

# REHABTECHNOLOGYSELECTION GUIDE

## CURED-IN-PLACE-PIPE

Company	Product/Type	Mainline, Lateral Sectional	Inversion/Cure Process	Pull-In Diameter Range (in)	Inversion Diameter Range (in)
Applied Felts	Felt Liner	lateral	steam, water; ambient cure	4-108	4-108
C.I.P.P. Corp.	Felt Liner	lateral	steam, water cure	4-108	4-108
HammerHead	Felt Liner	lateral	steam, water; ambient		2-12
Trenchless Equipment	RS CityLiner	mainline	steam, water; ambient	6-42	6-42
	RS BlueLine	mainline	steam, water; ambient	4-42	4-42
	RS CityMain	mainline	steam, water; ambient	6-42	6-42
	Point Repair	sectional	ambient	2-60	
Infrastructure Repair Systems	Point Repair	sectional		3-100	
Inliner Technologies	CIPP	lateral, mainline	steam, water; uv cure	4-120	4-120
Insituform Technologies	CIPP	lateral, mainline	air, water inversion steam, water cure	4-108	4-108
LMK Technologies	Lap Liner	main, lateral	ambient		4-24
	T-Liner	main, lateral	air/steam, ambient		6-36
	Shorty	main, lateral	air/steam, ambient		6-24
	Stubby	main, lateral	air/ambient		6-36
	Performance Liner Lateral Liner	lateral	air/steam, ambient		2-8
	Push-In-Place Spot Repair	lateral	air/steam, ambient		4 & 6
	Invert-In-Place Spot Repair	lateral	air/steam, ambient		4 & 6
	Performance Liner Sectional Inversion	sectional	air/steam, ambient		6-42
Liner Products	Felt Liner	lateral, mainline	air, water inversion, steam, water cure	4-120	4-120
Masterliner	CIPP	mainline, lateral, sectional	steam, water, air cure	up to 75	up to 75
MaxLiner	Felt Liner	lateral	steam, ambient cure	3-10	3-10
Mississippi Textiles	Felt Liner		air, water inversion steam cure	6-96	6-96
National Liner	CIPP		air, water inversion water, steam cure	4-108	4-108
Perma-Liner	Perma-Main	mainline	water inv./steam cure	6-24	
	Perma-Lateral	lateral	air inv./ambient cure	2-12	
	Perma-Liner	sectional		6-52	
	Sectional Point Repairs			6-54	2'-30'
	Perma-Patch	lateral spot		4-6	
Premier-Pipe USA	Felt Liner	lateral			4-108
PrimeLine Products	PrimeLiner	lateral	ambient cure	2-8	
Sekisui SPR Americas	Nordipipe	mainline	air/steam inversion		6-48
	Nordiforce	mainline	water/hot water cure		

## GROUT-IN-PLACE-PIPE

Company	Product	Diameter Range (in)
Danby	Panel Lok	36+
National Liner	3 - S	36+
Sekisui SPR Americas	SPR	32 - 217

## SPRAYED-IN-PLACE-PIPE

Company	Product	Pipe Diameter (In.)	Type Pipe	Insitu/ New Pipe
3M	Scotchkote 269	4-12	water metal, concrete,	insitu
AP/M	Permacast PL-8000	30-120	clay, brick culverts, sewer pipe	insitu
Permaform	(centrifugally- cast-concrete)		culverts, storm drains, DOT	
IPR	Eco-Cast	36-120	CMP, concrete, brick, stone	fully structural pipe- in-pipe
Quadex LLC	Quadex Lining System	30+		
Sprayroq	SprayWall	36+	concrete, metal, culverts, storm drains, DOT, clay, brick, sewer, stormwater	
The Strong Co.	Storm Seal	18-120	metal, concrete, clay, brick	insitu
Warren Environmental			metal, concrete	

## SPIRAL WOUND PIPE

Company	Product	Diameter Range (in)
Contech Engineered Solutions	SPR PE	30-118
Danby	Panel Lok	36+
Sekisui SPR Americas	SPR EX	8 - 42
	SPR TF	36 - 80
	SPR	32 - 217

## UV-LIGHT CURED-IN-PLACE-PIPE

Company	Product	Diameter Range (in)
C.I.P.P. Corp.	BKP Berolina	up to 36
Layne Inliner	Inliner STX	6-48
Reline America	Alphaliner	6-60

## FOLDED PIPE

Company	Product	Pipe Type	Diameter Range (in)	Pre-Heating
American Pipe & Plastics	AM-LINER <sup>®</sup>	PVC	6-12	Yes
Insituform	InsituGuard	HDPE	4-48	No
IPEX USA LLC	Liner	PVC	6-30	Yes
Miller Pipeline	EX Method	PVC	6-12	Yes

## SLIPLINING

Company	Model	Diameter (in)	Pipe Material	Available Lengths
Advanced Drainage Systems (ADS)	N-12 HDPE	4-60	high density polyethylene	13', 20'
	SaniTite HP	12-60	polypropylene	13', 20'
	HP Storm	12-60	polyethylene	13', 20'
Contech Engineered Solutions	A2 Liner	12-36	PVC resin (12454)	12.5', 14', 22'
	DuroMaxx	30-120	steel reinforced polyethylene;	14', 24'
	ULTRA FLO	18-102	aluminized steel type 2, aluminum polymer pre-coated aluminized steel type 2,	10'-48'
	CMP ALSP	6-144 5'-40'	aluminum polymer pre-coated aluminum structural slate	10'-48' 4.5' plate lengths
	Tunnel Liner Plate Other	4'-15' 8'-102'	steel or aluminum other plate & bridge products	18" plate lengths
HOBAS Pipe USA	CCFRPM	18-126	centrifugally cast, fiberglass-reinforced polymer mortar	20' standard, shorter available
ISCO	Snap-Tite	6-63	HDPE	2'-50'
Underground Solutions Inc.	Fusible PVC Pipe	4-36	PVC	20', 30', 40'
United Pipeline Systems	Tite Liner	4-54+	HDPE	1,000'
US Composite Pipe South	Flowtite	4-156	filament wound fiberglass-reinforced plastic mortar	10'-40'

## GROUT

Company	Product	Viscosity	Application
Avanti Intl.	AV-100 Chemical Grout	1-2 cP in solution	Sewer joint sealing, service lateral connections, soil stabilization, hazardous waste containment, controls groundwater in mines, tunnels & subways.
	AV-202* Multigrout	3200-6000 cP in solution	Seals leaks in large cracks or joints in concrete, dams, structures, manholes & pipe penetrations.
	Ultrafine*	water/cement ratio of 0.6/1 by weight	Pumice-based cement increases compressive strength of soils, soil stabilization, forms low-permeability grout curtains, seal seeping mines, dams & tunnels.
	AV-118 Duriflex	1-2 cP in solution	Sewer joint sealing, service lateral connections, soil stabilization, hazardous waste containment, controls groundwater in mines, tunnels & subways.
	AV-160 SuperGel	1-2 cP in solution	Sewer joint sealing, service lateral connections, soil stabilization, controls groundwater in mines, tunnels & subways.
	AV-248-LV *Flexseal LV	150-250 cP	Flexible hydrophobic withstands wet/dry cycles, seals leaks in fine to medium moving cracks and joints in concrete structures.
	AV-248 Flexseal	550-830 cP	Flexible hydrophobic withstands wet/dry cycles, seals leaks in medium to large moving cracks & joints in concrete structures.
	AV-275* SoilGrout	100-120 cP	Fills voids outside a structure or joints & cracks in concrete structures, soil stabilizer.
	AV-315* MicroFoam	50-200 cP	Seals leaks in fine cracks or joints in concrete retaining walls, parking structures, tunnels & mines.
	AV-330* Safeguard	350-750 cP	Seals leaks in medium to fine cracks or joints in subways and tunnels, tie-backs & slurry walls, manhole & pipe penetrations.
	AV-333* Injectaflex	350-750 cP	Seals leaks in medium to fine cracks or joints in concrete structures, subways, manholes, pipe penetrations.
	AV-350 Multigel	275-450 cP	Soil stabilization around manholes, pipe joints, service laterals, tunnels, dams.
	* Certified for use with potable water		
Prime Resins	Prime Flex 900 XLV*	250-350 cps	Sealing leaks in extremely tight hairline cracks.
	Prime Flex 900 MV	650-700 cps	Sealing active leaks in concrete (cold joints, cracks, failed water stop). Tough and flexible. No catalyst or accelerator needed.
	Prime Flex 910	35-50 cps	Soil stabilization; curtain wall grouting; sea wall leak sealing. Hydrophobic, forms watertight, rock hard mass.
	Prime Flex 920*	120 cps	Soil stabilization, permeation grouting, void filling, gushing leak sealing, below-grade curtain grouting. Hydrophobic.
	Prime Flex 940*	450-600 csp	Sealing active leaks in joints and cracks. Hydrophobic flexible foam.
	Hydro Gel SX*	440-550 cps (20 cps at 8:1)	Sealing leaks; point repair grouting. Hydrophilic; for wet, below-grade environments such as manholes
	Prime Flex 985 (LX20*)	270-280 cps	Rigid polyurethane foam. Fills voids in/ around structures; fills abandoned underground storage tanks and pipes.
	AR 800*	1-15 cps in solution	Soil stabilization, sealing joints and leaks in potable water pipes and waste water pipes. Hydrophilic, acrylate (acrylamide-free), elastomeric gel, primarily for geotech uses. Wide window of variable set time-field adjustable. Excellent penetration in sandy/silty soils. For void fill when expansive pressure is not desired.

Prime Resins	AR 870	2-7 cps in solution	Sealing leaks in concrete; sealing wastewater lateral joints and leaks; controlling water in tunneling ops, elevator pits, below-grade structures.
	Precision Lift 4.0/4.75	270-280 cps	Compaction grouting, slab lifting. Hydro insensitive, polyurethane structural foam.
	Rock Grout 9200	190-200 cps	Soil stabilization, compaction grouting. Fast-reacting. Creates dense, hard fill material required for anchoring and binding aggregate.
	Prime Permeation Grout	35-50 cps	Soil stabilization, curtain wall grouting, sea wall leak sealing. Hydrophobic.
	VF 3.5	270-280 cps	Soil stabilization, void filling, slab lifting. Hydro insensitive.
*Independently tested and verified to meet NSF/ANSI Standard 61 for contact with potable water.			
Sealing Systems	Aqua Seal	440 cps "B" side 200 cps "A"	Aqua Seal is an extremely reactive two side component hydrophobic polyurethane water stop system that can be injected into flowing water.

## GROUTING EQUIPMENT

### Test & Seal Packers

Company	Model	Pipe Diameter (in)	Type
Logiball	2001 J Series	6-21	round pipe (vcp, acp, concrete, pvc)
	CMP Series	4-144	round pipe collapsible
	Elliptical series	(14 x 23+)	mainline test & seal packers
	Box Culvert series	up to 120	test & seal grouting packers for elliptical concrete pipe
	Flexible Push/Pull	4-10	custom made packers for box culverts
CUES	Low Void	6-18	flexible packers w/3-5ft grouting span
	Collapsible	24-96	round

### Test & Seal Lateral Packers

Company	Model	Mainline Pipe Diameter	Lateral Diameter
Logiball	2001L series	6"-30"	4"-6"; 30'
CUES	Logiball	6"-30"	3"-8"

## INTERNAL JOINT SEALS

Company	Product	Seal Application Size (in)	Seal Operating Pressures (psi)
Cretex Specialty Products	Internal Manhole	20-48	
	Chimney Seal	24-48	
	Internal Pipe Joint Seal	32-120	
	External Manhole Joint Seal	18-218	300 psi internal 150 psi external
LMK Technologies	CIPMH	up to 36	
	Miller Pipeline	18-216	150 psi external 300 psi internal

## MANHOLES

Company	Coating	Inserts	Liners	Inverts
AP/M Permaform	.....	Yes	.....	Yes
No-Dig manhole solutions since 1975 provided through world-wide network of highly trained applicators; PERMAFORM, PERMACAST, CON <sup>SM</sup> SHIELD and COR+GARD offer the "hole" solution.				
Containment Solutions	.....	No	.....	No
Non-corrosive fiberglass manhole rehab liners slide into existing manholes to save time and money. Manhole bases with adhesive channels also available.				
Cretex Specialty Products	.....	Yes	.....	No
Leading manufacturer of mechanical internal and external manhole frame-chimney seals, internal joint seals, PRO-RING, external joint wraps, lid plugs, gaskets, inflow dishes and more.				
Danby	.....	No	.....	Yes
Cast-in-place new and rehab manholes using corrosion-resistant PVC liner with cementitious grout for storm and wastewater structures for over 28 years.				
HOBAS Pipe USA	.....	No	.....	Yes
Segmental sections are utilized to rehabilitate manhole shafts. The corrosion resistance and high strength composite make liner insertion quick and easy. Manhole T-base systems are available.				

## MANHOLES (continued)

Company	Coating	Inserts	Liners	Inverts
Infrastructure Repair Systems	Yes	No	No	No
<i>Infragard, a durable topcoat and Chim Coat; a flexible mastic, trowel-on 100% solid epoxy rehab material.</i>				
Linabond	No	No	Yes	No
LMK Technologies	No	No	Yes	No
<i>A stretchable, one-size fits most CIPP lining is designed to structurally renew manholes while eliminating inflow at its source. CIPMH can be installed as a chimney seal or full-depth manhole lining.</i>				
Miller Pipeline	No	Yes	No	No
Perma-Liner	No	No	Yes	No
Press-Seal Gasket	No	Yes	Yes	No
Quadex LLC (member of the Vortex family)	Yes	No	Yes	No
<i>Since 1991, Quadex has been manufacturing and delivering the highest-quality geopolymer, hybrid cements and patching materials for the manhole/sewer infrastructure rehab market.</i>				
Raven Lining Systems	Yes	No	Yes	No
<i>Raven Lining Systems offers products that are solvent free 100% solids, ultra high-build epoxy coating for new and rehabilitated water/wastewater infrastructures.</i>				
Reliner/Duran	No	No	No	Yes
Sealing Systems	Yes	No	No	No
<i>Sealing Systems manufactures a variety of manhole rehab products: manhole inserts, coatings (external and internal) and chemical grout.</i>				
Sauereisen	Yes	No	No	No
<i>Sauereisen manufactures an array of cements, calcium aluminate, 100% solids epoxies, urethanes and polyurethane grouts for stopping water inflow and preventing corrosion in wastewater manholes.</i>				
SpectraShield Liner Systems	Yes	No	No	No
<i>Systematic layering of polymer resins stops infiltration, prevents corrosion, and has a 10-year warranty.</i>				
Sprayraq Inc.	Yes	No	Yes	Yes
<i>Structural polyurethane that is self-priming, and provides infiltration control and fast return to service.</i>				
Standard Cement Materials	Yes	No	Yes	Yes
<i>Standard Cement Materials manufactures and installs cementitious liners and epoxy coatings in manholes, lift stations and wet wells as a certified MBE.</i>				
The Strong Company	Yes	No	No	No
<i>Manhole rehab solution since 1989. The fast, cost-effective solution for stopping infiltration, restoring structural integrity and protecting against corrosion.</i>				
Terre Hill Composites	No	No	Yes	No
Warren Environmental	Yes	No	No	No
<i>Warren Environmental is a blender of specialty non toxic epoxy systems for the lining and rehabilitation of manholes, pipes and other potable and wastewater structures.</i>				

## CCTV EQUIPMENT

### REMOTE INSPECTION SYSTEMS

Company	Model	Pipe Size (in)	Pipe Length (ft)	Video	Camera	Adjustable Focus
CUES	Digital Universal Camera DUC	6-60	2,000	side scan color	mainline	virtual
	MP 2020 Push System	2-12	100-300	color	mini	no
	ProScout	4-24	1,000	color	mini/mainline	yes
	Inspector General	2-200	1,000	color	mini/mainline	yes
	Qube	4-200	1,000	color	mainline	yes
	Evolution Mainline	2-200	4,000	color	mini/mainline	yes
	Workhorse Mainline	2-200	4,000	color	mini/mainline	yes
	LAMP Lateral & Mainline	6-36	1,500	color	mini/mainline	no
	LAMP II Lateral & Mainline Probe II	6 relined-36	1,500	color	mini/mainline	no
	OZ II & Nitelite	6-200	N/A	color	mainline	yes
	Pipe Ranger Transporter	7-60	2,000	N/A	mainline	N/A
	Lite Stick	4-24	N/A	color	pole	no
	Quickzoom	4-48	100	color	pole	yes
	Sonar	8-1,200	2,800	color	mainline	N/A
	Laser Profiler	6-90	N/A	N/A	mainline	yes
	Shorty Transporter	6-36	1,500	N/A	mainline	N/A
	OZIII/Compact	5-30	1,500	color	mainline	yes
	Pipe Ranger OZIII/Ultra	5-30	1,500	color	mainline	yes
	Shorty III	5-72	N/A	color	mainline	yes
	OZIII	5-72	N/A	color	mainline	yes
	Ultra Shorty 21 Transporter	6-36	1,500	N/A	mainline	N/A

Envirosight	WTRIII Wheeled /Track Transporter K2 Series	6-30	1,500	N/A	mainline	N/A
	Ultra Shorty III Track Transporter	6-200	1,200	color	mainline	yes
	Steerable Mudmaster	5-30	1,500	N/A	mainline	N/A
	ROVVER X 95	24-200	2,000	N/A	mainline	N/A
	ROVVER X 140	4"+	+1,650'	color pan/ tilt/zoom	lateral, mainline	yes
	ROVVER X 400	6"+	+1,650'	color pan/ tilt/zoom	mainline	yes
	ROVVER X Laser	24"+	+1,650'	color pan/ tilt/zoom	mainline	yes
	ROVVER X Digisewer QuickView	8"+	+1,650'	color pan/ tilt/zoom, side-scan	mainline	yes
	VeriSight Pro	6"+	+400'	color side-scan	manhole, mainline	yes
	VeriSight Pro 360	2"+	+330'	color	drain, lateral	yes
R.S. Technical Services	JetScan HD Video Nozzle	4"+	+330'	color pan/ tilt	drain, lateral	yes
	Helix Manhole	6"+	as long as jetter hose up to 50' (deeper options)	color	mainline	no

## LATERAL INSPECTION SYSTEMS

Company	Model	Pipe Size	Pipe Length	Air/Electric	Material	Motion
CUES	LAMP	6"-36"	1,500'	electric	all pipes	extend/retract into lateral from mainline
	LAMP II	6" relined-36"	1,500'	electric	all pipes	extend/retract into lateral from mainline
<i>Note: both units simultaneously inspect mainlines.</i>						
Envirosight	ROVVER X SAT	6"+	500'	electric	all pipes	extends 150' into lateral from mainline; performs pan/tilt inspection
HammerHead Trenchless Equipment	PortaVision	2"-6"	200'	electric	all pipes	
RS Technical Services	mainline/lateral	6"-24" mainline 4"-8" lateral	500' mainline up to 200' lateral	N/A	all pipes	dedicated lateral camera extends up to 150' from mainline

## CUTTERS

Company	Model	Pipe Size	Pipe Length	Air/Electric	Material	Motion
CUES	Kangaroo	6"-15"	1,000'	air/electric	all pipes	in/out-up/down-rotate
	Giant Kangaroo	10"-30"	1,000'	air/electric	all pipes	in/out-up/down-rotate
LMK/Schwalm Robotic Systems	Schwalm Self Propelled Cutter	6"-12"				
	Schwalm Self Propelled Cutter	8"-24"				
Pipeline Renewal Technologies	Talpa 2060	6"-12"	600'	air/electric		360°
	Talpa 1330	8"-24"				
Micro Pro	Micro	3'-6"	100'	air	any	clamping, arm rotation, arm bend self-propelled, clamping, arm rotation, arm bend self-propelled, ram extends up to 6' local remote/auto
	Micro Pro	3'-6"	100'	air	any	clamping, arm rotation, arm bend self-propelled, clamping, arm rotation, arm bend self-propelled, arm rotation, arm bend self-propelled, ram extends up to 6' local remote/auto
Micro Premium	Micro Premium	3'-6"	100'	air	any	clamping, arm rotation, arm bend self-propelled, clamping, arm rotation, arm bend self-propelled, arm rotation, arm bend self-propelled, ram extends up to 6' local remote/auto
	PC200	8"-28"	300'	air	any	clamping, arm rotation, arm bend self-propelled, arm rotation, arm bend self-propelled, ram extends up to 6' local remote/auto
Self-propelled tap cutter	Self-propelled tap cutter	8"-24"	500'	electric; cutting motor is air color	all	clamping, arm rotation, arm bend self-propelled, clamping, arm rotation, arm bend self-propelled, ram extends up to 6' local remote/auto
	1500 Series	1.5-6	400'	air color	mini cam	clamping, arm rotation, arm bend self-propelled, clamping, arm rotation, arm bend self-propelled, ram extends up to 6' local remote/auto
Vortex/Schwalm	1300 Series	2.25-18	1,000'	color	mini/mainline	clamping, arm rotation, arm bend self-propelled, clamping, arm rotation, arm bend self-propelled, ram extends up to 6' local remote/auto
	Omni-Eye III	6-72	2,500'	color	mainline	clamping, arm rotation, arm bend self-propelled, clamping, arm rotation, arm bend self-propelled, ram extends up to 6' local remote/auto
NovaSTAR	NovaSTAR	6-72	2,500'	color	mainline	clamping, arm rotation, arm bend self-propelled, clamping, arm rotation, arm bend self-propelled, ram extends up to 6' local remote/auto
	Talpa 1300	6'-12"	600'	both	all	clamping, arm rotation, arm bend self-propelled, clamping, arm rotation, arm bend self-propelled, ram extends up to 6' local remote/auto
Talpa 2060	8"-24"	600'	both	all	clamping, arm rotation, arm bend self-propelled, clamping, arm rotation, arm bend self-propelled, ram extends up to 6' local remote/auto	

## TRENCHLESS PIPE REPLACEMENT

### LATERAL SYSTEMS

Company	Model	Type Drive	Host Pipe Diameter (in)
Fibrwrap Construction Services	Tyfo Fibrwrap systems	gas or pressure operated	30+
HammerHead Trenchless Equipment	PortaBurst PB30G2	hydraulic	2-6
	PortaBurst Lightning	hydraulic	2-6
	HydroBurst HB3038	hydraulic	2-6
	HydroBurst HB5058	hydraulic	2-12
	HydroBurst 100XT	hydraulic	3-16
	3" HammerHead Mole Pipe Bursting Tool	pneumatic	4
	5 1/8" HammerHead Mole Pipe Bursting Tool	pneumatic	4-6
TT Technologies	Grundotugger	hydraulic	4-6
	Grundoburst 30TX	hydraulic	up to 6
	Grundoburst 50TX	hydraulic	up to 10
	Grundocrack PCG85	pneumatic	4
	Grundocrack PCG95	pneumatic	4-6
	Grundocrack Mini-Atlas	pneumatic	4
	Grundocrack PCG130	pneumatic	4-6

### PIPE REAMING

Company	Description
Nowak Pipe Reaming	Replace existing non-metallic pipe with HDPE or restrained joint PVC, non-disruptively, with up to double diameter size increases in any soil condition, rock, and non-reinforced concrete encasement included, using an appropriately sized directional drill.

## PNEUMATIC PIPE BURSTING SYSTEMS

Company	Model	Tool Diameter (in)	Tool Length (in)	Host Pipe Diameter (in)	Host Pipe Type
HammerHead Trenchless Equipment	3" SR	3	52	4	ACP,VCP, RCP, concrete, cast iron
	5.125" SR	5.125	66	6	ACP,VCP, RCP, concrete, cast iron
	5.75" SR	5.75	79.5	6	ACP,VCP, RCP, concrete, cast iron
	7" AR	7	81	6-10	ACP,VCP, RCP, concrete, cast iron
	8" AR	8	105	8-12	ACP,VCP, RCP, concrete, cast iron
	12" AR	12	89.2	10-18	ACP,VCP, RCP, concrete, cast iron
	16" AR	16	85.5	12-24	ACP,VCP, RCP, concrete, cast iron
	20" AR	20	108.4	18-26	ACP,VCP, RCP, concrete, cast iron
	24" AR	24	109	20-30+	ACP,VCP, RCP, concrete, cast iron
	8" AI	11.44	32	6-10	ACP,VCP, RCP, concrete, cast iron
	12" AI	14.75	36.8	8-12	ACP,VCP, RCP, concrete, cast iron
	SR=Screw Reverse;; AR=Air Reverse; AI=Air Impactor				
TT Technologies	PCF 130	5	53.5	6-7	ACP,VCP, RCP, concrete, cast iron
	PCF 145	5.75	63	7-8	ACP,VCP, RCP, concrete, cast iron
	PCF 180	7	66.5	8-10	ACP,VCP, RCP, concrete, cast iron
	PCF 220	8.5	77	10-12	ACP,VCP, RCP, concrete, cast iron
	Mini-Atlas	5	36	6-7	ACP,VCP, RCP, concrete, cast iron
	Titan	5.75	61	6-7	ACP,VCP, RCP, concrete, cast iron
	PCG 130	5	50.5	6-7	ACP,VCP, RCP, concrete, cast iron
	PCG 145	5.75	60	7-8	ACP,VCP, RCP, concrete, cast iron
	Olympus	7	66.5	6-8	ACP,VCP, RCP, concrete, cast iron
	PCG 180*	7	66	8-12	ACP,VCP, RCP, concrete, cast iron
	Hercules	8.5	75	8-12	ACP,VCP, RCP, concrete, cast iron
	HV 220*	9	79	10-12	ACP,VCP, RCP, concrete, cast iron
	Mini-Gigant	10	49	10-12	ACP,VCP, RCP, concrete, cast iron
	Gigant	10	79	12-16	ACP,VCP, RCP, concrete, cast iron
	PCG 270*	11	84	14-16	ACP,VCP, RCP, concrete, cast iron
	Koloss	14	92	16-24	ACP,VCP, RCP, concrete, cast iron
	Goliath	18	112	22-30	ACP,VCP, RCP, concrete, cast iron
	Taurus	24	144	32-42	ACP,VCP, RCP, concrete, cast iron
	*Reversible				

## PUSH TECHNOLOGY

Company	Model	Pipe Diameter Range (in)	Thrust (tons)	Pit Size (ft)	Host Pipe Types
Tenbusch	B-500	Clay&DI 6-12; Steel 6-18	140	9 x 9	AC,VCP, Cast Iron, DI, RCP, PVC, HDPE, Truss Pipe, Steel
	B-600	Clay&DI 6-15; Steel 6-22	192	9 x 9	AC,VCP, Cast Iron, DI, RCP, PVC, HDPE, Truss Pipe, Steel
	B-700	Clay&DI 6-12 Steel 6-18	140	9 x 14	AC,VCP, Cast Iron, DI, RCP, PVC, HDPE, Truss Pipe, Steel
	T-1000	Long joints of DI to 12" DIA	192	varies	AC,VCP, Cast Iron, DI, RCP, PVC, HDPE, Truss Pipe, Steel
	T-1500	Long joints of DI to 16" DIA	250	varies	AC,VCP, Cast Iron, DI, RCP, PVC, HDPE, Truss Pipe, Steel
	T-2000	Long joints of DI to 24" DIA	375	varies	AC,VCP, Cast Iron, DI, RCP, PVC, HDPE, Truss Pipe, Steel
	MB - 330	Clay&DI 6-10 Steel 6 - 15	125	4 x 10	AC,VCP, Cast Iron, DI, RCP, PVC, HDPE, Truss Pipe, Steel
	MB - 340	Clay&DI 6-10 Steel 6 - 15	125	4 x 14	AC,VCP, Cast Iron, DI, RCP, PVC, HDPE, Truss Pipe, Steel
	MB - 3040	Clay&DI 6-27 Steel 6 -36	375	9 x 14	AC,VCP, Cast Iron, DI, RCP, PVC, HDPE, Truss Pipe, Steel
	MH - 100	Clay&DI 6-8	62	in manhole	AC,VCP, Cast Iron, DI, RCP, PVC, Pipe, Steel, HDPE, Truss

## STATIC PIPE BURSTING SYSTEMS

Company	Model	Type Drive	Thrust (ft/lbs)	Pullback (lbs)	Power Unit	Host Pipe Diameter (in)	Host Pipe Types
HammerHead	HydroBurst HB3038	hydraulic	76,000	60,000	pack	2-6	ACP,VCP, RCP, concrete, cast iron, ductile iron, steel
	HydroBurst HB5058	hydraulic	100,000	100,000	pack	2-8	ACP,VCP, RCP, concrete, cast iron, ductile iron, steel
	HydroBurst 100XT	hydraulic	20,000	200,000	pack	3-16	ACP,VCP, RCP, concrete, cast iron, ductile iron, steel
	HydroBurst HB125	hydraulic	40,000	250,000	pack	6-20	ACP,VCP, RCP, concrete, cast iron, ductile iron, steel
	HydroBurst HB175	hydraulic	25,000	346,000	pack	8-24	ACP,VCP, RCP, concrete, cast iron, ductile iron, steel
	PortaBurst PB30G2	hydraulic	N/A	60,000	pack	2-6	ACP,VCP, RCP, concrete, cast iron
	PortaBurst Lightning	hydraulic	N/A	60,000	pack	2-6	ACP,VCP, RCP, concrete, cast iron
TT Technologies/Grundoburst	400S (manhole)	hydraulic	80,000	90,000		4-8	
	400G	hydraulic	80,000	90,000	pack	4-8	iron
	800G	hydraulic	100,000	173,000	pack	6-12	iron
	1000G	hydraulic	155,000	225,000	pack	6-20	iron
	1250G	hydraulic	250,000	225,000	pack	6-20	iron
	2500G	hydraulic	396,000	570,000	pack	24-48	iron
	30TX	hydraulic	60,000	60,000	pack	4-6	iron
	50TX	hydraulic	100,000	100,000	pack	4-8	iron

## WINCH SYSTEMS

Company	Model	Pull Force (tons)	Winch Line Diameter (in)	Line Length (ft)
HammerHead Trenchless Equip.	HG375	3.75	0.5	3,200*
	HG5	5.51	0.5	3,200*
	HG1200 (hydraulic boom)	12	0.625	2,000*
	HG1200AT (hydraulic boom track unit)	12	0.625	2,000*
	HG20	20	0.875	2,000*
	HG2200 (hydraulic boom)	22	0.875	2,000*
	HG2200AT (hydraulic boom track unit)	22	0.875	2,000*
	*usable length			
TT Tech./Grundowinch	RW 1500	1.5	5/16	600
	RW 4002	4	7/16	650
	RW 5000	4	1/2	2,100
	RW 10*	10	5/8	2,300
	RW 10X	10	5/8	2,300
	RW 20	20	7/8	2,300
	RW 206	30	7/8	2,300
	RW 40	40	1 1/4	2,600