong background in this field, coupled with our successful track record, positions us as a leader in the industry. Our experience pertinent to this field includes power generation, process and manufacturing.

UNISORB is the nation's leader in the manufacturing of premium quality machinery installation systems. Our factory trained field representatives are available during installation and system start-up to assure that maximum performance is attained.

UNISORB supplies equipment for power generation equipment mounting in kit form. These kits are designed and furnished for each specific machine application. They include all necessary hardware and support equipment for a complete and successful installation. A typical kit will contain grout pocket forms, grout products, foundation embedments, leveling devices, anchor bolts and setting plates, as well as specialized tools required for major, alignment critical installations.

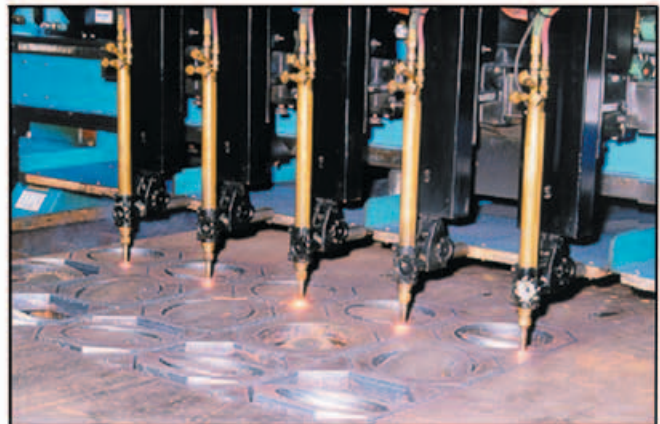
Our grout pocket forms are unique, and make placing grout pockets simple. The form is simply slid over the anchor bolt and secured with the top of the form even with the top of the foundation. After the foundation is poured and stripped, the form is simply removed from the concrete by pulling up on the eye nuts supplied with it. Your grout pocket is now ready for use.

Each kit has its own set of engineering drawings to provide the field staff with all the necessary instructions and documentation to install a quality mounting system for the customers. Another feature of UNISORB'S mounting systems is on site technical support. Our field engineers have what it takes to assist our customers with their machinery installation in a way that assures a *successful completion every time.*

The UNISORB Fixator System is utilized as the cornerstone of the mounting packages for steam turbine installations. This magnificent system is capable of aligning machinery to within .0001 of an inch (.002 millimeters), and in a far shorter time than was previously possible using other leveling devices. One of the key features of the Fixator is its capability of leveling the machinery after the anchor nut is tightened, using only a small hand wrench. (For more information on the Fixator see page 8 of this catalog.)

Needless to say, when you save time on installation you also save money. On some of the projects UNISORB power generation installation packages have been used on, time *savings of up to 80%* have been achieved. This amounts to significant money savings by our customers.

UNISORB uses the latest manufacturing techniques available for manufacturing hardware contained in the kits. This helps to assure high quality products - on schedule. In addition, UNISORB stocks an extensive inventory of kits for specific power generation equipment for our customers.



UNISORB uses latest manufacturing technology.



A large inventory of parts and kits are in stock.



UNISORB Grout Pocket Forms are unique.

UNISORB® POWER GENERATION ENGINEERED PRODUCTS

Proper packaging is an integral part of our policy to assure our customers will receive quality kits, with part identification. No expense is spared to supply the very best materials and workmanship on this phase of our business. UNISORB customers have been very pleased with our packaging procedures.



Packaging comes complete with part identification.



Only top quality goes into UNISORB packaging.

UNISORB has scores of satisfied customers who have taken advantage of our superior products and services over the years. Please consult with UNISORB's Power Generation Engineering Department for a list of these references.

For more information on UNISORB's power generation products call our engineers at 1-888-4-UNISORB.

PROJECTED COST SAVINGS

UNISORB Systems vs. Conventional Methods

- **REDUCED LABOR** - Savings of 300 to 500 man-hours on typical installations. Calendar savings of 9-14 days.
- **REDUCED PROJECT MANAGEMENT LABOR** - Fewer people are required on job sites; Fewer supervisory hours are required; Less personnel management required; Instructions and on-site technical support provided by UNISORB.
- **REDUCED ORDERING AND QUOTING REQUIREMENTS** - One source for all material requirements; Multiple source and component quotes are eliminated; UNISORB supplies materials to customer specifications.
- **REDUCED DESIGN TIME** - All embedments and grout pockets are designed; Foundation layout and component drawings are furnished and can be referenced on construction drawings.
- **REDUCED REWORK** - Increased ability to deal with out-of-spec foundation and site preparation work; Costly rework and associated delays are minimized.

UNISORB KIT



Ready to ship to your job.

UNISORB® LEV-L-INE® MACHINERY MOUNTS

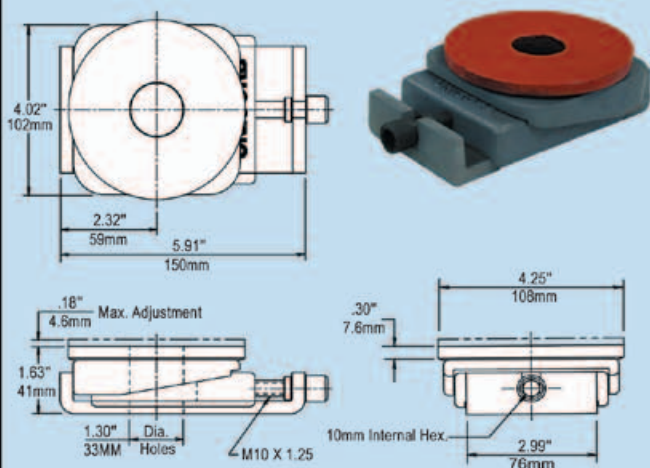
LEV-L-INE mounts, with their spherical aligning discs, provide true self-alignment with an absolutely even load distribution over the entire bearing surface. They are designed to compensate for uneven floor distortion found in most industrial plants, and may be used with or without anchor bolts.

- Floor line may be sloped but machine line is level
- Easily accessible, true vertical leveling adjustment
- Spherical aligning disc assures intimate contact and equal distribution of weight over entire bearing surfaces
- Mating surfaces are machined to provide quick, easy and permanent leveling
- Anchor bolt clearance hole permits bolting machine to floor

U.S. Patent No. 913,017 (All Lev-l-ine Mounts)

LEV-L-INE MODEL LL-7

Load Capacity: 7000 lbs. (3182 kg)

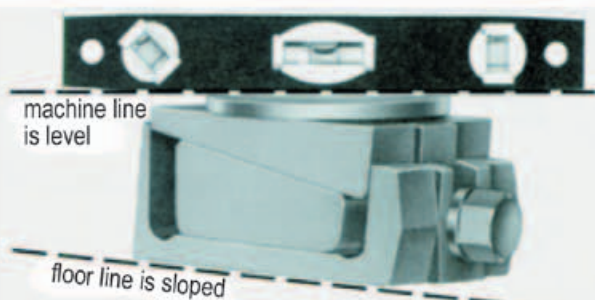


LL-7 MATERIAL SPECIFICATIONS:

MOUNTING PLATE, TOP WEDGE, BOTTOM LIFTING WEDGE, AND BASE: 65-45-12 DUCTILE IRON.
TENSILE STRENGTH: 65000 PSI (4548 kg/cm²) MIN.

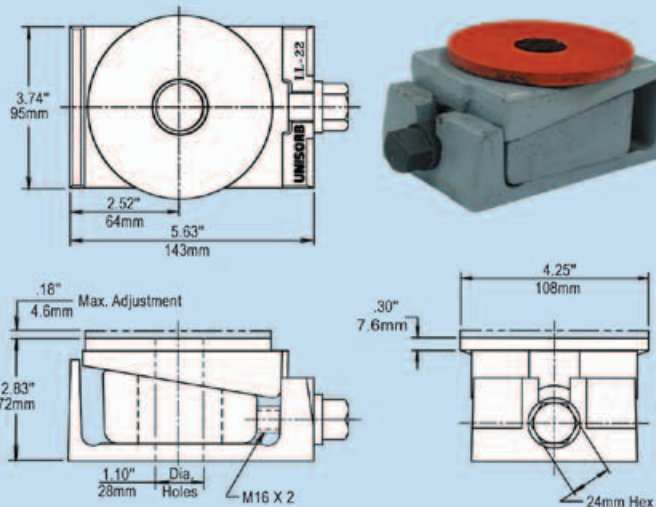
BOLT STOCK: AISI C 1215 STEEL.

LEV-L-INE MOUNTS COMPENSATE FOR UNEVEN FLOORS



LEV-L-INE MODEL LL-22

Load Capacity: 22000 lbs. (10000 kg)



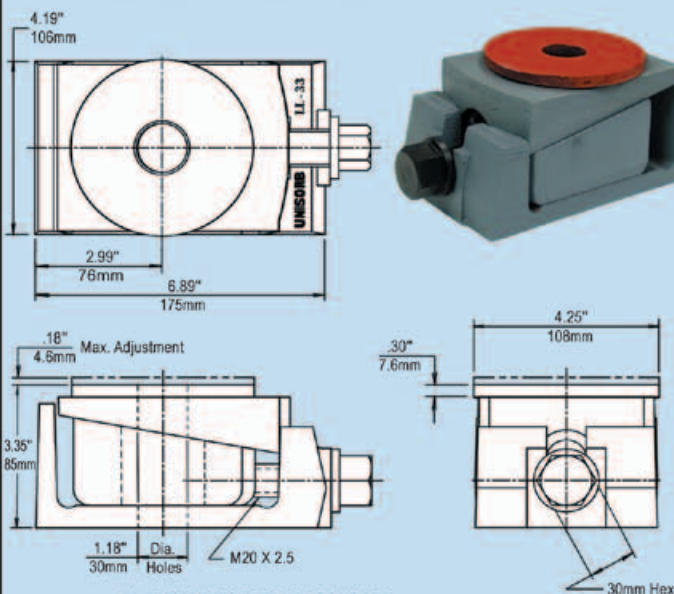
LL-22 MATERIAL SPECIFICATIONS:

MOUNTING PLATE, TOP WEDGE, BOTTOM LIFTING WEDGE, AND BASE: 65-45-12 DUCTILE IRON.
TENSILE STRENGTH: 65000 PSI (4548 kg/cm²) MIN.

BOLT STOCK: AISI C 1215 STEEL.

LEV-L-INE MODEL LL-33

Load Capacity: 33000 lbs. (15000 kg.)

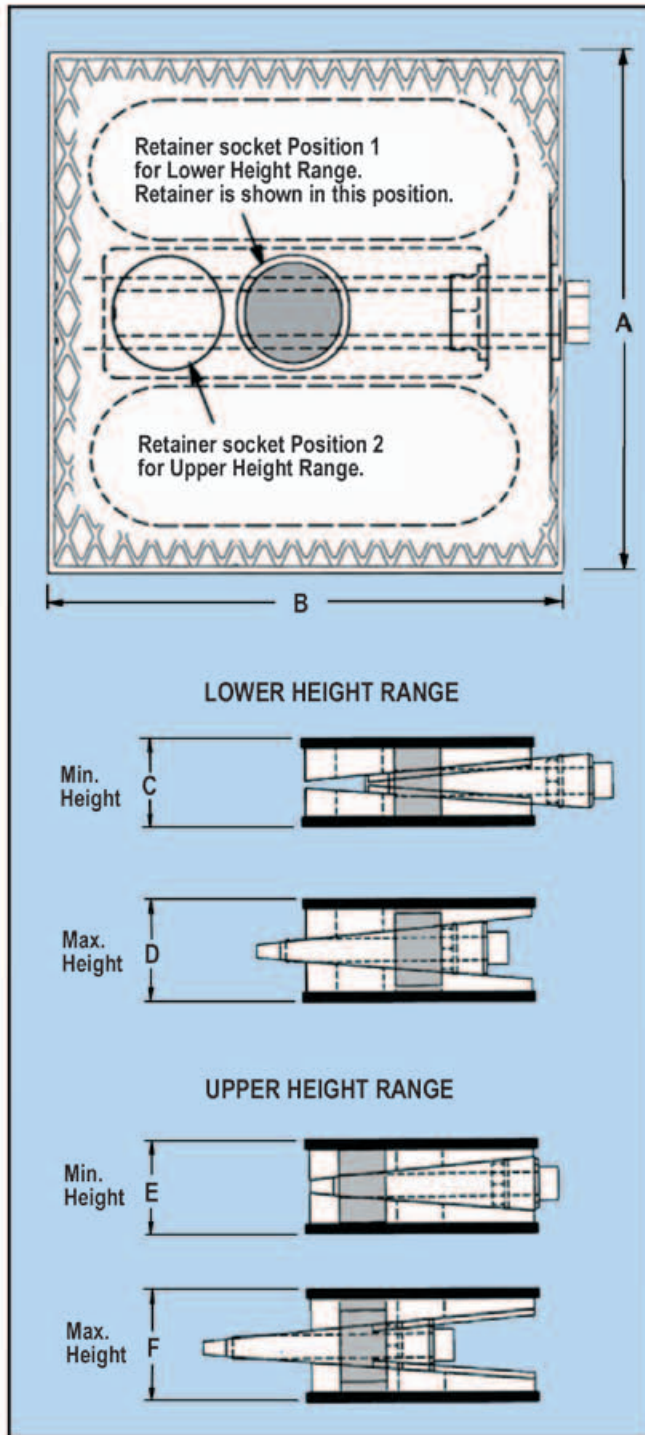


LL-33 MATERIAL SPECIFICATIONS:

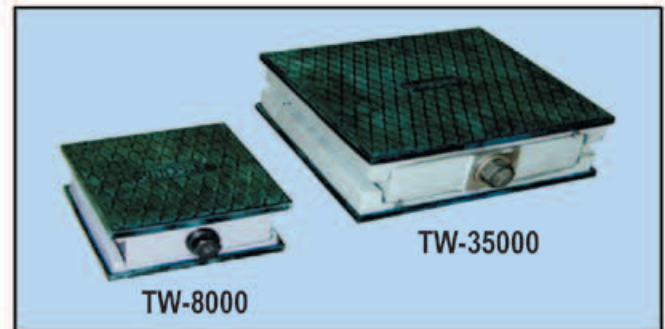
MOUNTING PLATE, TOP WEDGE, BOTTOM LIFTING WEDGE, AND BASE: 65-45-12 DUCTILE IRON.
TENSILE STRENGTH: 65000 PSI (4548 kg/cm²) MIN.

BOLT STOCK: AISI C 1215 STEEL.

**UNISORB®
TRI-WEDGE®
MACHINERY MOUNTS**



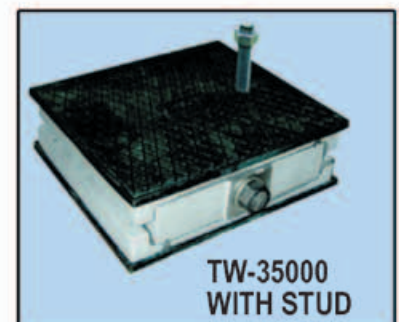
- Heavy duty machinery mount system
- Two height ranges in one mount
- Easily accessible side adjustment
- Use for all in-place alignment and leveling
- Pads provide vibration isolation
- Patented designs on mounts and pads



U.S. Patent No. 2,939,465

The UNISORB Tri-Wedge Mount series comes in two sizes. The TW-8000 and TW-35000 are load rated at 8000 lbs. (3636 kg) and 35000 lbs. (15909 kg) respectively. These similarly designed Tri-Wedge Mounts both utilize two stationary and one sliding wedge to provide mechanical lift for the mounts. An adjustment bolt moves the center wedge fore and aft between the stationary wedges to provide lift to the top wedge. Each model has height ranges based on the position of a retainer within the mounts. The retainer (shaded in the top left illustration) can be placed in one of two retaining sockets. Placing the retainer in the socket nearest to the adjusting bolt head moves the mount through the lower height range. Positioning the retainer in the rear socket moves the mount through the upper height range.

Both models may be used either with or without pads. The pads provide excellent isolation from vibrations between the machine base, the mounts and the floor. Each pad is recessed approximately 1/8 inch (3.2 mm) to allow for a secure fit over the edges of the top and bottom of the mounts. The thickness of the pads is approximately 1/4 inch (6.4 mm). The TW-35000 is available with an optional vertical stud as shown in the photo below. In addition to providing precision leveling capability, these mounts also will prevent machines from walking.



**TW-35000
WITH STUD**

SPECIFICATIONS

MOUNT SERIES	A in./mm	B in./mm	C in./mm	D in./mm	E in./mm	F in./mm
TW-8000	5.31/135	5.31/135	2.00/51	2.30/58.4	2.20/56	2.50/63.5
TW-35000	9.40/239	8.40/213	2.46/62.5	2.91/74	2.75/70	3.20/81
TW-35000 WITH STUD	9.40/239	8.40/213	2.52/64	2.91/74	2.75/70	3.08/78

All dimensions include pads, and may vary slightly between production runs.
Height dimensions shown are with no load.

UNISORB® INERTIA BLOCK VIBRATION ISOLATION IB-500 FOUNDATION ISOLATION SYSTEM

To realize the full potential of your production machinery, quality control or laboratory equipment, it is necessary to create an isolated environment that controls vibration and provides a rigid base on which to secure the equipment and obtain accurate alignment. This environment can be created effectively and permanently with the construction of an isolated inertia block.

An isolated inertia block foundation consists of a concrete mass with a suitable isolator. Together these provide a system natural frequency which will isolate the sensitive machine from vibrations occurring in the environment, and control the vibrations from a source machine.

The concrete mass also functions as a rigid anchoring base, required to assure permanent alignment of the machine. This rigidity has become increasingly important as many machine builders have replaced cast iron bases with weldments to accommodate the demand for more varied designs.

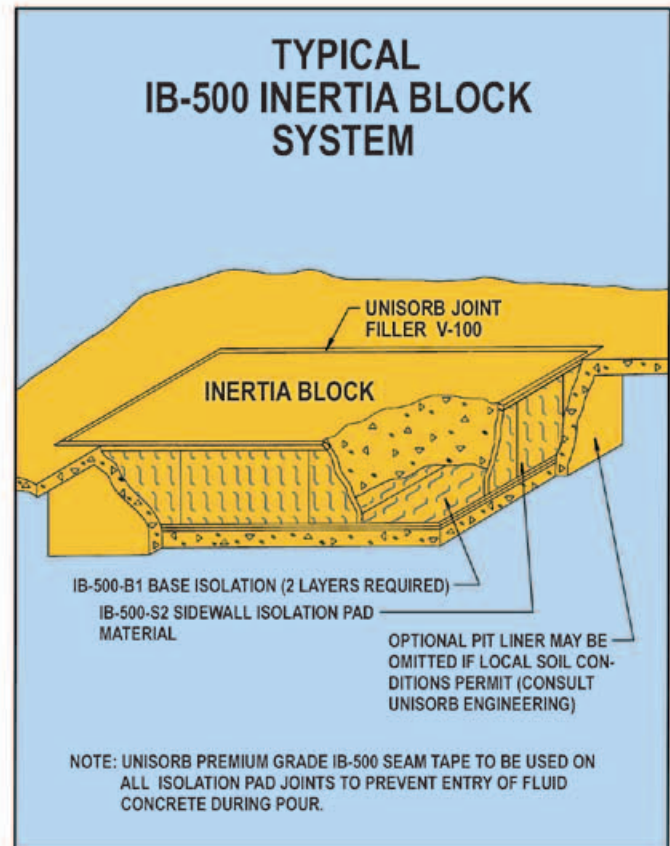
UNISORB Isolation Systems include:

IB-500 isolation pads designed to employ standard foundation construction techniques to isolate vibrations typical to the manufacturing environment.

GK Block foundation isolation, a high efficiency isolator for sensitive equipment or severe environments.

RD Foundation Insert System is used to contain one of UNISORB's low frequency vibration isolation products, while also providing leveling capability.

UNISORB® VIBRATION ANALYSIS SERVICES FOUNDATION ENGINEERING SERVICES



INERTIA BLOCK FOUNDATION ISOLATION

UNISORB isolation pad materials offer superior performance because they have been specifically engineered to provide optimum use of the inertia block foundation while using standard construction techniques. These products are unaffected by oils, coolants, cutting fluids and other liquids normally found in the industrial environment. UNISORB isolation pad materials are conservatively rated, providing a life expectancy which in most cases exceeds that of the machinery being installed.

The materials are manufactured in two densities: A less dense material, designated IB-500-S2, is used to isolate sidewalls of the inertia block. A more dense material, IB-500-B1 is applied to the base surface of the foundation (usually two layers). Both materials are manufactured in 1/2" (12mm) thick sheets and are used in layers where greater thickness is desired. The material is available from stock in 3' X 6' (914mm X 1829mm) sheets for fast delivery. Special sizes may be cut to exact dimensions at the factory or on the job site.

The isolation material is protected from moisture migrating from fluid concrete by a water resistant covering, which also provides a tough, abrasion and puncture-resistant surface.

Although there are several methods of installation, the proper approach depends primarily on the depth of the inertia block and condition of the soil. UNISORB's installation engineers offer assistance in determining suitable materials and procedures to meet specific inertia block requirements.

VIBRATION ANALYSIS SERVICES

Sensitive machines in severe environments may require an ambient vibration survey to determine exact site conditions. UNISORB stands ready to help you decide when this service is needed. We can work with the vibration analysis people to assure that the data collected is representative of the actual site conditions. UNISORB also has the capacity to perform on-site surveys of this nature. Typical surveys include a day at the site to collect data which is recorded for later analysis. The analysis can also be performed on site if necessary for immediate feedback. Contact UNISORB Engineering Department for details.

FOUNDATION ENGINEERING SERVICES

UNISORB has the capability of developing certified construction foundation drawings that are customized to meet equipment support requirements. UNISORB can also offer the option of unique construction techniques that have been developed to help reduce installation costs. A Finite Element Analysis (FEA) can be performed for each unique machine to assure that the dynamic characteristics of the foundation will be compatible with the machine's operation. UNISORB can also provide in-depth post installation machine diagnostic services to aid in the optimization of machine operations. Contact UNISORB Engineering Department for details.

LOW FREQUENCY FOUNDATION BLOCK

The GK Block is specifically used for isolating equipment where low interfering frequencies are encountered. They are typically used under concrete foundations supporting either source or sensitive machines. The highly specialized rubber compounds used, unique geometrical shape, and carefully controlled load deflection characteristics make the GK Block an excellent lower cost alternative to installations normally required to reach system natural frequencies as low as 3.5 Hz vertical and 1.5 Hz horizontal. GK Blocks are rated from 4,000 to 18,000 lbs. (1818 kg to 8182 kg).

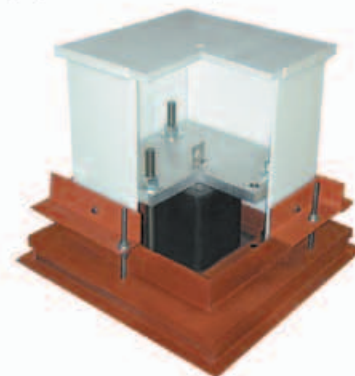
Examples of GK Block Applications Include:

- Coordinate measuring machines
- Precision optical equipment
- Precision grinders
- Vibrating conveyors
- Lab equipment
- Presses
- Equipment operating in environments of unusually severe shock and vibration conditions



RD FOUNDATION INSERT SYSTEM

The UNISORB RD Foundation Insert System provides an effective means of utilizing UNISORB highly efficient low frequency passive isolators. The RD Foundation Insert is a case in place access point enabling installation of a variety of isolators specifically selected for each project environment. UNISORB Professional Engineering determines the number of RD Inserts required per project as the desired load is controlled at each RD isolator location. We assure proper loading of each isolator by means of adjustment within the RD Foundation Insert. This adjustment also enables precision elevation alignment to the surrounding floor ensuring a smooth transition. The RD Foundation Inserts are provided in an engineered kit that includes all required materials with the exception of the concrete, simplifying the construction process and reducing construction costs.



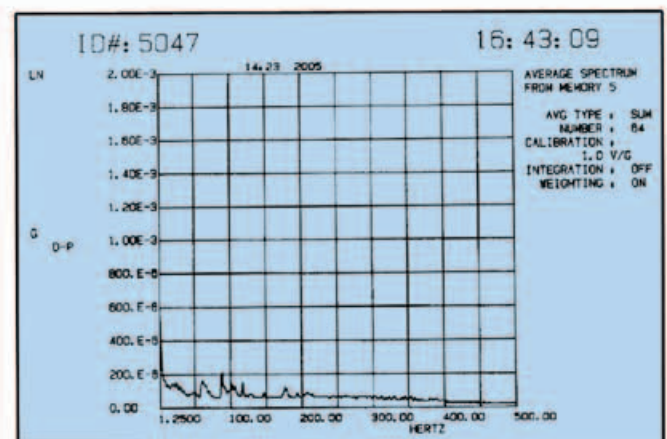
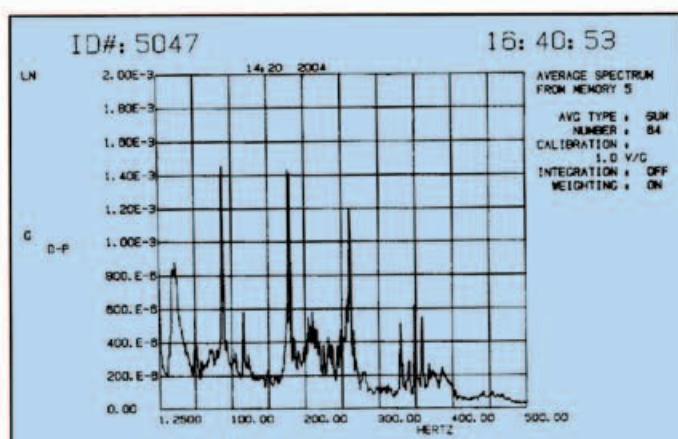
U.S. Patent No. 6,739,568

TYPICAL RESULTS OF ISOLATED INERTIA BLOCK FOUNDATION ENGINEERING VIBRATION ANALYSIS

The charts show a vibration survey performed by UNISORB on an existing isolated inertia block installation. A grinding machine performing a rough grind operation on a crankshaft was installed on an inertia block isolated as shown on the typical IB-500 inertia block installation details. During the rough grind the machine generated vibrations were measured on the foundation. The left chart shows an average of 64 of these measurements.

Vibration measurements were also taken on the concrete floor immediately surrounding the isolated foundation. The right chart shows an average of 64 of these measurements which were also taken simultaneously to measurements on the left chart.

A comparison of the two charts is a graphic illustration of the high degree of isolation efficiency provided by UNISORB inertia block isolation materials.



UNISORB® V-1® NON-SHRINK GROUT

UNISORB V-1 NON-SHRINK GROUT

- Pre-mixed
- Extra high strength
- Non-shrinking
- Flowable (may be pumped and vibrated)
- High yield
- Meets ASTM C 1107



Yield per 48 lb. (21.77 kg) bag: .40 Ft³ (.011 M³)

V-1 Grout is a cement-based, flowable, non-shrink grout that develops extremely high compressive strength in a short period of time. It can be used in any application requiring high strength support and anchoring of machinery.

FAST CURING FOR MINIMUM DOWN TIME

At an ASTM flow index of 109, V-1 Grout has a strength of approximately 6,124 psi (429 kg/cm²) in 24 hours. This strength increases gradually and reaches its maximum of 10,197 psi (714 kg/cm²) at 28 days.

HIGH QUALITY, NON-CORROSIVE, NON-SHRINKING

V-1 Grout is composed of several carefully blended size ranges of pure silica sand, the best quality, high early curing portland cement and a proprietary controlled expansion compound. V-1 Grout is unique in that it can be extended by adding up to 50% (by weight) pea gravel, thus substantially reducing material costs on larger pours.

V1-Grout is chloride-free, has controlled expansion and will not shrink below its original mixing volume after the recommended water ratio is added. Controlled expansion ensures a full bearing contact between machine base and foundation.

IMPORTANT ADVANTAGES

Because of its high load carrying capacity, UNISORB V-1 Grout withstands extremely high unit loads, distributing them over a large area. Weaker materials, such as concrete and inferior grout may develop structural flaws when subjected to concentrated loads that weaken the machine-foundation connection. Controlled expansion precludes the possibility of shrinkage related voids so that full bearing contact is ensured between the machine and its foundation. V-1 is an excellent choice where high ambient temperatures will be encountered. It also exhibits superior resistance to attack by strong acids and bases.

V-1 Grout exceeds ASTM 1107 and Corps of Engineers Specification for Non-Shrink Grout CRD-C 621. Test results are available on request.

UNISORB® CONCRETE REPAIR COMPOUND (UCRC)

UNISORB CONCRETE REPAIR COMPOUND (UCRC)

- Pre-mixed
- Fluid consistency
- Feather edges
- Fast set
- Resume normal traffic in 1 hour or less
- Stronger than concrete
- Self-sealing
- Conveniently packaged: 20 & 50 lb. (9.09 & 22.73 kg) pails; 50 lb. (22.73kg) bags
- Extended set formula available for long working time in hot climate



Yield: 20# (9.1 kg.) Pail= .16 Ft³ (.004 M³)
50# (22.7 kg.) Pail= .40 Ft³ (.011 M³)
50# (22.7 kg.) Bag= .40 Ft³ (.011 M³)

UNISORB Concrete Repair Compound (UCRC) is designed for use in making fast repairs of concrete floors, aisle ways and drives. It is also excellent for patching and filling chuck holes and for quick setting of anchors.

Depending on the application, repairs made with UNISORB Concrete Repair Compound (UCRC) can be used in as little as one hour. After a three hour cure it is as strong as most concrete floors, 3,900 psi (273 kg/cm²) compression.

UNISORB Concrete Repair Compound (UCRC) is self-sealing and requires no sealant when used out-of-doors, unlike most other cementitious products.

PHYSICAL PROPERTIES		
PHYSICAL PROPERTIES	V-1 NON-SHRINK GROUT	UNISORB CONCRETE REPAIR COMPOUND (UCRC)
Compressive Strength		
24 Hours	6565 psi (459.4 kg/cm ²)	5200 psi (363.9 kg/cm ²)
28 Days (Ultimate)	11875 psi (831 kg/cm ²)	8000 psi (559.8 kg/cm ²)
Tensile Strength (28 Days)	568 psi (39.7 kg/cm ²)	476 psi (33.3 kg/cm ²)
Flexural Strength (28 Days)	1700 psi (119 kg/cm ²)	1405 psi (98.3 kg/cm ²)
Allowable Thickness (Typ.)	3/4" - 2" (19mm - 51mm)	1/16" - 2" (1.6 mm - 51 mm)
Working Time	45 - 60 minutes	11 minutes
Yield	.83 Ft. ³ /100 lbs. (.023 M ³ /45.5 kg.)	.80 Ft. ³ /100 lbs. (.023 M ³ /45.5 kg.)

SUGGESTIONS FOR CEMENTITIOUS GROUTING

Grouting should be done following established concreting procedures in accordance with the recommendations of the American Concrete Institute.

PREPARATION - All grout contact surfaces must be cleaned of all oil, grease, scale, etc. Unsound concrete should be chipped out, leaving surface level, but rough.

ALL GROUT CONTACT SURFACES SHOULD BE PRE-SOAKED THOROUGHLY FOR 24 HOURS PRIOR TO GROUT PLACEMENT.

This will insure that the existing foundation does not pull water from the newly placed grout at a rapid rate, which could interfere with proper curing. Excess standing water should be removed prior to grout placement. This pre-soaking requirement is particularly important when working with new "green" foundations or floors.

FORMING - Must provide for rapid continuous placement of grout. Adequate clearance for grout placement and head must be provided. Adequate venting to prevent air entrapment must also be provided. A minimum grout thickness of 1 1/4" (31.8 mm) under base plates is required.

MIXING - V-1 grout can be mixed in a concrete mixing pan or in an agitator-type power mixer. Follow water mixing ratio recommended on the bag.

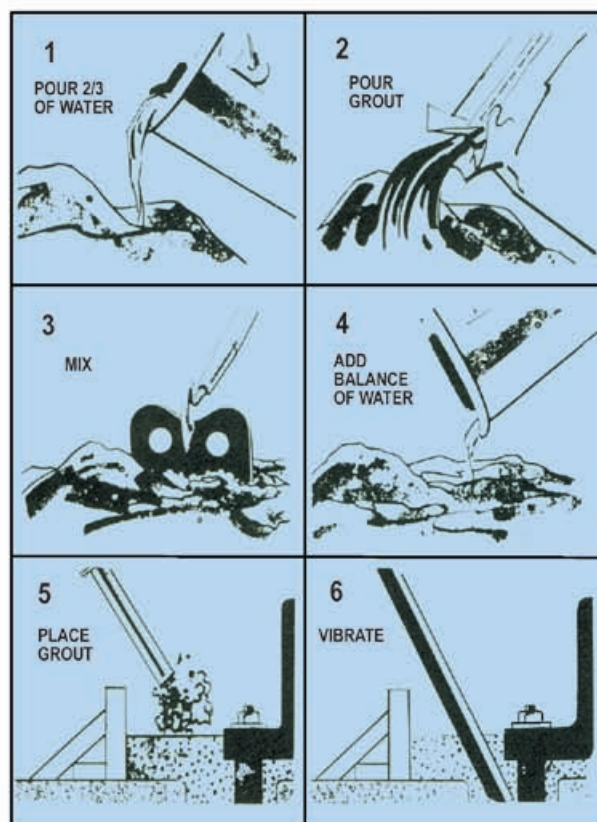
MIX AS FOLLOWS - Add 2/3 water requirement. Add grout, mix partially, then add remainder of water and mix thoroughly for 2-3 minutes.

PLACEMENT - V-1 can be placed by pouring or pumping. It is recommended that the fluid material be rodded thoroughly or vibrated to minimize the possibility of air being trapped. Place grout from one side of cavity so it flows uniformly to adjacent and opposite sides.

CURING - Forms may be removed after initial set (3 to 4 hours). At this point, final finishing may be done. No capping or painting is required.

PREVENT RAPID WATER LOSS BY COVERING WITH WET BURLAP FOR 3 TO 7 DAYS AFTER INITIAL SET. (CALL UNISORB ENGINEERING WITH QUESTIONS.)

CURING, SEALING, AND BONDING COMPOUNDS ARE NOT REQUIRED FOR MOST APPLICATIONS.



TEMPERATURE CONSIDERATIONS

The higher the temperature, the faster the set; the lower the temperature, the slower the set. Normal winter and summer concreting procedures should be observed in temperatures below 40°F (4.4°C) and above 90°F (32.2°C).

Physical properties shown are the result of independent laboratory testing performed per industry recognized test procedures. Laboratory properties aid in determining suitability of the product for the intended application. Field test results may vary due to procedures or ambient conditions such as temperature and humidity. Laboratory reports are available on request.

UNISORB® STANDARD V-100® EPOXY GROUT

STANDARD V-100 EPOXY GROUT

- Permanent
- Easy installation
- Fast cure
- Minimum material usage
- Less expensive than cementitious grouts for many applications
- Withstands severe shock loads
- Easy repair of foundations and pulled anchor bolts



Yield per 11 lb. (5 kg) Kit: .10 Ft.³ (.003 M³)

Yield per 22 lb. (10 kg) Kit: .21 Ft.³ (.006 M³)

Yield per 55 lb. (25 kg) Kit: .53 Ft.³ (.015 M³)

UNISORB Standard V-100 Epoxy Grout is a two-component, 100% solids, filled epoxy system that cures very rapidly at normal room temperature. It sets up a tough, durable impact and vibration resistant grout which eliminates chronic re-grouting common to many installations. Pours as thin as 1/4" (6.4 mm) and as thick as 1" (25 mm) unconfined, up to 1 1/2" (38 mm) under plate may be made with Standard V-100 Epoxy Grout. It is a proven method of grouting, re-grouting, and anchoring hard-to-hold machinery.

Standard V-100 Epoxy Grout can be used to grout shears, lathes, punches, presses, grinding machines, machine tools, compressors, pumps, engines, generators, motors, crushers, grinding mill bases, truck and track scales, column bases, sole plates, rails, hoist bases, canning machinery, etc.

UNISORB® DEEP POUR V-100® EPOXY GROUT

DEEP POUR V-100 EPOXY GROUT

UNISORB Deep Pour V-100 Epoxy Grout is made for grouting applications where maximum cross sections are involved and where minimum machinery down time can be allowed. Pours as deep as 8" (203.2 mm) can be made with the grout while providing high flowability without compromising the strength of the installation. The Deep Pour Grout is resistant to oils, greases, acids, alkalis and solvents to a much greater degree than cementitious materials. Tensile and flexural strengths are at least eleven times that of concrete and the compressive strength is about four times that of concrete.



Shipped in pre-measured one cubic foot (.028 cu. M) kits, the grout kits contain individually packaged components: 1. Base Resin; 2. Hardener; 3. Two bags of Blended Aggregate. The hardener and aggregate are mixed with the base resin at the job site.

The grout is self-leveling and will flow into spaces under machines to fill voids completely before solidifying. At 70° F (21°C), an 8" (203.2 mm) pour of epoxy grout will be ready to use in 24 hours @ 11,000 psi (769.8 kg/cm²).

The Deep Pour V-100 Epoxy Grout provides a cost effective solution to large volume, thick cross section pours in grouting, re-grouting and in anchoring hard-to-hold machinery. The three part formula is easy to mix on the job site and the formulation simplifies most equipment installations. Up to 14,000 psi (979.7 kg/cm²) compressive strengths may be attained.

PHYSICAL PROPERTIES	STANDARD V-100	DEEP POUR V-100
Compressive Strength		
6 Hours	9000 psi (629.8 kg/cm ²)	—
3 Days	15250 psi (1067.2 kg/cm ²)	11600 psi (811.8 kg/cm ²)
7 Days (Ultimate)	16500 psi (1154.7 kg/cm ²)	14000 psi (979.7 kg/cm ²)
Tensile Strength	4800 psi (335.9 kg/cm ²)	1536 psi (107.5 kg/cm ²)
Flexural Strength	6800 psi (475.9 kg/cm ²)	4600 psi (321.9 kg/cm ²)
Allowable Thickness (Typical)	1/4" - 1" (6.4 mm - 25 mm)	3" - 8" (7.6 mm - 203.2 mm)
Working Time	10 - 15 minutes	60 minutes
Yield Per Kit	See Text Above	1 Ft. ³ (.028 M ³)

PHYSICAL PROPERTIES	DCR V-100	ADHESIVE V-100
Compressive Strength		
6 Hours	11200 psi (783.8 kg/cm ²)	—
3 Days	16700 psi (1168.6 kg/cm ²)	—
7 Days (Ultimate)	17000 psi (1189.6 kg/cm ²)	14000 psi (979.7 kg/cm ²)
Tensile Strength	3000 psi (209.9 kg/cm ²)	5200 (363.9 kg/cm ²)
Flexural Strength	6000 psi (419.9 kg/cm ²)	11000 psi (769.8 kg/cm ²)
Allowable Thickness (Typical)	3/4" - 8" (19mm - 203.2 mm)	1/32" - 1/4" (.79 mm - 6.4 mm)
Working Time	40 minutes	45 minutes
Yield Per Kit	1 Ft. ³ (.028 M ³)	.26 Ft. ³ (.007 M ³)

For detailed grouting information see our UNISORB Grouting Products Catalog available at www.unisorb.com.

UNISORB® DCR V-100® GROUT (ACID RESISTANT) EPOXY GROUT ADHESIVE V-100® EPOXY GROUT

UNISORB DCR V-100 (ACID RESISTANT) EPOXY GROUT

UNISORB DCR V-100 (Acid Resistant) Epoxy Grout is a three component, 100% solids epoxy resin system. It is specifically designed for applications requiring high mechanical strength due to high unit loading typical in die cast rail and crane rail systems. Its tremendous compressive strength characteristic makes it ideally suited for in-plant rail installations of all types. It is chemically inert, and therefore resistant to Hydrochloric Acid, Sulfuric Acid, Nitric Acid, Sodium Hydroxide, TSP Detergent and Kerosene.

UNISORB DCR V-100 (Acid Resistant) Epoxy Grout is formulated for medium thickness pours. It is recommended for applications varying from approximately 3/4" (19 mm) to 8" (203.2 mm) cross sections. Flow characteristics of DCR V-100 allow easy placement within this thickness range. Conveniently packaged in .50 Ft.³ (.014 M³) and 1 Ft.³ (.028 M³) kits.

UNISORB ADHESIVE V-100 EPOXY GROUT

- Paste consistency
- Bonds to most surfaces
- One to one mix ratio
- Short cure time

This is a general purpose industrial adhesive for uses in bonding, filling, patching and in temporary and permanent machinery installations.

A two gallon (7.6 liter) kit consists of two one gallon (3.8 liter) cans providing .26³ Ft.³ (.007 M³) of material. With a 1:1 mix ratio you need use only as much as is required. Reseal the cans of unmixed adhesive for future applications.

UNISORB JOINT FILLER V-100

- Remains flexible
- Seals out liquids
- Tough and puncture resistant
- Keeps out chips and debris
- Promotes good housekeeping
- Convenient kit includes mixing paddle, pail, resin and hardener

Yield: .26 Ft.³ (.007 M³)

Recommended to fill and seal the exposed top edge of UNISORB foundation isolation materials. Also useful to fill and seal saw cut control joints in concrete floors.

SPECIALIZED V-100 EPOXY GROUTING PRODUCTS

V-100 epoxy grouting products are also available with these special features:

Low-Temp	Air Temperatures from 25°F (-3.9°C) to 65°F (18.3°C)
Hi-Temp	Up to 325°F (162.8°C) Service Temperature
Xtra-Temp	Up to 425°F (218.3°C) Service Temperature
CR Hi-Flow	For indoor or outdoor crane rail applications where extreme loads are encountered.

UNISORB® JOINT FILLER V-100® GROUT FORMS AND SEALANT

UNISORB GROUT FORMS AND SEALANT



UNISORB Grout Forms are designed to reduce the time required to pour grouting materials for machinery mounting bases. The easy-to-use plastic Grout Forms eliminate on-site forms construction while providing for uniformity in size, shape and thickness of poured grout bases. Forms are easy to remove after grout has set by simply cutting the plastic form with a knife and removing.

Square Grout Forms are available in 9" (228.6 mm) and 11" (279.4 mm) sizes. A 12" x 15" (304.8 mm x 381 mm) rectangular form is also available. The 9" (228.6 mm) forms are available in heights up to 8" (203.2 mm) and are designed for use with UNISORB Model RK-I Fixators. The 11" (279.4 mm) forms are made in heights up to 10" (254 mm) and are for use with UNISORB Model RK-II and RK-III Fixators. The 12" x 15" (304.8 mm x 381 mm) forms are available in heights up to 11" (279.4 mm) and are for use with Model RK-IV and RK-V Fixators.

Supplied with the Grout Forms is a high-tack butyl rubber sealant in roll form which is applied to the base of the Grout Forms. When the Grout Forms are pressed into position on a clean, dry foundation the sealant prevents the grout from leaking under the form. Sealant requires no cure time and grout can be poured immediately after forms are in position. Application temperature for the sealant is from 20°F (-6.7°C) to 120°F (48.9°C). Excess sealant can be removed from cured grout with mineral spirits.

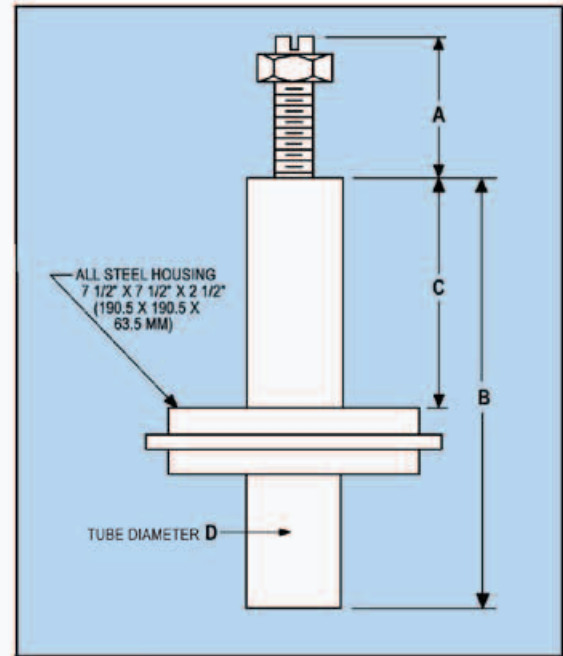
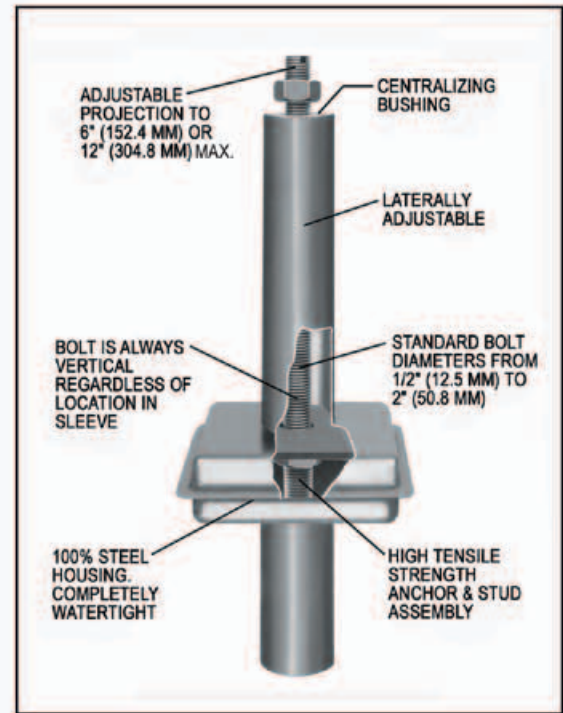
Grout Forms assure excellent results when used with all UNISORB Grouts.

For more detailed information on the above products see our UNISORB Grouting Products catalog available at www.unisorb.com.

UNISORB® JAKEBOLT® HEAVY DUTY ANCHOR BOLTS

Heavy Duty JAKEBOLTS offer a truly cost effective way to provide strong, problem-free, high quality anchors for virtually any concrete foundation/machinery application. They are designed to be hung from a template or welded directly to reinforcing steel, then cast in place during new foundation construction.

Constructed entirely of steel, the Heavy Duty JAKEBOLTS are tough, durable, and MIG welded watertight to prevent contamination of internal components during installation. Each JAKEBOLT comes supplied with a centralizing bushing which doubles as a seal and protects against contamination during grouting. JAKEBOLTS are manufactured with retractable studs to allow a "Clear Floor" condition at any time.



Anchor studs can be adjusted to project above the floor from 0" to 12" (0 mm to 304.8 mm), depending on the bolt specified for the installation. The entire internal anchor assembly can be adjusted laterally as well as vertically to compensate for normal construction variances in both hole location and machine foot thickness.

The Heavy Duty JAKEBOLT incorporates 90,000 psi (6.298 kg/cm²) tensile strength steel in the bolts. The all-steel anchor assembly is designed for service under the most severe conditions. Special versions of the Heavy Duty JAKEBOLT are available upon request by consulting UNISORB Engineering.

SPECIFICATIONS					
Model Bolt Size (Inches only)	Projection Above Floor "A"	Over-All Length "B"	Top Tube Length "C"	Tube Diameter "D"	Total Bolt Centerline Movement
	Inches Millimeters	Inches Millimeters	Inches Millimeters	Inches Millimeters	Inches Millimeters
1/2 x 6	0-6	20 1/4	11 1/2	2 1/2	1 3/4
	152	514	292	64	45
5/8 x 6	0-6	20 1/4	11 1/2	2 1/2	1 1/2
	152	514	292	64	38
3/4 x 6	0-6	20 1/4	11 1/2	2 1/2	1 1/2
	152	514	292	64	38
7/8 x 6	0-6	20 1/4	11 1/2	2 1/2	1 1/4
	152	514	292	64	32
1 x 6	0-6	20 1/4	11 1/2	2 1/2	1 1/4
	152	514	292	64	32
1 1/4 x 6	0-6	20 1/4	11 1/2	2 1/2	1
	152	514	292	64	25
1 1/2 x 6	0-6	20 1/4	11 1/2	2 1/2	3/4
	152	514	292	64	19
1 3/4 x 6	0-6	26 3/4	18	3 1/4	1 1/4
	152	680	457	83	32
2 x 6	0-6	26 3/4	18	3 1/4	1
	152	680	457	83	25.4
5/8 x 12	0-12	26 1/4	11 1/2	2 1/2	1 1/2
	305	667	292	64	38
3/4 x 12	0-12	26 1/4	11 1/2	2 1/2	1 1/2
	305	667	292	64	38
7/8 x 12	0-12	26 1/4	11 1/2	2 1/2	1 1/4
	305	667	292	64	32
1 x 12	0-12	26 1/4	11 1/2	2 1/2	1 1/4
	305	667	292	64	32
1 1/4 x 12	0-12	26 1/4	11 1/2	2 1/2	1
	305	667	292	64	25
1 1/2 x 12	0-12	26 1/4	11 1/2	2 1/2	3/4
	305	667	292	64	19
1 3/4 x 12	0-12	32 3/4	18	3 1/4	1 1/4
	305	832	457	83	32
2 x 12	0-12	32 3/4	18	3 1/4	1
	305	832	457	83	25

CASE HISTORY



JAKEBOLT ANCHORS

A large metalworking facility involved in the manufacturing of oil field equipment installed their machines using UNISORB Heavy Duty JAKEBOLT Anchors. JAKEBOLTS are installed when the foundations are poured. This approach offered the following advantages over previously used methods.

- No expertise in grouting techniques are required by the installation crew
- The foundation does not require special preparation such as pre-cast holes and pre-wetting
- There is no time delay to allow the grout to cure when setting the machines

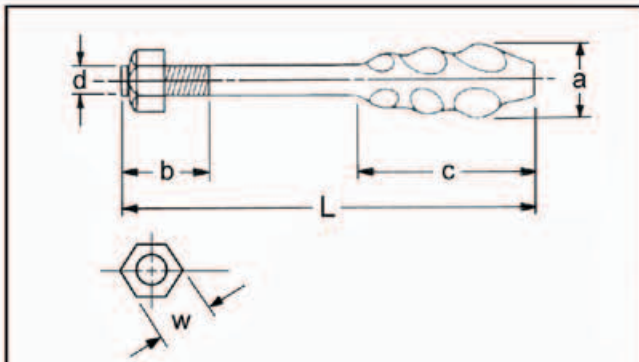
Several machines have been installed successfully using this method and the company has been very satisfied with the results. Use of all-steel Heavy Duty JAKEBOLTS has become the standard installation method for this company.

Made from high quality forged steel, VECTOR BOLTS have a series of angular facets which resolve vertical stress forces into a cone-shaped pressure pattern. An advantage of this unique design is the increased contact area between the bolt and the grout. The wedge shaped design on the bottom of the bolt transfers the tensile load of the stud into a lateral compressional load in the foundation assuring maximum pull out strengths. The increase in load transfer to the foundation results in a reduction of the embedment depth required to obtain full strength of the anchor. This reduction in required embedment depth lowers the installation cost by reducing the core drilling and grouting requirements.

VECTOR BOLTS are available in diameters and lengths shown below in a 90,000 psi (6,298 kg/cm²) minimum tensile strength material.



VECTOR ANCHOR BOLTS



SPECIFICATIONS

TYPE	MM INCH	BASIC DIMENSIONS						STANDARD LENGTH 'L'					
		d	b	a	c	w							
EM 12	MM	12	30	24	70	19	150	200	—	—	—	—	—
	INCH (REF.)	1/2	1-3/16	1	2-3/4	.75	6	8	—	—	—	—	—
EM 16	MM	16	40	32	90	24	150	200	255	300	355	—	—
	INCH (REF.)	5/8	1-5/8	1-1/4	3-1/2	.94	6	8	10	12	14	—	—
EM 20	MM	20	50	40	100	30	200	255	300	350	410	460	—
	INCH (REF.)	3/4	2	1-1/2	4	1.2	8	10	12	14	16	18	—
EM 24	MM	24	60	48	135	36	300	350	410	460	—	—	—
	INCH (REF.)	15/16	2-3/8	1-7/8	5-3/8	1.4	12	14	16	18	—	—	—
EM 30	MM	30	75	60	150	46	320	410	460	610	—	—	—
	INCH (REF.)	1-3/16	3	2-3/8	6	1.8	12	16	18	24	—	—	—
EM 36	MM	36	90	72	180	55	400	610	—	—	—	—	—
	INCH (REF.)	1-7/16	3-1/2	2-7/8	7	2.2	16	24	—	—	—	—	—

Other sizes and lengths available. Contact UNISORB Engineering.
 Inches are shown for reference only.

UNISORB® CAPSULE ANCHOR SYSTEMS



CAPSULE ANCHOR WITH STUD ASSEMBLY

This system provides a superior method of heavy duty anchoring using a high strength adhesive to retain a threaded rod and other materials such as rebar in concrete or other masonry material. The system consists of a glass capsule containing the proper proportion of base resin, hardener and aggregate for the anchor, an appropriate length stud with washer and nut and a drive unit to allow the stud to be inserted into a standard hammer drill.

To install the anchor a clearance hole is prepared and a capsule is inserted. The stud is driven into the hole with a standard hammer drill using the drive unit.

This action breaks the glass capsule and mixes the premeasured components. At room temperature the anchor nuts may be torqued down within approximately 30 minutes.

Extensive testing and field trials have proven the UNISORB Capsule Anchor Systems are among the most dependable on the market. They are far superior to expansion type anchoring systems, and stronger than the concrete itself.

SPECIFICATIONS						
Anchor Size	Capsule Number	Drill Dia.	Hole Depth	Anchor No. & Length	*Allowable Tensile Load	*Allowable Shear Load
in.		in.	in.	in.	lbs.	lbs.
mm		mm	mm	mm	kg.	kg.
3/8"	C-38	7/16	3-1/2	S-38 x 5-1/8	2115	1090
9.5		11	89	S-38 x 130	961	495
1/2"	C-12	9/16	4-1/4	S-12 x 6-1/2	3755	1940
12.7		14	108	S-12 x 165	1707	882
5/8"	C-58	11/16	5	S-58 x 7-5/8	5870	3025
15.9		17	127	S-58 x 194	2668	1375
3/4"	C-34	7/8	6-5/8	S-34 x 9-1/2	8455	4355
19.1		22	168	S-34 x 241	3843	1980
7/8"	C-78	1	7	S-78 x 10-1/4	11510	5930
22.2		25	178	S-78 x 260	5232	2695
1"	C-100	1-1/8	8-1/4	S-100 x 12	15035	7745
25.4		29	210	S-100 x 305	6834	3520
1-1/4"	C-114	1-1/2	10-1/4	S-114 x 15	23485	12100
31.8		38	260	S-114 x 381	10675	5500

Metric dimensions are for reference only.

*ALLOWABLE LOAD DATA

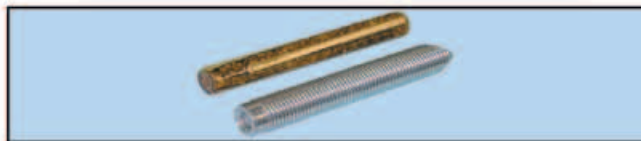
-Tensile loads are based on a 4:1 safety factor applied to the tested bond strength of the adhesive to 4,000 psi (279.9 kg/cm²) concrete.

-Shear loads are based on an F 1554 Gr. 36 anchor and are based on the methods described in the AISC Manual of Steel Construction (Ninth Edition).

-Greater allowable loads are possible by using different anchor materials and by altering the embedment depth. Please contact the factory for information on custom anchoring applications.

Contact factory for information for drive unit models available for all drill types.

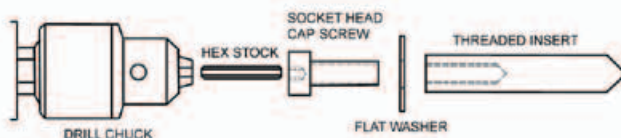
To order specify capsule, stud and driver (if required).



CAPSULE ANCHOR WITH INTERNALLY THREADED INSERT

This system provides a superior method of heavy duty anchoring using a high strength adhesive to retain a threaded insert in concrete or other masonry material. The system consists of a glass capsule containing the proper proportion of base resin, hardener and aggregate for the anchor and an appropriately sized threaded insert. The customer provides an appropriately sized socket head cap screw and washer, along with a short length of hex stock to be used as a driver when inserted into the chuck of a standard hammer drill. The cap screw can then be used to secure the machine.

To install the anchor a clearance hole is prepared and a capsule inserted. The threaded insert is driven into the hole with a standard rotary hammer drill using the equipment shown in the illustration below. This action breaks the glass capsule and mixes the pre-measured components. At room temperature the anchor bolts may be torqued down in approximately 30 minutes.



SPECIFICATIONS						
Insert Size	Capsule No.	Drill Dia.	Hole Depth	Thread Length	*Allowable Tensile Load	*Allowable Shear Load
in.		in.	in.	in.	lbs.	lbs.
mm		mm	mm	mm	kg.	kg.
3/8 x 4-1/4	C-12	11/16	4-1/4	7/8	3755	1090
10 x 108		17	108	22	1707	495
1/2 x 5	C-58	7/8	5	1-1/4	5870	1940
13 x 127		22	127	32	2668	882
5/8 x 6-5/8	C-78	1-1/8	6-5/8	1-5/8	11510	3025
16 x 168		29	168	41	5232	1375
3/4 x 8-1/4	C-100	1-1/4	8-1/4	2	15035	4355
19 x 210		32	210	51	6834	1980

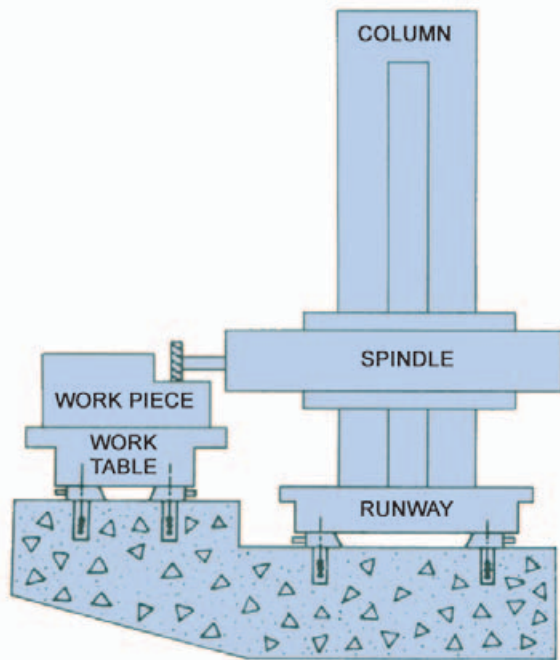
Metric dimensions are for reference only.



MINIMUM CURE TIMES	
CONCRETE TEMPERATURE	CURE TIME
68° F (20° C) & Over	20 Minutes
50° F to 68° F (10° C to 20° C)	30 Minutes
32° F to 50° F (0° C to 10° C)	1 Hour
23° F to 32° F (-5° C to 0° C)	5 Hours
14° F to 23° F (-10° C to -5° C)	10 Hours

Cure time should be doubled for wet concrete.

To order specify capsule and threaded insert.



Here's what to consider:

First, determine if the machine requires anchoring.

Before designing a foundation for a particular machine tool, two questions must be answered:

- 1) Does the machine require support from its foundation to maintain alignments between machine elements?
- 2) Will shock and vibration isolation be required to assure the desired levels of finish quality and accuracy?

An excellent example of a machine that requires a large amount of support to operate properly is the above illustrated horizontal-boring mill. In this application, the only connection between the machine column and work table (and hence spindle and work piece) is the floor or foundation.

In designing the foundation for an alignment-critical machine, these factors are important:

- 1) Foundation thickness. The stiffness of a foundation varies with the cube of its thickness. The stiffer the required support, the more concrete required.
- 2) All machine elements should be mounted on the same foundation block.
- 3) Local soil conditions must be taken into account to assure that the foundation will be stable on the soil on which it is placed.

Second, use correct foundation reinforcing designs and adequate methods of anchoring for the equipment being installed.

In order for the foundation to become an integral part of the machine tool structure, a connection of adequate rigidity must be provided. In many types of machinery, a means of adjusting the relationship of the machine base to the foundation is also necessary.

Several approaches may be followed:

1. **Anchor Bolts and Shims:** (generally inadequate where alignment requirements are critical.)

2. **Leveling Screws:** provide for faster adjustment than the shimming methods, but there is a tendency for machines to "creep" under load and for adjustments to be difficult and time consuming.

3. **Anchor Bolts and Grout:** provide strong, continuous rigid support between the machine and the foundation. Grouting is used to assure that the voids between the machine base and the foundation surface are completely filled, and to spread concentrated loads over a larger area.

4. **Leveling Wedges:** provide a more rigid support than does the leveling screw. The most elementary of these is a two-piece wedge. Three-piece wedges provide greater mechanical advantage and permit more precise alignment. The UNISORB LEV-L-INE for general purpose installation and FIXATOR SYSTEM for high precision requirements are excellent choices.

Third, isolate support critical machines.

The first step involves carefully evaluating the environment into which the machine is to be placed.

For support critical machines (and for non-support critical machines when high amplitude and low frequency vibrations are involved) an isolated inertia block foundation is the best solution. The concrete foundation is isolated from the rest of the environment. Limiting the transmission of shock and vibration from the environment to the machine or, in the case of a source machine, from the machine to the environment is the goal.

Either IB-500 isolation material or rubber GK Blocks may be used.

The IB-500 isolation material approach can be carried out using normal construction practices and is substantially less involved. The GK Block approach is used for natural frequency requirements in the 4hz range. Using either method, an isolation efficiency of over 90% is usually attainable.

Fourth, be sure the machine that is non-support critical is mounted properly.

If you determine a machine is non-support critical, it is still desirable to provide some sort of mounting device to comply with OSHA requirements, to permit the machine to be leveled easily, prevent "walking," and isolate from shock and vibration. This can usually be accomplished by the use of a free standing mount, such as UNISORB LR Series.

CONCLUSION

Correct installation is second in importance only to the proper selection of the machine tool itself in guaranteeing optimum performance from a piece of equipment, and a proper return on invested capital.

When you realize that correctly installing a machine tool rarely costs more than one percent of the total value of the machine, it's false economy not to spend the time and money necessary to make the proper installation.

By taking advantage of UNISORB's products and engineering, you can be sure that your machine will be correctly installed.

For a more complete discussion of machinery installation, request UNISORB'S BULLETIN: "Preventing Machine Installation Problems," along with information on a free seminar in your plant.

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