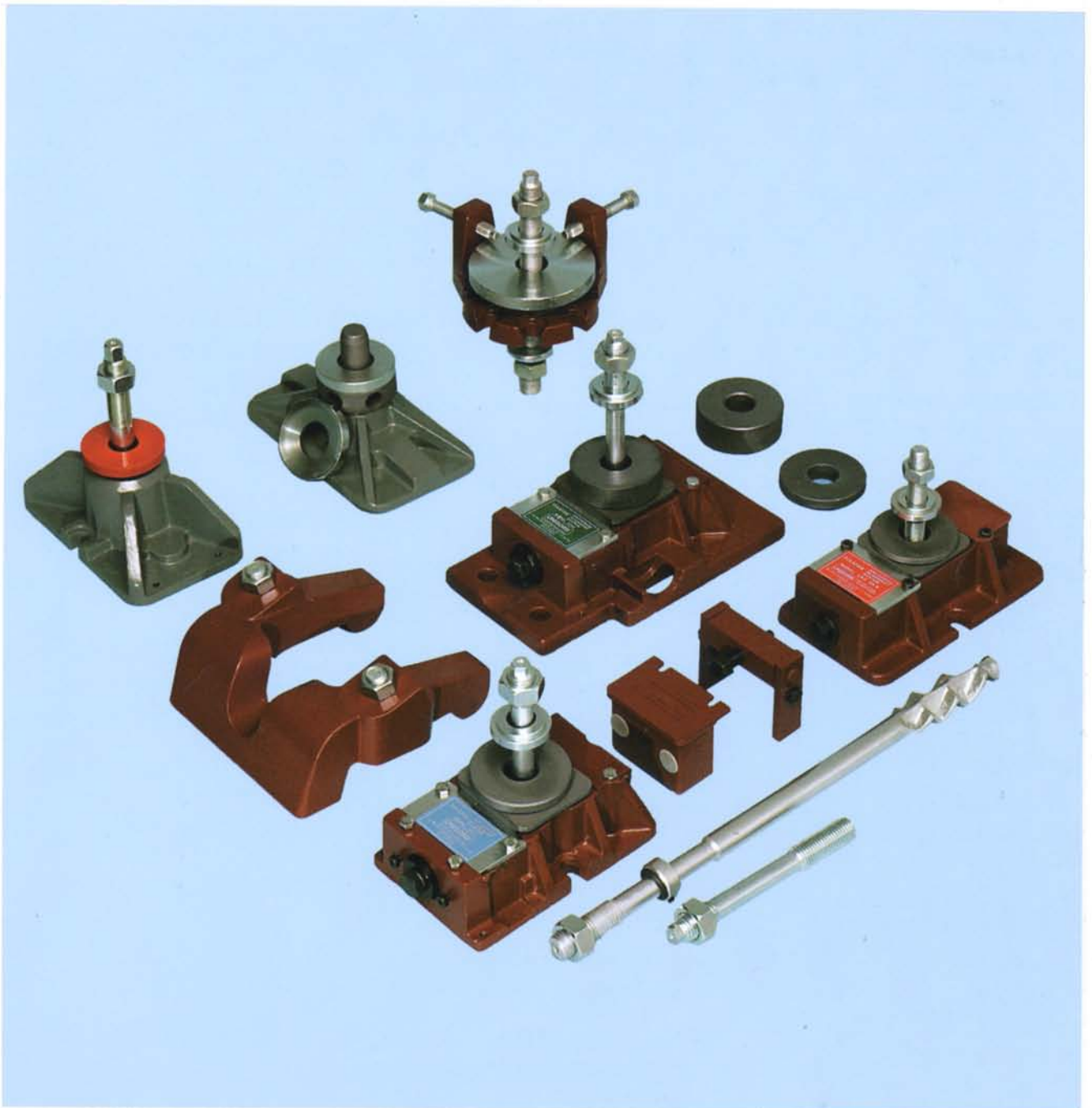


FIXATOR® SYSTEMS



RK FIXATOR® INTRODUCTION

INTRODUCTION

This UNISORB® FIXATOR® publication presents detailed performance and product selection data covering the FIXATOR® models and sizes available for precision alignment of support critical machinery. Among the Data included are detailed specifications, pictorial representations of available optional accessories, installation instructions and standard drawings illustrating various FIXATOR® application configurations. It is our intent to provide you with sufficient information for you to have a complete understanding of the particular FIXATOR® SYSTEM recommended by UNISORB®'s Engineers.

UNISORB® FIXATOR® SYSTEMS have been carefully designed to provide optimum performance and ease of installation, even in the most demanding of circumstances.

The UNISORB® engineering staff and field representatives are readily available to provide design and on-site assistance with your projects to assure that maximum product performance is achieved.

In any machinery installation, the question must be asked "is this machine support critical?" In other words, does it require support from its foundation to maintain critical alignments between machine elements? A few examples of machines that typically fall within this category are long bed lathes (over 48"), long bed grinders (over 48"), large horizontal boring mills, etc. Some helpful criteria may include any machine with rapid changes in load caused by motion of any element, machines which are equipped with leveling devices by the builder, most machines working with parts over 50 lbs. in weight, and any machine whose installation instructions call for alignment at installation.

The UNISORB® RK FIXATOR® SYSTEM is the finest anchoring/alignment product in the world. It makes support critical machinery installations fast and simple. Each application is engineered by UNISORB®'s Engineers to assure successful implementation and results.

Not only are anchoring/alignment installations fast and easy, but realignments can be achieved without loosening the anchor nut, and can be done whenever necessary. Unlike conventional leveling methods that require repeated trial and error jacking and tightening during machine installation, the RK FIXATOR® SYSTEM permits alignment adjustments to be made after anchor nuts are tight. The only tool required to adjust the FIXATOR® is a small hand wrench.

The patented RK FIXATOR® SYSTEM levels and aligns machinery to tenths (.0001") tolerances. Finely machined Molykoted surfaces, limited backlash and high mechanical advantage make it possible to vary height adjustments at anytime, even under maximum loads. The time-consuming work and production losses usually associated with aligning are eliminated. Machines remain in service, and machine life is prolonged.

Other important benefits include built-in compensation for uneven areas in

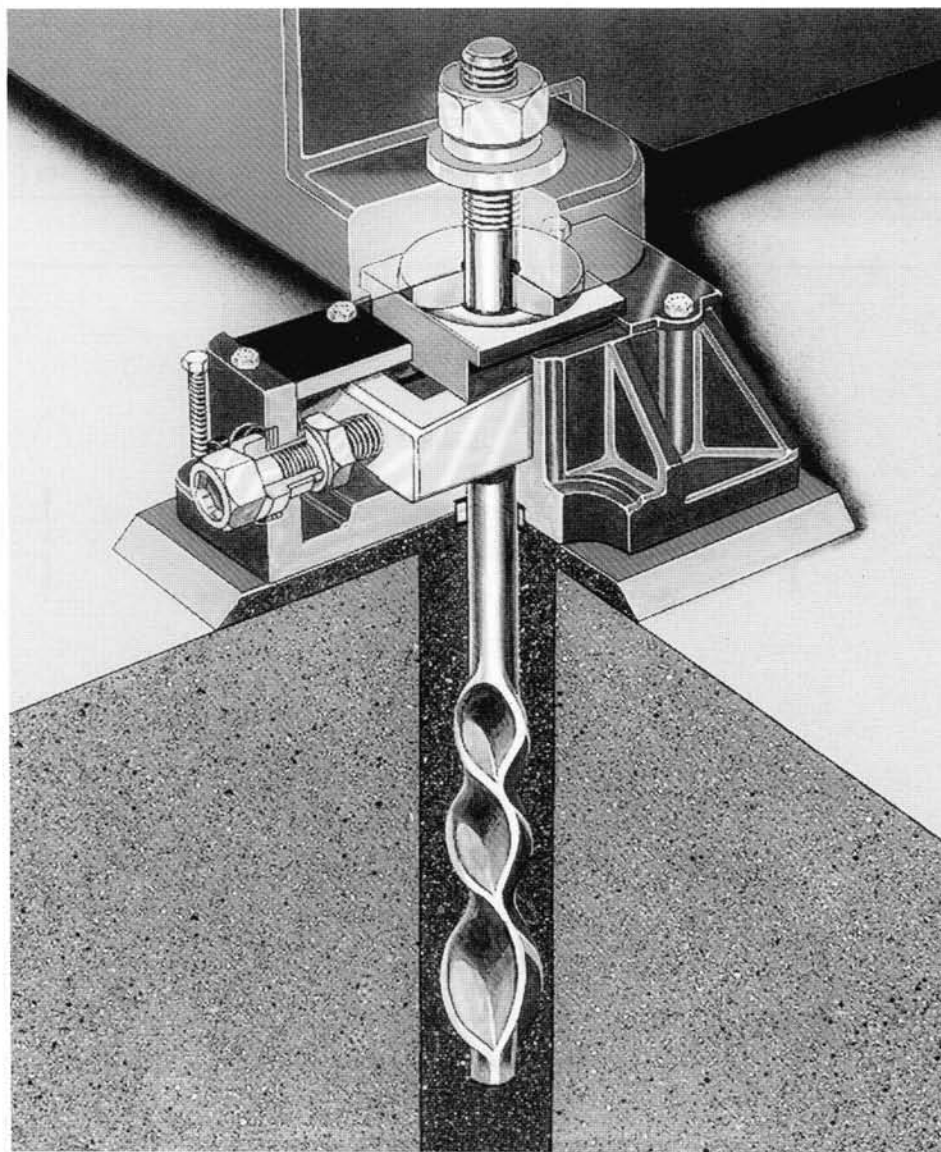
RK FIXATOR® APPLICATIONS

foundations or machine bases, and true vertical lift (made possible by a 3-piece wedge design) to eliminate lateral forces as machines are raised or lowered. The RK FIXATOR® SYSTEM also affords the most rigid machine-to-foundation connection available. RK FIXATOR® SYSTEMS are available in five sizes with a wide choice of optional equipment that adapt the system to meet any installation required.

The RK FIXATOR® Basic Units are rustproofed at manufacture and require no further treatment for normal machine tool applications. All load-bearing sur-

faces are Molykoted at manufacture and require no further attention during the life of the unit. Under normal circumstances, the adjusting bolt should move easily under any loading, requiring only the use of a small hand wrench. The anchor bolts supplied with the FIXATORS® are of special design to allow stretching with no reduction in strength or anchoring power.

The above listed advantages of the UNISORB® RK FIXATOR® SYSTEM have been consistently found to outweigh any additional expense necessary to purchase the units.



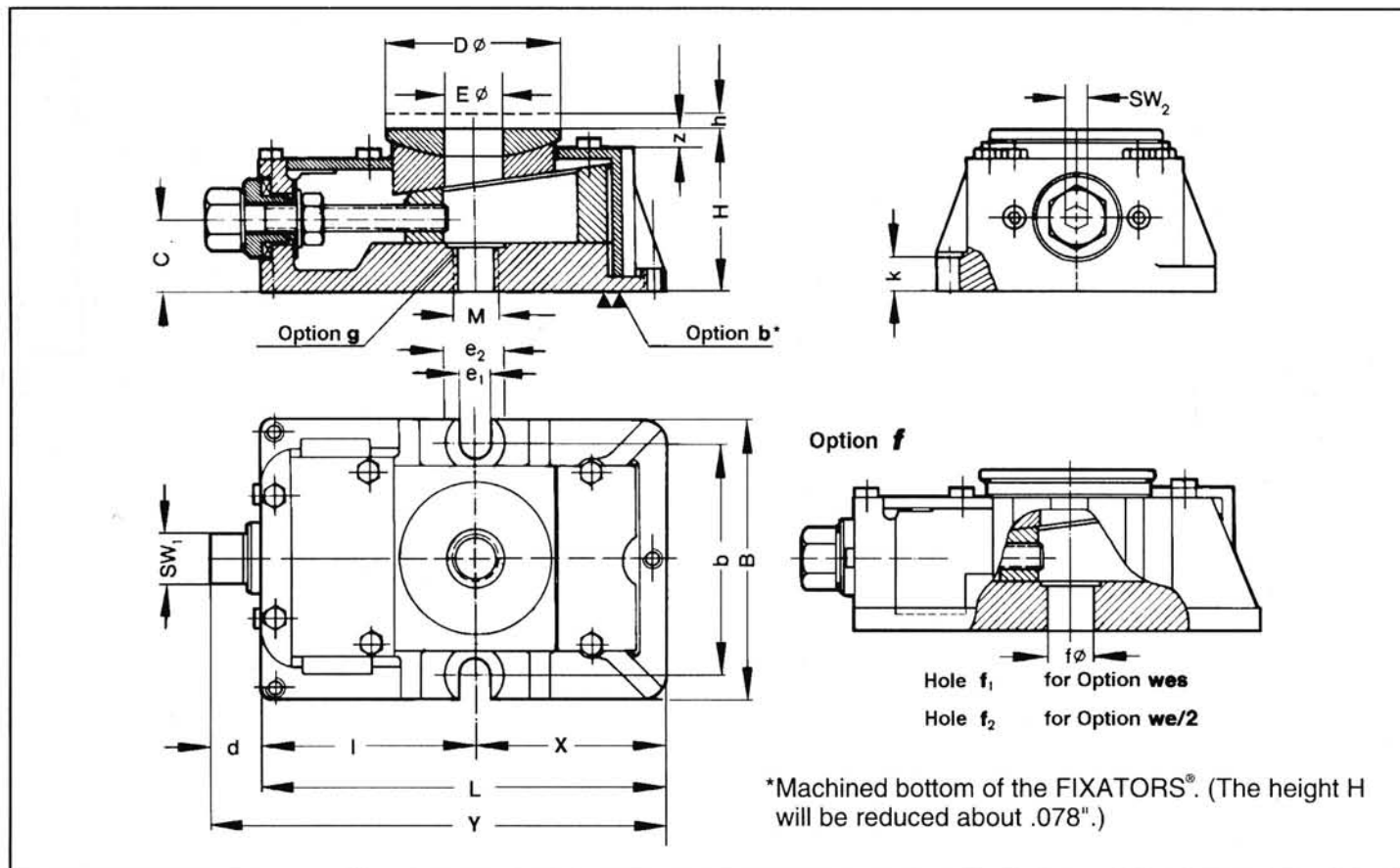
RK FIXATOR® TECHNICAL SPECIFICATIONS

DESCRIPTION	Dim.	RK I	RK II	RK III	RK IV	RK V
Recommended machine dead weight	lbs.	Contact Factory	4,400	8,800	13,200	26,400
Maximum allowable lifting load per FIXATOR®	lbs.	Contact Factory	26,500	53,000	80,000	155,000
Spring constant	lb./in.	Contact Factory	22,800,000	37,100,000	45,700,000	79,900,000
Vertical adjustment per revolution of height adjusting screw	in.	0.010	0.010	0.012	0.014	0.017
Maximum vertical adjustment	in.	0.20	0.20	0.24	0.32	0.40
Approximate torque required to turn adjusting screw	ft. lb./1000 lbs. load	1.0	1.0	1.3	1.5	1.8
Maximum allowable torque on adjusting screw	ft. lb.	22	29	73	117	294
Thread dimensions	M x S metric	16 x 2 mm	20 x 2.5 mm	24 x 3 mm	30 x 3.5 mm	36 x 4 mm
Approximate torque on anchor bolt nut at yield point of bolt	ft. lb.	116	217	376	723	1300
Approximate tension on anchor bolt at yield point	lbs.	Contact Factory	19,800	28,600	44,000	66,000
Weight of Basic Unit	lbs.	8.8	12.1	25.3	46.2	92.4

DIMENSIONS*



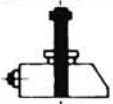
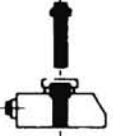
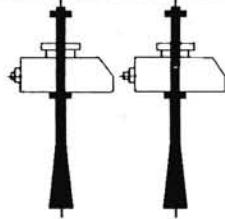

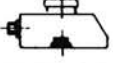

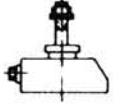
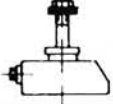
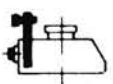
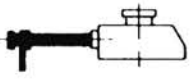
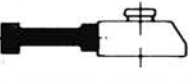
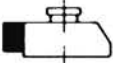
SIZE RK	M	L	B	H	DØ	SW ₁	SW ₂	EØ	d	c	z	h	l	b	e ₁	e ₂	k	x	Y	f ₁ Ø	f ₂ Ø
I	M12	6.89	4.13	2.17	2.36	19 mm	—	.80	.63	.93	.39	.20	3.62	3.54	.55	1.02	.55	3.27	7.52	.67	.75
II	M20	6.89	4.72	2.95	2.95	19 mm	—	1.00	.63	1.30	.51	.20	3.66	3.94	.55	1.02	.59	3.23	7.52	.83	.98
III	M24	8.66	5.91	3.74	3.54	24 mm	—	1.25	.81	1.61	.55	.24	4.63	5.12	.71	1.26	.91	4.03	9.47	.98	1.22
IV	M30	10.83	7.09	4.53	4.33	32 mm	17 mm	1.55	1.26	2.09	.71	.32	5.61	6.30	.94	1.50	1.10	5.22	12.09	1.22	1.46
V	M36 M42	13.58	9.06	5.31	5.91	36 mm	19 mm	1.80	1.38	2.52	.79	.40	7.09	8.07	1.10	1.81	1.50	6.49	14.96	1.46 1.73	1.73 —

*CASTING DIMENSIONS MAY VARY



RK FIXATOR® OPTIONS & OPTION SPECIFICATIONS

FIXATOR® OPTIONS

	Basic Unit	Basic Unit with Spherical Seat including Option g (internal threads for Option ste)	
	Option b	Machined Base	For attachment to floor plates or other machined surfaces
	Option c	Side Anchor Bolts for connecting FIXATOR® to Foundation	For use with Option ste and ste/2
	Option ste	Normal or Long Center Hold Down Stud for attaching the FIXATOR® to the machine	Connection between FIXATOR® and machine is made by a high tensile stud screw
	Option ste/2	Two-Piece Center Hold Down Stud for attaching the FIXATOR® to the machine	Connection between FIXATOR® and machine by high tensile stud screw (two pieces) where there are access problems
	Option wes	Through Type Anchor/Hold Down Stud for the direct connection of the machine to the foundation	Used in place of Options c and ste
	Option we/2	Two-Piece Anchor/Hold Down Stud for the direct connection of the machine to the foundation	
	Option f	Housing Clearance Hole for Option wes	Required when Option wes is specified
	Option mon	Locking System for the top spherical washer	Used for set-up tooling
	Option p	Spherical Washer Set for non-parallel bearing surfaces	Corrects for angular misalignment to prevent line contact
	Option r	Oversized Spherical Washer Set for non-parallel bearing surfaces	Provides greater bearing area when machine base opening is excessively large
	Option d	Lateral Adjuster for adjusting machine location	For lateral adjustment of the machine. Requires side anchor bolts unless FIXATOR® embedded to resist imposed forces
	Option le	Adjustment Extension for adjusting FIXATORS® which are located in hard to reach places under machines	The height adjustment is done via an extension shaft from beyond the rim of the machine
	Option les	Enclosed Adjustment Extension for adjusting FIXATORS® which are located in hard to reach places under machines	Facilitates height adjustment via an extension shaft from beyond the rim of the machine when FIXATOR® is embedded in foundation
	Option m	Adjustment Bolt Enclosure for use with recessed FIXATORS®	Permits adjustment when FIXATOR® is embedded in foundation

RK FIXATOR® OPTIONS & OPTION SPECIFICATIONS

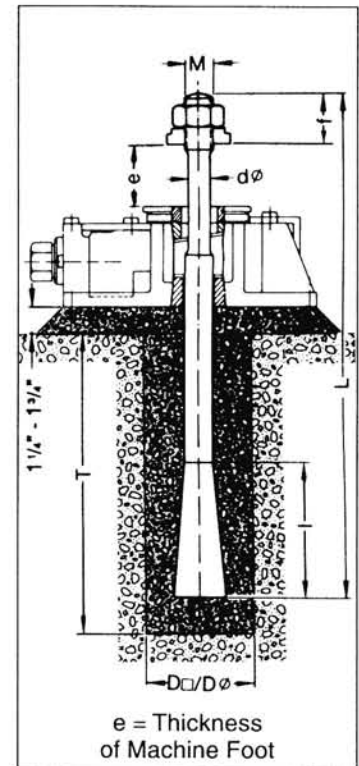
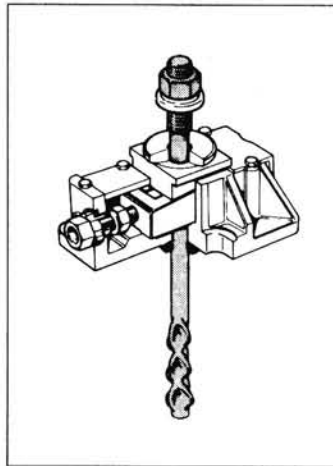
wes

Through Type Anchor/Hold Down Stud for the direct connection of the machine to the foundation.

Note:

Specify "f₁" (Basic Model Option) in your order.

Sizes II, III and IV permit the use of the next size larger anchor bolt to improve safety under extremely high tensile loads. When selecting the anchor, however, the maximum allowable load must never be exceeded.



DIMENSIONS										
SIZE RK	M	L	I	f	dØ	e		Foundations		Approx. Clamping Force lbs.
						from	to	D	T	
I	M16	12.99	3.54	1.18	.51	.79	2.36	3.00	9.00	Contact Factory
II	M20	15.75	4.33	1.57	.63	.79	3.54	3.50	10.75	19,800
III	M24	19.69	5.12	1.97	.75	1.18	3.94	4.00	13.50	28,600
IV	M30	23.62	5.91	2.17	.94	1.38	5.31	5.00	16.25	44,000
V	M36	31.50	7.09	2.56	1.14	1.57	5.91	6.00	22.50	66,000
	M42	39.37	10.24	2.95	1.38	1.57	7.87	7.00	30.00	94,000

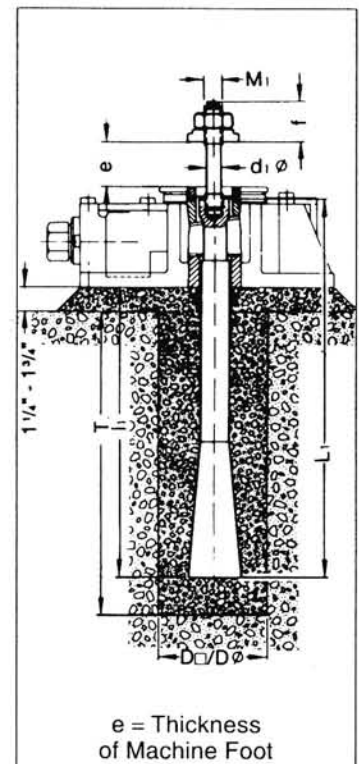
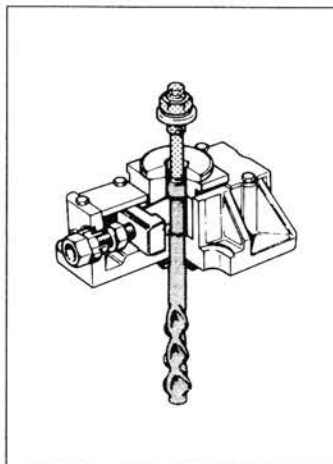
Note: Hole sizes and grout dam heights based on using UNISORB® V-1® Grout.

we/2

Two-Piece Anchor/Hold Down Stud for the direct connection of the machine to the foundation.

Note:

Specify "f₂" (Basic Model Option) and dimension "e" (thickness of machine foot) in your order.



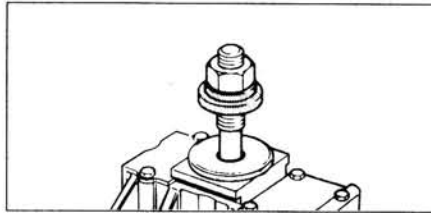
DIMENSIONS										
SIZE RK	M ₁	L ₁	I ₁	f ₁	d ₁ Ø	e		Foundations		Approx. Clamping Force lbs.
						from	to	D	T	
I	M16	7.48	5.91	1.18	.51	.79	2.36	3.50	9.00	Contact Factory
II	M20	10.83	8.66	1.57	.63	.79	3.94	4.00	10.75	19,800
III	M24	14.17	11.42	1.97	.75	1.18	4.72	5.00	13.50	28,600
IV	M30	17.72	14.17	2.36	.94	1.38	5.31	6.00	16.25	44,000
V	M36	23.62	19.69	2.95	1.14	1.57	5.31	7.00	22.50	66,000

Note: Hole sizes and grout dam heights based on using UNISORB® V-1® Grout.

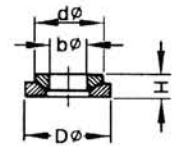
RK FIXATOR® OPTIONS & OPTION SPECIFICATIONS

p

Spherical Washer Set for non-parallel bearing surfaces.



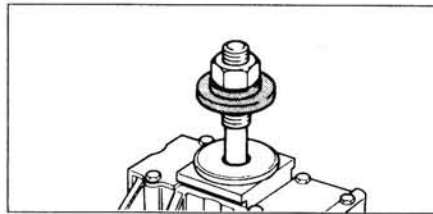
DIMENSIONS				
SIZE RK	DØ	H	dØ	bØ
I	1.55	.34	1.16	.67
II	1.73	.39	1.42	.83
III	2.20	.51	1.73	.98
IV	2.68	.63	2.20	1.22
V M36	3.07	.79	2.68	1.46
V M42	3.94	1.02	3.54	1.81



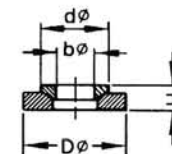
Max. 10° Angle Correction

r

Oversized Spherical Washer Set for non-parallel bearing surfaces.



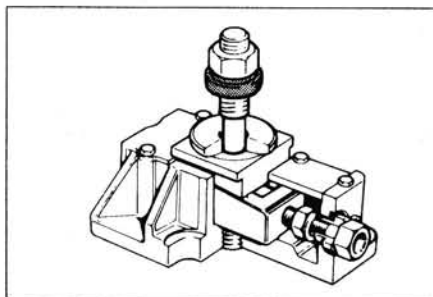
DIMENSIONS				
SIZE RK	DØ	H	dØ	bØ
I	1.73	.39	1.42	.67
II	2.20	.51	1.73	.83
III	2.68	.63	2.20	.98
IV	3.07	.79	2.68	1.22
V M36	3.94	.79	2.68	1.46
V M42	4.92	1.02	3.54	1.81



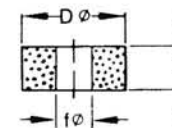
Max. 10° Angle Correction

z

Foam Centering Bushing for the concentric location of the anchor bolts in the machine foot holes.



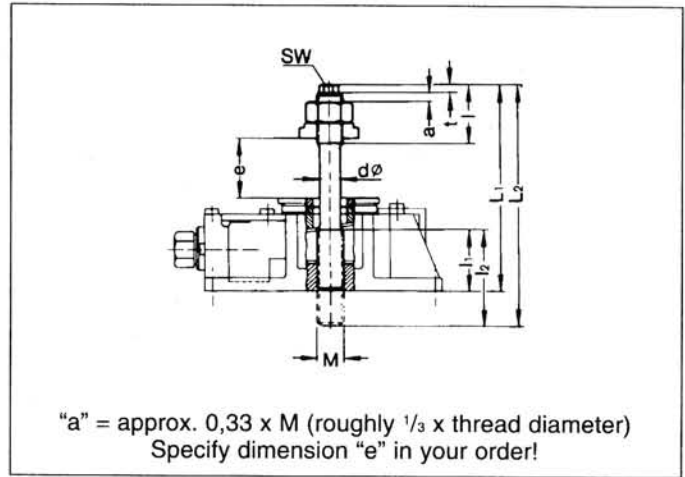
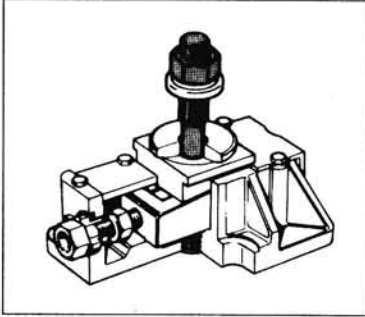
DIMENSIONS			
SIZE RK	fØ	DØ	H
I	.62	1.25	1.00
II	.81	1.56	1.00
III	.96	1.75	1.00
IV	1.19	2.13	1.00
V M36	1.44	2.38	1.00
V M42	1.69	2.75	1.00



RK FIXATOR® OPTIONS & OPTION SPECIFICATIONS

ste

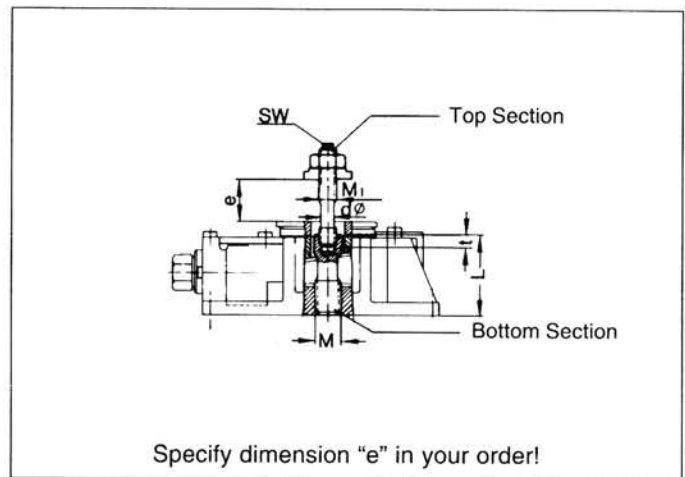
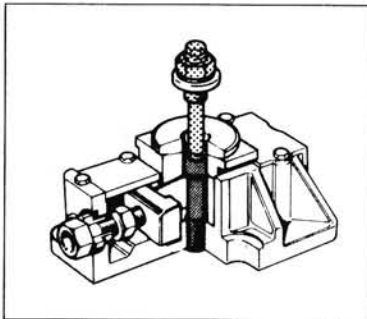
Normal or Long Center Hold Down Stud for attaching the FIXATOR® to the machine.



DIMENSIONS														
SIZE RK	M	dØ	Width a/f SW	t	l	Normal		e		Long		e		Approx. Clamping Force lbs.
						L ₁	l ₁	from	to	L ₂	l ₂	from	to	
I	—	—	—	—	—	—	—	—	—	—	—	—	—	—
II	M20	.63	13 mm	.28	1.38	6.89	2.17	.79	2.17	8.07	2.17	1.97	3.35	19,800
III	M24	.75	17 mm	.31	1.97	8.46	2.76	.79	2.76	10.24	2.76	2.56	4.53	28,600
IV	M30	.94	19 mm	.31	2.17	10.24	3.35	1.18	3.35	12.20	3.35	3.15	5.31	44,000
V	M36	1.14	24 mm	.39	2.56	12.40	4.13	1.57	4.13	14.17	4.13	3.94	5.91	66,000

ste/2

Two-Piece Center Hold Down Stud for attaching the FIXATOR® to the machine.

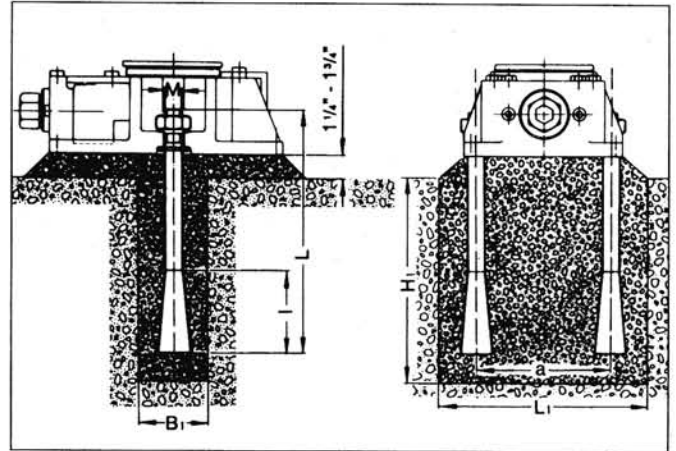
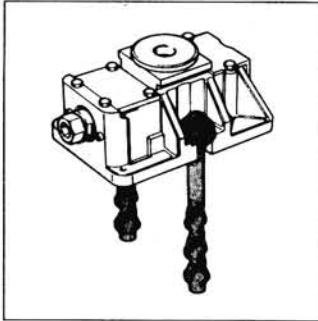


DIMENSIONS										
SIZE RK	M	L	t	M ₁	dØ	Width a/f SW	e		Approx. Clamping Force lbs.	
							from	to		
I	—	—	—	—	—	—	—	—	—	
II	M20	2.17	.63	M16	.51	10 mm	.79	3.94	13,200	
III	M24	2.76	.79	M20	.63	13 mm	1.18	4.72	19,800	
IV	M30	3.35	.94	M24	.75	17 mm	1.38	5.31	28,600	
V	M36	4.13	1.18	M30	.94	19 mm	1.57	5.31	44,000	

RK FIXATOR® OPTIONS & OPTION SPECIFICATIONS

C

Side Anchor Bolts for connecting FIXATOR® to Foundations.

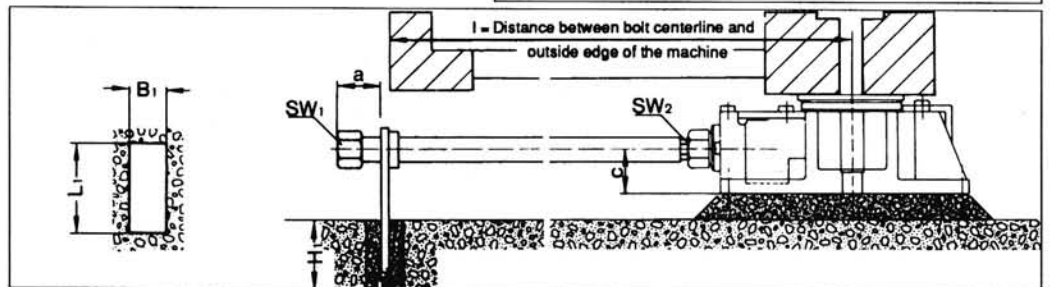
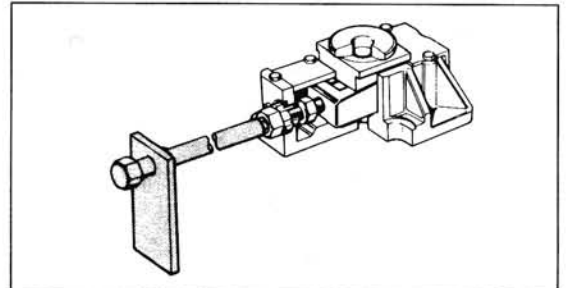


SIZE RK	M	L	I	a	DIMENSIONS			Approx. Clamping Force lbs.
					Foundations			
					L ₁	B ₁	H ₁	
I	M12	5.91	2.76	3.54	5.50	2.50	5.50	14,600
II	M12	5.91	2.76	3.94	6.25	2.50	5.50	14,600
III	M16	9.84	3.54	5.12	8.00	2.75	9.50	26,900
IV	M20	11.81	3.94	6.30	9.50	3.25	11.50	42,700
V	M24	13.78	5.31	8.07	12.00	4.00	13.75	61,800

Note: Hole sizes and grout dam heights based on using UNISORB® V-1® Grout.

le

Adjustment Extension for adjusting FIXATORS® which are located in hard to reach places under machines.



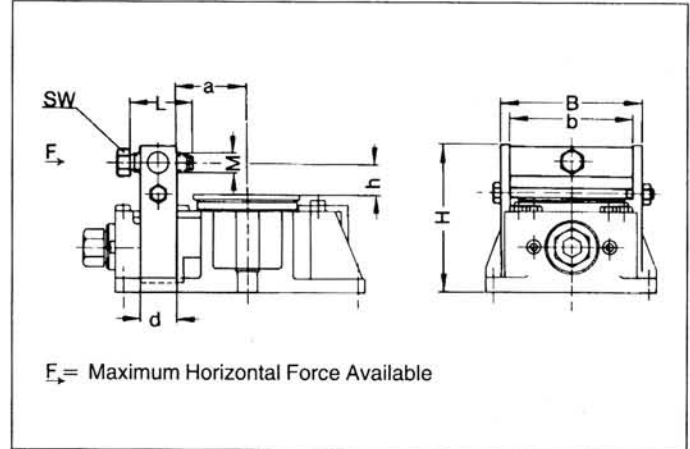
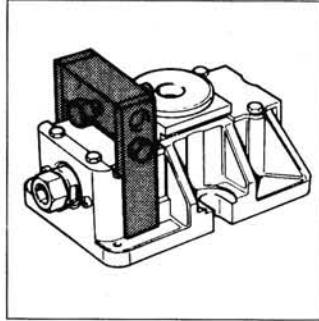
SIZE RK	a	c	SW ₁	SW ₂	Min. Dim. I	Tube	DIMENSIONS		
							Foundations		
							L ₁	B ₁	H ₁
I	1.97	.93	.87	.55	5.51	.94 x .16	3.25	1.50	2.75
II	1.97	1.30	.87	.55	5.51	.94 x .16	3.25	1.50	2.75
III	1.97	1.61	.94	.55	7.09	.94 x .16	3.25	1.50	3.50
IV	1.97	2.09	1.26	.67	8.27	.94 x .16	3.25	1.50	4.00
V	1.97	2.52	1.42	.75	9.84	1.34 x .24	4.00	2.00	4.50

Note: Hole sizes and grout dam heights based on using UNISORB® V-1® Grout.

RK FIXATOR® OPTIONS & OPTION SPECIFICATIONS

d

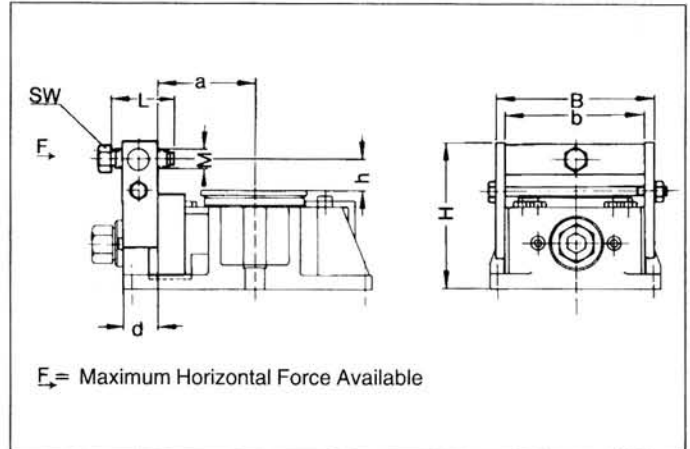
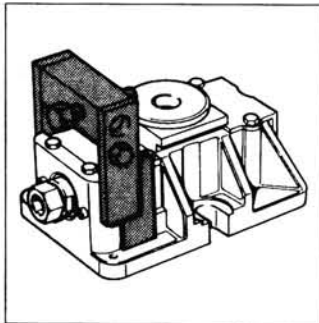
Lateral Adjuster for adjusting machine location. (The use of option c is recommended along with option d.)



DIMENSIONS										
SIZE RK	M	L	Width a/f SW	H	B	b	d	a	h	F_{\rightarrow} lbs.
I	M12	1.97	.67	2.95	3.39	2.76	.98	1.46	.47	Contact Factory
II	M16	2.36	.75	4.17	4.02	3.39	1.18	1.77	.63	5,500
III	M16	2.36	.75	5.08	5.08	4.29	1.38	2.17	.63	7,700
IV	M20	2.76	.94	6.30	5.91	5.12	1.57	2.76	.79	8,800
V	M24	3.15	1.18	7.56	7.83	6.89	1.77	3.54	.94	13,200

dz

Offset Lateral Adjuster for adjusting machine location. (The use of option c is recommended along with option dz.)

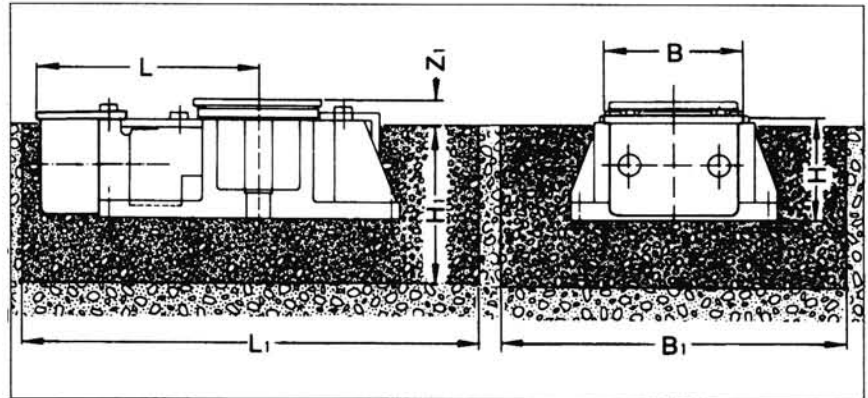
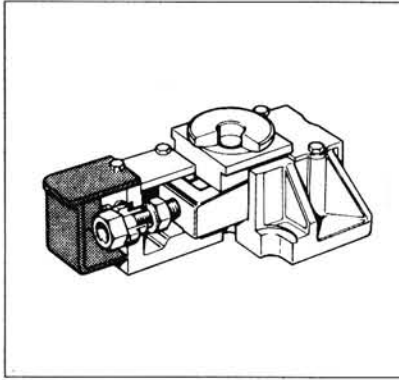


DIMENSIONS										
SIZE RK	M	L	Width a/f SW	H	B	b	d	a	h	F_{\rightarrow} lbs.
I	M12	1.97	.67	2.95	4.02	3.39	.98	2.24	.47	Contact Factory
II	M16	2.36	.75	4.17	4.65	4.02	1.18	2.64	.63	5,500
III	M16	2.36	.75	5.08	5.87	5.08	1.38	3.15	.63	7,700
IV	M20	2.76	.94	6.30	6.69	5.91	1.57	3.94	.79	8,800
V	M24	3.15	1.18	7.56	8.78	7.83	1.78	4.84	.94	13,200

RK FIXATOR® OPTIONS & OPTION SPECIFICATIONS

m

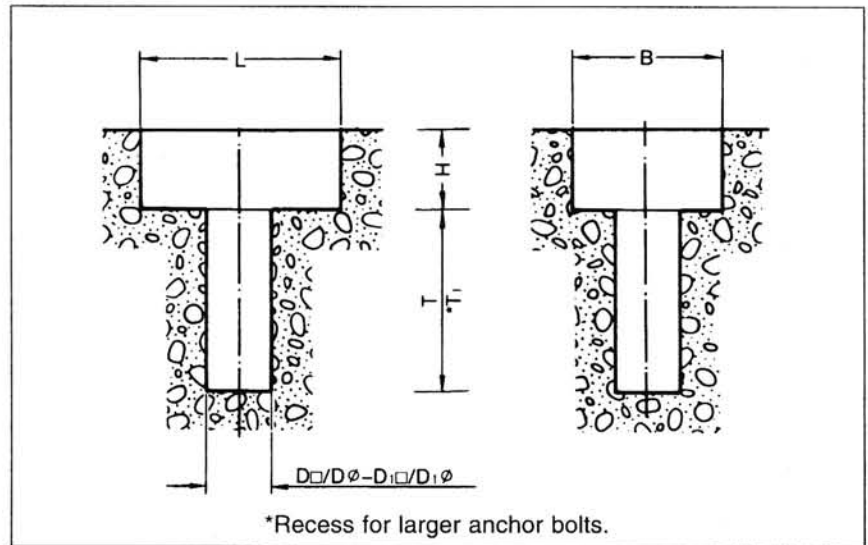
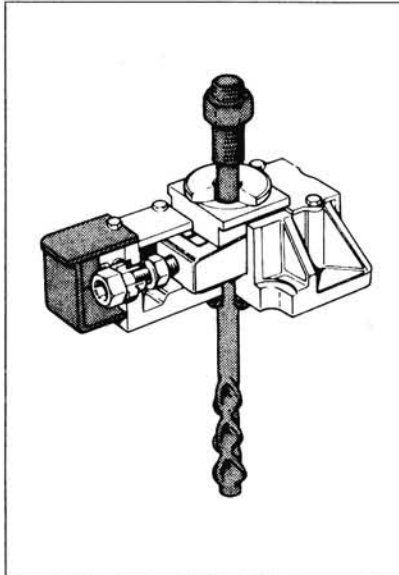
Adjustment Bolt Enclosure for use with recessed FIXATORS®.



SIZE RK	DIMENSIONS						
	L	B	H	Z ₁	Foundations		
					B ₁	H ₁	L ₁
I	5.16	3.23	1.81	.79	6.25	2.75	12.25
II	5.20	3.23	2.25	.98	8.00	3.25	12.25
III	6.46	4.13	3.00	1.18	10.00	4.00	13.75
IV	7.80	4.84	3.69	1.38	12.00	4.75	17.75
V	9.65	5.91	4.81	1.57	13.00	5.50	20.50

Note: Hole sizes based on using UNISORB® V-1® Grout.

Recesses In Foundations for Options m + wes combined.



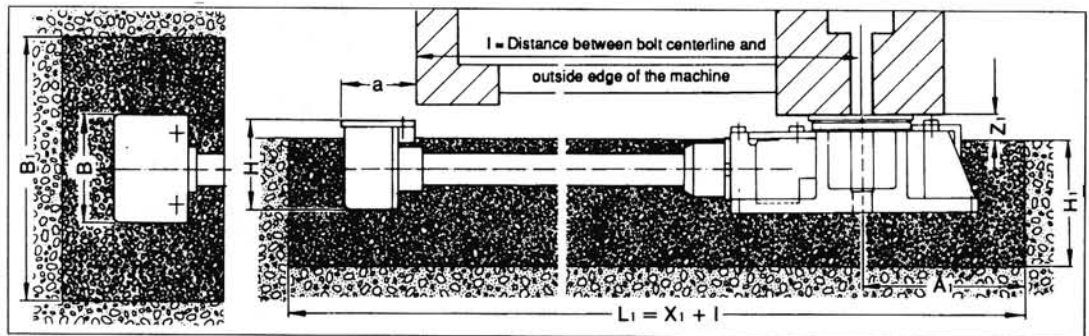
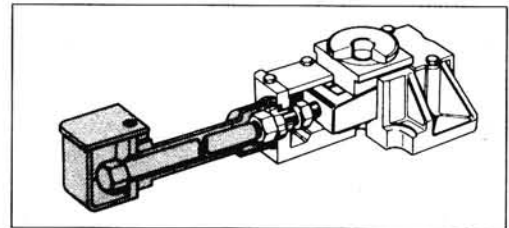
SIZE RK	DIMENSIONS						
	L	B	H	D	T	*D ₁	*T ₁
I	12.25	6.50	2.75	3.00	9.50	3.50	9.00
II	12.25	8.00	3.25	3.50	10.75	4.00	14.25
III	13.75	10.00	4.00	4.00	13.50	5.00	17.00
IV	17.75	12.00	4.75	5.00	16.25	6.00	23.25
V	20.50	13.00	5.50	6.00	22.50	7.00	30.00

Note: Hole sizes based on using UNISORB® V-1® Grout.

RK FIXATOR® INSTALLATION INSTRUCTIONS

les

Enclosed Adjustment Extension for adjusting recessed FIXATORS® which are located in hard to reach places under machines.

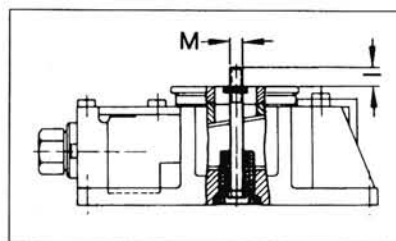
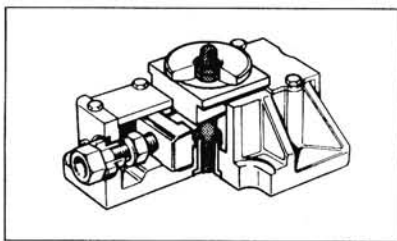


SIZE RK	DIMENSIONS								
	a	B	H	Min. Dim.			Foundations		
				I	A ₁	Z ₁	B ₁	H ₁	X ₁
I	2.56	3.23	1.97	5.51	5.12	.79	6.25	2.75	9.00
II	2.56	3.23	2.44	5.51	5.51	.98	6.25	3.25	9.50
III	2.76	4.13	3.11	6.69	6.30	1.18	8.50	4.00	10.75
IV	3.54	4.84	3.58	7.87	7.87	1.38	10.00	4.75	12.75
V	3.94	5.91	4.17	9.84	9.06	1.57	12.00	5.50	14.75

Note: Hole sizes based on using UNISORB® V-1® Grout.

frot

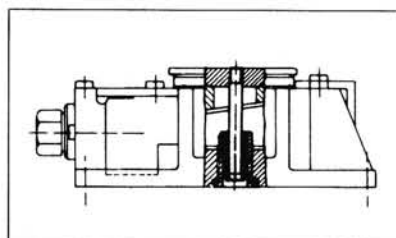
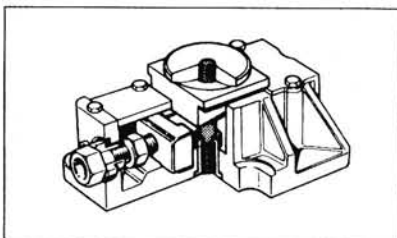
Connection for mobile application.



SIZE RK	DIMENSIONS	
	M	I
I	.24	.31
II	.24	.31
III	.31	.31
IV	.31	.31
V	.31	.31

mon

Locking System for the top spherical washer.



RK FIXATOR® INSTALLATION INSTRUCTIONS

OVERVIEW

The machine to be installed is moved to its approximate position, supported with temporary blocks, and the FIXATORS® with their options are prehung from the machine base. The machine base is then moved into final position on the foundation. The FIXATORS® with their anchors suspended from the base are positioned and lowered into previously prepared grout cavities. The machine is rough aligned and permanently grouted into place. When the grout has cured sufficiently, the temporary blocks are removed. The anchor bolts are tightened and the machine is then precisely leveled and aligned with the FIXATOR® adjusting wedges. This approach eliminates the need for precise presetting of the mounts and results in substantial time savings.

STEP-BY-STEP

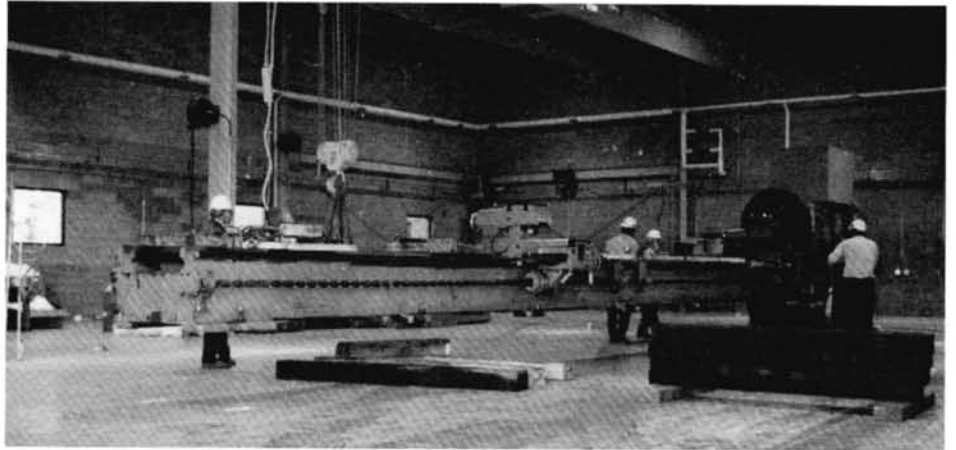
1. FOUNDATION PREPARATION—

Prepare the foundation in accordance with accepted civil engineering practices. Grout cavities for the FIXATOR® base and anchor bolts may be provided by precasting them or by core drilling after pouring concrete. The best core drilling results can be obtained while the foundation is green (approximately 48 hours). Anchor bolt holes shall be in accordance with UNISORB® Drawing No. 469900-02. Grout cavities for recessed FIXATOR® mounting shall be in accordance with UNISORB® Drawing No. 469900-07.

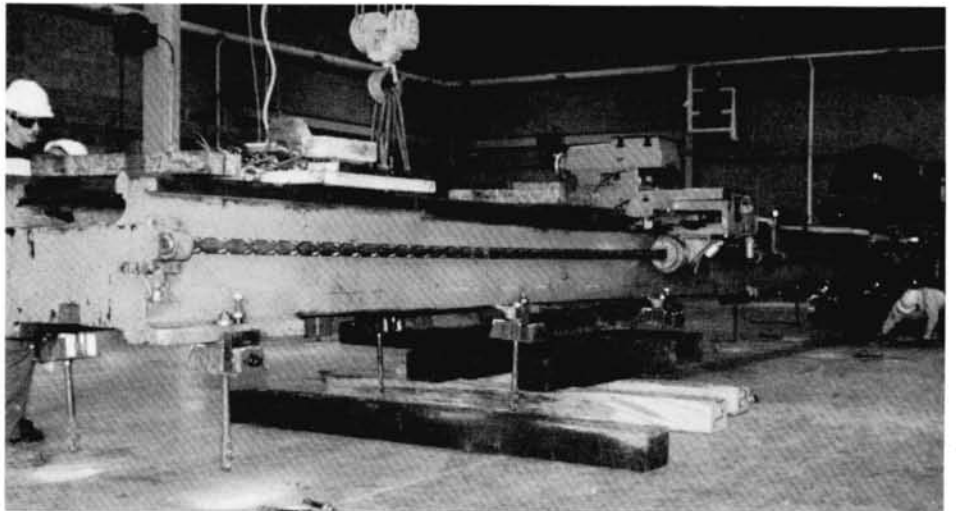
2. **POSITION MACHINE**—When the concrete is cured sufficiently to support machine loads, prepare the machine for installation in accordance with the manufacturer's instructions and move into position on the foundation. The machine is supported temporarily on blocks with the anchor holes over the

previously prepared grout cavities. Note: Temporary blocks should be high enough to permit assembly of FIXATOR® units to the machine base.

3. **ATTACH FIXATORS®**—Turn the FIXATOR® alignment and leveling adjustment screw fully counterclockwise to assure that the full travel of the wedge will be available during the alignment phase. Assemble the FIXATOR® with the anchor bolt and spherical washer set to the machine base. (Refer to the installation drawing included in this manual for proper assembly.) Position the "O" ring and set collar provided with the anchor bolt against the bottom of the FIXATOR®, securing it with the set screw provided. The anchor nut should be positioned so that three threads are exposed and only tightened sufficiently to hold the FIXATOR® unit in contact with the machine base.

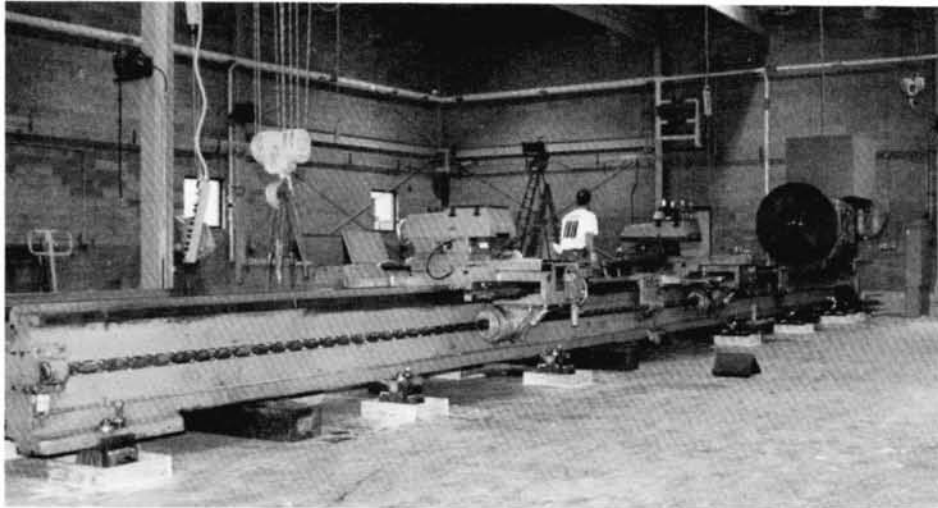


4. **LOWER MACHINE**—Lower the machine into final position, again supported by temporary blocks with the FIXATOR® projected into the grout cavities. The machine should now be rough aligned to a value of plus or minus 1/16". Note: Minimum clearance between the FIXATOR® base and the foundation for grout placement must be 1/2" for UNISORB® Standard V-100® Epoxy Grout Formula and 1-1/2" for UNISORB® V-1® cementitious grout. The three small presetting screws in the FIXATOR® base flange may be used to level the FIXATOR® to the foundation, if desired. Do not attempt to support the machine weight with these three screws.

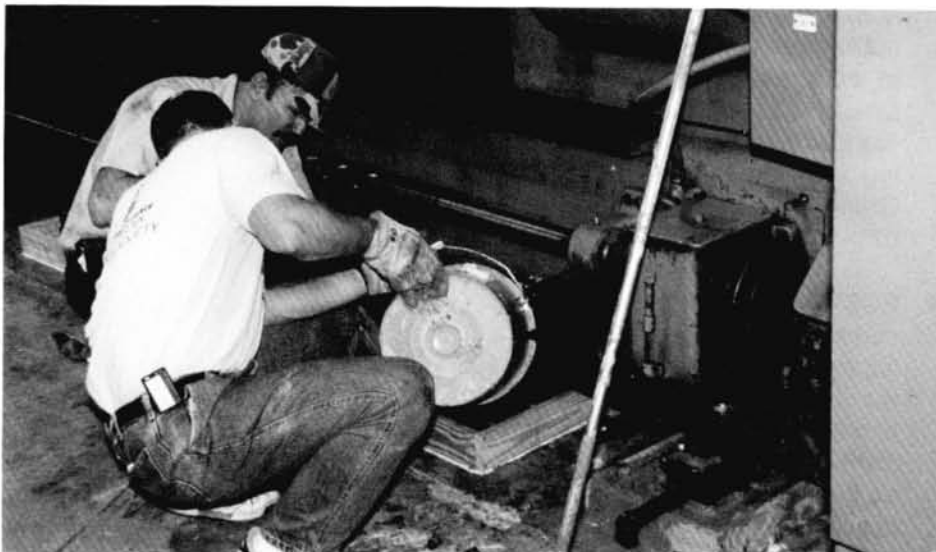


RK FIXATOR® INSTALLATION INSTRUCTIONS

- 5. PREPARE GROUT FORMS**—Apply butyl tape around the bottom flange of grout form. Leave release paper on. Clean the floor thoroughly with oil free compressed air. Remove paper from butyl tape and press form securely to the floor for about 30 seconds to create a secure seal.



- 6. POUR GROUT**—Prepare and pour UNISORB® Grout in accordance with grouting instructions provided with the material. Pour grout to cover FIXATOR® base flange as shown on UNISORB® Drawing No. 469900-02 for surface mounting or UNISORB® Drawing No. 469900-07 for recessed mounting. Grout forms used for surface mounting may be removed after grout has set. (See page G1 for instructions.)



RK FIXATOR® INSTALLATION INSTRUCTIONS

- 7. ADJUST FIXATORS®**—After grout cures and with anchor nuts loose, remove the temporary blocks. Snug anchor nuts with a small hand wrench and turn each adjusting screw two full turns. This action applies final tension to the anchor bolts and prepares the machine and the foundation. When raising the machine, adjust all FIXATORS® in sequence, starting at one end or the middle and working toward each end. Do not skip any units.



- 8. FINAL MACHINE ALIGNMENT**—Any reliable alignment measuring system may be used. We suggest however that optical or electronic systems are far superior to bubble-level technology in that they respond much faster, thus allowing installers to take full advantage of the quick installation characteristics offered by the FIXATOR® system.

Align the machine by locating the high spot and raising the remainder of the machine to match. The anchor nuts will remain tightened during this operation. If it becomes necessary to lower an individual FIXATOR® during final alignment do not exceed one full turn. If more than one turn is required the unit should be backed off until the anchor nut loosens; the nut is re-snugged, and the unit is raised to the desired adjustment. This is necessary to assure that the minimum anchor bolt tension is achieved. When final level and alignment is achieved, the machine may be placed into operation. Note: The base may be realigned at any time, if required. Simply adjust the FIXATOR® units, again raising the low points. The anchor nuts need not be loosened to accomplish the realignment.

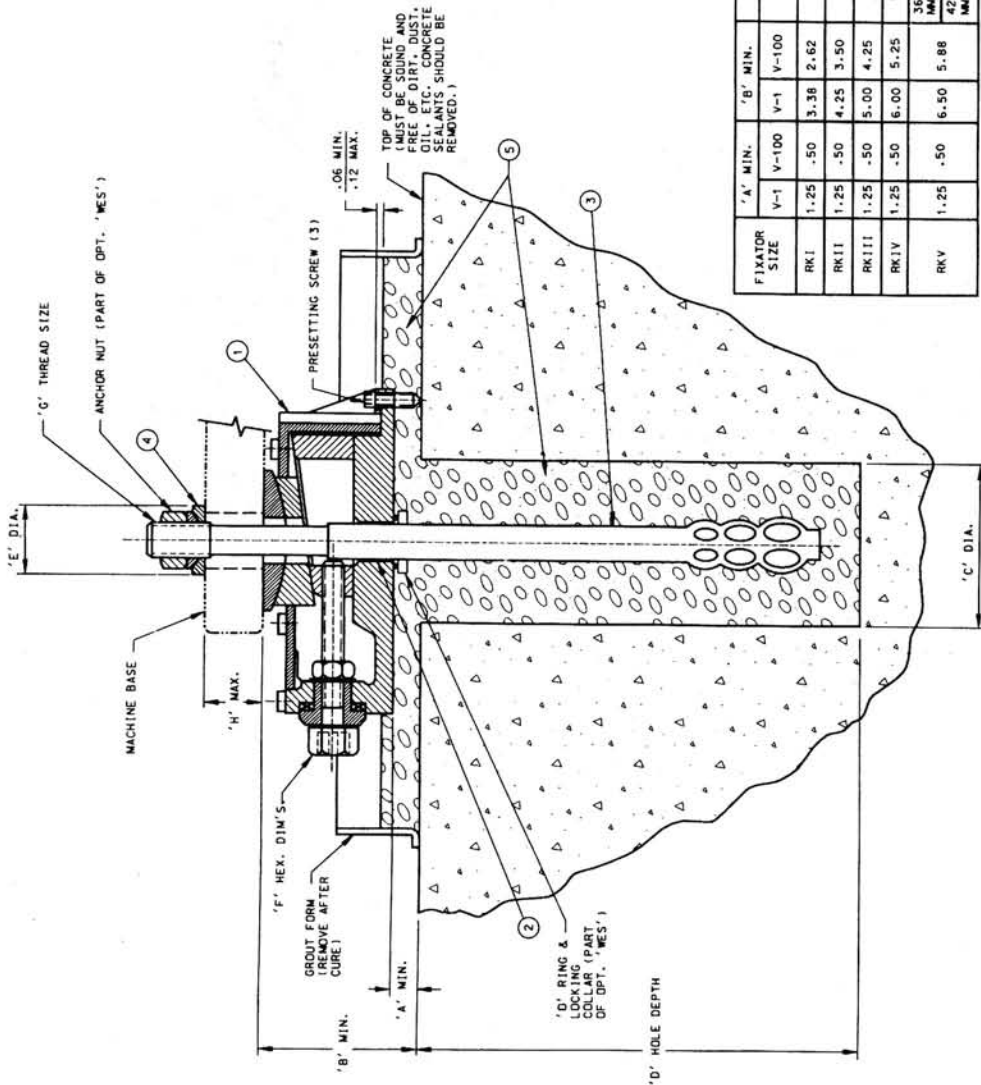
RK FIXATOR® STANDARD INSTALLATION DRAWINGS

STANDARD INSTALLATION DRAWING

RK FIXATOR® WITH OPTION 'WES'

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION
1	1	FIXATOR BASIC UNIT
2	1	OPT. 'F' CLEARANCE HOLE
3	1	OPT. 'WES' ANCHOR/HOLD DOWN STUD
4	1	OPT. 'P' SPHERICAL WASHER SET
5	A/R	OPT. 'R' OVERSIZE SPHERICAL WASHER SET
		V-1 NON-SHINK GROUT
		STANDARD V-100 EPOXY GROUT



FIXATOR SIZE	'A' MIN.		'B' MIN.		'C' DIA.		'D' HOLE DEPTH		'E' DIA.		'F' HEX. DIM'S.		'G' THREAD SIZE		'H' MAX.	
	V-1	V-100	V-1	V-100	V-1	V-100	HOLE DEPTH	OPT.	'P'	'R'	OUTSIDE MM/(IN.)	INSIDE MM	MM	IN.	MM	IN.
RKI	1.25	.50	3.38	2.62	3.00	1.50	9.00	1.57	1.73	1.73	22/(.88)	—	16MM	2.38	—	—
RKII	1.25	.50	4.25	3.50	3.50	2.00	10.50	1.73	2.20	2.20	22/(.88)	—	20MM	4.00	—	—
RKIII	1.25	.50	5.00	4.25	4.00	2.50	13.50	2.20	2.68	2.68	24/(.94)	—	24MM	4.75	—	—
RKIV	1.25	.50	6.00	5.25	5.00	3.00	16.25	2.68	3.07	3.07	32/(1.25)	17	30MM	5.25	—	—
RKV	1.25	.50	6.50	5.88	36	3.50	22.50	36	3.07	3.94	36/(1.42)	—	36MM	6.00	—	—
					42	4.00	30.00	42	3.94	42/(1.65)	—	42MM	7.88	—	—	
					42	4.00	30.00	42	3.94	42/(1.65)	—	42MM	7.88	—	—	



BDX 1000, JACKSON, NJ 49204-1000
 INSTALLATION TECHNOLOGIES 517-164-6660 FAX 517-164-5607

TITLE STANDARD INSTALLATION DRAWING
 MACHINE FIXATOR WITH OPTION 'WES'
 COMPANY UNISORB CUSTOMER

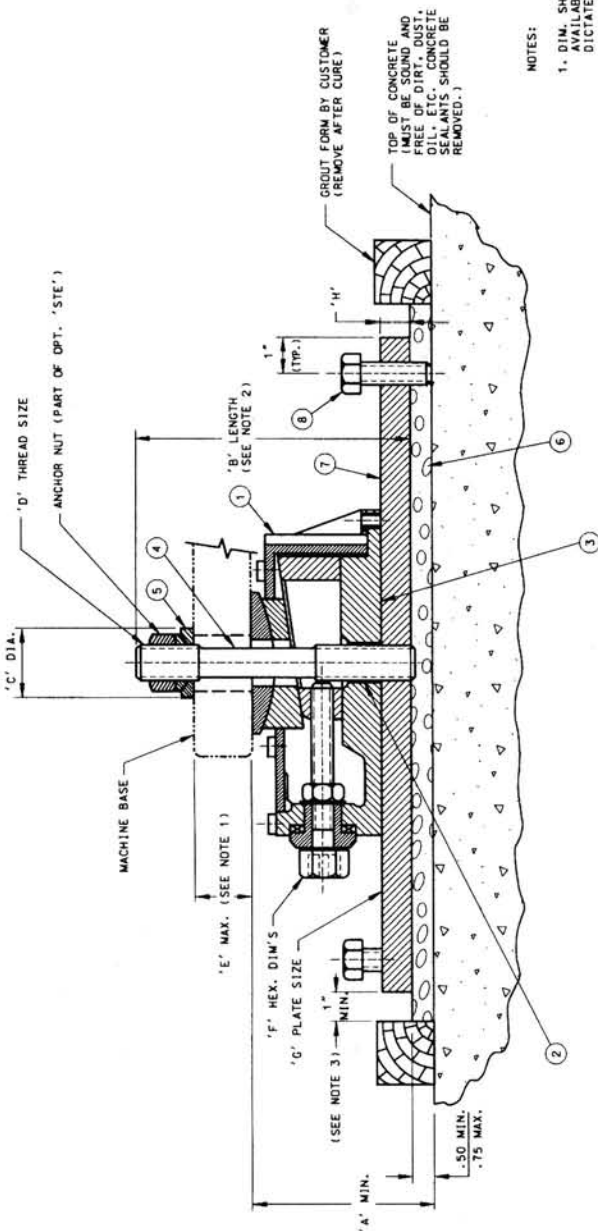
REV.	DESCRIPTION	DATE	CHKD.	RAH	SCALE	NTS	DWG.	NO.	469900-02	REV
1	REVISED DIMENSIONS OF 5/97	08/97	DR.	BY	DC					1

RK FIXATOR® STANDARD INSTALLATION DRAWINGS

STANDARD INSTALLATION DRAWING RK FIXATOR® WITH OPTION 'STE' ON STEEL PLATE

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION
1	1	FIXATOR BASIC UNIT
2	1	DPT., 'F' CLEARANCE HOLE
3	1	DPT., 'B' MACHINED BASE
4	1	DPT., 'STE' HOLD DOWN STUD
5	1	DPT., 'P' SPHERICAL WASHER SET
6	A/R	STANDARD V-100 EPOXY GROUT
7	1	STEEL PLATE, (SEE 'G' & 'H' DIM'S)
8	3	OPTIONAL LEVELING BOLT, VARIABLE SIZE, FURNISHED BY UNISORB OR CUSTOMER
		FURNISHED BY UNISORB OR CUSTOMER



- NOTES:
1. DIM. SHOWN IS FOR STANDARD LENGTH OPT. 'STE'. LONGER STUDS ARE AVAILABLE FOR SPECIAL APPLICATIONS WHERE MACHINE FOOT THICKNESS DICTATES.
 2. DIM. SHOWN IS WHEN USING STANDARD LENGTH OPT. 'STE'.
 3. 1" MIN. OUTSIDE OF STEEL PLATE ON 3 SIDES, AND 3" MIN. OUTSIDE OF STEEL PLATE ON GROUT POUR SIDE.
 4. SEE UNISORB DRAWING 466900-03A FOR DIMENSIONAL LAYOUT OF STEEL PLATES.

FIXATOR SIZE	'A' MIN.	'B' L'TH	'C' DIA.		'D' TH'D SIZE	'E' MAX	'F' HEX. DIM'S.		'G' PLATE SIZE	'H'
			DPT. 'P'	DPT. 'R'			OUTSIDE MM/(IN.)	INSIDE MM		
RK I	3.59	6.69	1.73	2.20	16MM	2.09	22/(.88)	6X9	1"	
RK II	4.45	6.69	1.73	2.20	20MM	1.17	22/(.88)	7X10	1"	
RK III	5.24	8.46	2.20	2.68	24MM	1.76	24/(1.94)	8X12	1"	
RK IV	6.28	10.24	2.68	3.07	30MM	2.10	32/(1.25)	10X15	1.25"	
RK V	7.31	12.20	3.07	3.94	36MM	2.63	36/(1.42)	15X20	1.50"	

UNISORB®

BOX 1000, JACKSON, MI 49204-1000
INSTALLATION TECHNOLOGIES 517-764-6060 FAX 517-764-5607

TITL0	STANDARD INSTALLATION DRAWING
MACHIN	FIXATOR WITH OPTION "STE" ON STEEL PLATE
COMPANY	UNISORB CUSTOMER
DR. BY	DG
SCALE	N.T.S.
DWG. NO.	469900-03
DATE	1/8/90
REV.	2

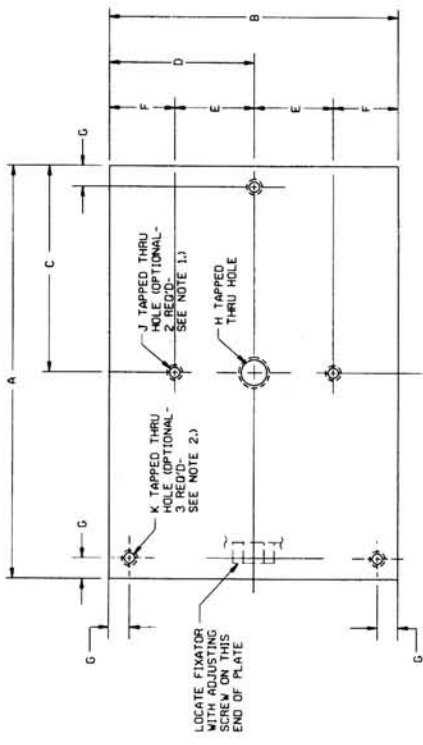
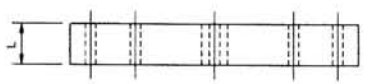
2	ADDED RKV & REV. 'M' DIM.	7/94
1	ADDED NOTE #4	5/92
	DESCRIPTION	

RK FIXATOR® STANDARD INSTALLATION DRAWINGS

STANDARD INSTALLATION DRAWING STEEL PLATES FOR USE WITH RK FIXATORS® AND OPTION 'STE'

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION



NOTES:

1. TAPPED HOLES 'J' WILL ONLY BE REQ'D. WHEN OPT. 'D' LATERAL STABILIZER IS USED.
2. TAPPED HOLES 'K' WILL ONLY BE REQ'D. IF CUSTOMER IS GOING TO USE PRE-LEVELING BOLTS.
3. FOR FIXATOR INSTALLATION DRAWING UTILIZING STEEL PLATES SEE UNISORB DRAWING 469900-03.

STEEL PLATE

FIXATOR SIZE	A	B	C	D	E	F	G	H	J	K	L
RK I	9.00	6.00	4.50	3.00	1.81	1.19	1.50	16MM	3/8-16	1/4-20	1.00
RK II	10.00	7.00	5.00	3.50	2.00	1.50	1.50	20MM	3/8-16	1/4-20	1.00
RK III	12.00	8.00	6.00	4.00	2.62	1.38	1.50	24MM	1/2-13	1/4-20	1.00
RK IV	15.00	10.00	7.50	5.00	3.18	1.82	1.50	30MM	3/4-10	1/4-20	1.25
RK V	20.00	15.00	10.00	7.50	4.04	3.47	1.75	36MM	1-8	3/8-16	1.50

BOLTS FOR TAPPED HOLES

FIXATOR SIZE	J (2) HOLES	K (3) HOLES
RK I	3/8-16 X 1.50 LONG HEX. HEAD WITH FLAT WASHER	1/4-20 X 2.00 LONG HEX. HEAD
RK II	3/8-16 X 1.50 LONG HEX. HEAD WITH FLAT WASHER	1/4-20 X 2.00 LONG HEX. HEAD
RK III	1/2-13 X 1.75 LONG HEX. HEAD WITH FLAT WASHER	1/4-20 X 2.00 LONG HEX. HEAD
RK IV	3/4-10 X 2.25 LONG HEX. HEAD WITH FLAT WASHER	1/4-20 X 2.25 LONG HEX. HEAD
RK V	1-8 X 2.25 LONG HEX. HEAD WITH FLAT WASHER	3/8-16 X 2.25 LONG HEX. HEAD

UNISORB®
 BOX 1000, JACKSON, MI 49204-1000
 INSTALLATION TECHNOLOGIES 517-764-6060 FAX 517-764-5607

TITLE: DIMENSIONAL LAYOUT

MACHINE: STEEL PLATES FOR USE WITH FIXATORS & OPT. "STE"

COMPANY: UNISORB CUSTOMER

DR. BY:	DATE:	SCALE:	DWG. NO.:	REV.
	7/94		469900-03A	1

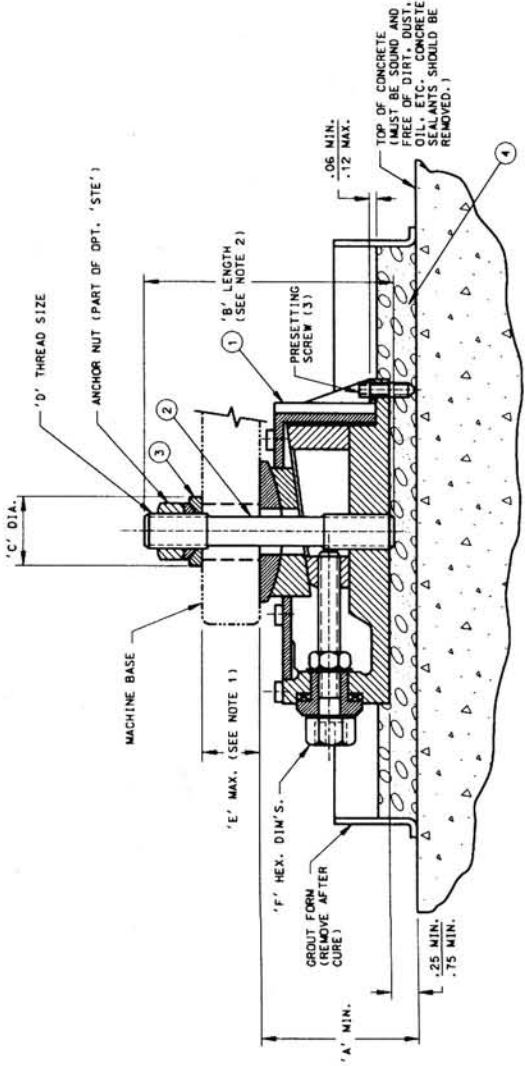
REV.	DESCRIPTION	DATE	SCALE	DWG. NO.	REV
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RK FIXATOR® STANDARD INSTALLATION DRAWINGS

STANDARD INSTALLATION DRAWING RK FIXATOR® WITH OPTION 'STE'

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION
1	1	FIXATOR BASIC UNIT
2	1	DPT. 'STE' HOLD DOWN STUD
3	1	DPT. 'P' SPHERICAL WASHER SET
4	A/R	DPT. 'R' OVERSIZE SPHERICAL WASHER SET
		STANDARD V-100 EPOXY GROUT



NOTES:

1. DIM. SHOWN IS FOR STANDARD LENGTH OPT. 'STE'. LONGER STUDS ARE AVAILABLE FOR SPECIAL APPLICATIONS WHERE MACHINE FOOT THICKNESS DICTATES.
2. DIM. SHOWN IS WHEN USING STANDARD LENGTH OPT. 'STE'.

FIXATOR SIZE	'A' MIN.	'B' L'TH	'C' DIA.		'D' TH'D SIZE	'E' MAX.	'F' HEX. DIM'S.	
			OPT. 'P'	OPT. 'R'			OUTSIDE MAX. (IN.)	INSIDE (MM)
RK1								
RK11	3.20	6.69	1.73	2.20	20MM	2.17	22/(1.88)	
RK111	4.01	8.46	2.20	2.66	24MM	2.76	24/(1.94)	
RK1V	4.78	10.24	2.68	3.07	30MM	3.35	32/(1.25)	17
RKV	5.56	12.20	3.07	3.94	36MM	4.13	36/(1.42)	19

UNISORB®

INSTALLATION TECHNOLOGIES

Title: STANDARD INSTALLATION DRAWING
Machine: FIXATOR WITH OPTION "STE"
Company: UNISORB CUSTOMER

RDY. 1000, JACKSON, MI 48204-1000
517-764-6060 FAX 517-764-5607

DR. BY: DG SCALE: NTS DWG. NO.: 469900-04
DATE: CHD. RAH DATE: 3/8/90 NO.:

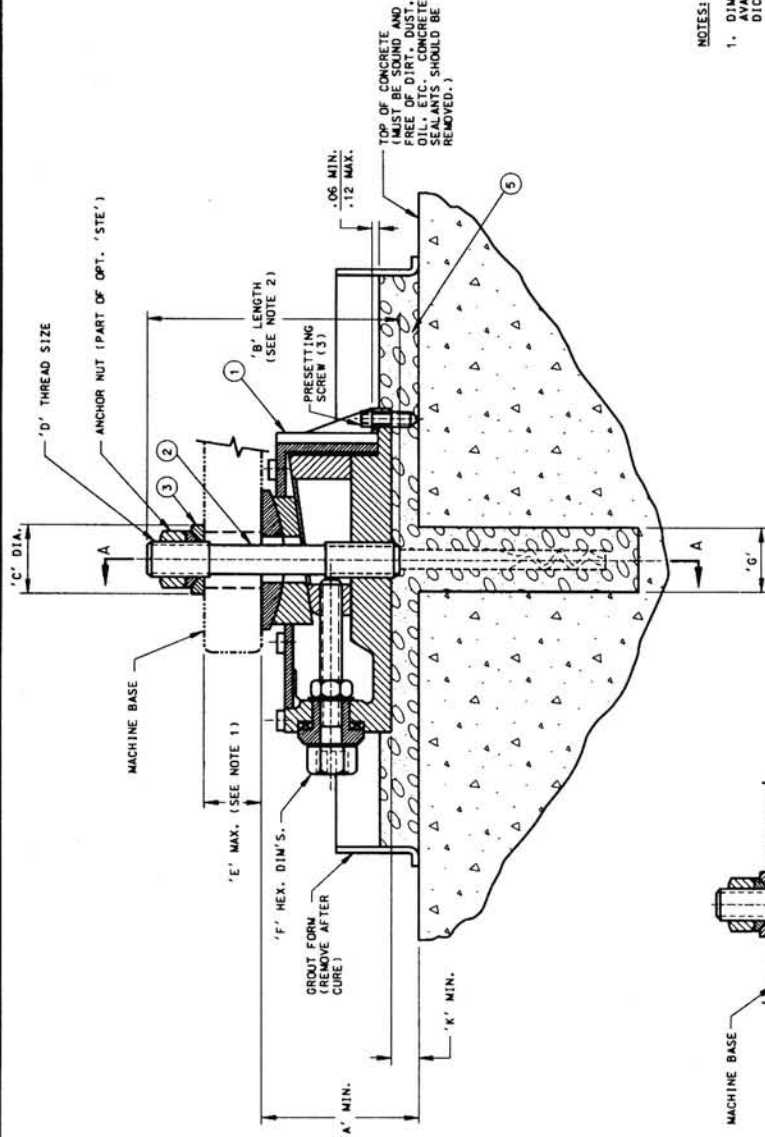
REV. DESCRIPTION DATE

RK FIXATOR® STANDARD INSTALLATION DRAWINGS

STANDARD INSTALLATION DRAWING RK FIXATOR® WITH OPTIONS 'STE' AND 'C'

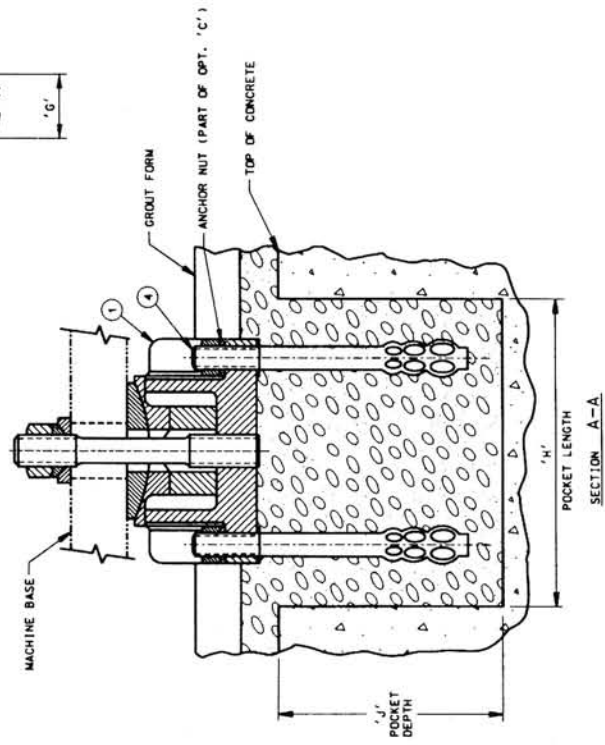
BILL OF MATERIALS

ITEM	QTY	DESCRIPTION
1	1	FIXATOR BASIC UNIT
2	1	OPT. 'STE' HOLD DOWN STUD
3	1	OPT. 'P' SPHERICAL WASHER SET
4	1	OPT. 'R' OVERSIZE SPHERICAL WASHER SET
5	A/R	V-1 NON-SHRINK GROUT STANDARD V-100 EPOXY GROUT



NOTES:
1. DIM. SHOWN IS FOR STANDARD LENGTH OPT. 'STE'. LONGER STUDS ARE AVAILABLE FOR SPECIAL APPLICATIONS WHERE MACHINE FOOT THICKNESS DICTATES.
2. DIM. SHOWN IS WHEN USING STANDARD LENGTH OPT. 'STE'.

FIXATOR SIZE	'A' MIN.		'B' L'TH	'C' DIA.		'D' TH'D SIZE	'E' TH'D MAX.	'F' HEX. DIM'S.		'G' V-1	'H' V-100	'J' POCKET DEPTH	'K' MIN.	
	V-1	V-100		OPT. 'P'	OPT. 'R'			OUTSIDE MM/(IN.)	INSIDE MM					
RK I	4.25	3.50	6.69	1.73	2.20	20MM	2.17	22/(1.88)	2.50	1.75	6.25	5.50	1.25	.50
RK II	5.00	4.25	8.46	2.20	2.68	24MM	2.76	24/(1.94)	2.75	2.00	8.00	7.25	1.25	.50
RK III	6.00	6.25	10.24	2.68	3.07	30MM	3.35	32/(1.25)	3.25	2.50	9.50	9.00	1.25	.50
RK IV	6.50	5.88	12.20	3.07	3.94	36MM	4.13	36/(1.42)	4.00	3.50	12.00	10.50	1.25	.50



BDX 1000, JACKSON, MI 49204-1000
INSTALLATION TECHNOLOGIES 517-764-6060 FAX 517-764-5807

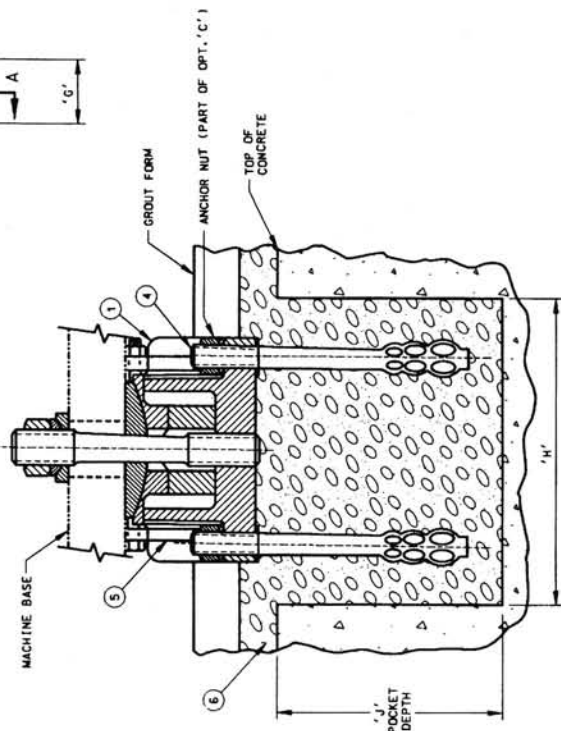
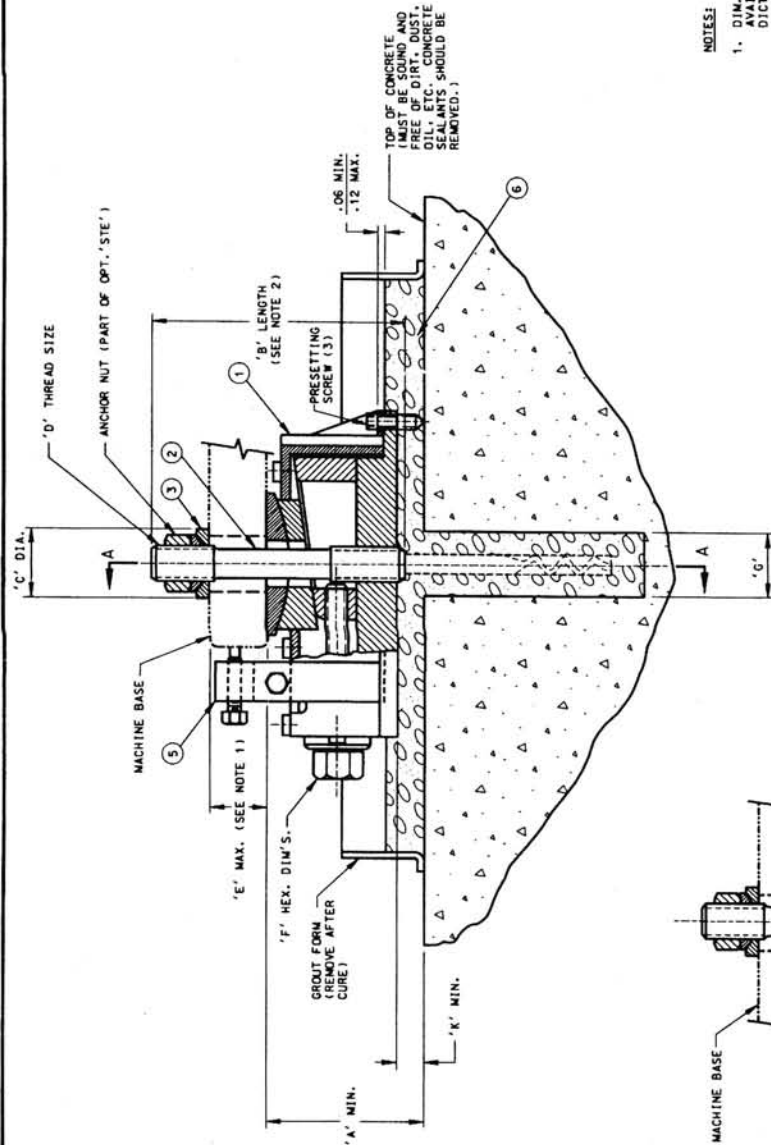
Title STANDARD INSTALLATION DRAWING
MACHINE FIXATOR WITH OPTIONS 'STE' AND 'C'
COMPANY UNISORB CUSTOMER
DR. BY DG SCALE NTS DWG. 469900-05
DATE CHKD. RAH DATE 3/21/90 REV

RK FIXATOR® STANDARD INSTALLATION DRAWINGS

STANDARD INSTALLATION DRAWING RK FIXATOR® WITH OPTIONS 'STE', 'C' AND 'D'

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION
1	1	FIXATOR BASIC UNIT
2	1	OPT. 'STE' HOLD DOWN STUD
3	1	OPT. 'P' SPHERICAL WASHER SET
4	1	OPT. 'R' OVERSIZE SPHERICAL WASHER SET
5	1	OPT. 'C' SIDE ANCHOR BOLT (2 BOLTS PER UNIT)
6	A/R	OPT. 'D' LATERAL STABILIZER V-1 NON-SHRINK GROUT STANDARD V-100 EPOXY GROUT

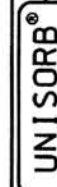


NOTES:

1. DIM. SHOWN IS FOR STANDARD LENGTH OPT. 'STE'. LONGER STUDS ARE AVAILABLE FOR SPECIAL APPLICATIONS WHERE MACHINE FOOT THICKNESS DICTATES.

2. DIM. SHOWN IS WHEN USING STANDARD LENGTH OPT. 'STE'.

FIXATOR SIZE	'A' MIN.		'B' L TH	'C' DIA.		'D' TH'D SIZE	'E' MAX.	'F' HEX. DIM'S.		'G' INSIDE MM		'H' V-1 V-100		'J' POCKET DEPTH		'K' MIN.
	V-1	V-100		OPT.	'P'			'R'	V-1	V-100	V-1	V-100	V-1	V-100		
RKI	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RKII	4.25	3.50	6.69	1.73	2.20	20MM	2.17	22(1.88)	2.50	1.75	6.25	5.50	5.50	1.25	.50	.50
RKIII	5.00	4.25	8.46	2.20	2.68	24MM	2.76	24(1.94)	2.75	2.00	8.00	7.25	9.50	1.25	.50	.50
RKIV	6.00	6.25	10.24	2.68	3.07	30MM	3.35	32(1.25)	3.25	2.50	9.50	9.00	11.50	1.25	.50	.50
RKV	6.50	5.88	12.20	3.07	3.94	36MM	4.13	36(1.42)	4.00	3.50	12.00	10.50	13.75	1.25	.50	.50



INSTALLATION TECHNOLOGIES 517-764-6060 FAX 517-764-5607

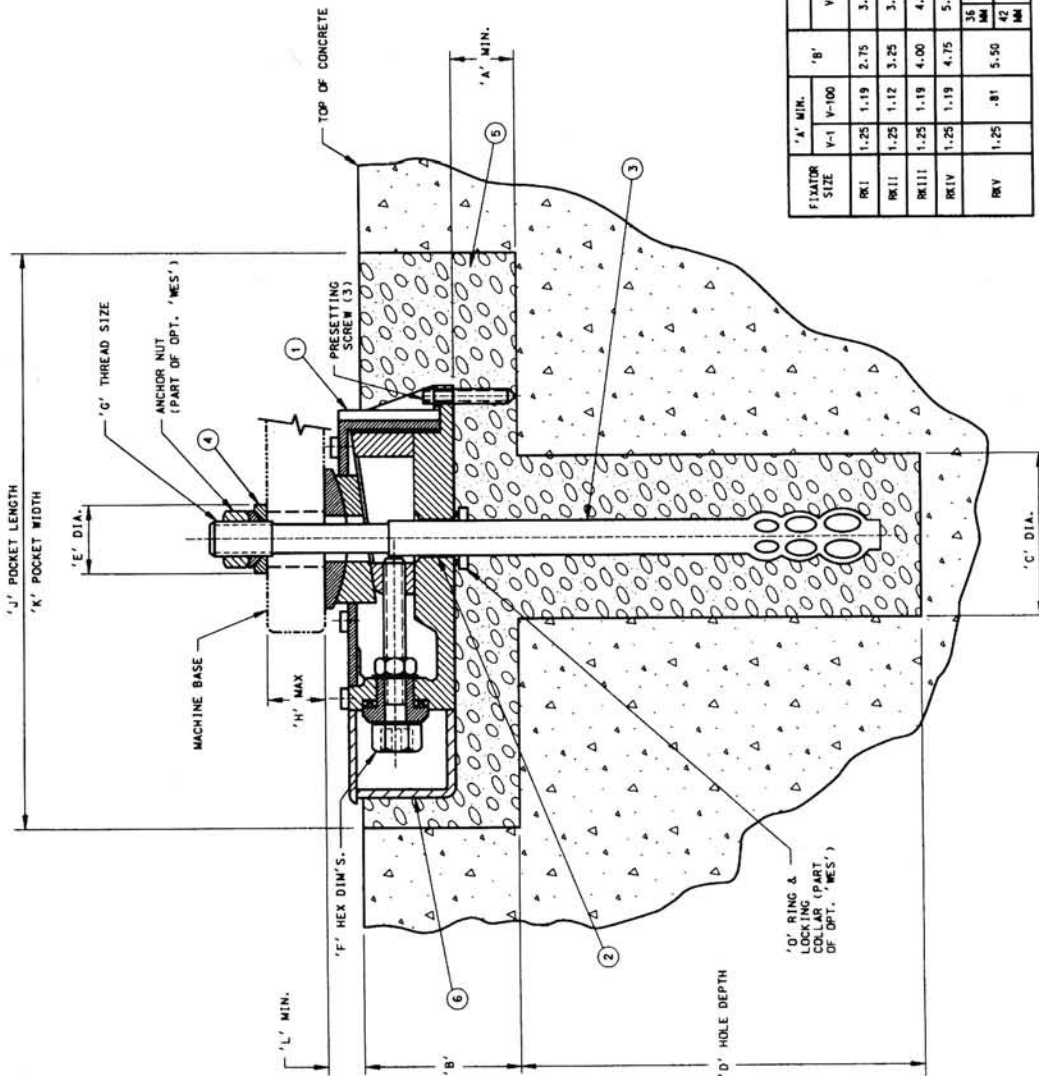
TITLE	STANDARD INSTALLATION DRAWING
MACHINE	FIXATOR WITH OPTIONS 'STE', 'C' AND 'D'
COMPANY	UNISORB CUSTOMER
DR. BY	DG
SCALE	NIS
DWG. NO.	469900-06
REV.	REV

RK FIXATOR® STANDARD INSTALLATION DRAWINGS

STANDARD INSTALLATION DRAWING RK FIXATOR® WITH OPTIONS 'WES' AND 'M'

BILL of MATERIALS

ITEM	QTY	DESCRIPTION
1	1	FIXATOR BASIC UNIT
2	1	DPT. 'F' CLEARANCE HOLE
3	1	DPT. 'WES' ANCHOR/HOLD DOWN STUD
4	1	DPT. 'P' SPHERICAL WASHER SET
5	A/R	DPT. 'R' OVERSIZE SPHERICAL WASHER SET
6	1	STANDARD V-100 EPOXY GROUT
		DPT. 'M' ADJUSTMENT BOLT ENCLOSURE



FIXATOR SIZE	'A' MIN.		'B'		'C' DIA.		'D' HOLE DEPTH		'E' DIA.		'F' HEX. DIM'S.		'G' THREAD SIZE		'H' POCKET MAX. L'TH		'J' POCKET L'TH		'K' POCKET W'TH		'L' MIN.		
	V-1	V-100	V-1	V-100	V-1	V-100	DPT. 'P'	DPT. 'R'	DPT. 'P'	DPT. 'R'	OUTSIDE MM/IN.	INSIDE MM	16MM	20MM	24MM	30MM	36MM	42MM	V-1	V-100	V-1	V-100	
RK I	1.25	1.19	2.75	3.00	1.50	1.50	1.57	1.73	22(1.88)	—	16MM	—	2.38	12.25	6.50	.59	.53	—	—	—	—	—	
RK II	1.25	1.12	3.25	3.50	2.00	2.00	1.73	2.20	22(1.88)	—	20MM	—	4.00	12.25	8.00	.95	.82	—	—	—	—	—	
RK III	1.25	1.19	4.00	4.00	2.50	2.50	2.20	2.68	24(1.94)	—	24MM	—	4.75	13.75	10.00	.99	.93	—	—	—	—	—	
RK IV	1.25	1.19	4.75	5.00	3.00	3.00	2.68	3.07	32(1.25)	17	30MM	17	5.25	17.75	12.00	1.25	1.19	—	—	—	—	—	
RV	1.25	.81	5.50	6.00	3.50	3.50	3.07	3.94	36(1.42)	35	36MM	35	6.00	—	—	—	—	20-50	13.00	1.75	1.31	—	
			4.2	4.2	4.2	4.2	3.94	4.2	4.32	42	42	42	7.00	—	—	—	—	—	—	—	—	—	—

UNISORB®
 INSTALLATION TECHNOLOGIES 517-764-6060 FAX 517-764-5807
 BOX 1000, JACKSON, MI 49204-1000

TITLE: STANDARD INSTALLATION DRAWING

MACHINE: FIXATOR WITH OPTIONS 'WES' AND 'M'

COMPANY: UNISORB CUSTOMER

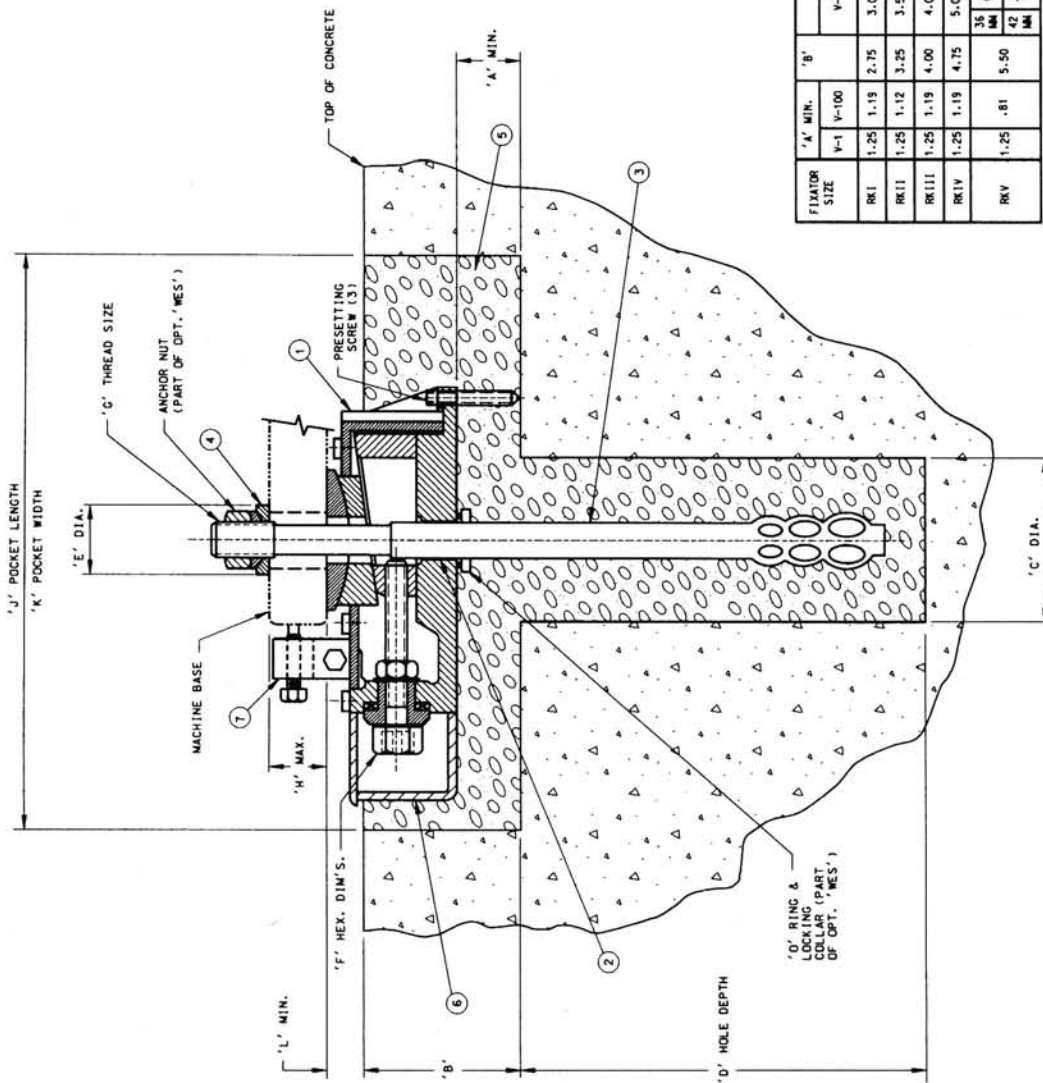
REV. 1	DESCRIPTION	DATE CHKD. RAH	DATE 5/1/90	SCALE NTS	DWG. NO. 469900-07	REV 1
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RK FIXATOR® STANDARD INSTALLATION DRAWINGS

STANDARD INSTALLATION DRAWING RK FIXATOR® WITH OPTIONS 'WES', 'M' AND 'D'

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION
1	1	FIXATOR BASIC UNIT
2	1	DPT. 'F' CLEARANCE HOLE
3	1	DPT. 'WES' ANCHOR/HOLD DOWN STUD
4	1	DPT. 'P' SPHERICAL WASHER SET
5	A/R	DPT. 'R' OVERSIZE SPHERICAL WASHER SET V-1 NON-SHRINK GROUT
6	1	STANDARD V-100 EPOXY GROUT
7	1	DPT. 'M' ADJUSTMENT BOLT ENCLOSURE DPT. 'D' LATERAL STABILIZER



FIXATOR SIZE	'A' MIN.		'B'		'C' DIA.		'D' HOLE DEPTH		'E' DIA.		'F' HEX. DIM'S.		'G' THREAD SIZE		'H' MAX.		'J' POCKET LENGTH		'K' POCKET WIDTH	
	V-1	V-100	V-1	V-100	V-1	V-100	V-1	V-100	DPT. 'P'	DPT. 'R'	OUTSIDE MM/(IN.)	INSIDE MM	16MM	20MM	24MM	30MM	36MM	42MM	V-1	V-100
RK1	1.25	1.19	2.75	3.00	1.50	9.50	1.57	1.73	2.27/(.88)	2.27/(.88)	16MM	2.38	12.25	6.50	.59	.53	12.25	6.50	.59	.53
RK11	1.25	1.12	3.25	3.50	2.00	10.75	1.73	2.20	2.27/(.88)	2.27/(.88)	20MM	4.00	12.25	8.00	.95	.82	12.25	8.00	.95	.82
RK111	1.25	1.19	4.00	4.00	2.50	13.50	2.20	2.68	2.41/(.94)	2.41/(.94)	24MM	4.75	13.75	10.00	.99	.93	13.75	10.00	.99	.93
RK1V	1.25	1.19	4.75	5.00	3.00	16.25	2.68	3.07	3.21/(1.25)	3.21/(1.25)	17	5.25	17.75	12.00	1.25	1.19	17.75	12.00	1.25	1.19
RKV	1.25	.81	5.50	4.00	3.50	22.50	3.07	3.94	3.50	3.94	36MM	6.00	20.50	13.00	1.75	1.31	20.50	13.00	1.75	1.31
					4.00	30.00	4.2	4.92	4.2	4.92	42MM	7.88								

UNISORB®

BOX 1000, JACKSON, MI 49204-1000
INSTALLATION TECHNOLOGIES 517-764-6660 FAX 517-764-5607

TITLE STANDARD INSTALLATION DRAWING

MACHINE FIXATOR WITH OPTIONS 'WES', 'M' AND 'D'

COMPANY UNISORB CUSTOMER

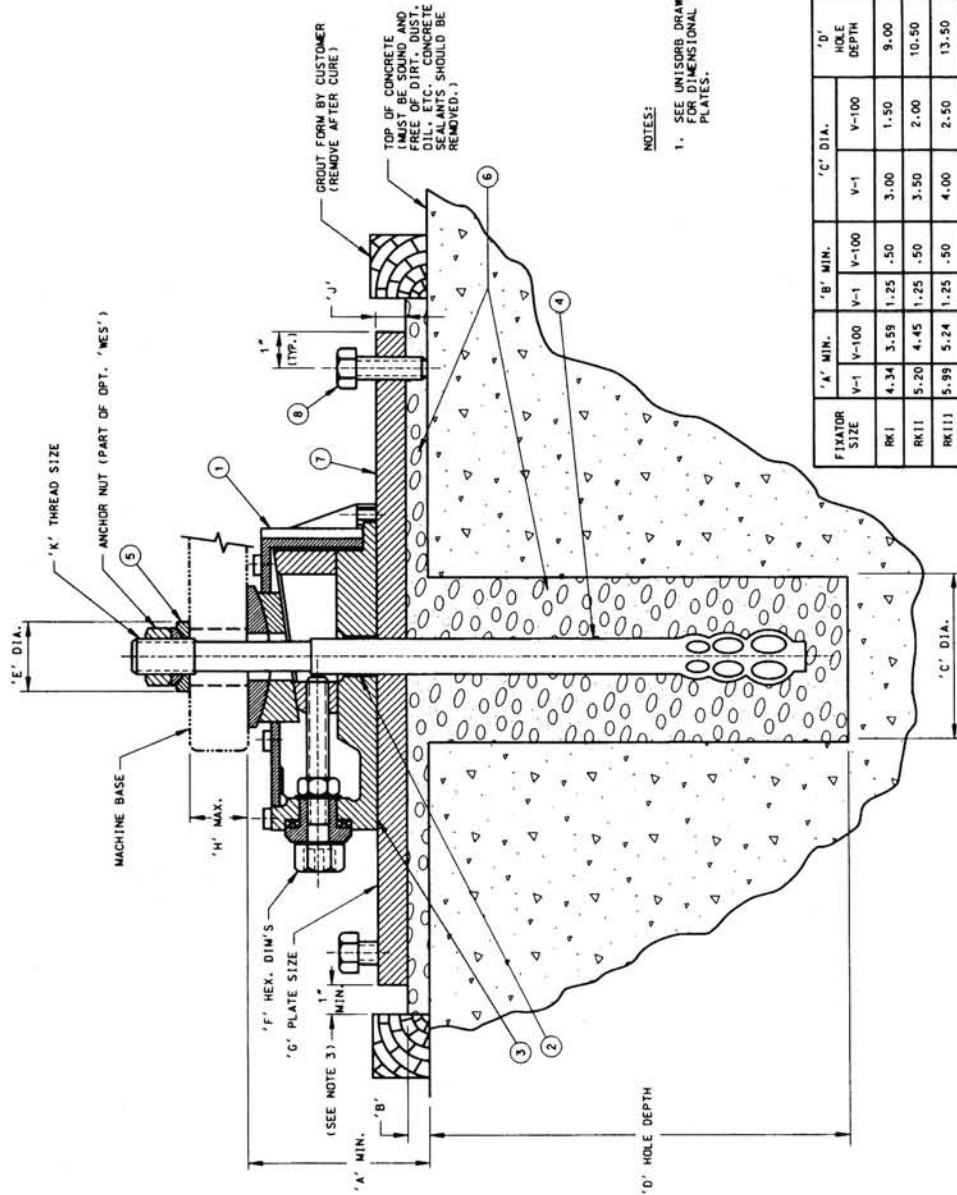
1	REVISED DIMENSIONS OF	6/97	DR. BY	DG	SCALE	NIS	DWG. NO.	469900-08	REV	1
	DESCRIPTION		CHKD.	RAH	DATE	5/22/90				

RK FIXATOR[®] STANDARD INSTALLATION DRAWINGS

STANDARD INSTALLATION DRAWING RK FIXATOR[®] WITH OPTION 'WES' ON STEEL PLATE

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION
1	1	FIXATOR BASIC UNIT
2	1	OPT. 'F' CLEARANCE HOLE
3	1	OPT. 'B' MACHINED BASE
4	1	OPT. 'WES' ANCHOR/HOLD DOWN STUD
5	1	OPT. 'P' SPHERICAL WASHER SET
6	A/R	OPT. 'R' DIVERSIZE SPHERICAL WASHER SET V-1 NON-SHRINK GROUT
7	1	STANDARD V-100 EPOXY GROUT
8	3	STEEL PLATE, (SEE 'G' & 'H' DIM'S)
		FURNISHED BY UNISORB OR CUSTOMER
		OPTIONAL LEVELING BOLT, VARIABLE SIZE, FURNISHED BY UNISORB OR CUSTOMER



NOTES:
1. SEE UNISORB DRAWING 46900-10A FOR DIMENSIONAL LAYOUT OF STEEL PLATES.

FIXATOR SIZE	'A' MIN.		'B' MIN.		'C' DIA.		'D' HOLE DEPTH		'E' DIA.		'F' HEX. DIM'S		'H' MAX.	'J' 'R' THREAD SIZE		
	V-1	V-100	V-1	V-100	V-1	V-100	V-1	V-100	OPT. 'P'	OPT. 'R'	OUTSIDE MM/(IN.)	INSIDE MM				
RK I	4.34	3.59	1.25	.50	3.00	2.00	10.50	9.00	1.57	1.73	22/(.88)	—	6.93	2.38	1.00	16MM
RK II	5.20	4.45	1.25	.50	3.50	2.50	10.50	10.50	1.73	2.20	22/(.88)	—	7.10	4.00	1.00	20MM
RK III	5.99	5.24	1.25	.50	4.00	2.50	13.50	13.50	2.20	2.68	24/(.94)	—	8.12	4.75	1.00	24MM
RK IV	7.03	6.28	1.25	.50	5.00	3.00	16.25	16.25	2.68	3.07	32/(1.25)	17	10.15	5.25	1.25	30MM
RK V	8.06	7.31	1.25	.50	35	6.00	35	22.50	35	3.07	35	3.94	35	6.00	1.25	36MM
			42	4.00	42	7.00	42	30.00	42	3.94	42	4.92	42	7.88	1.25	42MM
			MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM

UNISORB[®]

BOX 1000, JACKSON, NJ 08504-1000
INSTALLATION TECHNOLOGIES 311-764-6660 FAX 311-764-3607

TITLE STANDARD INSTALLATION DRAWING

MACHINE FIXATOR WITH OPTION 'WES' ON STEEL PLATE

COMPANY UNISORB CUSTOMER

REV. 3
REV. 10
REV. 11
REV. 12
REV. 13
REV. 14
REV. 15
REV. 16
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REV. 100

REV.	DESCRIPTION	DATE	BY	CHKD.	RAH
3	REVISED FOR THE USE OF	6/97			
2	REV. 'R' DIM.	7/94			
1	ADDED NOTE #1	5/92			

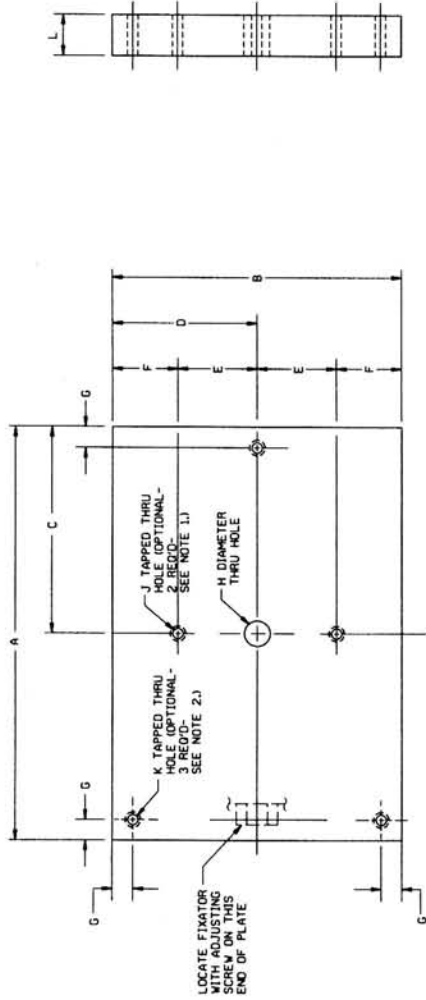
NO. 469900-10
REV 3

RK FIXATOR® STANDARD INSTALLATION DRAWINGS

STANDARD INSTALLATION DRAWING STEEL PLATES FOR USE WITH RK FIXATORS® AND OPTION 'WES'

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION



STEEL PLATE

FIXATOR SIZE	A	B	C	D	E	F	G	H	J	K	L
RK1	9.00	6.00	4.50	3.00	1.81	1.19	.50	16MM	3/8-16	1/4-20	1.00
RK11	10.00	7.00	5.00	3.50	2.00	1.50	.50	20MM	3/8-16	1/4-20	1.00
RK111	12.00	8.00	6.00	4.00	2.62	1.38	.50	24MM	1/2-13	1/4-20	1.00
RK1V	15.00	10.00	7.50	5.00	3.18	1.82	.50	30MM	3/4-10	1/4-20	1.25
RKV	20.00	15.00	10.00	7.50	4.03	3.47	.75	38MM	1-8	3/8-16	1.50
								42MM	1-75		

FIXATOR SIZE	BOLTS FOR TAPPED HOLES		
	J (2) HOLES	K (3) HOLES	L
RK1	3/8-16 X 1.50 LONG HEX. HEAD WITH FLAT WASHER	1/4-20 X 2.00 LONG HEX. HEAD	
RK11	3/8-16 X 1.50 LONG HEX. HEAD WITH FLAT WASHER	1/4-20 X 2.00 LONG HEX. HEAD	
RK111	1/2-13 X 1.75 LONG HEX. HEAD WITH FLAT WASHER	1/4-20 X 2.00 LONG HEX. HEAD	
RK1V	3/4-10 X 2.25 LONG HEX. HEAD WITH FLAT WASHER	1/4-20 X 2.25 LONG HEX. HEAD	
RKV	1-8 X 2.25 LONG HEX. HEAD WITH FLAT WASHER	3/8-16 X 2.50 LONG HEX. HEAD	

NOTES:
 1. TAPPED HOLES 'J' WILL ONLY BE REO'D. WHEN OPT. 'D' LATERAL STABILIZER IS USED.
 2. TAPPED HOLES 'K' WILL ONLY BE REO'D. IF CUSTOMER IS GOING TO USE PRE-LEVELING BOLTS.
 3. FOR FIXATOR INSTALLATION DRAWING UTILIZING STEEL PLATES SEE UNISORB DRAWING 469900-10.

UNISORB®
 BOX 1000, JACKSON, MI 49204-1000
 INSTALLATION TECHNOLOGIES 517-764-6060 FAX 517-764-5607

T1110 DIMENSIONAL LAYOUT

MACHINE STEEL PLATES FOR USE WITH FIXATORS & OPT. "WES"
 COMPANY UNISORB CUSTOMER

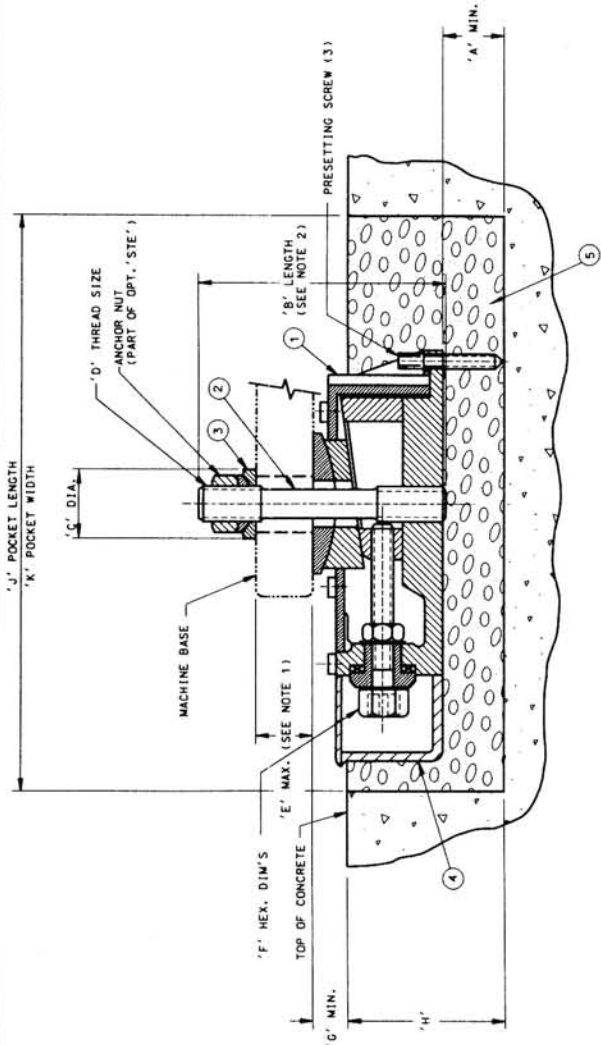
REV. 1	REV. RKV DIMENSIONS	7/94	DR. BY	DG	SCALE	NIS	DWG.	469900-10A	REV	1
	DESCRIPTION	DATE	CHKD.	RAH	DATE	5/11/92	NO.			

RK FIXATOR® STANDARD INSTALLATION DRAWINGS

STANDARD INSTALLATION DRAWING RK FIXATOR® WITH OPTIONS 'STE' AND 'M'

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION
1	1	FIXATOR BASIC UNIT
2	1	OPT. 'STE' HOLD DOWN STUD
3	1	OPT. 'R' SPHERICAL WASHER SET
4	1	OPT. 'M' ADJUSTMENT BOLT ENCLOSURE
5	A/R	V-1 NON-SHRINK GROUT STANDARD V-100 EPOXY GROUT



NOTES:

1. DIMENSION SHOWN IS FOR STANDARD LENGTH OPT. 'STE'. LONGER STUDS ARE AVAILABLE FOR SPECIAL APPLICATIONS WHERE MACHINE FOOT THICKNESS DICTATES.
2. DIMENSION SHOWN IS WHEN USING STANDARD LENGTH OPT. 'STE'.

FIXATOR SIZE	'A' MIN. V-1		'B' LENGTH	'C' DIA.		'D' THREAD SIZE	'E' MAX.	'F' HEX. DIM'S.		'G' MIN. V-1	'H' MIN.	'J' POCKET LENGTH	'K' POCKET WIDTH
	V-1	V-100		OPT. 'P'	OPT. 'R'			OUTSIDE MM/(IN.)	INSIDE MM				
RK1	1.25	—	—	—	—	—	—	—	—	—	—	—	—
RK11	1.25	1.12	6.69	1.73	2.20	20MM	2.17	22/(1.88)	—	.95	.82	3.25	12.25
RK111	1.25	1.19	8.46	2.20	2.68	24MM	2.76	24/(1.94)	—	.99	.93	4.00	13.75
RK1V	1.25	1.19	10.24	2.68	3.07	30MM	3.35	32/(1.25)	17	1.25	1.19	4.75	17.75
RK1V	1.25	.81	12.20	3.07	3.94	36MM	4.13	36/(1.42)	19	1.75	1.31	5.50	20.50

UNISORB®

BOX 1000, JACKSON, MI 48304-1000
INSTALLATION TECHNOLOGIES 517-764-6660 FAX 517-764-5807

TIT116 STANDARD INSTALLATION DRAWING

MACHINE FIXATOR WITH OPTIONS "STE" AND "M"

COMPANY UNISORB CUSTOMER

DR. BY DG SCALE NTS DWG. NO. 469900-12

DATE CHKD. RAH DATE 3/14/93 NO. 469900-12

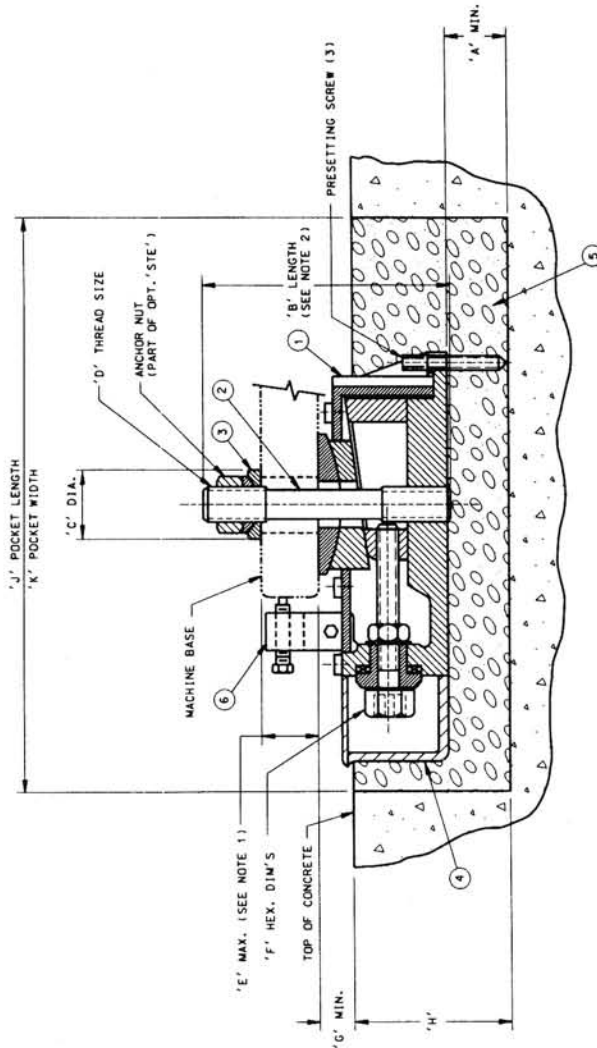
REV. DESCRIPTION

RK FIXATOR® STANDARD INSTALLATION DRAWINGS

STANDARD INSTALLATION DRAWING RK FIXATOR® WITH OPTIONS 'STE', 'M' AND 'D'

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION
1	1	FIXATOR BASIC UNIT
2	1	DPT. 'STE' HOLD DOWN STUD
3	1	DPT. 'R' SPHERICAL WASHER SET
4	1	DPT. 'R' OVERSIZE SPHERICAL WASHER SET
5	A/R	DPT. 'N' ADJUSTMENT BOLT ENCLOSURE
6	1	STANDARD V-100 EPOXY GROUT
		DPT. 'D' LATERAL STABILIZER



NOTES:

1. DIMENSION SHOWN IS FOR STANDARD LENGTH DPT. 'STE'. LONGER STUDS ARE AVAILABLE FOR SPECIAL APPLICATIONS WHERE MACHINE FOOT THICKNESS DICTATES.
2. DIMENSION SHOWN IS WHEN USING STANDARD LENGTH DPT. 'STE'.

FIXATOR SIZE	'A' MIN. V-1		'B' LENGTH	'C' DIA. DPT. 'P', 'R'		'D' THREAD SIZE	'E' MAX.	'F' HEX. DIM'S. INSIDE MM		'G' MIN. V-1	'H'	'J' POCKET LENGTH	'K' POCKET WIDTH
	V-1	V-100		DPT. 'P'	DPT. 'R'			MM	MM				
RK11	1.25	1.12	6.69	1.73	2.20	20MM	2.17	22/(1.88)	.95	.82	3.25	12.25	8.00
RK111	1.25	1.19	8.46	2.20	2.68	24MM	2.76	24/(1.94)	.99	.93	4.00	13.75	10.00
RK1V	1.25	1.19	10.24	2.68	3.07	30MM	3.35	32/(1.25)	1.25	1.19	4.75	17.75	12.00
RKV	1.25	.81	12.20	3.07	3.94	36MM	4.13	36/(1.42)	1.75	1.31	5.50	20.50	13.00

UNISORB®

BOX 1000, JACKSON, MI 49204-1000
INSTALLATION TECHNOLOGIES 517-764-6060 FAX 517-764-5607

Title STANDARD INSTALLATION DRAWING

Machine FIXATOR WITH OPTIONS 'STE', 'M' & 'D'

Company UNISORB CUSTOMER

DR. BY DG SCALE NTS DWG. 469900-14
DATE 3/14/91 NO. REV

REV.1 DESCRIPTION DATE CHKD. RAH

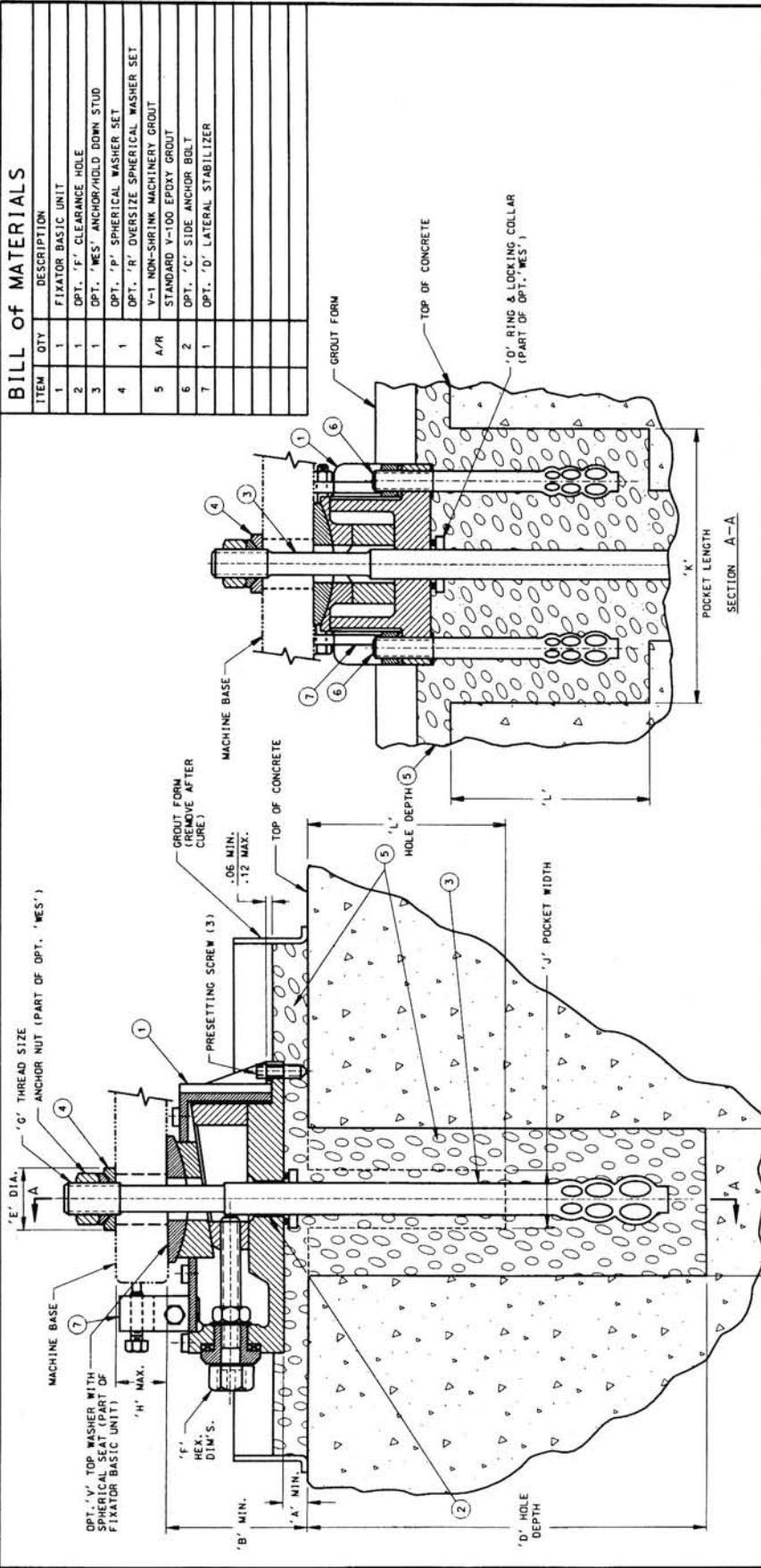
RK FIXATOR® STANDARD INSTALLATION DRAWINGS

STANDARD INSTALLATION DRAWING

RK FIXATOR® WITH OPTIONS 'WES', 'C' AND 'D'

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION
1	1	FIXATOR BASIC UNIT
2	1	OPT. 'F' CLEARANCE HOLE
3	1	OPT. 'WES' ANCHOR/HOLD DOWN STUD
4	1	OPT. 'P' SPHERICAL WASHER SET
5	1	OPT. 'R' DIVERSIZE SPHERICAL WASHER SET
6	1	OPT. 'C' SIDE ANCHOR BOLT
7	1	OPT. 'D' LATERAL STABILIZER



FIXATOR SIZE	'A' MIN.		'B' MIN.		'C' DIA.		'D' HOLE DEPTH		'E' DIA.		'F' HEX. DIM'S.		'G' THREAD SIZE		'H' MAX.		'J'		'K'		'L'	
	V-1	V-100	V-1	V-100	V-1	V-100	V-1	V-100	OPT.	'P'	OPT.	'R'	OUTSIDE MM/IN.	INSIDE MM	MAX.	V-1	V-100	V-1	V-100	V-1	V-100	
RK1	1.25	.50	3.38	2.62	3.00	1.50	3.00	9.00	1.57	1.73	22/(1.88)	16MM	2.38	2.50	1.75	6.25	5.50	5.50	5.50	5.50	5.50	5.50
RK11	1.25	.50	4.25	3.50	3.50	2.00	10.50	1.73	2.20	22/(1.88)	20MM	4.00	2.50	1.75	6.25	5.50	5.50	5.50	5.50	5.50	5.50	
RK111	1.25	.50	5.00	4.25	4.00	2.50	13.50	2.20	2.68	24/(1.94)	24MM	4.75	2.75	2.00	8.00	7.25	9.50	9.50	9.50	9.50	9.50	
RK1V	1.25	.50	6.00	6.25	5.00	3.00	16.25	2.68	3.07	32/(1.25)	17	30MM	5.25	3.25	2.50	9.00	11.50	11.50	11.50	11.50	11.50	
RKV	1.25	.50	6.50	5.88	36	3.50	36	22.50	36	3.07	36	3.94	36/(1.42)	19	6.00	4.00	3.50	12.00	10.50	13.75	13.75	13.75
					42	4.00	42	30.00	42	3.94	42	4.92	7.88	7.88	7.88							

UNISORB®
 BOX 1000, JACKSON, MI 48304-1000
 INSTALLATION TECHNOLOGIES 517-764-6660 FAX 517-764-5607

TITLE: STANDARD INSTALLATION DRAWING

MACHINE: FIXATOR WITH OPTIONS 'WES', 'C' & 'D'

COMPANY: UNISORB CUSTOMER

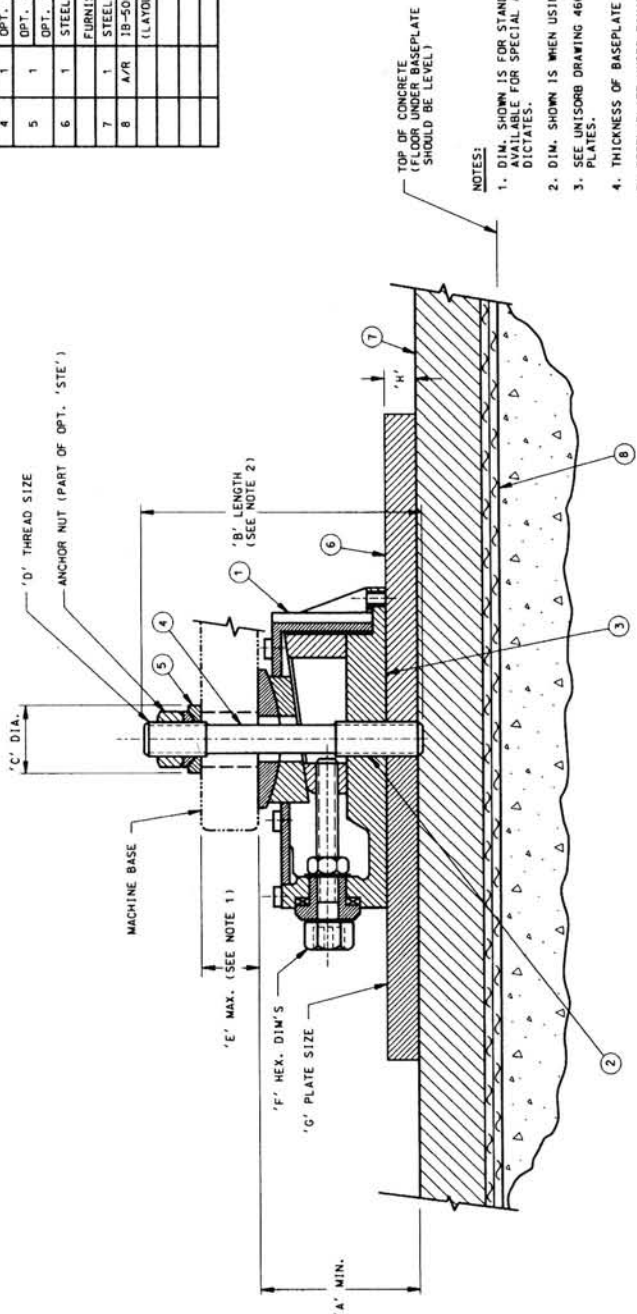
REV.	DESCRIPTION	DATE	CHKD.	RAH	DATE	3/31/92	DRG.	NO.	469900-15	REV.	1
1	REVISED DIMENSIONS OF C-100 CORE HOLES	6/97	DR.	BY	OG	SCALE	NIS	NO.	469900-15	REV.	1

RK FIXATOR® STANDARD INSTALLATION DRAWINGS

STANDARD INSTALLATION DRAWING RK FIXATOR® WITH OPTION 'STE' ON STEEL PLATE USED WITH STEEL BASEPLATES AND IB-500-B1 PADS

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION
1	1	FIXATOR BASIC UNIT
2	1	OPT. 'F' CLEARANCE HOLE
3	1	OPT. 'B' MACHINED BASE
4	1	OPT. 'STE' HOLD DOWN STUD
5	1	OPT. 'P' SPHERICAL WASHER SET
6	1	OPT. 'R' OVERSIZE SPHERICAL WASHER SET
7	1	STEEL PLATE, (SEE 'G' & 'H' DIM'S)
8	1	FURNISHED BY UNISORB OR CUSTOMER
9	1	STEEL BASEPLATE (BY CUSTOMER)
10	1	IB-500-B1 BASE ISOL. MAT'L (DOUBLE THICK)
11	1	(LAYOUT DEPENDS ON APPLICATION)



TOP OF CONCRETE
OR STEEL BASEPLATE
SHOULD BE LEVEL

NOTES:

- DIM. SHOWN IS FOR STANDARD LENGTH OPT. 'STE'. LONGER STUDS ARE AVAILABLE FOR SPECIAL APPLICATIONS WHERE MACHINE FOOT THICKNESS DICTATES.
- DIM. SHOWN IS WHEN USING STANDARD LENGTH OPT. 'STE'.
- SEE UNISORB DRAWING 466900-03A FOR DIMENSIONAL LAYOUT OF STEEL PLATES.
- THICKNESS OF BASEPLATE VARIES DEPENDING ON APPLICATION.
- STEEL PLATE UNDER FIXATOR MAY BE EITHER BOLTED OR WELDED TO STEEL BASEPLATE.

FIXATOR SIZE	'A' MIN.	'B' L' TH	'C' DIA.		'D' TH'D SIZE	'E' MAX.	'F' HEX. DIM'S		'G' PLATE SIZE	'H'
			DPT. 'P'	DPT. 'R'			OUTSIDE MM/(IN.)	INSIDE MM		
RK1	3.09	6.69	1.73	2.20	16MM	2.09	22/(1.88)	—	6 x 9	1"
RK111	3.95	6.69	1.73	2.20	20MM	1.17	22/(1.88)	—	7 x 10	1"
RK1111	4.74	8.46	2.20	2.68	24MM	1.76	24/(1.94)	—	8 x 12	1"
RK1V	5.78	10.24	2.68	3.07	30MM	2.10	32/(1.25)	17	10 x 15	1.25"
RK1V	6.81	12.20	3.07	3.94	36MM	2.63	36/(1.42)	19	15 x 20	1.50"

UNISORB®

BOX 1000, JACKSON, MI 49204-1000
INSTALLATION TECHNOLOGIES 517-764-6060 FAX 517-764-5607

T1110 STANDARD INSTALLATION DRAWING

MACHINE RK FIXATOR WITH OPT. 'STE' ON STEEL PLATE,
USED WITH STEEL BASEPLATES AND IB-500-B1 PADS

COMPANY UNISORB CUSTOMER

1 REVISED PICTURE OF ITEM 8	7/97 DR. BY DC	SCALE NTS	DWG. NO. 469900-17	REV 1
REV.	DATE CHD. RAH	DATE 3/31/83	NO.	

RK FIXATOR® GROUT CHART

SUGGESTED GROUT QUANTITIES

Cubic Ft. of Grout Per Fixator

GROUT TYPE	FIXATOR MODEL NO.	OPTIONS					
		BASIC UNIT	WES*	C*	LE*	M	LES
V-1	RKI 9" Grout Form	.11	.15	.15	.12	.12	0.16
V-100		.05	.06	.09	.06		** .02
V-1	RKII 11" Grout Form	.16	.22	.20	.17	.18	0.22
V-100		.07	.09	.10	.08		** .02
V-1	RKIII 11" Grout Form	.16	.26	.28	.17	.32	0.39
V-100		.07	.11	.15	.08		** .03
V-1	RKIV 12" x 15" Grout Form	.23	.41	.44	.24	.59	0.71
V-100		.10	.15	.25	.11		** .05
V-1	RKV 12" x 15" Grout Form	.23	36mm = .60 42mm = .90	.61	.24	.85	1.04
V-100		.10	36mm = .19 42mm = .27	.39	.11		** .06

Yields for Grout:	V-1	48# Bag	= .40 cu. ft.
	V-100	11# Kit	= .10 cu. ft.
		22# Kit	= .21 cu. ft.
		55# Kit	= .53 cu. ft.

* Includes Basic Unit grout (above concrete).

** Add this amount per inch in specified length of Option LES.

NOTES:

1. V-1 Grout for Basic Unit (above concrete) is figured @ 2-1/4" thick.
2. V-100 Grout for Basic Unit (above concrete) is figured @ 1" thick.
3. Options M & LES refer to either V-1 or V-100 (no grout above surface of concrete).
4. Option LES includes grout quantity for Option M.

RK FIXATOR® ADDITIONAL TECHNICAL INFORMATION

MATERIAL SPECIFICATIONS FOR ANCHOR BOLTS FURNISHED

WITH FIXATOR MODELS RKI, RKII and RKIII

Chemical Composition:

"C" = 0.42 to 0.50%

"Si" = 0.15 to 0.35%

"Mn" = 0.50 to 0.80%

"P" = 0.045% max.

"S" = 0.045% max.

Physical Properties: (for 5/8" to 2" Dia.)

Tensile = 93,000 to 128,000 psi min.

Yield = 58,000 to 68,300 psi min.

Elong. = 14% to 18% within 5 D min.

Red.o.Area = 35% to 40% min.

Material Grade: C - 45 (German)

DIN - Standard: DIN 17,200 (German)

Material Nr.: 1 0503 (German)

RK FIXATOR® ADDITIONAL TECHNICAL INFORMATION

CAST-IN-PLACE BEAMS VS. FIXATORS

Beams:

Concrete Preparation:

- Requires accurate machine drawings to fabricate beams.
- Requires accurate machine drawings to position beams for future machine match.
- Requires locating beams in three planes when the reference point is quite a distance away.
- Secure beams so fluid concrete does not push them out of position.
- Requires drilling of vent holes in beams so fluid concrete does not trap air under flange.
- requires use of concrete additives to reverse normal shrinkage to assure flanges are fully supported.
- Often requires post cure pressure grouting to secure flange.

Placement:

- Position Machine over beams.
- Attach anchor/levelers.
- Use machine as template and weld into position.
- (Provides connection to beam, but must still be leveled and aligned.)

Level:

- Adjust leveling screws to achieve level.
- Tighten anchor nuts.
- Verify level.
- Repeat until level.

Fixators:

Concrete Preparation:

- Finish concrete flat.
- Snap chalk lines per machine anchor bolt drawings.
- Core drill anchor holes.

Placement:

- Position Machine over cores.
- Attach Fixators.
- Rough Level.
- Grout into Place.
- (Simultaneously sets anchor and provides grout shim for initial level.)

Level:

- Snug anchor nuts.
- Pretension (Two full turns on Adjusting screw.)
- Level (Raise low points to match high point.)

RK FIXATOR® ADDITIONAL TECHNICAL INFORMATION

Cast-in-Place Beams vs. Fixators

Features/Benefits

Beams

- Connection to foundation consists of anchor stud, plate, welded to beam.
- Anchor is only as stiff as the top flange of the beam.
- Stiffness is reduced as the anchor is located closer to the edge of the flange.

- ◆ Connection to the concrete is 'neutral'.
- ◆ As dynamic forces are encountered, the concrete is placed under alternating compressive and tensile forces. (Concrete design properties are compressive, not tensile.)
- ◆ Alignment procedure may result in different torque required to achieve level. (More frequent re-alignments.)

- Inaccurate machine drawings, and/or beam fabrication and placement will result in costly delays and rework.

- ◆ In transfer lines, future station changes will require substantial foundation rework.

- ⇒ Success depends on accuracy of machine drawings, field measurements, accuracy of placing beams, and concrete placing techniques. Final alignment can be time consuming, and re-alignments more frequent.

Fixators

- Single anchor goes from concrete embedment through machine foot.
- Grouting rigidly secures each anchor and fixator base.

- ◆ Alignment procedure tensions anchor bolt, placing concrete in compression.
- ◆ Dynamic forces place concrete in more or less compression, but not into tension.
- ◆ Alignment procedure places each anchor in nearly identical tension. (Less frequent re-alignments.)

- Inaccurate machine drawings result filling core with grout and coring in proper position with little impact on cost or installation time schedule.

- ◆ In transfer lines, additional stations can be added with no foundation rework.

- ⇒ Success depends on grouting techniques, Final alignments are fast and re-alignments are infrequent.

RK FIXATOR® ADDITIONAL TECHNICAL INFORMATION

FIXATOR LEVELING PROCEDURES

1. Lower the machine on the temporary shims or Fixators.
2. Use the temporary shims or Fixators to pre-align before grouting to within .002 in./ft.
3. After the grout cures remove the temporary shims or Fixators.
4. Use an ordinary hex head wrench to tighten the anchor bolt nuts to specified torque by hand (see table in Fixator Manual).
5. In half to full turn amounts, give all Fixator adjustment screws two right-hand turns to obtain extra anchor bolt prestress. The adjustment screws must also be turned if a higher prestressing force should be required in the anchor bolts (see table in Fixator Manual).
6. After determining the high position, level the machine to final precision, taking care to make upward adjustments to the high position. This will prevent the loss of anchor bolt prestress.
7. If the machine should need re-leveling at a later date, repeat the upward adjustment.
8. If the "upward" leveling of the machine should be impractical (if only one point must be leveled downwards, for instance), proceed as follows:
 - a) Use the adjustment screws to pull the Fixators down, thus producing a visible gap between the spherical washer and machine bed sole.
 - b) Use the anchor bolt nuts to push the machine bed down and beyond the level to be obtained.
 - c) Again, use the adjustment screws to raise the Fixator until the desired level has been reached.

Note: When pulling the machine bed down, make sure to avoid excessive tension in the anchor bolts. A torque wrench should be used for this work. If the yield point of the anchor bolt material is exceeded, adjacent Fixators will also have to be readjusted in the manner described so that several anchor bolts will be engaged in the downward thrust.

The permissible clamping force and torque values can be taken from the table in the Fixator Manual.

RK FIXATOR® ADDITIONAL TECHNICAL INFORMATION

FIXATORS UNDER TRANSFER MACHINERY

Each of these types of equipment require precision alignment not only to maintain repeatability of machining operation, but also to properly transfer the workpiece.

Pallet, shuttles and gantry systems require this precision alignment to assure correct workpiece location.

Equipment required:

- Several .0005 in./ft. spirit levels
- Parallel bars
- 1, 2, 3 spacing blocks
- Transit or laser
- Piano wire
- 4" x 4" shim stock in various thicknesses (1/32", 1/16", 1/8", 1/4", 1/2", 1", 2", 3", 4")
- Toe Jacks
- Hydraulic Jacks
- Come-along bars
- Temporary Fixators

NOTE: Mark all level locations with grease pencil.

1. Calibrate all levels daily.
2. Establish a benchmark height requirement via use of transit or laser. Mark target locations on foundation.
3. Establish center wire with column measurements.
4. Place 1st station. Height and location must be verified because Station #1 will become your reference point for the rest of the installation.
5. Level station #1.
6. Secure station #1 with mechanical holding blocks.
7. Add any sequential stations and level, maintaining reference to station #1.
8. When assembly of machine is complete, recheck levels at previous location. Run final center wire. This will allow you to verify height and location at each station. Recheck levels.
9. Grout.
10. Final level procedure.

RK FIXATOR® ADDITIONAL TECHNICAL INFORMATION

FIXATOR CHECK LIST FOR TRANSFER LINES

- ___ 1. Preset locking collar on anchor bolt to allow 1/4" of thread to show above anchor nut.
- ___ 2. Check Fixator height adjustment visually by removing spherical seat and top wedge and then reassemble. (All units should be two full turns from bottom.)
- ___ 3. Attach Fixator with spherical seat on bottom of machine foot and spherical washer set on top of machine foot--snug anchor bolt.
- ___ 4. Check Fixator position under machine making sure it is level and adjustment screw is accessible.
- ___ 5. Lower machine base on temporary mounts and shim plates. Maintain proper minimum clearance between Fixator and floor for grout (1-1/2" for V-1 and 1/2" for V-100 Standard).
- ___ 6. Cut grout form down one side with razor knife. Place the grout form in position. Duct tape back side of cut grout form to create seal.
- ___ 7. Align machine to center wire.
- ___ 8. Use hydraulic jacks to rough level and shim temporary Fixators into adjustment range. Level base using temporary Fixators.

NOTE: IF TORQUE REQUIREMENTS INCREASE ON ADJUSTMENT BOLT, MAXIMUM HEIGHT MAY HAVE BEEN REACHED AND FURTHER TURNING WILL CAUSE BREAKAGE.

RK FIXATOR® ADDITIONAL TECHNICAL INFORMATION

FIXATOR ALIGNMENT SYSTEM WITH HEAVY DUTY JAKEBOLT ANCHOR INSTALLATION PROCEDURE

The Fixator and Heavy Duty Jakebolt are used in combination whenever pre-set anchor bolts and precision alignment are a requirement. The Jakebolt allows the anchor to be located in the new foundation yet allows for lateral movement to compensate for normal construction variances. It features a fully retractable stud which remains in the housing until needed. This allows a "clear floor" condition whenever required yet the stud is in place with full thread engagement ready for use.

The Fixator is Unisorb's state-of-the-art alignment system. It offers precise alignment in a minimum amount of time and greatly reduces the frequency of realignments. This brochure provides the machine tool installer with information on the proper use of the Fixator Alignment System and the Jakebolt anchor bolt.

GENERAL NOTES

The Fixator System includes a number of options for anchor bolts. When used with the Jakebolt anchor, it is necessary to provide an adequate clearance hole through the base. Be sure to specify option "F" to obtain this clearance hole.

The chart below shows which size Heavy Duty Jakebolt to use in conjunction with the various Fixator basic units.

FIXATOR MODEL	HEAVY DUTY JAKEBOLT MODEL
RK-I	5/8" x 12" Heavy Duty Jakebolt
RK-II	3/4" x 12" Heavy Duty Jakebolt
RK-III	1" x 12" Heavy Duty Jakebolt
RK-IV	1-1/4" x 12" Heavy Duty Jakebolt
RK-V	1-1/2" x 12" Heavy Duty Jakebolt

RK FIXATOR® ADDITIONAL TECHNICAL INFORMATION

HEAVY DUTY JAKEBOLT INSTALLATION

The Heavy Duty Jakebolts must be positioned accurately. If the machine is not available for precise measurements, use only "certified" or "as built" floor plans to locate the anchors.

A template may be prepared to simulate the machine base. The Jakebolts are hung from the template, projecting into the foundation. After rebar isolation material and other foundation considerations are in order, the concrete may be poured. Be sure that the template is rigid enough to prevent shifting as the concrete flows around the Jakebolts. It is helpful to attach the Jakebolts to the rebar cage to prevent them from shifting to the side. Any part of the Jakebolt stud which is exposed should be greased heavily to prevent concrete from adhering to the threads or filling the screwdriver slot.

PREPARATIONS FOR FIXATOR INSTALLATION

Build forms for grouting. The height will vary depending on the grout being used and the amount of slope of the foundation. Typically, a 1-1/2" grout pad will be used with V-1 grout and a 1/2" grout pad with V-100 Epoxy Grout. Dimensions of the grout dams are as follows.

FIXATOR MODEL	INSIDE DIMENSIONS
RK-I	7" x 10"
RK-II	7" x 10"
RK-III	10" x 12"
RK-IV	11" x 14"
RK-V	12" x 16"

Check the Fixator to assure that all components are present. The base washer and spherical washer sets should be located. Double-check the position of the wedge by turning the adjusting screw fully counter clockwise. This will assure that the full travel of the wedge is available for adjustment. Also turn the three set screws in the base of the Fixator so there is no projection below the base.

Locate a foam bushing around the Jakebolt stud to prevent grout from casting it into position. Ethafoam or other products which will compress and expand are acceptable. The thickness is dependent on the desired grout pad thickness.

RK FIXATOR® ADDITIONAL TECHNICAL INFORMATION

LOCATE THE FIXATORS

Place the Fixators over the Jakebolts and orient them so the adjusting screw will be accessible after the equipment is in position. Place the grout dam over the Fixator, providing the larger clearance on the side from which the grout will be poured. Be sure to caulk between the dam and the concrete and secure the form in place. Allow the caulk to cure before grouting.

Raise the Jakebolt stud to project through the Fixator. This will make it easier to raise the Jakebolt stud through the machine.

NOTE: If the machine base is not designed so that a screwdriver can be inserted through the anchor hole to raise the stud, the stud can be raised high enough to go through the machine base at this time.

LOCATE THE MACHINE

Lift the machine into position and carefully lower it. Support it on temporary blocks to provide about a 1-1/2" clearance between the top of the Fixator and the underside of the machine (provide 1/2" of clearance if using V-100 Epoxy Grout).

Rough level the machine using shims under the temporary blocks. A carpenter's level is adequate for this procedure. The machine should be level within 1/8" or better.

RK FIXATOR® ADDITIONAL TECHNICAL INFORMATION

PREPARE THE GROUT

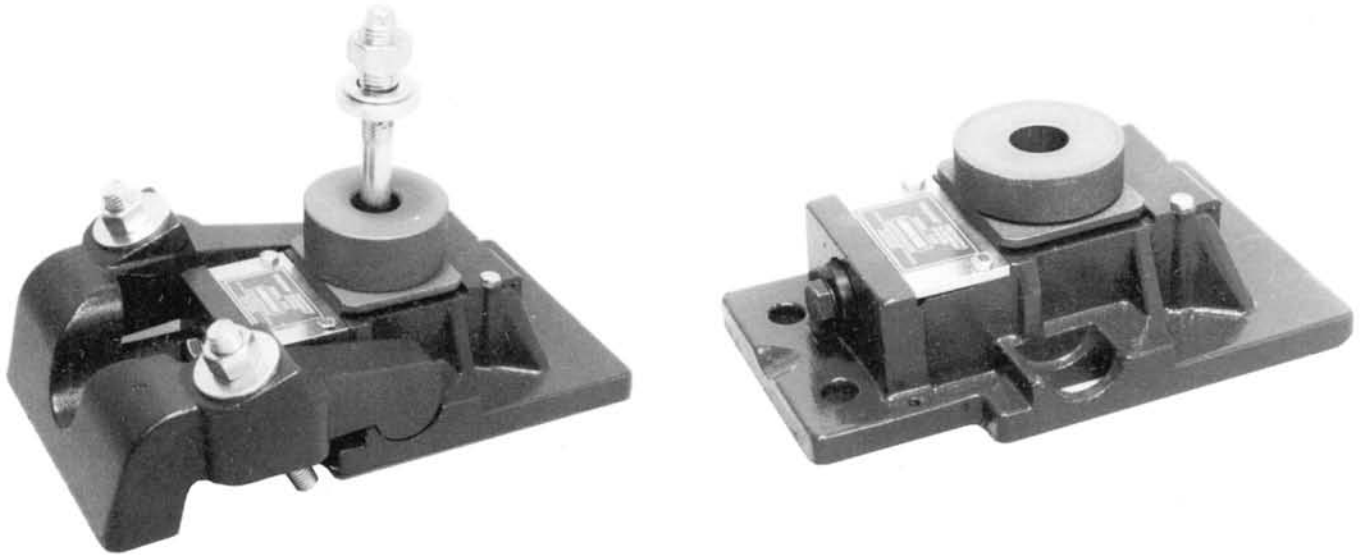
Raise the Fixators so they are tight against the machine by turning the three set screws in the Fixator base. This will provide the desired grout clearance under the Fixator. Do not attempt to support the machine weight on these screws. Raise the Jakebolt stud far enough through the machine foot to add the washer and nut. Do not tighten at this time.

Assure that the Fixators are in the proper position, the grout dams are secure and the caulk is cured. Check also that the foam strip has expanded enough to provide a seal to keep the grout from the Jakebolt stud and correct if necessary.

Mix and pour the grout according to the instructions provided with product. Pour from only one side and allow the grout to flow under the Fixator to the other side. Pour the grout slightly up the side of the Fixator base flange.

After the grout has cured the nuts may be hand tightened on the Jakebolt and the temporary blocks removed. Refer to the machine alignment procedures in the Fixator manual for further instructions.

AK FIXATOR® DESCRIPTION



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

The AKII Agile Fixator® Mount 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® Mount'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. See Figures 1 thru 6

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

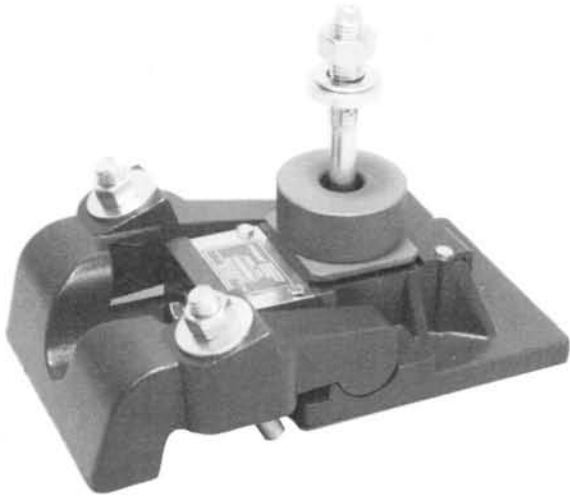
Pre-layout or core drilling is not required as the anchor holes are simply drilled through the mount base after installation. The use of the optional toggle clamp permits this to be accomplished even when overhanging machine components prevent access to the center or side anchor locations.

- *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.*

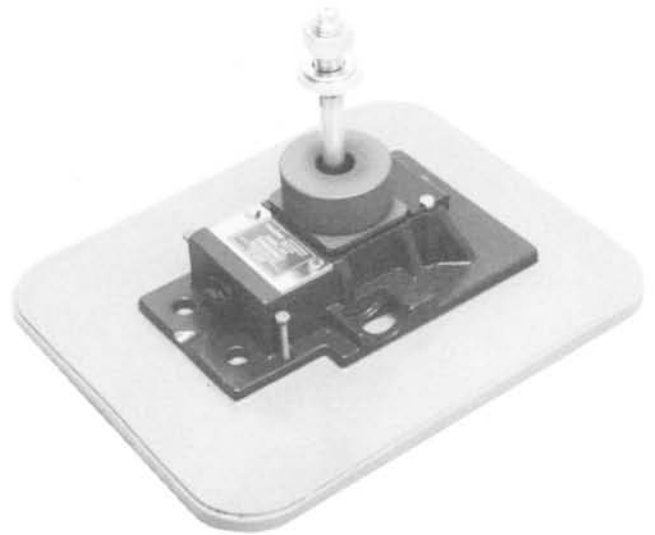
UNISORB AKII AGILE FIXATOR® - APPLICATION METHODS

TOGGLE CLAMP WITH CAPSULE ANCHOR STUDS

"WES" CENTER ANCHOR STUD

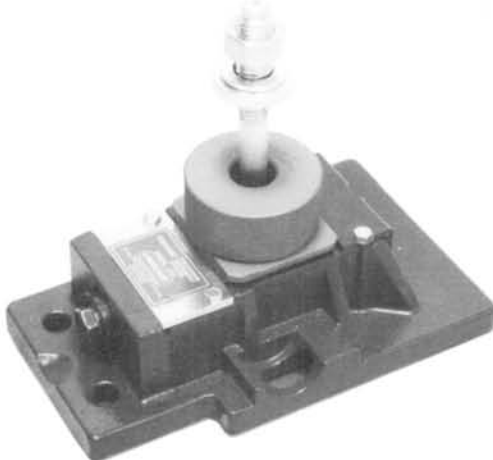


See Figure 4



See Figure 6

"STE" CENTER BOLT - FREE STANDING
 "STE" CENTER BOLT - GLUE DOWN
 CENTER CAPSULE ANCHOR STUD



See Figures 1, 2 & 5

SIDE CAPSULE ANCHOR STUDS



See Figure 3

AKII AGILE FIXATOR® SYSTEM SPECIFICATIONS

Description	Dimensions
Recommended machine dead weight	4,400 lbs.
Maximum allowable lifting load per Fixator®	26,500 lbs.
Spring Constant	22,800,000 lb./in.
Minimum available overall height	3.31 in.
Approximate torque required to turn adjusting screw	1 ft. lb./1000 lbs. load
Maximum allowable torque on adjusting screw	29 ft. lb.
Vertical adjustment per revolution of height adjusting screw	0.010 in.
Maximum vertical adjustment	0.200 in.
Minimum height with v = 84 Spherical Seat	3.31 in.
Minimum height with v = 95 Spherical Seat	3.74 in.
Minimum height with v = 101 Spherical Seat	3.98 in.
Minimum height with v = 107 Spherical Seat	4.21 in.
Total overall height range with standard components	1.10 in.
Base area of basic unit	59.4 sq. in.
Weight of basic unit	19.2 lbs.
Weight of Toggle Clamp	13.4 lbs.
Approximate torque on anchor bolt nut at yield point of bolt	217 ft. lbs.
Approximate tension on anchor bolt at yield point	19,800 lbs.
Anchor specifications with uplift resistance:	
With side anchors	19,800 lbs.
With Toggle Clamp	12,000 lbs. max.
With 'wes' center anchor	19,800 lbs.
With 'wcs' center anchor	12,000 lbs.
Resilient pad specifications:	
Stiffness with 6 mm thick pad	2,000,000 lbs./in. min.
Stiffness with 2 mm thick pad	6,000,000 lbs./in. min.
Coefficient of friction	>0.7
Internal damping coefficient	>0.15

AK FIXATOR® INSTALLATION METHODS

Figure 1.

This method of installation simply sets the AKII Agile Fixator® on the Opt. 'Y' Resilient Pad. The pad has a coefficient of friction of approximately .70 which will quite effectively prevent the Fixator® from walking. The pad is available in either a 2 mm or 6 mm thickness. The standard pad is supplied in 90 durometer, but different durometers are available on a special order basis (contact Unisorb Engineering). An Opt. 'STE' Hold Down Stud is used to secure the Fixator® to the machine foot. This method should be used when some degree of vibration isolation is desired, and when extremely close tolerances are not a consideration.

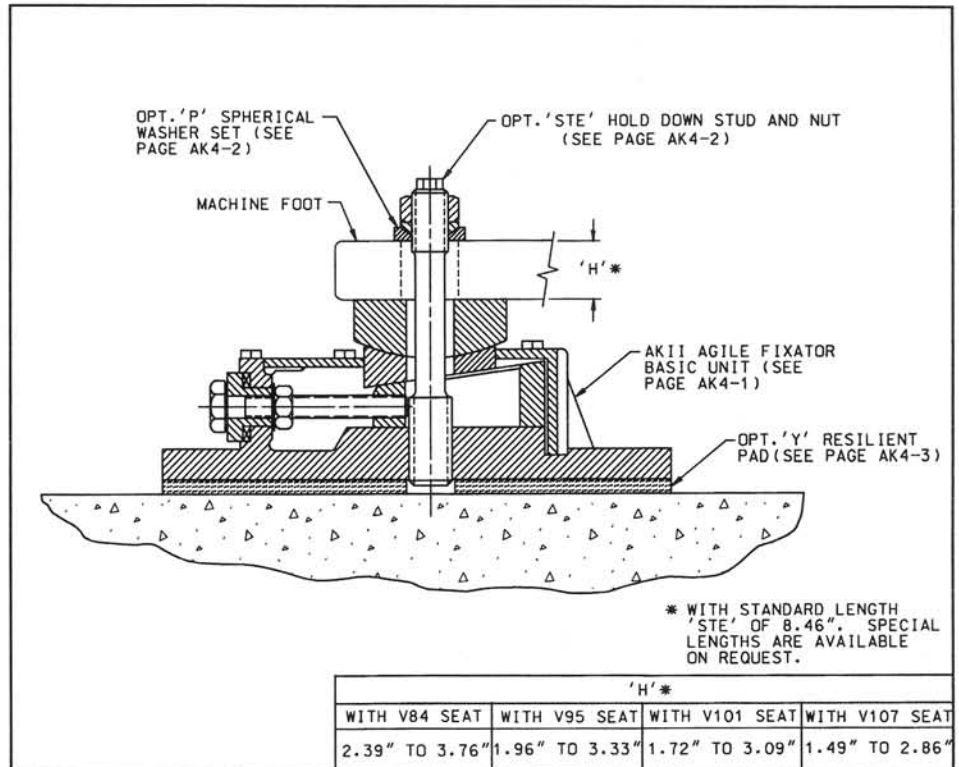


FIGURE 1. 'STE' CENTER BOLT - FREE STANDING

Figure 2.

This method of installation utilizes Unisorb® Adhesive V-100 Epoxy Grout applied beneath the Fixator®. Please note that a minimum thickness of .09" is recommended. This method also uses the Opt. 'STE' Hold Down Stud. This stud is capable of stretching to allow adjustment after the anchor nut is tightened. This method provides a simple and inexpensive, relatively secure installation without disturbing the floor. Please note that this method provides no option for vibration isolation.

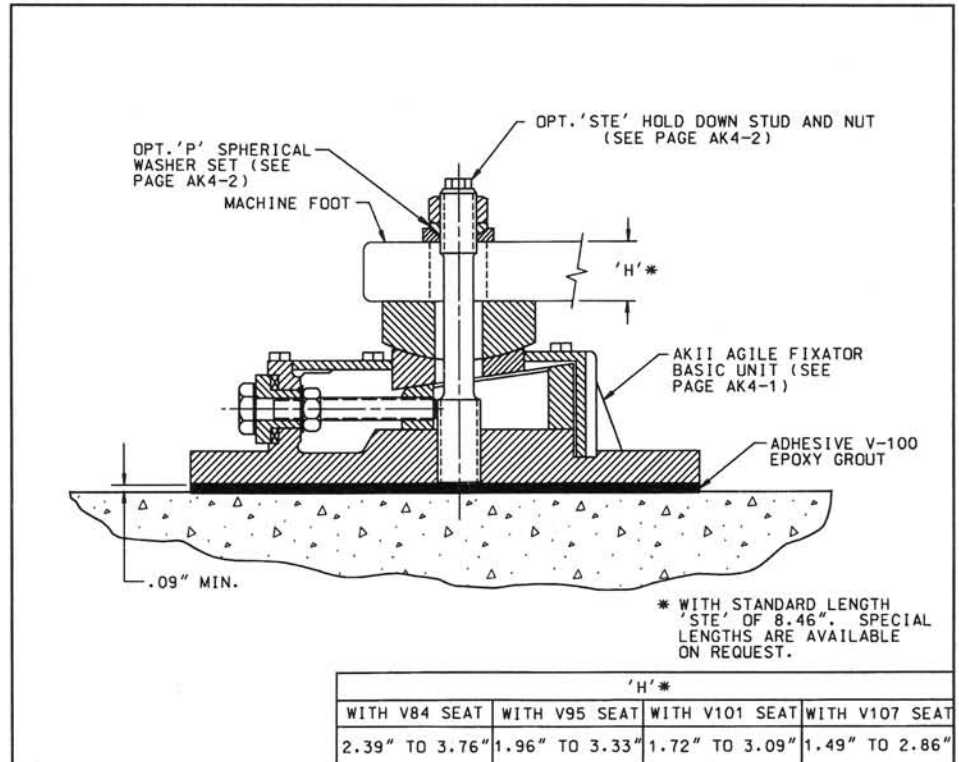


FIGURE 2. 'STE' CENTER BOLT - GLUE DOWN

AK FIXATOR® INSTALLATION METHODS

AK FIXATOR® INSTALLATION METHODS

Figure 3.

This method of installation utilizes four (4) Unisorb® Capsule Anchors and Stud Assemblies with two (2) located on each side of the Fixator®. The anchors may be installed after the Fixator® is in place. See instructions on installing these anchors. This method also uses the Opt. 'STE' Hold Down Stud, and may use either the Opt. 'Y' Resilient Pad or the Adhesive V-100 Epoxy Grout beneath the Fixator®.

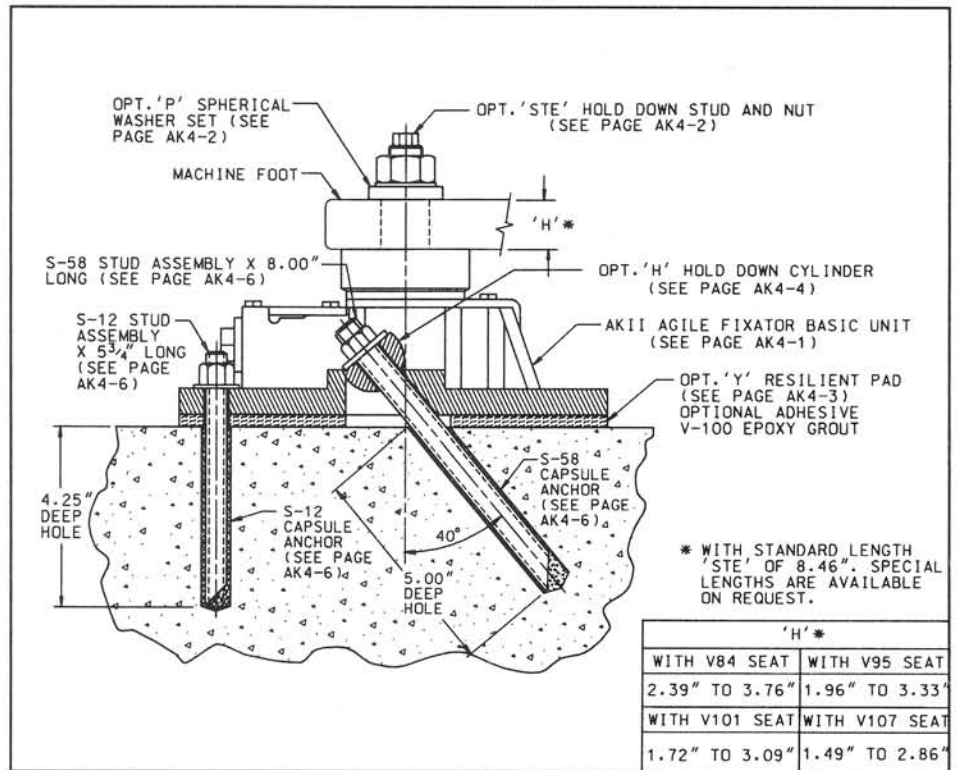


FIGURE 3. SIDE CAPSULE ANCHOR STUDS

Figure 4.

This method of installation utilizes the Unisorb® Toggle Clamp to hold down the Fixator®. The Toggle Clamp is held down with two (2) Unisorb® Capsule Anchors and Stud Assemblies, one located on each side. See instructions on installing these anchors. This method also uses the Opt. 'STE' Hold Down Stud, and may use either the Opt. 'Y' Resilient Pad or the Adhesive V-100 Epoxy Grout beneath the Fixator®.

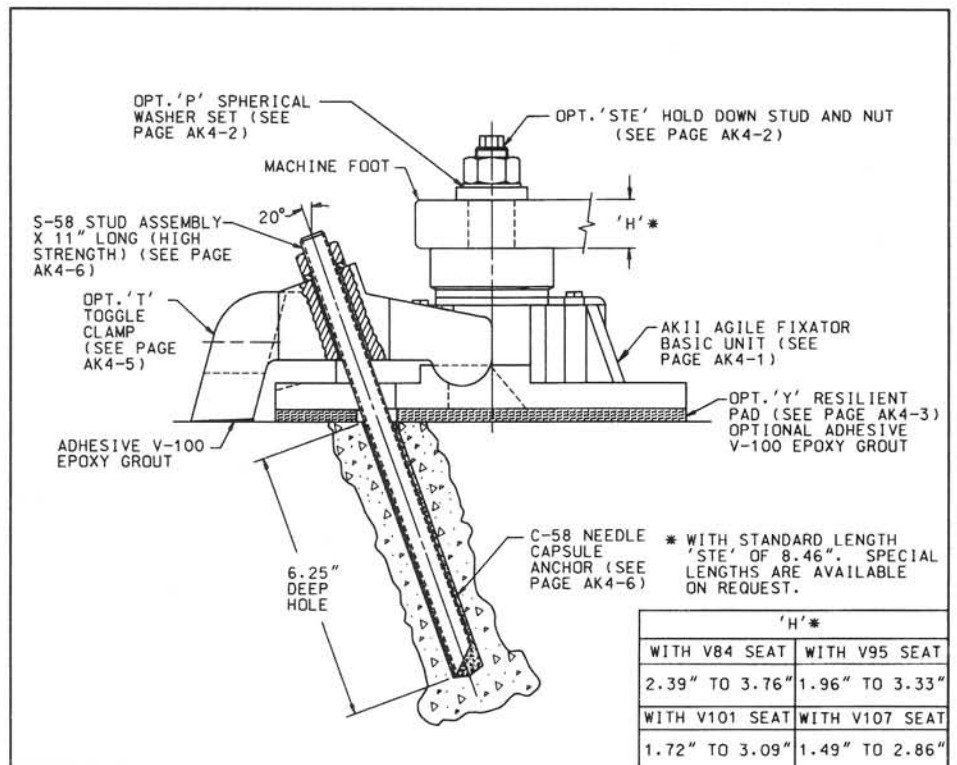


FIGURE 4. TOGGLE CLAMP WITH CAPSULE ANCHOR STUDS

AK FIXATOR® INSTALLATION METHODS

AK FIXATOR® INSTALLATION METHODS

Figure 5.

This method of installation utilizes a single, center mounted Unisorb® Capsule Anchor and Stud Assembly to securely fasten the Fixator® to the floor. The Capsule Anchor and Stud Assembly may be installed either before or after the Fixator® is in place. The recommended practice, however, is to install the anchor prior to placing the Fixator®. This installation method utilizes either the Opt. 'Y' Resilient Pad or the Adhesive V-100 Epoxy Grout and may be utilized only if access to the center stud anchoring location is available.

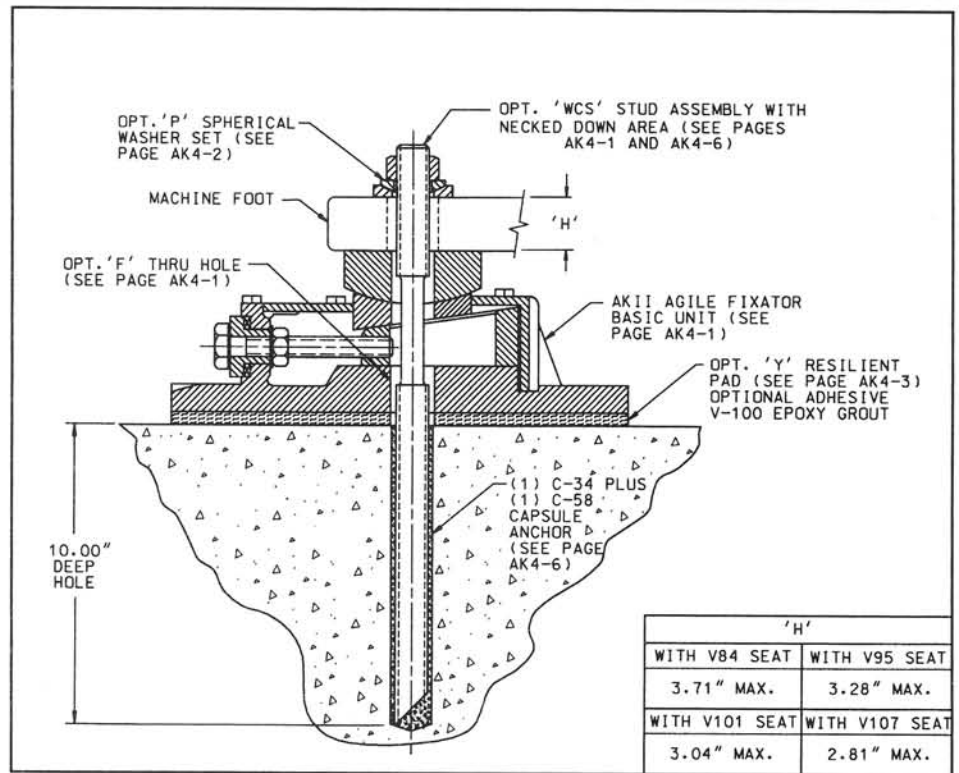


FIGURE 5. CENTER CAPSULE ANCHOR STUD

Figure 6.

This method of installation utilizes a single, center mounted Unisorb® Opt. 'WES' Anchor Hold Down Stud. This stud is placed into a core drilled hole and secured with either Unisorb® V-1 cementitious or Standard V-100 Epoxy Grout. A Unisorb® 12" x 15" Grout Form is used with this configuration. This method provides the most secure anchoring of all, and is recommended when very close tolerances are required to be held, and when access to the center anchoring location is available. Please note that this method provides no option for vibration isolation.

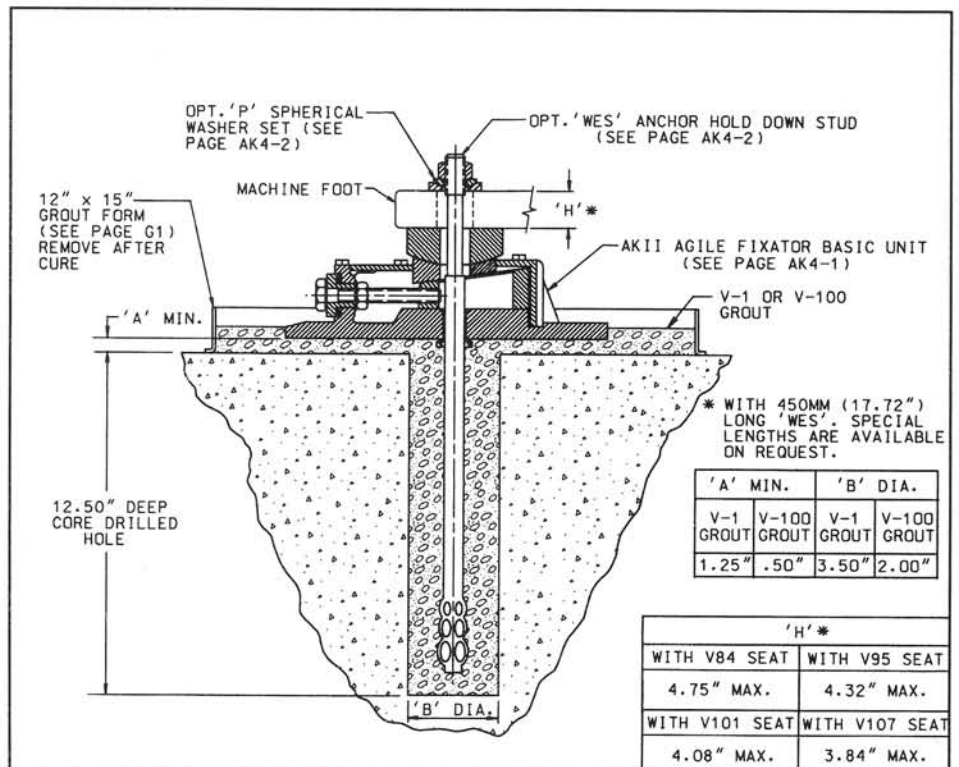
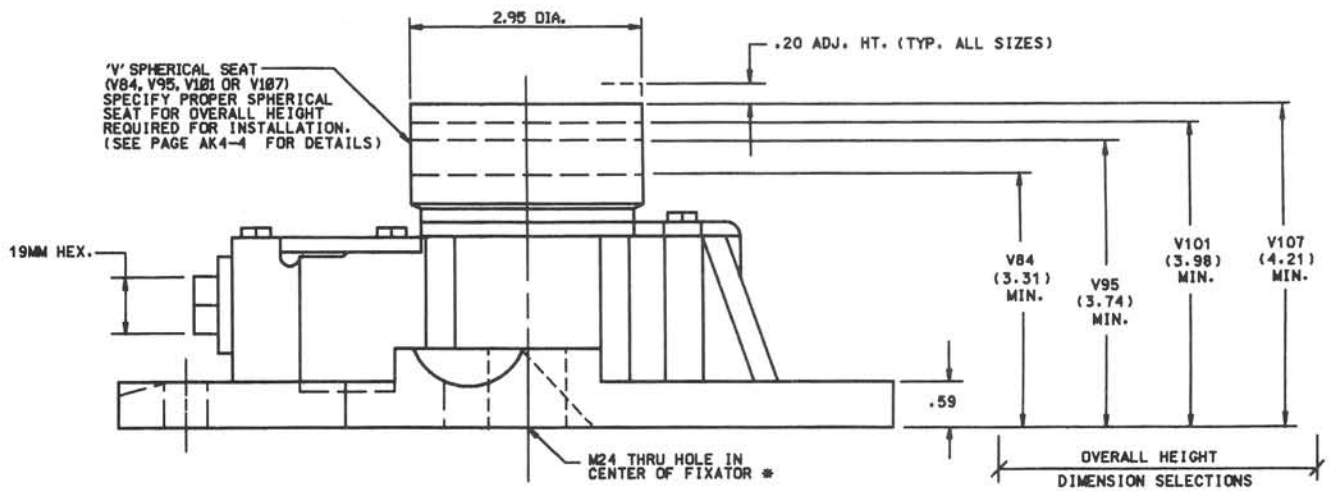
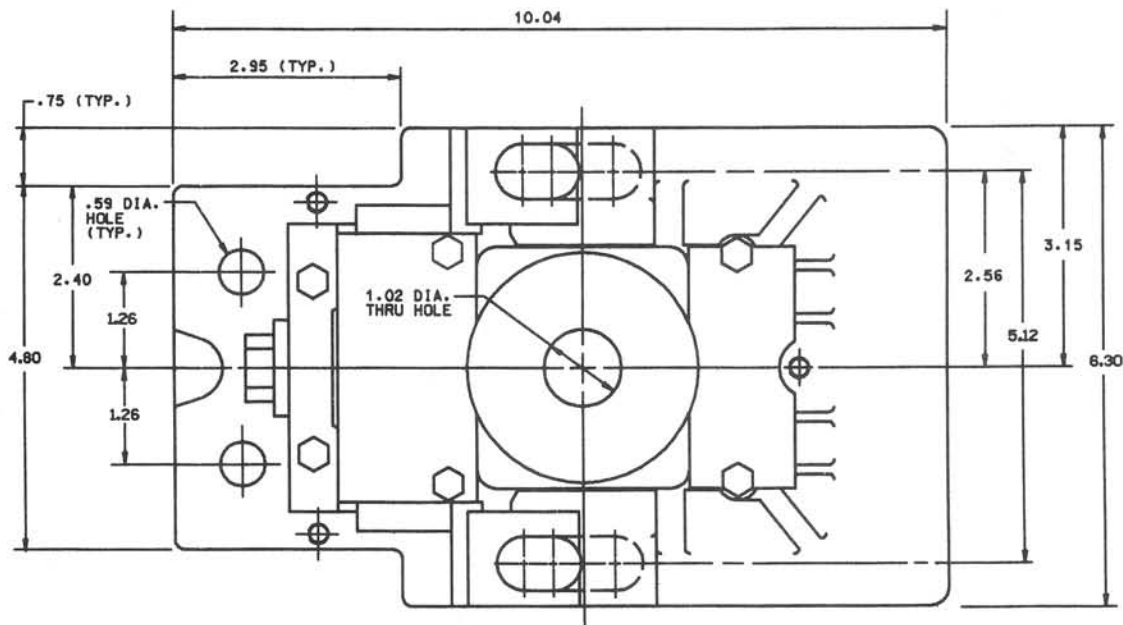


FIGURE 6. 'WES' CENTER ANCHOR STUD

AK FIXATOR® OPTION DETAIL

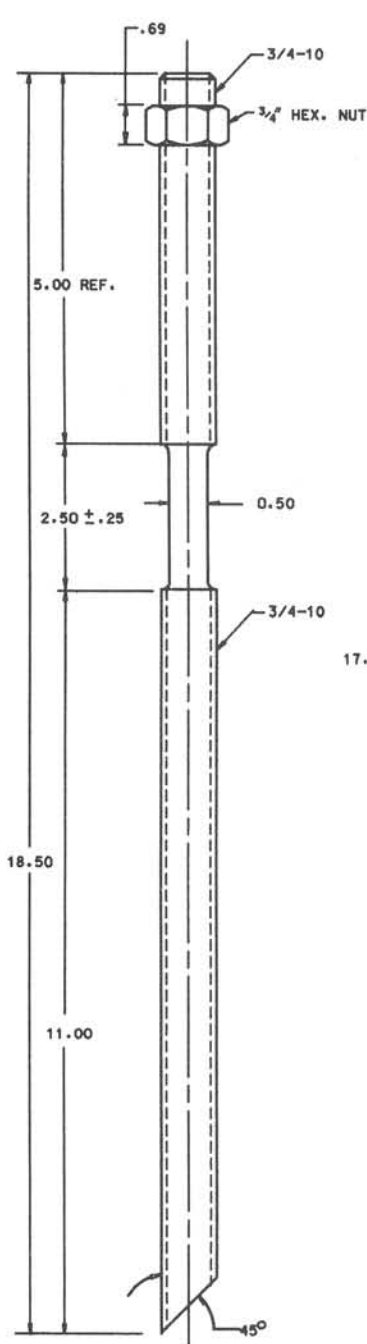


* OPT. 'F' (.94 DIA. THRU HOLE) TO BE USED FOR CONFIGURATION SHOWN IN FIGURE 5.

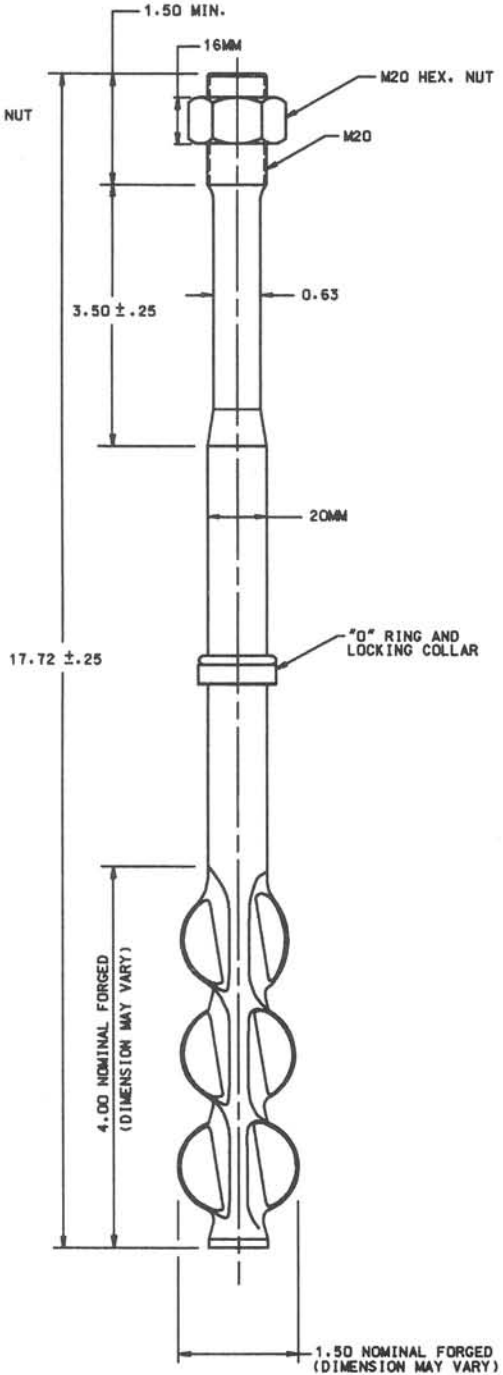
AKII AGILE FIXATOR BASIC UNIT

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

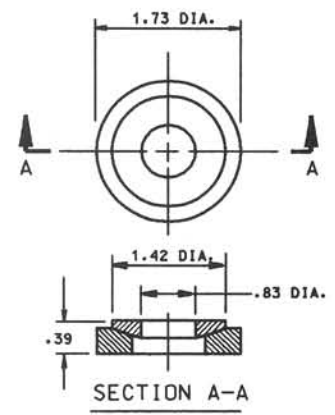
AK FIXATOR® OPTION DETAIL



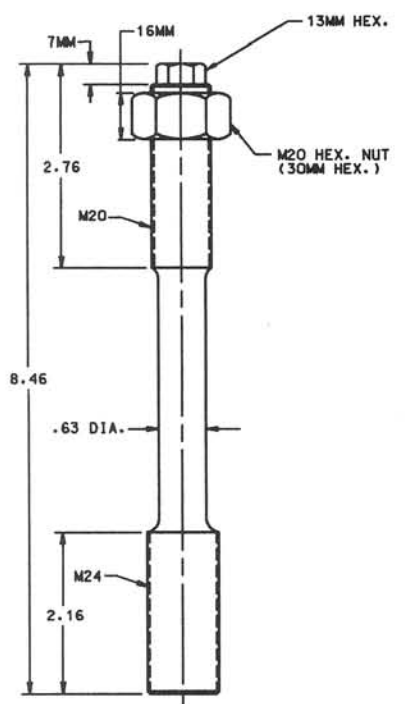
**OPTION S-34 STUD ASSEMBLY
WITH NECKED DOWN AREA**



**OPTION 'WES'
ANCHOR HOLD DOWN STUD**



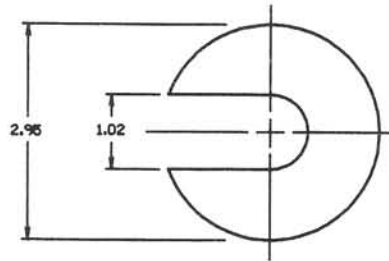
**OPTION 'P'
SPHERICAL WASHER SET**



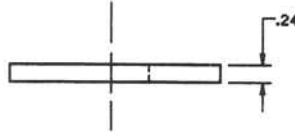
**OPTION 'STE'
HOLD DOWN STUD**

DIMENSIONS ARE IN INCHES
UNLESS OTHERWISE SPECIFIED.

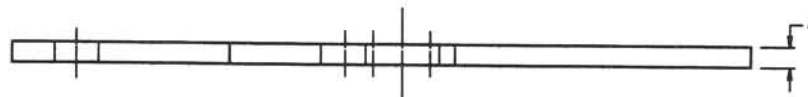
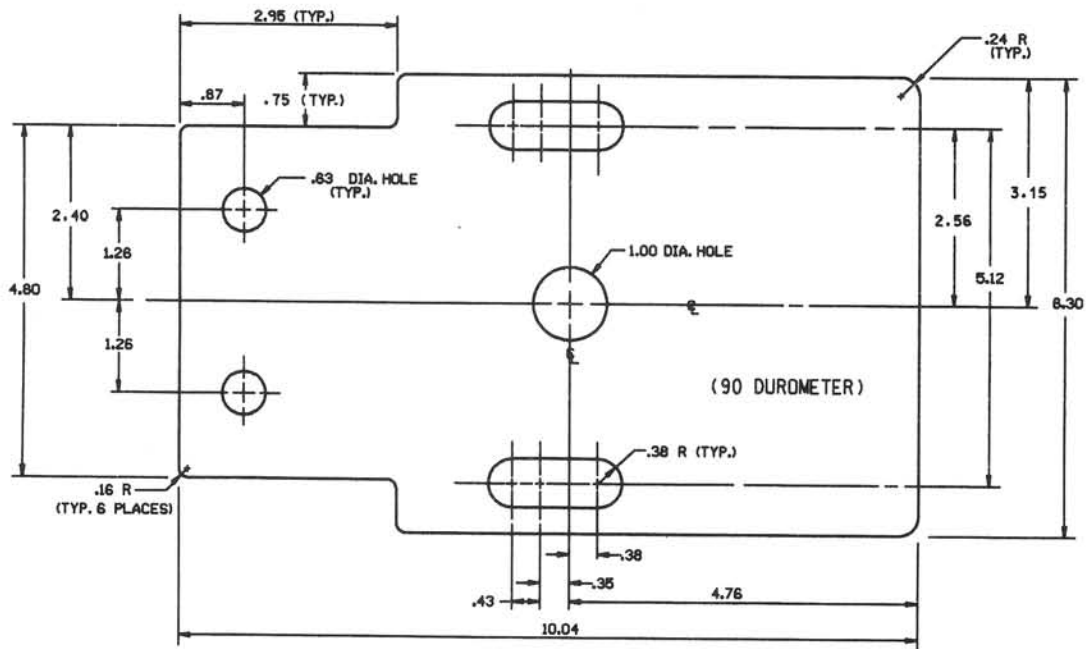
AK FIXATOR® OPTION DETAIL



*** SHIMS TO BE USED WHERE NECESSARY TO ADJUST OVERALL HEIGHT. CUSTOMER SHOULD ORDER APPROPRIATELY FOR PROJECT SIZE.



OPTION 'Q'
SHIM ***



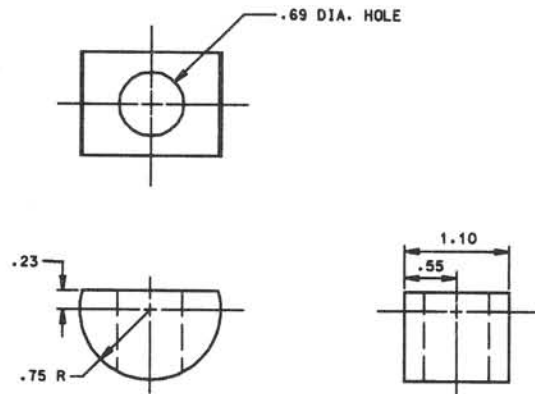
OPTION 'Y'
RESILIENT PAD

A **
2MM (.08")
6MM (.24")

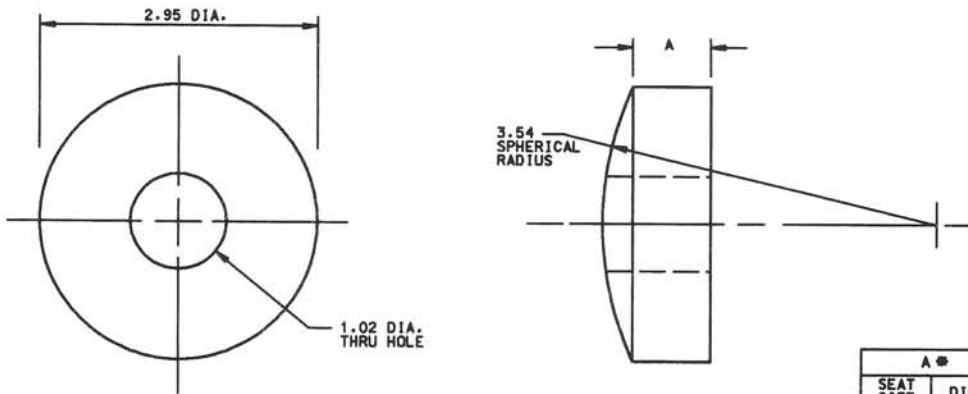
** SPECIFY REQUIRED THICKNESS

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

AK FIXATOR® OPTION DETAIL



OPTION 'H'
HOLD DOWN CYLINDER



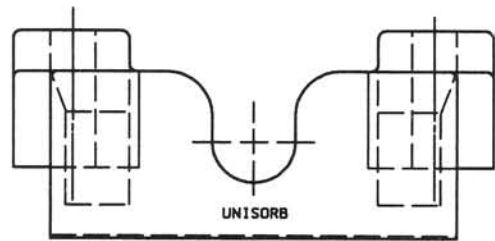
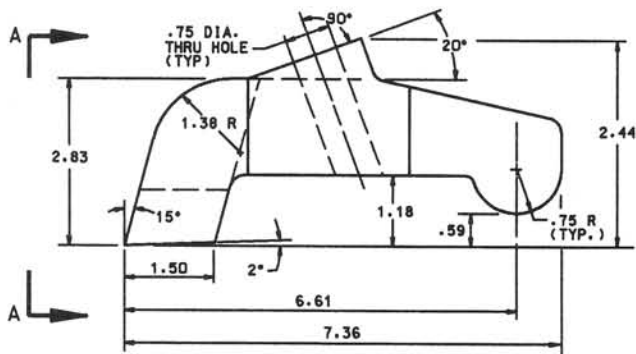
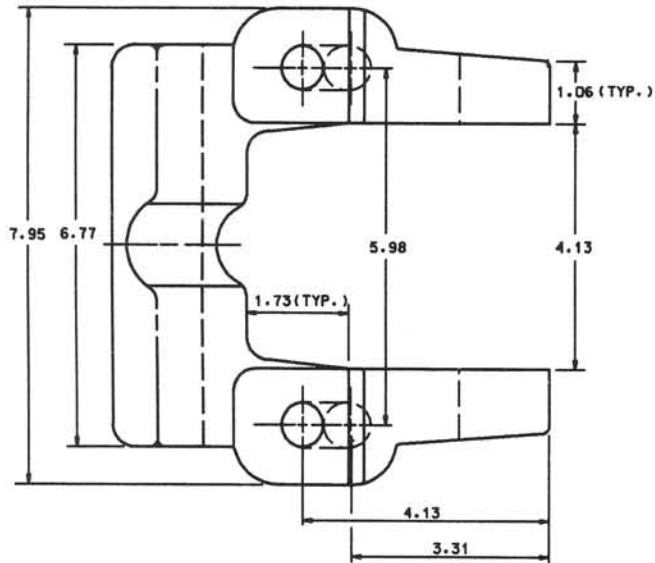
OPTION 'V'
SPHERICAL SEAT

A*	
SEAT SIZE	DIM.
V84	.50
V95	.83
V101	1.07
V107	1.31

* SPECIFY PROPER SPHERICAL SEAT FOR OVERALL HEIGHT REQUIRED FOR INSTALLATION. (SEE PAGE AK FOR ASSEMBLY)

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

AK FIXATOR® OPTION DETAIL



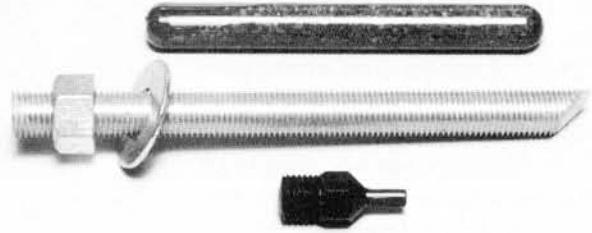
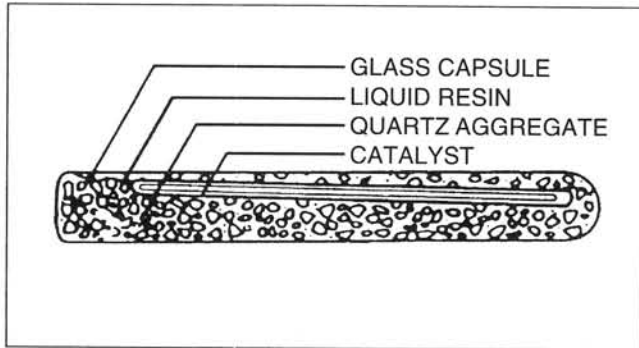
VIEW A-A

OPTION 'T'
TOGGLE CLAMP

DIMENSIONS ARE IN INCHES
UNLESS OTHERWISE SPECIFIED.

UNISORB® CAPSULE ANCHOR SYSTEMS WITH STUD ASSEMBLY

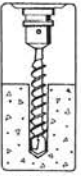
The Unisorb® Capsule Anchor with Stud Assembly offers tremendous holding power which is stronger than the concrete itself. A graded blend of quartz aggregate transfers the pullout forces into the concrete. Since there are no expansive forces from the anchor systems, they can be placed near the foundation edges, chip troughs, coolant trenches or wireways. High anchor-to-concrete strengths are developed which allow smaller anchor holes and smaller studs to be used than is possible with conventional expanding anchor type systems.



The Unisorb® Capsule Anchor with Stud Assembly is 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 and other masonry material. The system consists of a glass capsule containing the proper proportion of base resin, hardener and aggregate for the anchor, appropriate length stud with washer and nut, and a drive unit to allow the stud to be installed with a standard hammer drill.

INSTALLATION INSTRUCTIONS

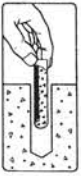
1. Drill a clearance hole for the insert using a rotary hammer drill or core drilling equipment. Refer to the chart for proper diameter and depth for each anchor size and standard stud material (50,000 psi). Drill deeper holes when using high tensile strength studs or when close to the foundation edge, chip troughs or have extremely close spacing.



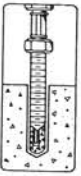
2. Thoroughly clean the holes. Excessive dust will reduce the holding power of the anchor. For best results blow out the concrete dust using compressed air or flush out with water. The strength of the bond will not be affected by wet or damp holes.



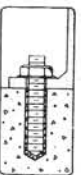
3. Insert the capsule anchor.



4. Assemble the drive unit into the hammer drill. Thread the nut onto the stud about one diameter and insert the stud into the drive unit. The drive unit should shoulder on the nut for ease of removal. Drive the point end into the capsule. This action will break the glass tube and mix the components. Turn the drill off immediately when the stud is fully inserted.



5. Allow the anchor to cure about 1 1/2 minutes without disturbing the drive unit. Two or more drive units may be convenient for larger jobs. Remove the drill unit by placing a wrench on the drive unit and another on the nut. Loosen, being careful not to disturb the stud. Allow the anchor to cure for the minimum time before using.



SPECIFICATIONS

ANCHOR SIZE*	CAPSULE NUMBER	DRILL DIAMETER*	HOLE DEPTH*	ANCHOR NO. & LENGTH*	† ULTIMATE TENSILE LOAD	ULTIMATE SHEAR LOAD
3/8	C-38	7/16	3 1/2	S-38x5 1/8	7,820 lbs.	6,480 lbs.
1/2	C-12	9/16	4 1/4	S-12x6 1/2	13,435 lbs.	11,120 lbs.
5/8	C-58	11/16	5	S-58x7 5/8	20,585 lbs.	17,650 lbs.
5/8	C-58**	11/16	6 1/4	S-58x11***	34,780 lbs.	17,650 lbs.
3/4	C-34	7/8	6 5/8	S-34x9 1/2	27,400 lbs.	27,385 lbs.
7/8	C-78	1	7	S-78x10 1/4	35,090 lbs.	36,065 lbs.
1	C-100	1 1/4	8 1/4	S-100x12	47,800 lbs.	53,135 lbs.
1 1/4	C-114	1 1/2	10 1/4	S-114x15	70,100 lbs.	68,000 lbs.

*All dimensions in inches. **Needle Capsule ***High Strength Stud

MINIMUM CURETIMES

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

†ULTIMATE TENSILE LOAD TEST DATA

Test results using 4,000 PSI concrete are given as a guide only. It is recommended that tests to simulate actual conditions be carried out to determine the suitability of Capsule Anchors for particular applications.

To order specify capsule, stud and drive unit.

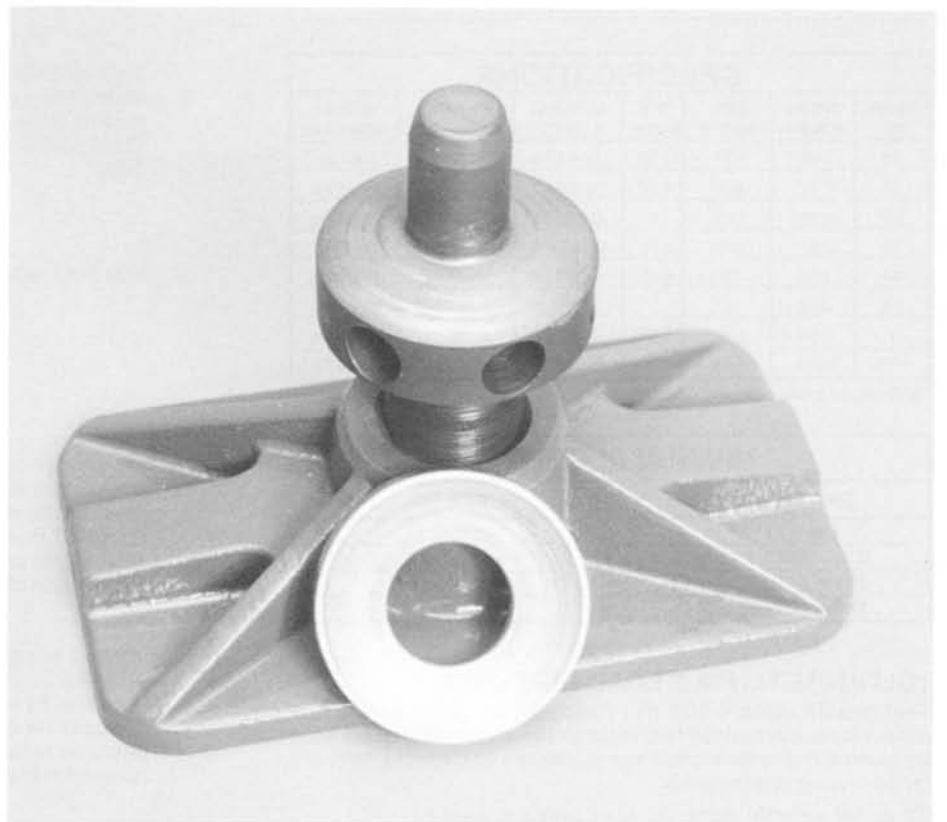
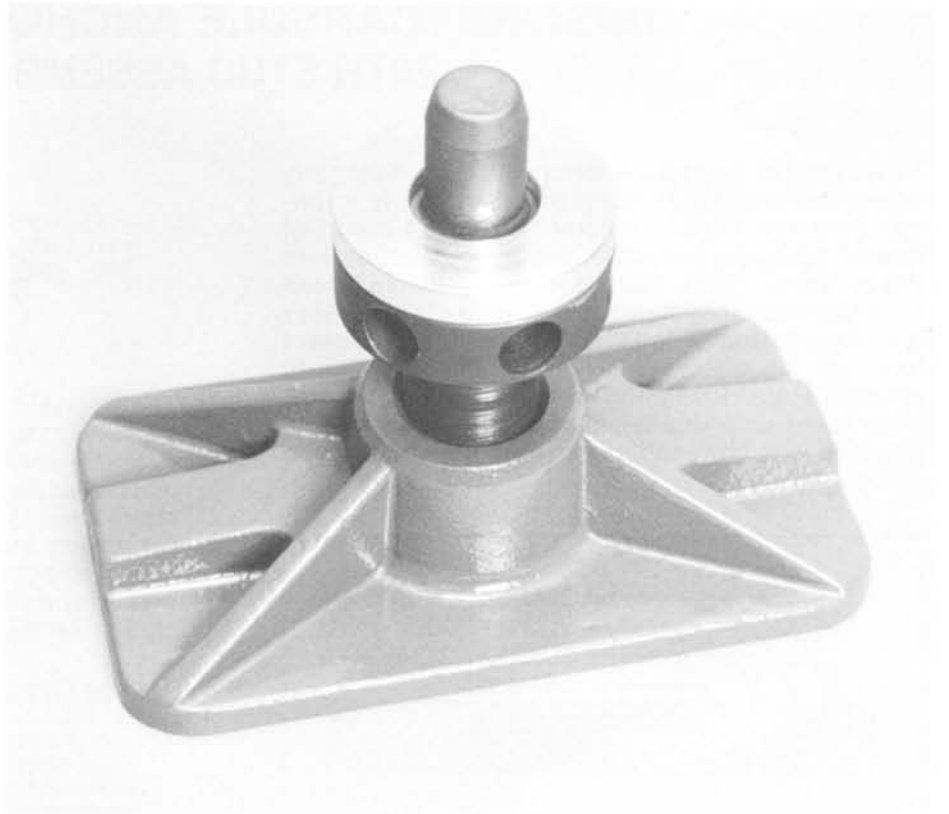
DS FIXATOR® DESCRIPTION & DIMENSIONS

MODEL DS FIXATOR®

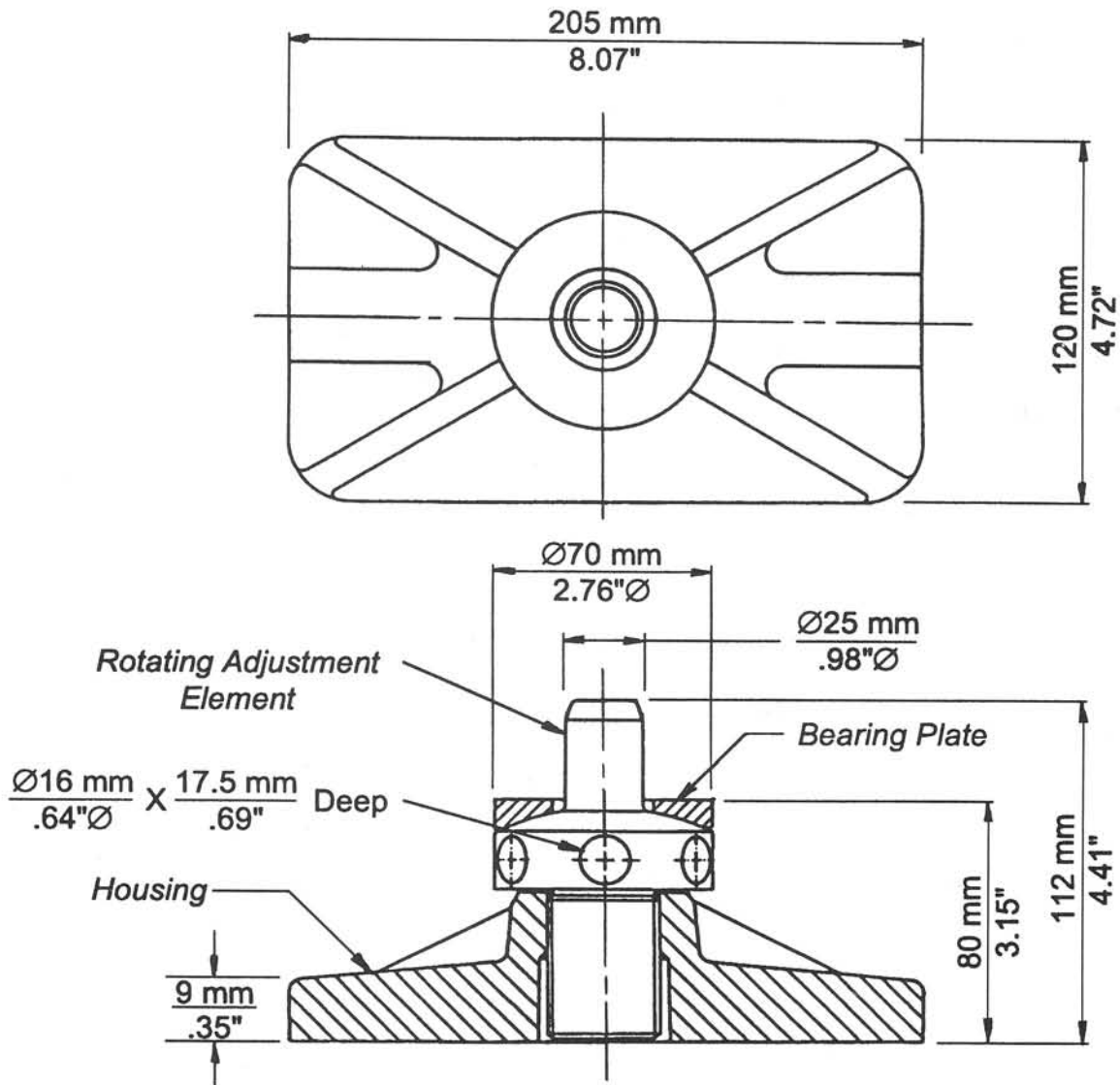
The Model DS Fixator® is designed to be used as a leveling device for machinery which require a large leveling range, and where pin-point accuracy is not required.

The DS Fixator has a round rotating adjustment element, threaded into the housing below it, and a top plain stud which is intended to protrude into the mounting hole of the machine foot. The adjustment element has six holes for inserting a steel rod for adjustment from the side of the machine, under the mounting foot. The top portion of the adjustment element has a spherical seat, and a bearing plate with a spherical bottom surface is placed on top of it. This spherical seat design corrects for out-of-level conditions on the machine foot.

The device acts as a free-standing leveling jack, and can be equipped with an anti-vibration pad if required.



DS FIXATOR® DESCRIPTION & DIMENSIONS



TECHNICAL SPECIFICATIONS

MAXIMUM ALLOWABLE LOAD	25 KN	/	5,620 LBS.
LEVELING TORQUE	40 Nm/to	/	13.4 $\frac{\text{FT. LBS.}}{1000 \text{ LBS.}}$
VERTICAL ADJUSTMENT PER TURN	1,5 mm	/	.06"
MAXIMUM VERTICAL ADJUSTMENT	30 mm	/	1.18"
WEIGHT	ca.4 Kg	/	8.8 LBS.

MS FIXATOR® DESCRIPTION & DIMENSIONS

MODEL MS FIXATOR®

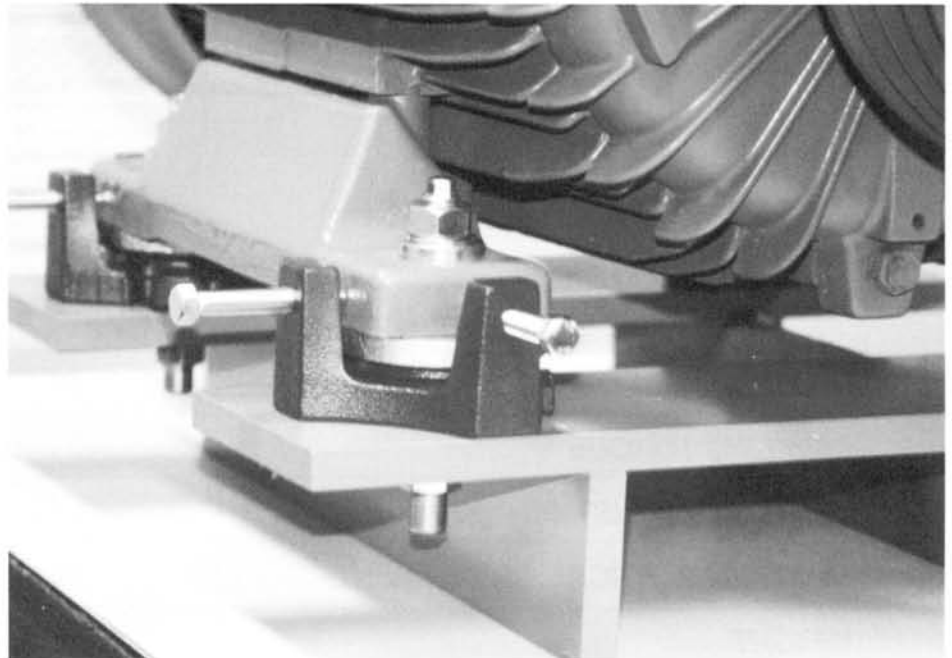
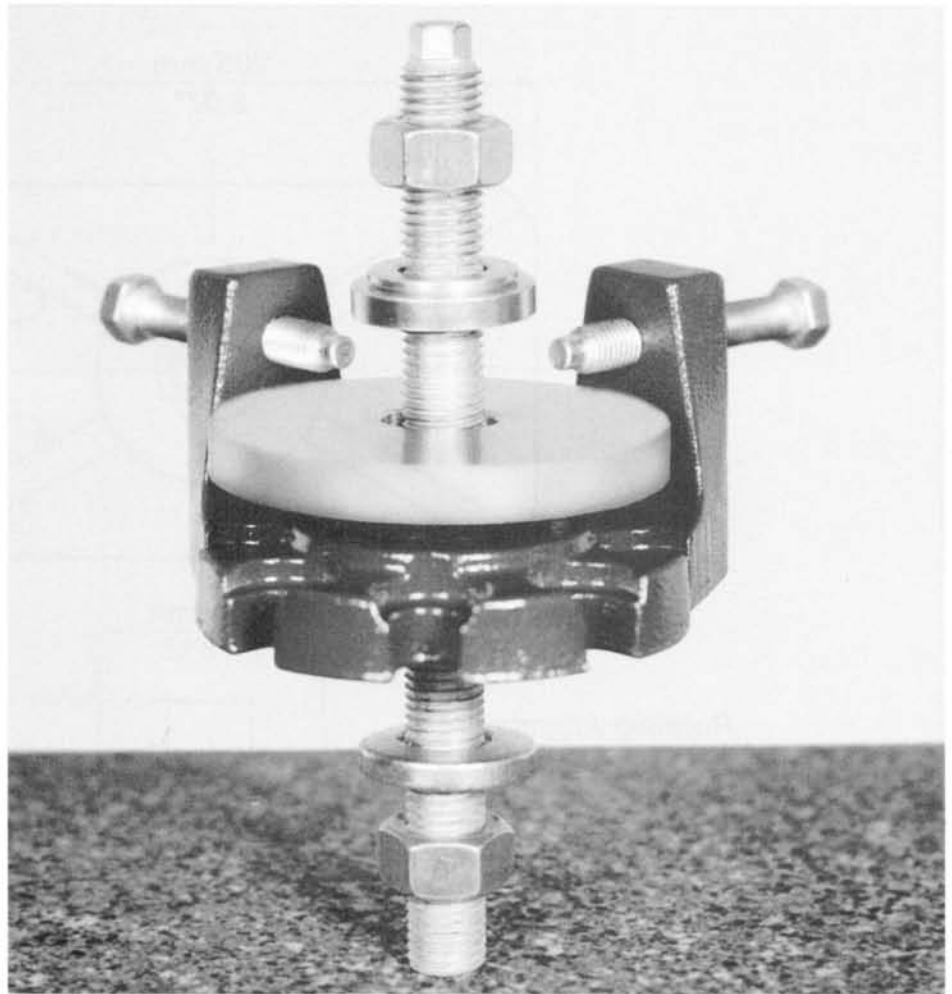
The Model MS Fixator® is designed for vertical and lateral alignment and anchoring of electric motors, pumps, compressors, cooling apparatus and many other applications.

The MS Fixator® comes in five sizes: MSIIa40, MSIIa60, MSIIa80, MSIIIa110, and MSIIIa150 as shown in the chart on the next page. It has two lateral adjusters providing positive horizontal positioning. Vertical alignment is accomplished from the top with a threaded element. To ensure positive support the bearing plate incorporates a spherical seat.

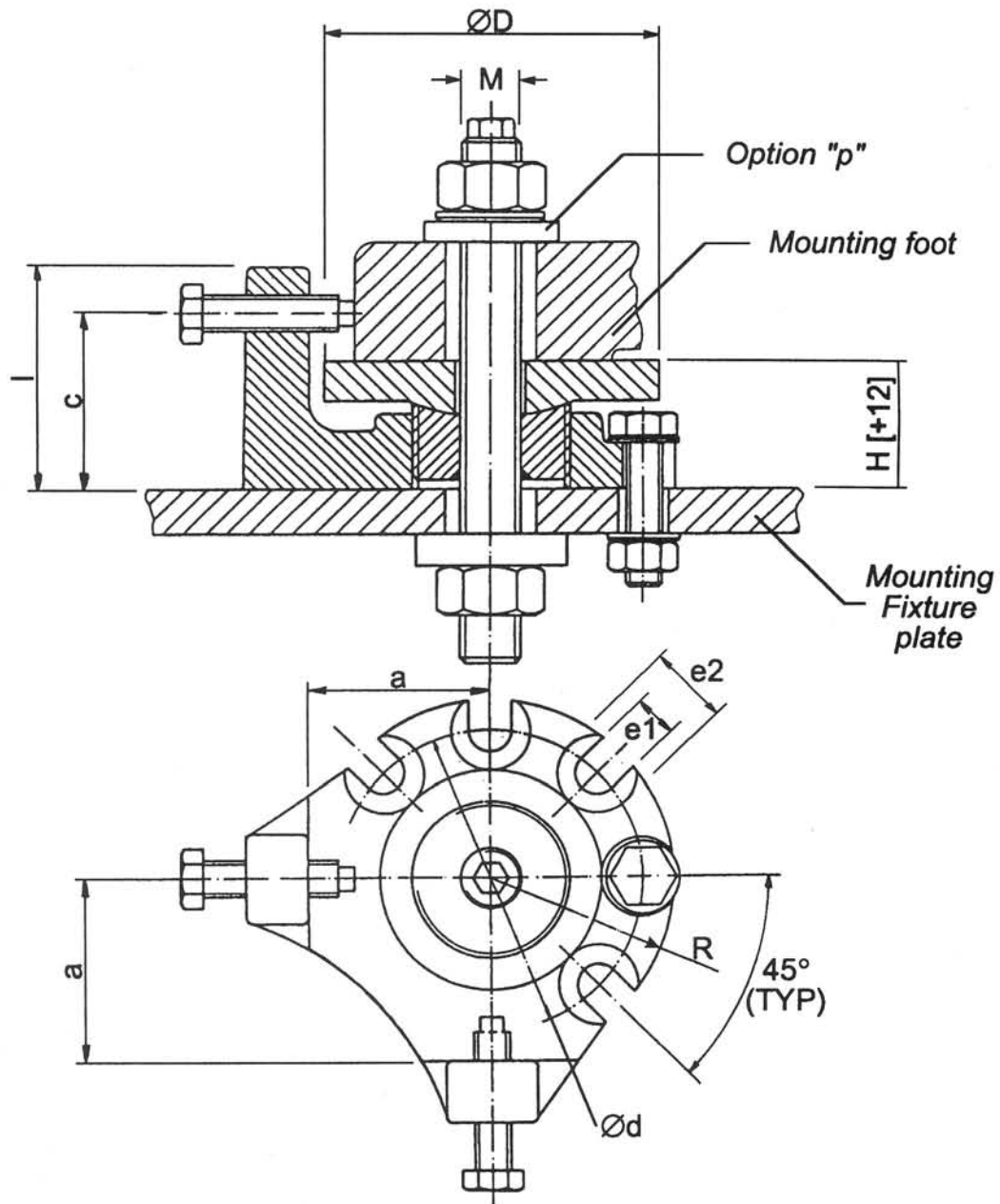
Normally the Model MS Fixator® will be fastened to the steel base frames of such machines as described above. It can also be adapted to concrete pedestal installations.

ALIGNMENT PROCEDURES

1. Lower the motor or machine onto the MS Fixator®.
2. Align first in the vertical direction (without tightening nuts at the leveling bolt.)
3. Tighten the lower nut on the anchor bolt or stud against the base frame.
4. Align the machine in the lateral direction.
5. Tighten the upper nut to secure the motor or machine.
6. Check the alignment.

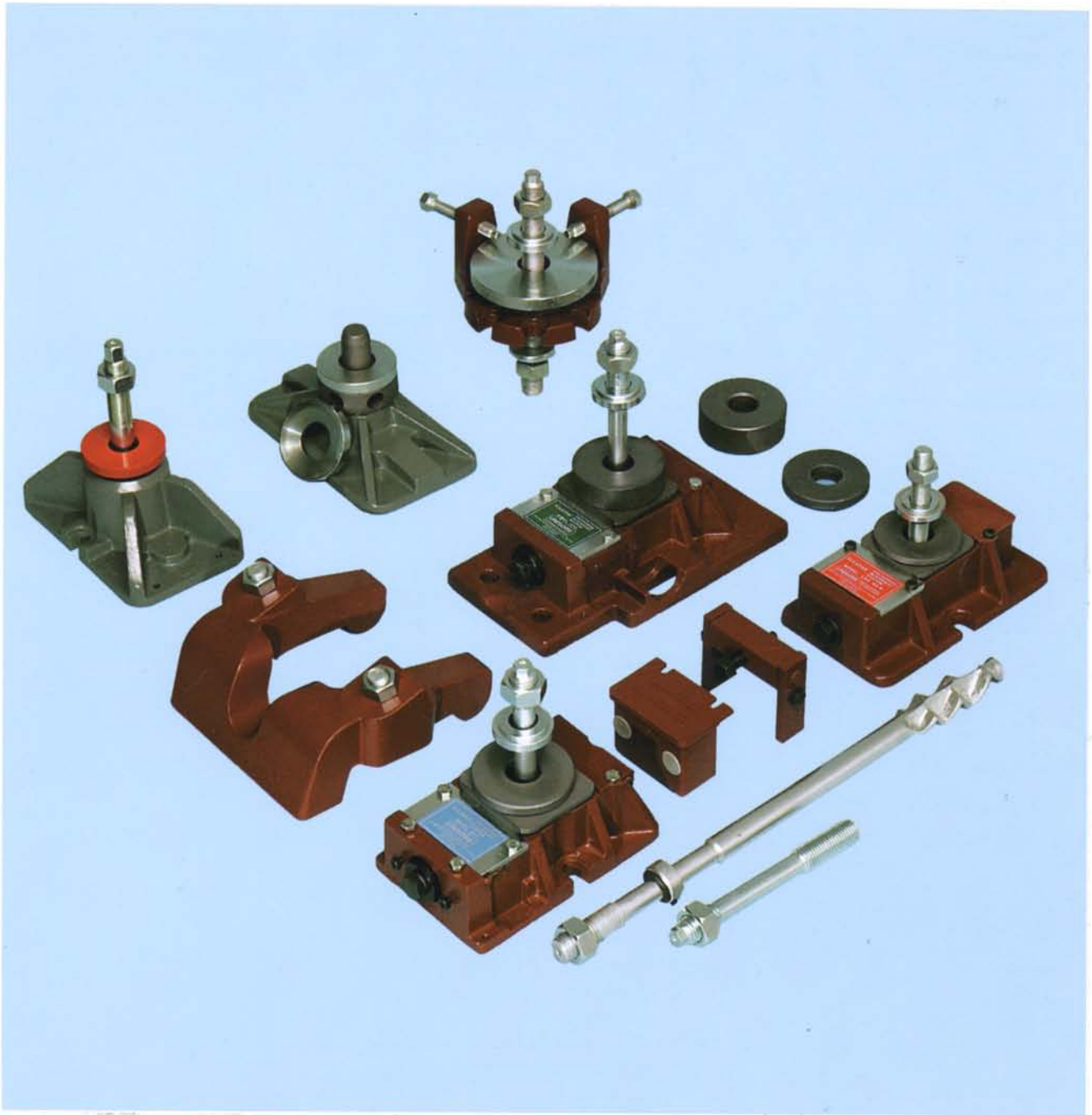


MS FIXATOR® DESCRIPTION & DIMENSIONS



MS		a	ØD	H	M			l	c	Ød	R	e1	e2
Ia40	mm	40	70	40	12	16	20	68	56	85	50	12	23
	in.	1.58	2.76	1.58	.47	.63	.79	2.68	2.20	3.35	1.97	.47	.91
Ila60	mm	60	110	40	16	20	24	75	58	100	60	14	26
	in.	2.36	4.33	1.58	.63	.79	.94	2.95	2.28	3.94	2.36	.55	1.02
Ila80	mm	80	150	40	16	20	24	75	58	100	60	14	26
	in.	3.15	5.91	1.58	.63	.79	.94	2.95	2.28	3.94	2.36	.55	1.02
IIla110	mm	110	210	50	24	30	36	80	60	140	80	18	32
	in.	4.33	8.27	1.97	.94	1.18	1.42	3.15	2.36	5.51	3.15	.71	1.26
IIla150	mm	150	210	50	24	30	36	80	60	140	80	18	32
	in.	5.91	8.27	1.97	.94	1.18	1.42	3.15	2.36	5.51	3.15	.71	1.26

FIXATOR® SYSTEMS



LK FIXATOR® DESCRIPTION & SPECIFICATIONS

MODEL LK FIXATOR®

Model LK Fixators® were developed to complement the Model RK Fixators®, and to provide features that would make the use of Fixators® feasible where the RK Fixators® could or would not be used.

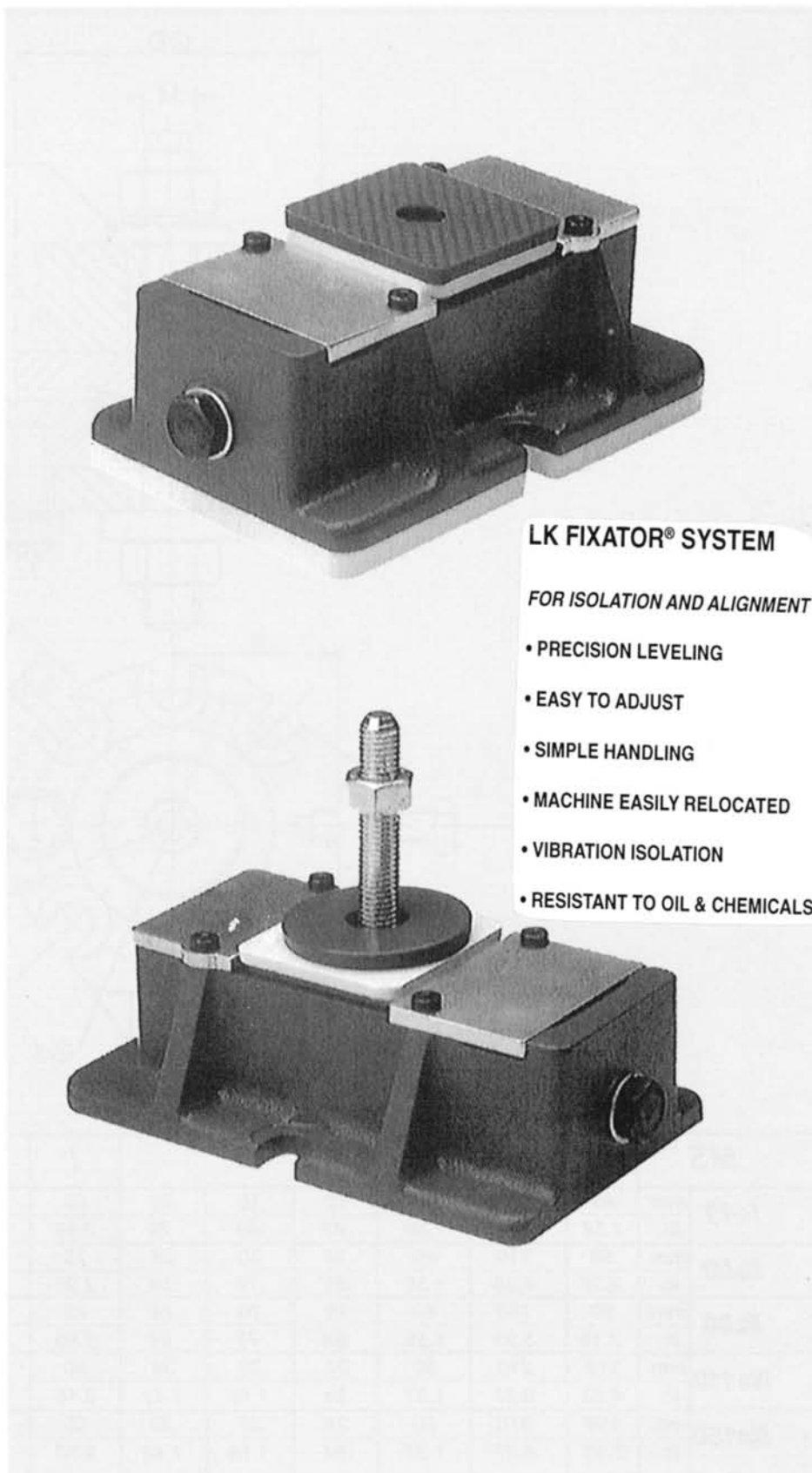
One of the features of the LK Fixator® is the option of having either a spherical top washer or a flat plastic square top plate for resting under the machine foot. These two design options are shown in the picture on the right, with the Model GA-D shown above, and Model GA-K shown below.

A non-skid vibration pad made of Polyurethane is available for attaching to the bottom of either model. This pad will serve to reduce vibrations as well as help fill in for rough or uneven concrete floor surfaces.

Another feature of the LK Fixators® is their economy. The LK Fixator® comes in three sizes, LKI, LKII, and LKIII. All three sizes are less expensive than their RK Fixator® counterparts.

Another advantage is that the height adjustment of the LK Fixator® exceeds that of the RK. For instance, the RKI maximum height adjustment is .20 inches, while the LKI height adjustment is .47 inches.

Unlike the RK Fixator®, however, the LK cannot be adjusted with the anchor nut tightened. It must be adjusted loosely, and then the nut must be securely tightened. The anchor bolts are not intended to be stretched, such as with the Model RK. This means that the leveling tolerances cannot be held as closely as with the RK. In applications where very precision leveling is not required, this Fixator® makes a good choice. The LK Fixator® is also good for mounting situations where no anchoring is desired, when used with the Polyurethane pad on the bottom.



LK FIXATOR® DESCRIPTION & SPECIFICATIONS

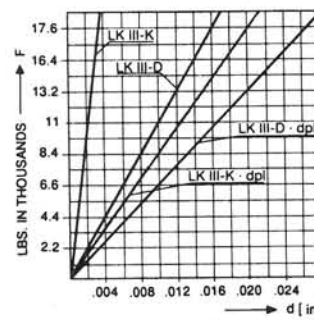
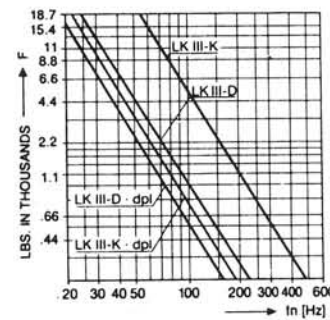
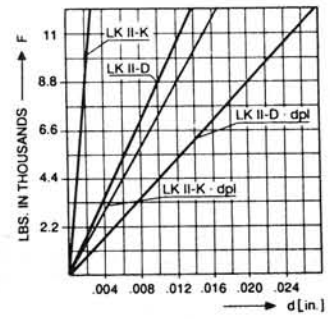
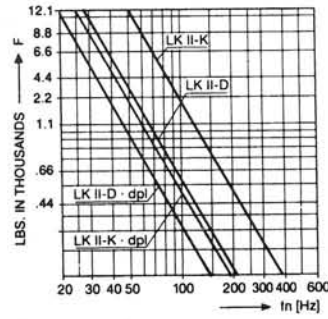
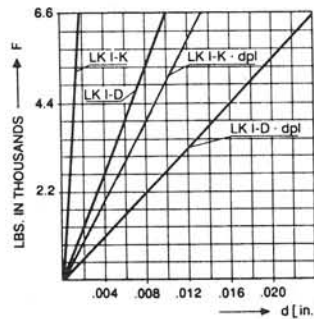
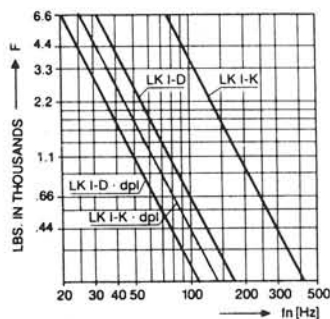
DESCRIPTION	Dim.	LK I	LK II	LK III
Recommended static load per mount (approx.)	lbs.	4,400	8,800	13,200
Maximum allowable lifting load per FIXATOR®	lbs.	6,600	12,100	18,700
Torque at Leveling Screw	Maximum	16	28	45
	Recommended	6	8	10
Vertical Adjustment per Screw Turn	in.	.016	.019	.017
Weight of the Basic Unit	lbs.	6.6	12.2	21.0

IMPORTANT: Do not level the LK FIXATORS® with anchor bolts already tightened.

DETERMINING FIXATOR® SIZES

Divide the total load (machine weight and workpiece) by the number of mounting points to determine the average load per mount. Select a mount size with an equal or greater recommended static load. If exact weight distribution is known, refer to the maximum total allowable load rating for mount sizing.

LOAD/DEFLECTION AND MOUNT NATURAL FREQUENCY DATA FOR FIXATORS® WITH ISOLATION PADS



These curves are a result of static tests with Shore 87A hardness pads.

$$f_n = \frac{3.13}{\sqrt{d}} \text{ Hz}$$

f_n = natural frequency of the FIXATOR® and pad combination.

d = static deflection (in inches).

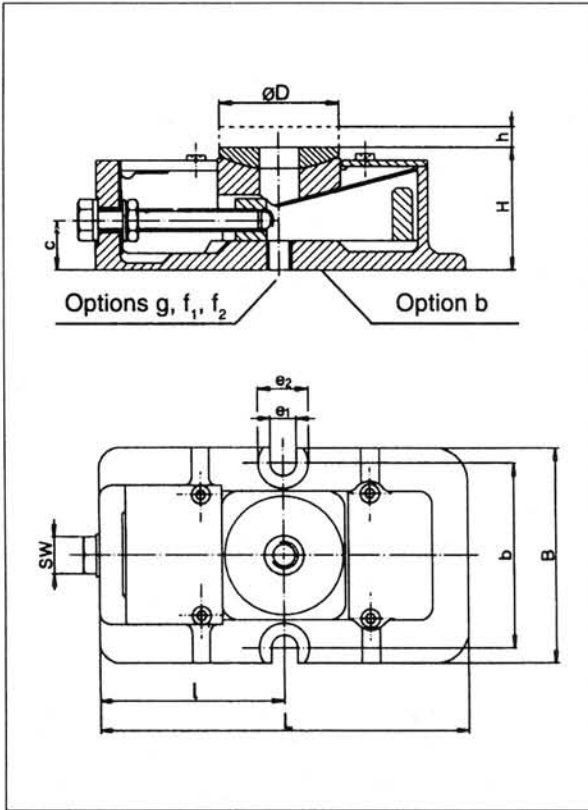
Consult UNISORB® Engineering for technical assistance and to discuss your individual application.

Manufacturer reserves the right to improve product without notice of technical modifications.

LK FIXATOR® DIMENSIONS

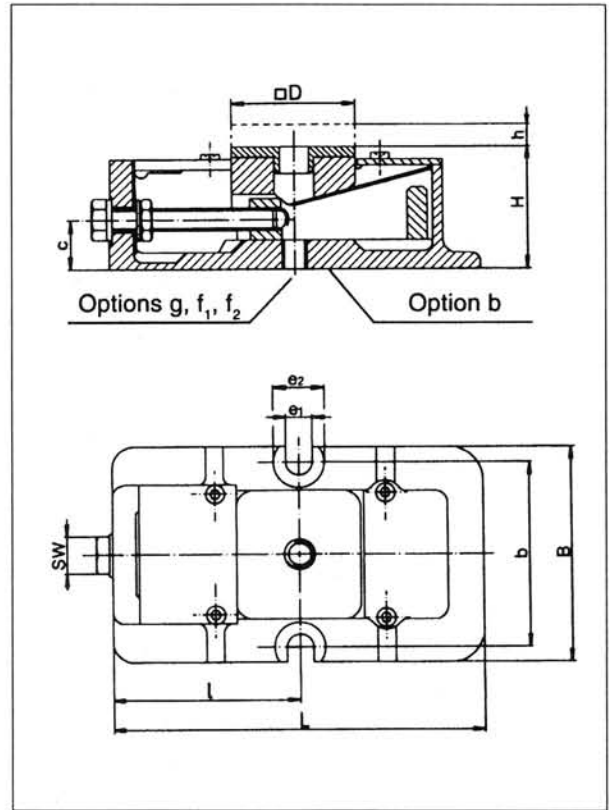
MODEL GA-K

Round, Spherical Top Seat



MODEL GA-D

Square, Flat Seat with Pad



DIMENSIONS

SIZE LK	L	B	H	øD	□D	SW	h	l	b	e ₁	e ₂	c
I	6.69	3.94	2.28	2.17	2.28	.67	.47	3.35	3.35	.47	.91	.95
II	8.07	4.72	2.76	2.76	2.64	.75	.47	3.94	3.94	.55	1.02	1.10
III	9.45	5.51	3.15	3.54	3.54	.95	.47	4.84	4.72	.55	1.02	1.42

Option g, f₁, f₂

DIMENSIONS

SIZE LK	g	øf ₁	øf ₂
I	M12	.51	.67
II	M16	.67	.75
III	M20	.83	.98

Option b

Machined bottom of the FIXATORS®. (The height H will be reduced about .078".)

Option f

Housing clearance hole.

Option g

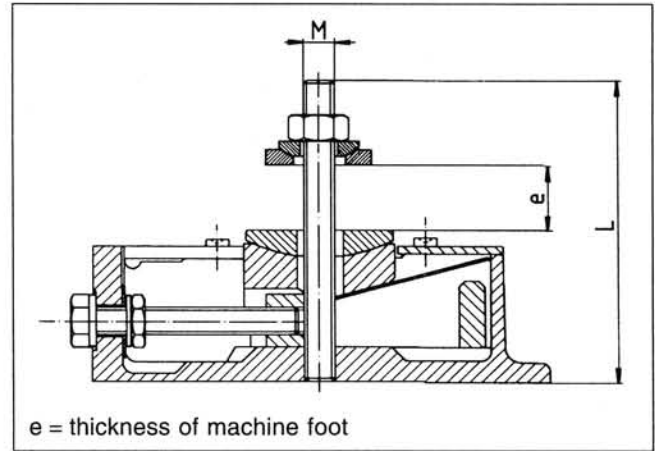
Tapped hole (standard).

LK FIXATOR® DETAILED OPTION SPECIFICATIONS NON-ANCHORED INSTALLATIONS

Option ste

Stud Bolt for attaching the FIXATOR® to the machine.
Specify dimension "e" in your order.

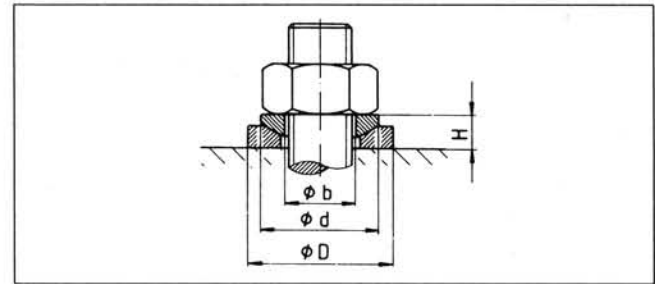
DIMENSIONS					
SIZE LK	M	L	e	Torque ft. lb.	Load lbs.
I	M12	5.12	1.58	24	2,200
II	M16	5.91	1.58	48	3,300
III	M20	6.89	1.97	80	5,500



Option p

Spherical Washer Set for non-parallel bearing surfaces.

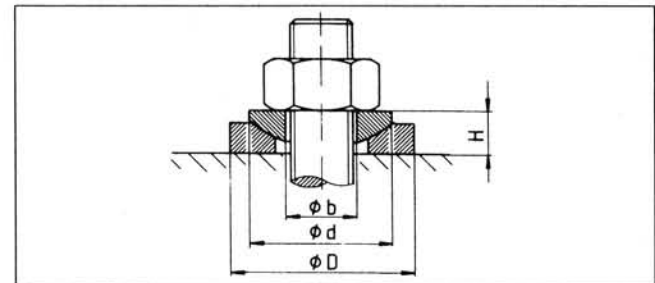
DIMENSIONS				
SIZE LK	øD	H	ød	øb
I	1.58	.35	1.18	.51
II	1.58	.39	1.18	.67
III	1.73	.39	1.42	.83



Option r

Oversized Spherical Washer Set for non-parallel bearing surfaces.

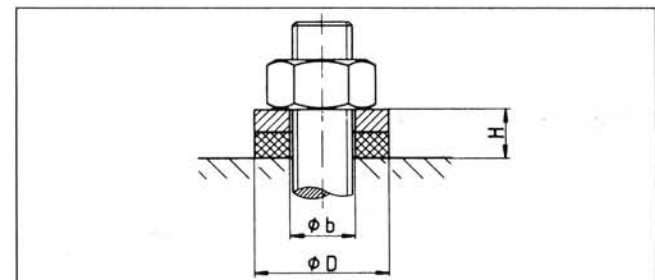
DIMENSIONS				
SIZE LK	øD	H	ød	øb
I	N/A	N/A	N/A	N/A
II	1.73	.39	1.42	.67
III	2.21	.51	1.73	.83



Option i

Anchor Bolt Isolation

DIMENSIONS			
SIZE LK	øD	H	øb
I	1.18	.47	.51
II	1.58	.47	.67
III	1.73	.55	.83

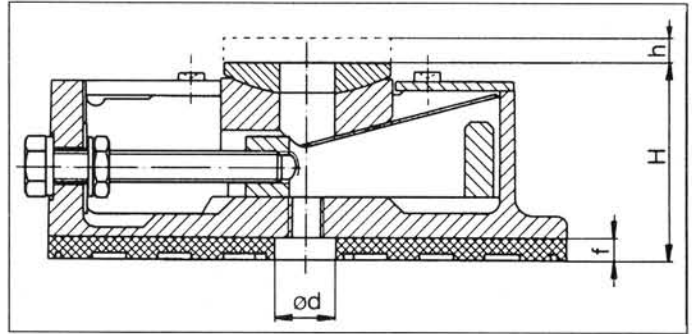


LK FIXATOR® DETAILED OPTION SPECIFICATIONS NON-ANCHORED INSTALLATIONS

Option dpl

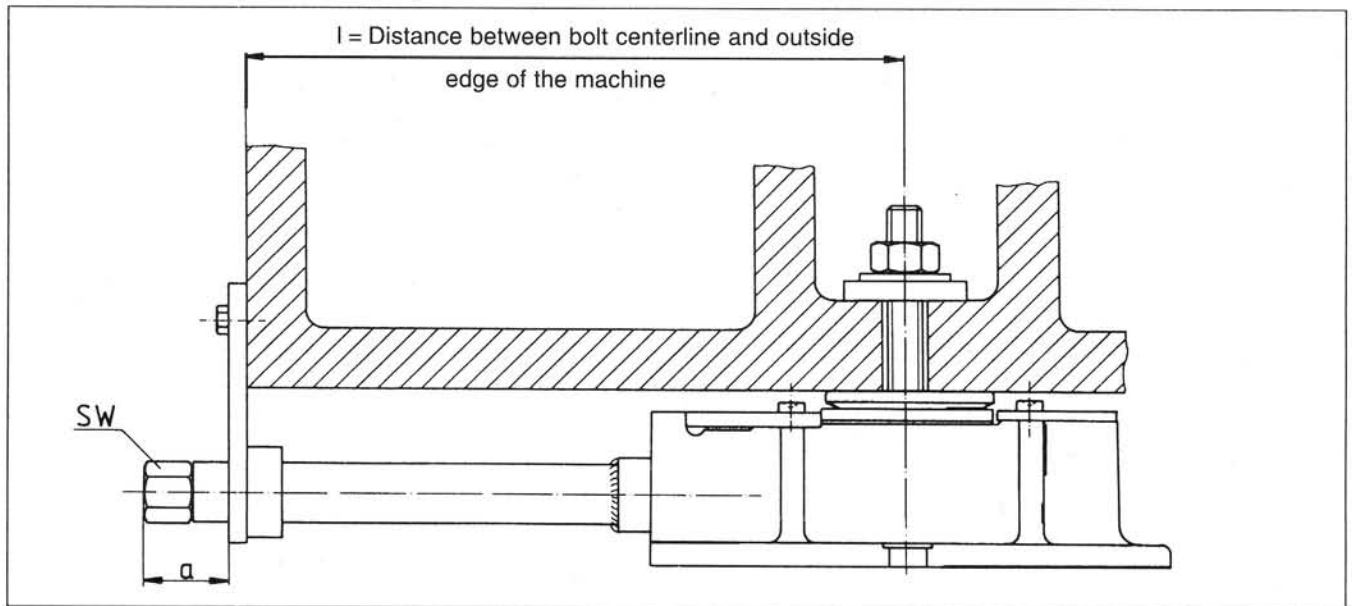
Non-skid Vibration Pad made of Polyurethane.

DIMENSIONS				
SIZE LK	H	f	ød	h
I	2.56	.28	.79	.47
II	3.03	.28	.87	.47
III	3.43	.28	.98	.47



Option le

Adjustment extension for adjusting FIXATORS® when recessed under machine.



DIMENSIONS				
SIZE LK	a	SW	Minimum Dimension	Tube Size
I	1.97	.87	5.51	24 x 4
II	1.97	.87	5.91	24 x 4
III	1.97	.87	6.69	24 x 4

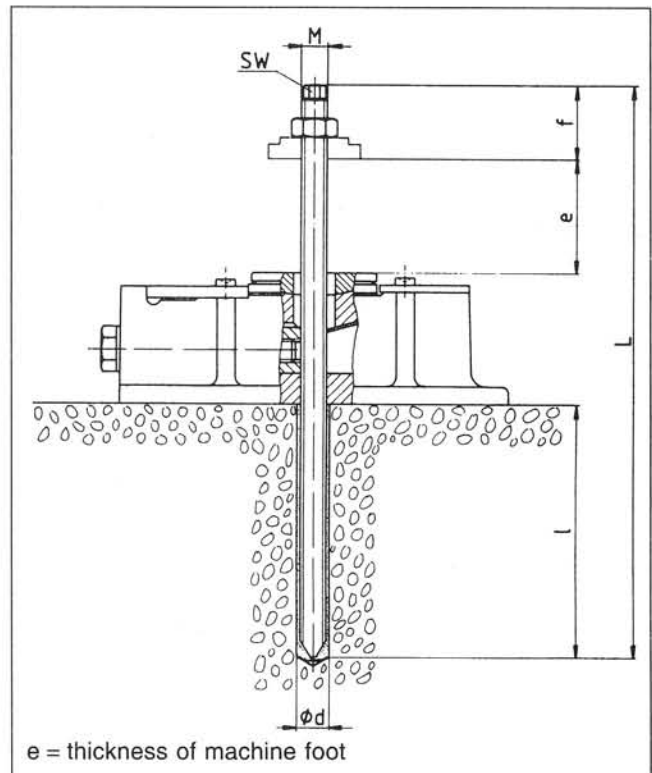
LK FIXATOR® DETAILED OPTION SPECIFICATIONS ANCHORED INSTALLATIONS

Option due

Center Capsule Anchor System consisting of a capsule and a stud.

Requires option f₁ and specification of dimension "e".

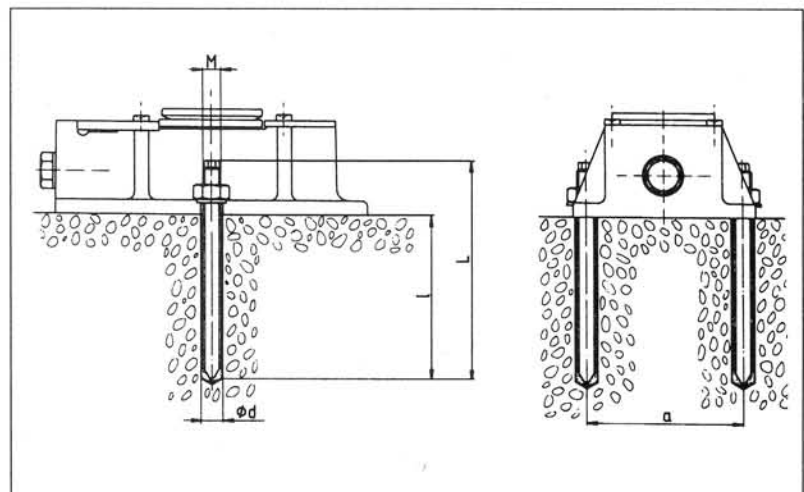
DIMENSIONS								
SIZE LK	M	L	f	ød	l	SW	Torque ft. lbs.	Load lbs.
I	M12	9.84	1.18	.55	4.33	.31	24	2,200
II	M16	11.81	1.38	.71	4.92	.39	39	3,300
III	M20	13.78	1.58	.98	6.69	.39	65	5,500



Option ca

Side Capsule Anchor System consisting of 2 capsules and 2 studs.

DIMENSIONS					
SIZE LK	M	L	a	l	ød
I	M10	4.72	3.35	3.54	.47
II	M12	5.91	3.94	4.33	.55
III	M12	5.91	4.72	4.33	.55



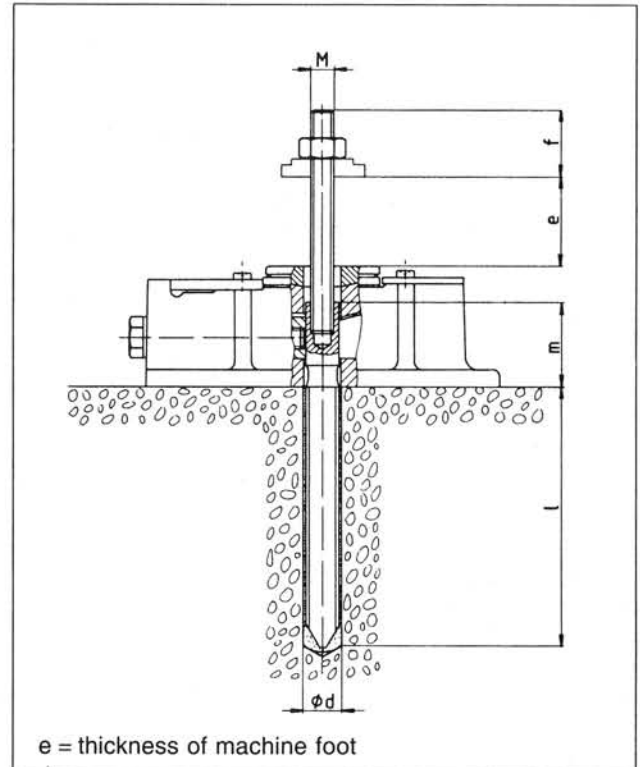
LK FIXATOR® DETAILED OPTION SPECIFICATIONS ANCHORED INSTALLATIONS

Option due/2

Center Two Piece Capsule Anchor System consisting of a capsule and a split stud.

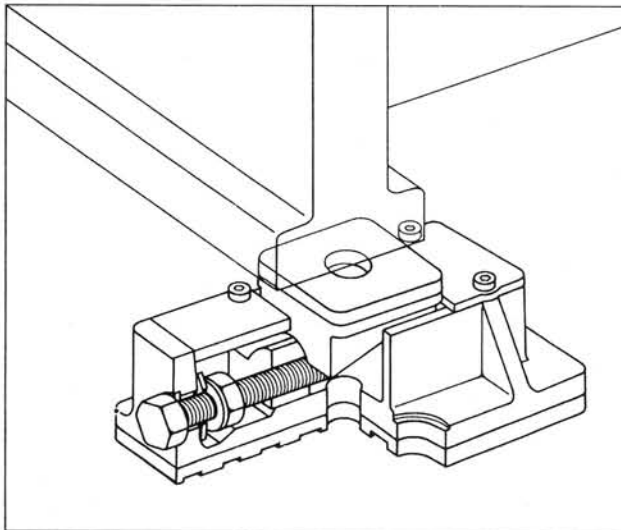
Requires option f_2 and specification of dimension "e".

DIMENSIONS							
SIZE LK	M	m	l	ϕd	f	Torque ft. lbs.	Load lbs.
I	M12	1.58	4.92	.71	1.18	20	2,200
II	M16	1.58	4.92	.71	1.38	39	3,300
III	M20	1.97	6.69	.98	1.58	65	5,500



COMBINATIONS AND APPLICATIONS

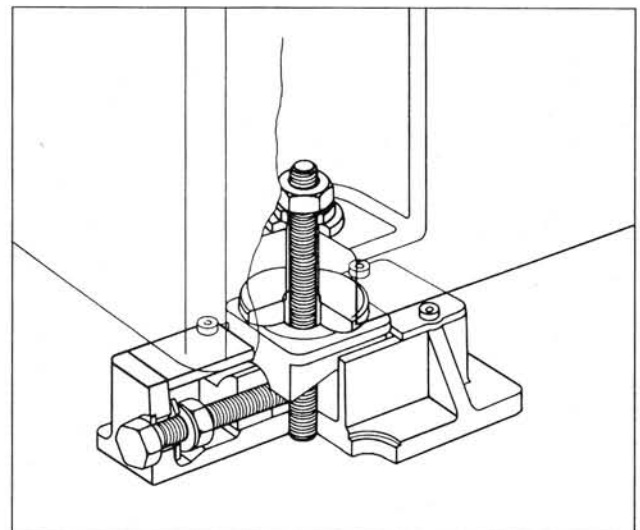
Combination 1



Order Specification,
e. g. LK (x*), GA-D, f_1 , d_{pl}

(x*) = Size of FIXATOR®

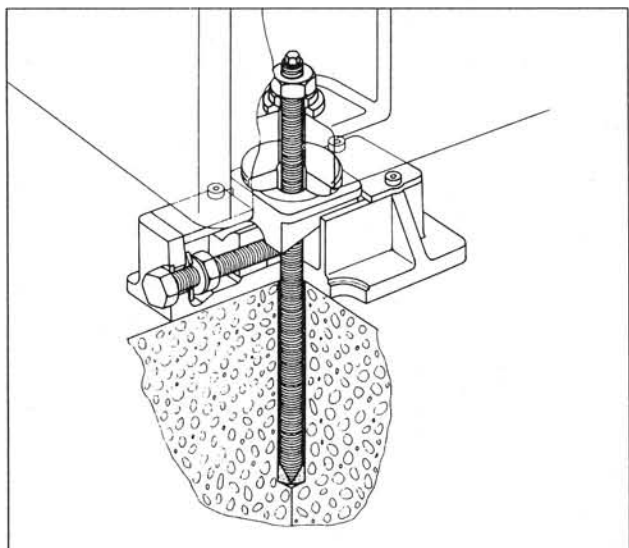
Combination 2



Order Specification,
e. g. LK (x*), GA-K, g, p, ste

LK FIXATOR® COMBINATIONS & APPLICATIONS

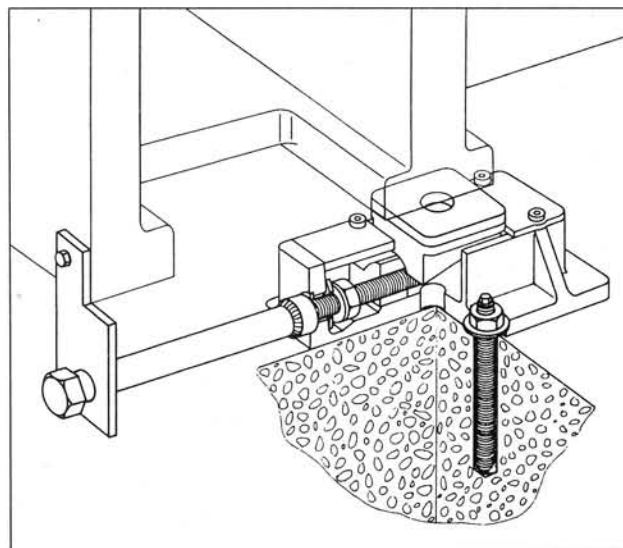
Combination 3



Order Specification,
e. g. LK (x*), GA-K, f₁, p, due

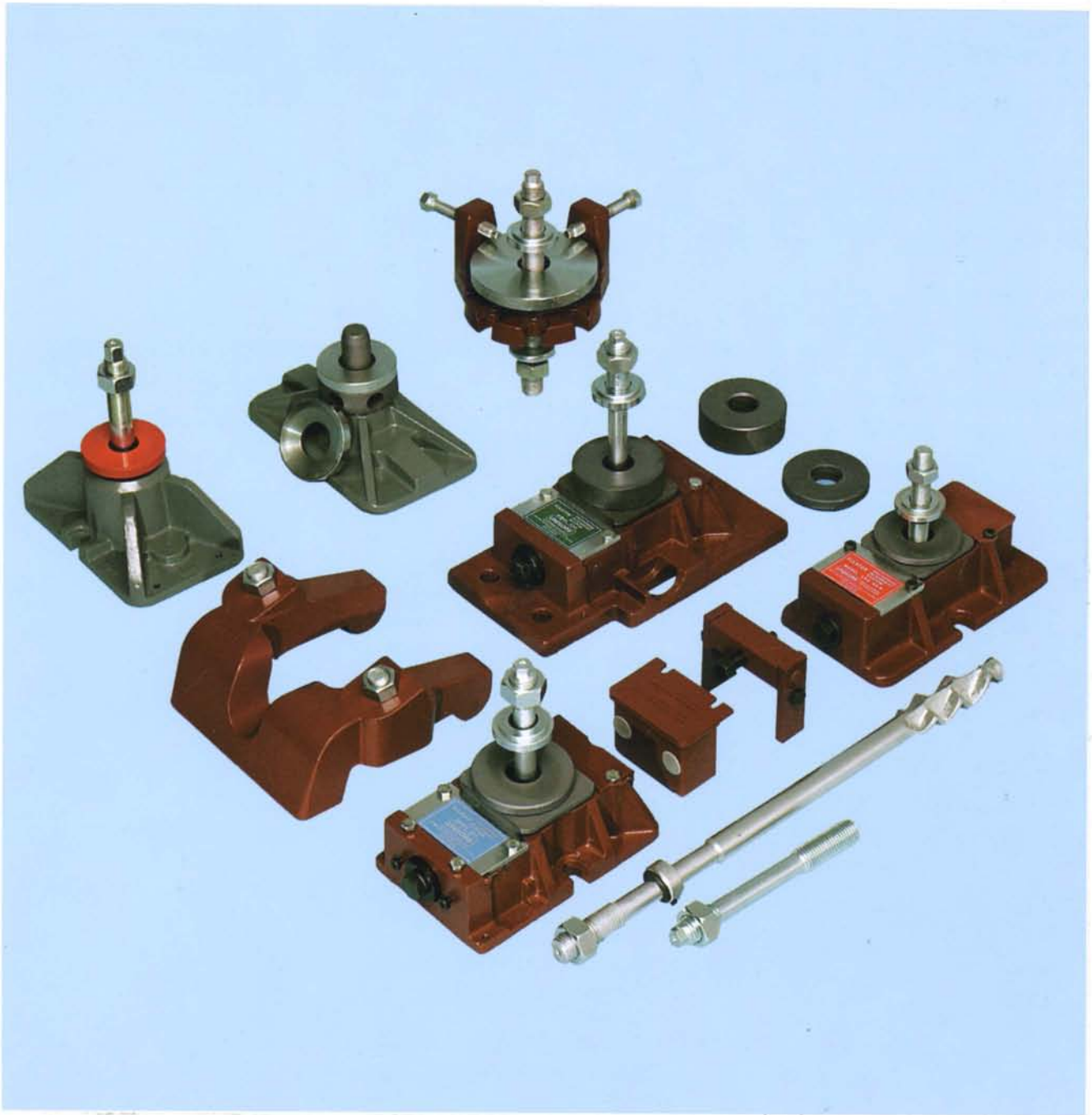
(x*) = Size of FIXATOR®

Combination 4



Order Specification,
e. g. LK (x*), GA-D, f₁, ca, le

FIXATOR® SYSTEMS



S FIXATOR® DESCRIPTION & DIMENSIONS

The Model S Fixator® is designed to complement the Model RK system. The Model S features a vertical bolt type adjustment and is used particularly in cases when leveling adjustment must be done from above where the Model RK cannot be used. Specific applications include floor plates, layout tables and similar situations.

The unit is comprised of a high density cast iron housing equipped with a captive mounted free turning adjusting and hold-down bolt combination. This high tensile bolt has at its lower half a spline shaped body structure. The upper end has a rolled thread to accept the hold-down nut, with a hex. head end for height adjustment.

The spline end section of the adjusting bolt engages with a precision matching spline pattern in the adjusting sleeve that is threaded into the base of the housing. The adjusting sleeve is guided by the upper portion of the housing to prevent lateral movement. A support plate with a precision machined concave surface mates with the convex spherical surface of the adjusting sleeve to assure equal load distribution over the entire bearing surface and compensate for any angular difference between machine and Fixator®.

An additional spherical washer set (option P) may be provided to compensate for any angular differences on the top surface of the machine bed.

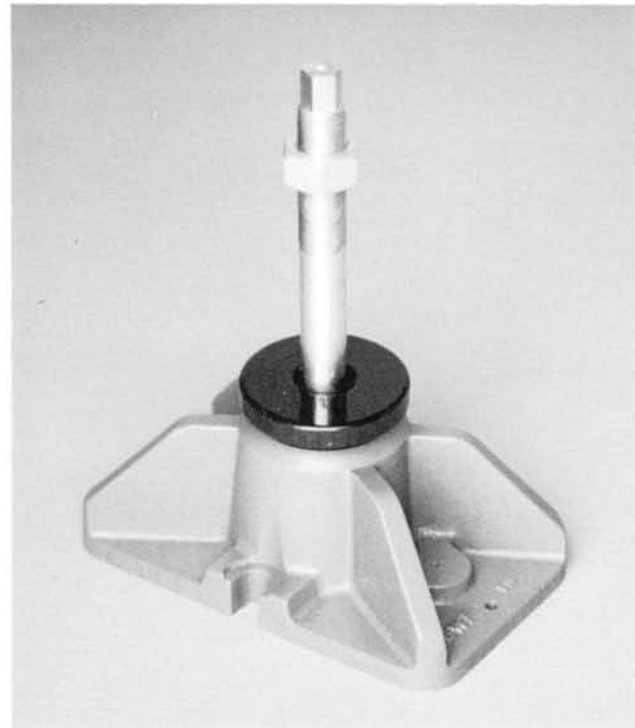
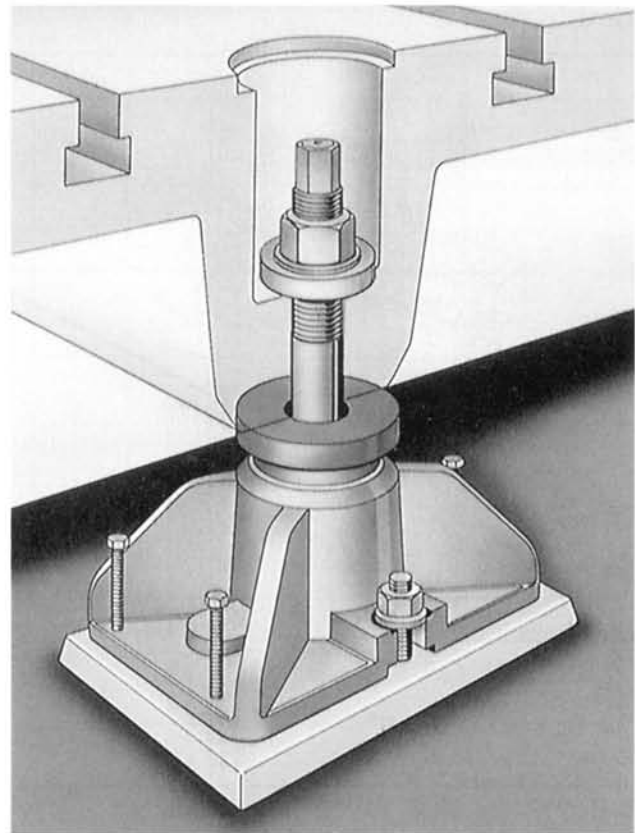
The adjusting mechanism is totally enclosed and all machined surfaces have been treated with a high pressure lubricant to reduce friction and prevent corrosion.

The Model S Fixator® may be completely embedded into the foundation.

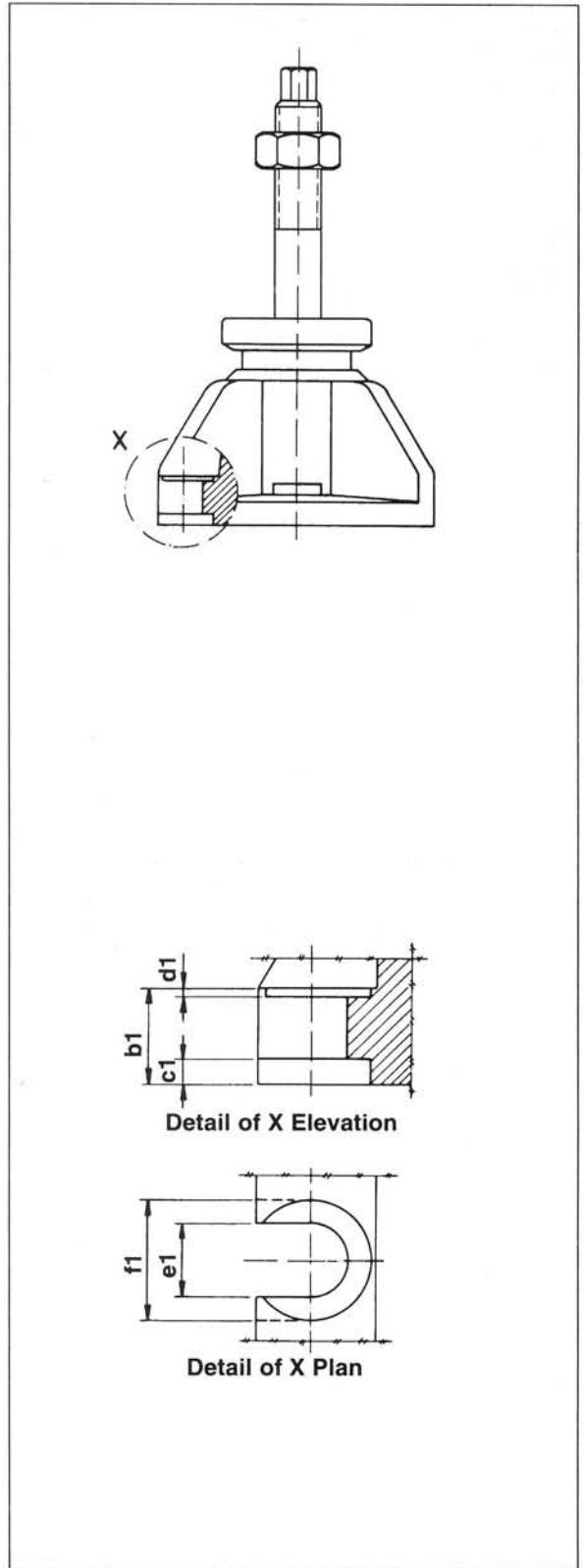
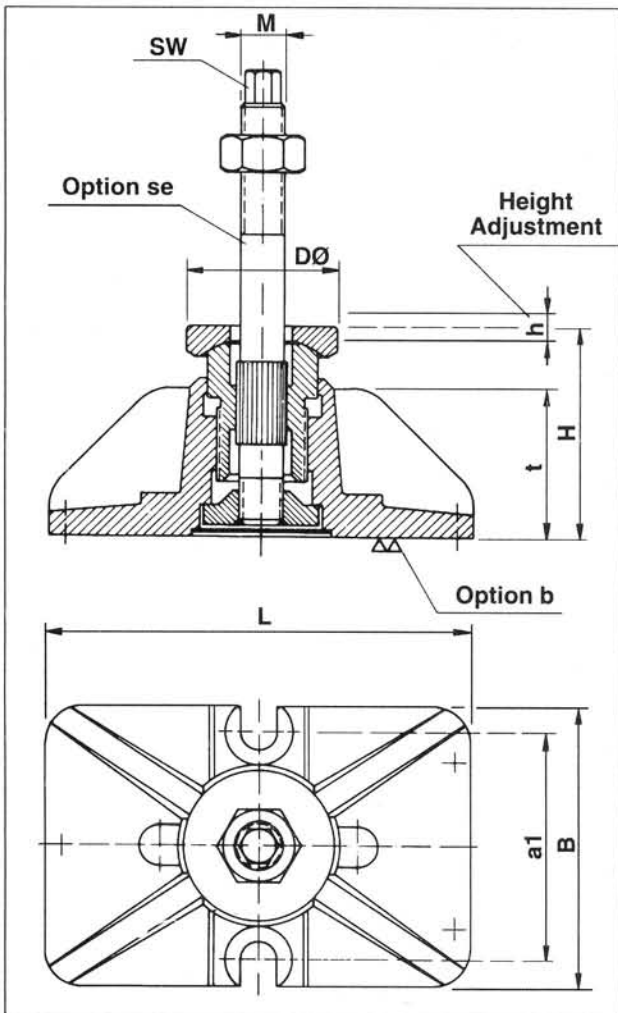
In addition, this unit is equipped with three auxiliary preleveling screws to rough level the base prior to pouring grout. When the unit is mounted on the top of a foundation, two side located anchor bolts (option C) secure the leveler to the foundation using the grouting method.

The leveling is accomplished by the following sequence: After securing the Model S Fixator® to the machine and foundation the upper hold-down nut is loosened and the adjustment accomplished by turning the adjusting bolt at its hex. head, thus causing vertical leveling through the movement of the inner adjustment sleeve. After the leveling is completed, the hold-down nut is tightened, acting as a jam nut to prevent creeping of the inner adjusting sleeve due to vibration.

As an additional feature, option D cover plates are available in several outside diameters to cover and seal the access openings usually provided to accommodate the hold-down/adjusting bolt and nut mechanism, for the adjusting of the Fixator®.



S FIXATOR® DESCRIPTION & DIMENSIONS



DIMENSIONS

SIZE	M	L	B	H	DØ	SW	t	h
I	M16	6.61	4.13	3.15	2.24	.47	2.36	.32
II	M20	7.48	4.53	3.74	2.76	.59	2.68	.39
III	M24	8.66	5.51	4.45	3.23	.75	3.27	.47
IV	M30	11.02	7.28	5.51	3.94	.95	3.82	.63
V	M36	12.99	8.86	6.54	4.80	1.18	4.72	.79

DIMENSIONS

SIZE	a1	b1	c1	d1	e1	f1
I	3.47	.63	.16	—	.47	.87
II	3.94	.79	.20	.08	.55	1.02
III	4.72	.98	.24	.08	.71	1.26
IV	5.91	1.26	.32	.08	.95	1.50
V	7.09	1.50	.32	.08	1.10	1.81

S FIXATOR® TECHNICAL SPECIFICATIONS

DESCRIPTION		DIM.	SI	SII	SIII	SIV	SV
Recommended machine dead weight per Fixator® *		Lbs.	2,200	4,400	8,800	13,000	22,000
Maximum allowable lifting load per Fixator® **		Lbs.	20,008	26,500	53,000	80,000	133,000
Spring Constant		Lbs./In.	8,550,000	11,400,000	14,250,000	17,100,000	22,800,000
Approximate Torque Required To Turn Adjusting Screw		$\frac{\text{Ft. Lbs.}}{1000 \text{ Lbs.}}$	1.2	1.5	1.7	2.0	2.3
Maximum Allowable Torque On Adjusting Screw		Ft. Lbs.	90	175	350	700	1,500
Maximum Torque at the Hold Down Nut		Ft. Lbs.	45	88	176	350	700
Weight of Basic Unit		Lbs.	7.2	11.2	18.5	33.7	60.7
Maximum Tension On Anchor Bolt	Option se	Lbs.	11,650	17,820	25,300	40,040	58,300
	Option c	Lbs.	9,900	14,300	26,400	41,800	60,500









Vertical Adjustment per Screw turn: .079 inches for all sizes.

*Standard approach for determination of Fixator® size.

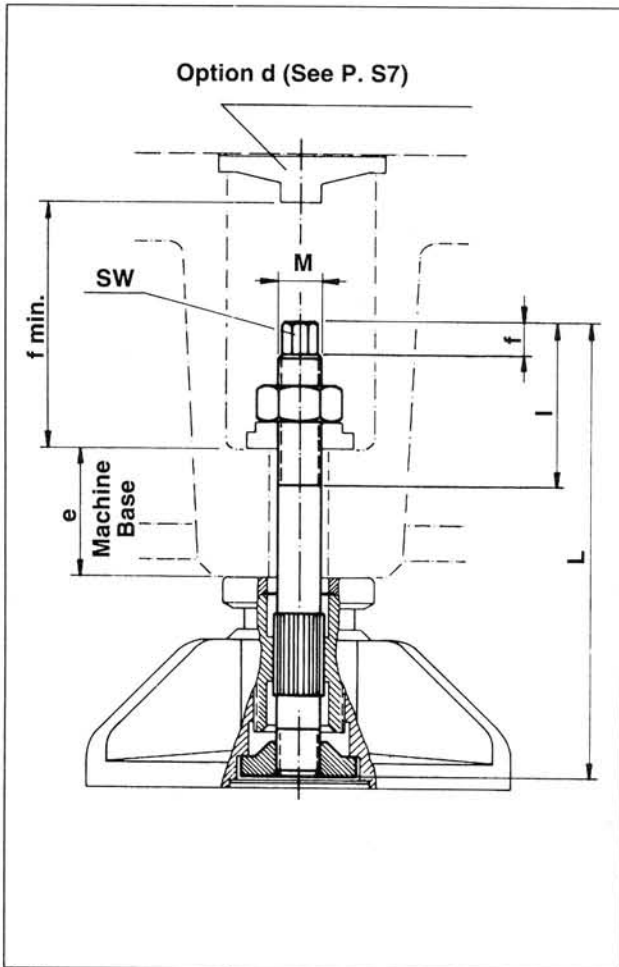
**Maximum allowable is the total of the following.

- a) Proportional Machine Load.
- b) Tensile Force Exerted by Anchor Bolt.
- c) Dynamic (Acceleration) Forces.
- d) Changing Loads (moving machine parts or workpieces).

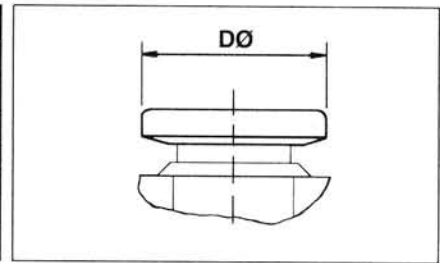
S FIXATOR® OPTIONS

Options	The basic design can be modified by the following versions to adapt it to any type of machine or building construction feature.
<p>b</p> 	<p>Base surface of S FIXATORS® machined.</p>
<p>se</p> 	<p>High tensile hold-down and adjusting bolt.</p>
<p>p</p> 	<p>Spherical washer set.</p>
<p>r</p> 	<p>Oversized spherical washer set.</p>
<p>v</p> 	<p>Enlarged spherical support washer.</p>
<p>c</p> 	<p>Two side anchor bolts for securing the S FIXATORS® to the foundation.</p>
<p>sew</p> 	<p>Center anchor hold-down stud.</p>
<p>d</p> 	<p>Access opening cover.</p>

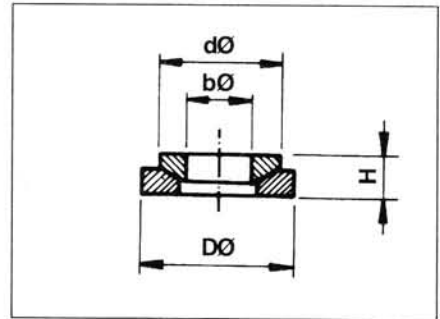
S FIXATOR® DETAILED OPTION SPECIFICATIONS NON-ANCHORED INSTALLATIONS



DIMENSIONS	
SIZE S	DØ
I	2.76
II	3.15
III	3.94
IV	4.72
V	5.91



Option v



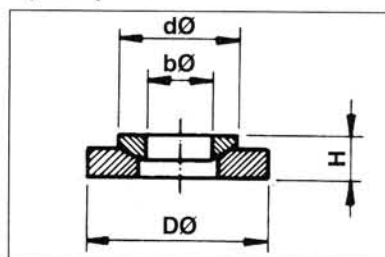
Option r

DIMENSIONS				
SIZE S	DØ	H	dØ	bØ
I	1.73	.39	1.42	.67
II	2.20	.51	1.73	.83
III	2.68	.63	2.21	.98
IV	3.07	.79	2.68	1.22
V	3.94	.79	2.68	1.46

Option se

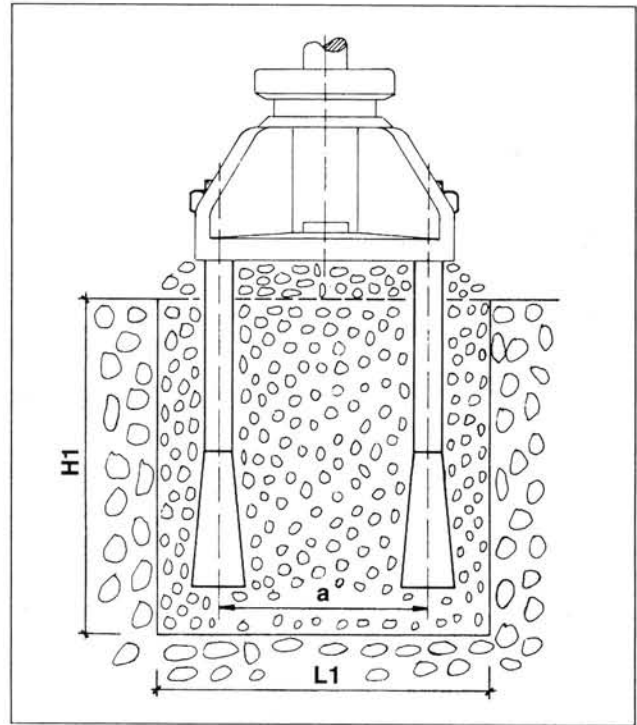
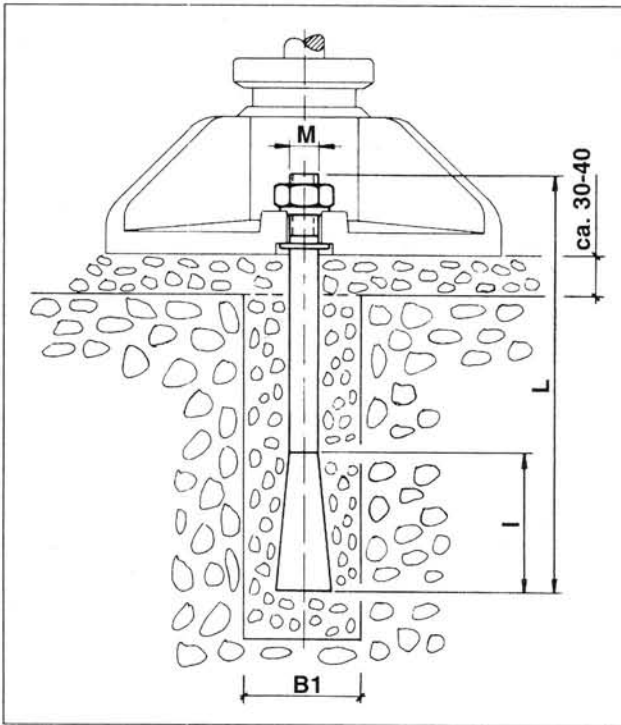
DIMENSIONS											
SIZE S	M	I	SW	t	f	L	from e		L	from e	
I	M16	2.56	.47	.47	3.15	6.69	.79	1.58	7.48	1.58	2.36
II	M20	2.95	.89	.59	3.54	7.28	.79	1.58	8.07	1.58	2.36
III	M24	3.54	.75	.75	4.13	9.65	1.38	2.36	10.43	2.36	3.15
IV	M30	4.33	.95	.95	4.92	12.21	2.36	3.54	—	—	—
V	M36	5.12	1.18	1.18	6.30	14.96	2.76	4.33	—	—	—

Option p



DIMENSIONS				
SIZE S	DØ	H	dØ	bØ
I	1.58	.35	1.18	.67
II	1.73	.39	1.42	.83
III	2.21	.51	1.73	.98
IV	2.68	.63	2.21	1.22
V	3.07	.79	2.68	1.46

S FIXATOR® DETAILED OPTION SPECIFICATIONS ANCHORED INSTALLATIONS

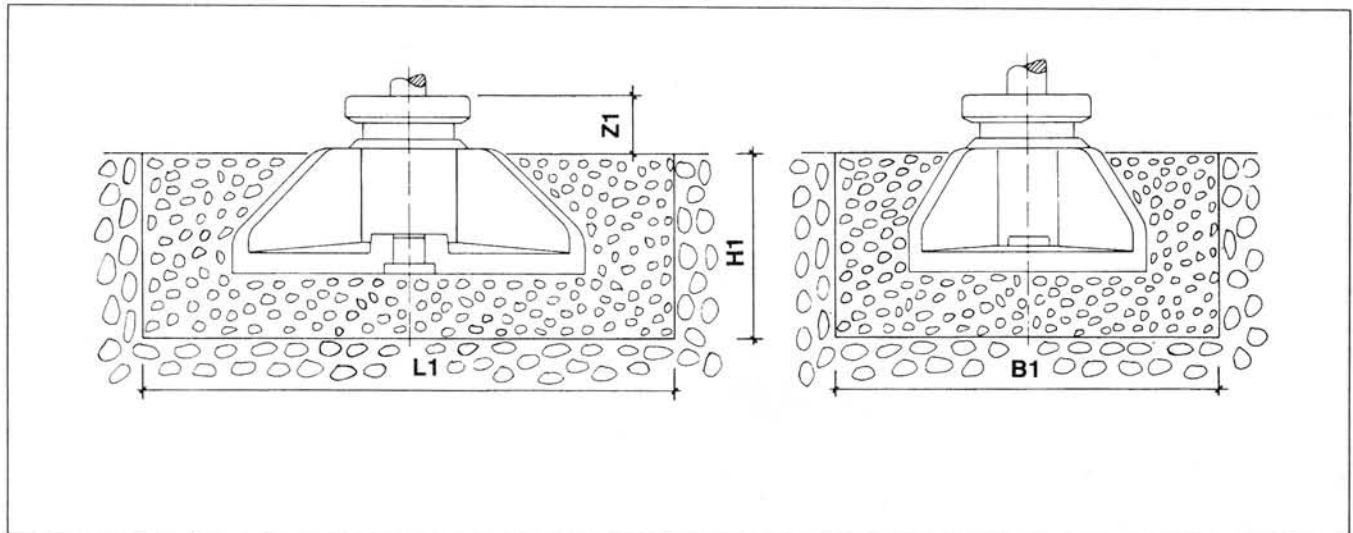


Option c

DIMENSIONS				
SIZE	M	L	I	a
I	M10	4.92	2.17	3.47
II	M12	5.91	2.76	3.94
III	M16	9.84	3.54	4.72
IV	M20	11.81	3.94	5.91
V	M24	13.78	5.32	7.09

DIMENSIONS				
SIZE	L1	B1	H1	Z1
I	11.81	6.30	3.94	1.18
II	12.99	7.87	4.33	1.38
III	13.78	9.45	5.51	1.58
IV	17.72	11.81	6.30	1.77
V	19.69	12.60	7.48	1.97

DIMENSIONS			
SIZE	L1	B1	H1
I	5.32	1.97	4.72
II	6.30	2.30	5.51
III	7.87	2.76	9.45
IV	9.84	3.15	11.42
V	13.78	3.94	13.78



S FIXATOR® DETAILED OPTION SPECIFICATIONS ANCHORED INSTALLATIONS

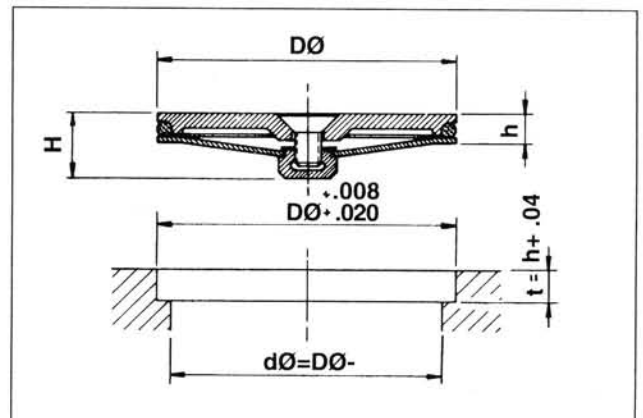
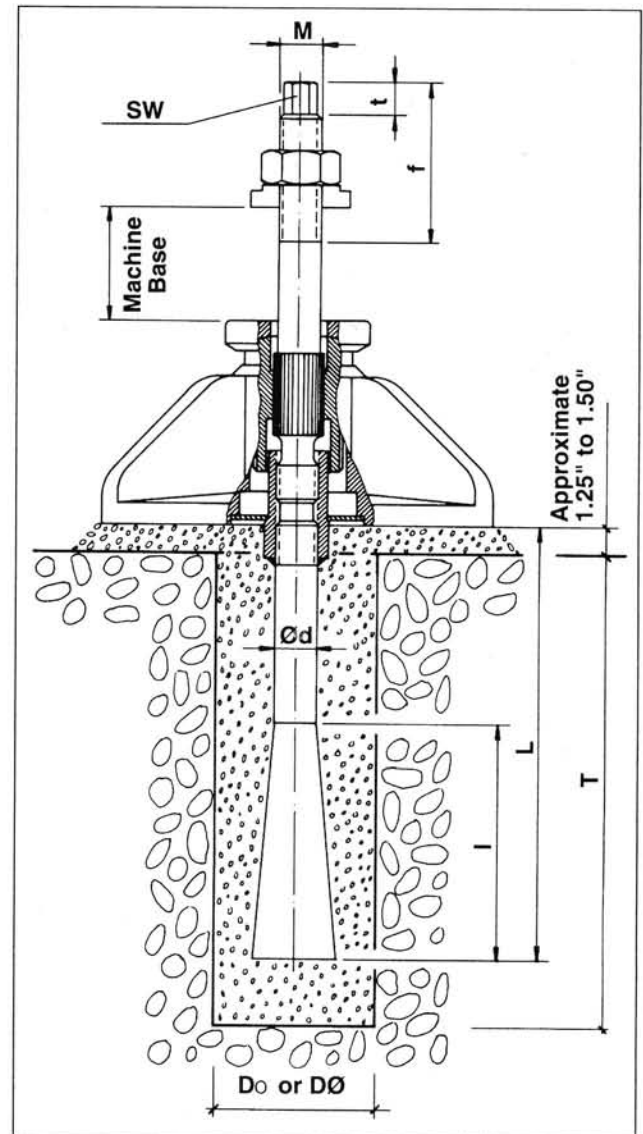
Option sew

DIMENSIONS							
S	M	f	SW	t	dØ	L	I
I	M16	2.56	.47	.47	.63	5.91	3.54
II	M20	2.95	.59	.59	.79	7.87	3.94
III	M24	3.54	.75	.75	.95	10.63	5.32
IV	M30	4.33	.95	.95	1.18	12.60	5.91
V	M36	5.12	1.18	1.18	1.42	13.72	7.09

DIMENSIONS		
S	D	T
I	2.76	7.09
II	3.15	9.84
III	3.94	12.60
IV	4.72	14.96
V	5.91	20.47

Option d

DIMENSIONS								
D	63	80	90	110	130	150	200	250
H	1.26	1.26	1.26	1.26	1.26	1.26	1.69	1.69
h	.43	.43	.43	.43	.43	.43	.45	.45
DØ	2.48	3.15	3.54	4.33	5.12	5.91	7.87	9.84



S FIXATOR® INSTALLATION INSTRUCTIONS

Clean the concrete foundation or floor thoroughly,

Clean the bottom surface of the machine or worktable.

The S Fixators® must be adjusted to the same height. Standard adjustment at delivery: 1/8" above the lowest point.

The S Fixators® are protected against corrosion (therefore do not grease them).

When grouting in the anchor bolts, the specifications of this Fixator® publication must be carefully complied with.

Attach the S Fixators® to the worktable or machine feet and lower onto temporary auxiliary wedges.

Align the worktable or machine feet by using the auxiliary wedges, making certain that dimension between the worktable or machine feet and foundation is adhered to.

Fill the grout pocket with grout.

After proper grout cure the auxiliary wedges may be removed and the worktable or machine may be aligned.

Tighten the nuts on the SE hold down bolts. The installation is now complete.