

REHAB TECHNOLOGY SELECTION GUIDE

CURED-IN-PLACE-PIPE (CIPP)

Company	Product/Type	Mainline, Lateral Sectional	Inversion/Cure Process	Pull-In Diameter Range (in)	Inversion Diameter Range (in)	
Applied Felts	Felt and fiberglass-reinforced liners	mainline, laterals, sectional	steam, hot water, ambient cure	4-120	4-120	
C.I.P.P. Corp.	Felt Liner	lateral	steam, water cure	4-108	4-108	
Granite Inliner	CIPP	mainline	steam, water, uv cure	4-120	4-120	
HammerHead Trenchless	Felt Liner	lateral	steam, water, ambient		2-12	
	RS CityLiner	mainline	steam, water, ambient	6-48	6-48	
	RS BlueLine	mainline	steam, water, ambient	4-48	4-48	
	RS CityMain	mainline	steam, water, ambient	6-48	6-48	
	Point Repair	sectional	ambient	2-60		
Infrastructure Repair Systems	Point Repair	sectional		3-100		
Inland Pipe Rehabilitation (IPR)	Invert-a-Pipe	mainline	steam & water	n/a	6-120	
Insituform Technologies	CIPP	lateral, mainline	air, water inversion steam, water cure	4-108	4-108	
Interplastic Corporation	CIPP resin	mainline, lateral, sectional	steam, water, ambient, UV	4-120	4-120	
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	CIPP	lateral	steam, hot water, ambient	2-10	2-10	
Manufactured Technologies Corp.	Felt liner		air, water, inversion, steam cure	6-96	6-96	
National Liner	CIPP		air, water inversion water, steam cure	4-108	4-108	
PALTEM	Super-HL	mainline	inversion/steam or ambient		8 - 40	
Perma-Liner Industries	Perma-Liner Inversion	lateral	inversion		2-8	
	Perma-Lateral Pull-in	lateral		2-8		
	Perma-Patch Lateral Spot	lateral	spot	4	8	
	Perma-Main Continuous Lining	mainline			6-36	
	Mainline Spot Repair	mainline		6-24		
Premier-Pipe USA	Felt Liner	lateral			4-108	
PrimeLine Products	PrimeLiner	mainline, lateral, sectional	steam hot water, ambient	3-6	2-120	
		point repair	ambient	2-36		
Reline America	UV GRP CIPP	mainline	UV-cured	6-72	6-72	

WET-OUT SERVICES

Company	Resin Type	Liner Type	Mainline/Lateral	Diameter Range (in.)
Ferratex Solutions	polyester/vinylester	felt/fiberglass reinforcement	both	6-84

SPRAYED-IN-PLACE-PIPE (SIPP)

Company	Product	Pipe Diameter (in)	Type Pipe	Insitu/New Pipe
APM Permaform	Permacast PL-8000 (centrifugally-cast-concrete)	30-120	metal, concrete, clay, brick culverts, sewer pipe	insitu
Epoxytec	CPP Sprayliner	32+	metal, concrete, clay, brick culverts, sewer pipe	insitu
GeoTree Solutions	GeoSpray/GeoSpray HCE/GeoSpray 61 Geopolymer Mortars	30+	CMP, concrete, brick, stone, storm, sewer, box	fully structural - insitu pipe-in-pipe
Granite Inliner	GeoKrete	36+	all	fully structural pipe-in-pipe
Inland Pipe Rehabilitation (IPR)	EcoCast	36+	all	insitu
Quadex LLC	Quadex Lining System	30+	CMP, concrete, brick, stone	fully structural pipe- in-pipe
Sauereisen	SewerGard 210	48+	concrete, brick, metal	
SippTech	SippSteel	8 - 144	all	structurally independent - insitu
Sprayroq	SprayWall	36+	concrete, metal, culverts, storm drains, DOT, clay	fully structural pipe-in-pipe
The Strong Co.	Storm Seal	30-120	brick, sewer, stormwater, metal, concrete, clay, brick	insitu
Warren Environmental	301 & 501 epoxy series	4+	all	structural insitu

GROUT-IN-PLACE-PIPE

Company	Product	Diameter Range (in)
Danby	Panel Lok	36+
National Liner	3 - S	36+
PALTEM	Flow Ring	32+

SPIRAL WOUND TECHNOLOGY

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

LIGHT CURED-IN-PLACE-PIPE (CIPP)

Company	Product	Type	Diameter Range (in.)
C.I.P.P.	BKP Berolina	UV	up to 56
Granite Inliner	Inliner STX	UV	6-48
HammerHead Trenchless	BlueLight LED	LED	4-10
Insituform Technologies	iPlus Infusion	UV	6-15
Interplastic Corporation	UV Co-Resyn-CIPP	UV	6-48
LightRay	LIR3	UV	3-6
Manufactured Technologies Corporation	iPlus Infusion	UV	6-15
MaxLiner USA	MaxLight	LED	4-10
Pipeline Renewal Technologies	SpeedyLight+	UV LED	4-12
	LEDRIg	UV LED	6-24
PrimeLine Products	PrimeLiner	UV	3-15
Reline America	Alphaliner	UV	6-60
SAERTEX multiCom	LINER Pressure	UV	8 - 48*
	LINER Premium	UV	6 - 63*
	LINER Type S+	UV	6 - 63*
	LINER Premium Type S+	UV	6 - 63*
	LINER H2O	UV	8 - 40*

*Pull-in Diameter Range

FOLDED PIPE

Company	Product	Pipe Type	Diameter Range (in)	Pre-Heating
American Pipe & Plastics	AM-LINERII	PVC	6-12	Yes
IPEX USA LLC	Liner	PVC	6-30	Yes
Miller Pipeline	EX Method	PVC	6-12	Yes
United Pipeline Systems	Tite Liner	HDPE	4-48	No

SLIPLINING

Company	Product	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	polypropylene	13', 20'
Contech Engineered Systems	A2 Liner	12-36	PVC resin (12454)	10', 20'
	DuroMaxx	30-120	Steel Reinforced Polyethylene	14', 24'
	ULTRA FLO	18-120	ALT2 Corrugated Steel Pipe Polymer-Coated Steel Corrugated Pipe	10' - 40'
	HEL-COR	6-144	ALT2 Corrugated Steel Pipe Polymer-Coated Steel Corrugated Pipe	10' - 40'
	CORLIX	6-120	Aluminum	10' - 40'
	ALSP	5' - 40'	Aluminum Structural Plate	4.5' plate lengths
	Tunnel Liner Plate	4' - 15'	Steel or Aluminum	18" plate lengths
HOBAS Pipe USA	CC-FRP	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	Chemically reactive gel used to stop water infiltration in mainlines, joints, laterals, lateral connections via remote packer, and manholes via curtain or probe grouting. Controllable set times from seconds to hours. 40+ years of successful documented use.
	AV-160 Supergel	1-2 cP in solution	Chemically reactive gel used to stop water infiltration in mainlines, joints, laterals, lateral connections via remote packer, and manholes via curtain or probe grouting. Acrylamide-free.
	AV-202® Multigrout (multiple versions available)	(LV) 650-800 cP Standard 3,200-6,000 cP* (NTP) 3,200-6,000 cP	Single component, water-activated grout designed to seal small, active water leaks, to large, gushing leaks in cracks or joints of concrete structures, manholes and pipe penetrations. *Standard version NSF/ANSI/CAN 61: Drinking Water System Components
	AV-248 Flexseal w/ AV-249 Flexseal Cat (multiple versions available)	(LV) 150-250 cP* (Standard) 550-830 cP	Moisture activated, polyurethane resin whose reaction is catalyzed by mixing AV-249 catalyst with AV-248. Injected as single component and designed to seal active and potential water leaks in various cracks, and annular spaces where flexibility is needed. Creates a resilient, impermeable flexible foam. Withstands wet/dry cycles. *LV version: NSF/ANSI/CAN 61 Drinking Water System Components
	AV-275 Soilgrout* w/ AV-276 Soilcat	30-55 cP	Moisture-activated polyurethane resin whose chemical reaction is catalyzed by mixing AV-276 catalyst with AV-275. Injected as single component and designed to quickly bind together and waterproof loose soils for soil stabilization and void fill. Forms dense, impermeable, rigid soil-polyurethane matrix. Withstands wet/dry cycles. *NSF/ANSI/CAN 61: Drinking Water System Components
	AV-290 Fast-Set	200-600 cP	Dual component, hydrophobic polyurethane resin designed to fill large voids on the exterior of below-grade structures where high-water flow is present. Reacts in seconds, no water needed.
	AV-315 Microfoam*	50-100 cP	Single component, moisture activated polyurethane resin designed to seal active water leaks in very fine cracks or joints in below-grade structures. *NSF/ANSI/CAN 61: Drinking Water System Components
	AV-330 Safeguard*	Standard 350-750 cP* NTP 350-750 cP	100% MDI-based, single component, moisture-activated "polyurethane resin designed to seal active leaks in below-grade structures," grade structures. Permeates well in various cracks and joints, and offers added safety in confined spaces or areas with poor ventilation. *Standard version NSF/ANSI/CAN 61: Drinking Water System Components
	AV-333 Injectaflex*	350-750 cP	Single component, moisture activated polyurethane resin designed for sealing active water leaks in cracks or joints in below-grade structures. Contains dimethyl ketone (acetone) to ensure good adhesion on various surfaces. NSF/ANSI 61 – Drinking Water System Components.
	Ultrafine Cement*		Composed of a finely ground mixture of Portland cement, pumice, and dispersant. Stabilizes weak soil and rock; seals seepage in mines, dams, tunnels. Small particle size penetrates smaller fractures and finer soils. *NSF/ANSI/CAN 61: Drinking Water System Components

* Certified for use with potable water.

GROUT (cont.)

Company	Product	Viscosity	Application
Prime Resins	Prime Flex 900 XLV**	250-350 cps	Sealing leaks in extremely tight hairline cracks.
	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.
	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.
	PR10 ACLM	1-2 cP @ 72° F in solution	Sealing leaks from infiltrating water or to deeply penetrate soils for stabilization. Thin as water for great penetration.
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.
	Spectrashield® SpectraGrout®	125cP	Hydrophilic grout used for stopping leaks, filling joints and cracks, sealing pipe penetrations, filling voids and stabilizing soil in wastewater structures

GROUTING EQUIPMENT

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 mainline test & seal packers
	Elliptical series	(14 x 23+)	test & seal grouting packers for elliptical concrete pipe
	Box Culvert series	up to 120	custom made packers for box culverts
	Flexible Push/Pull	4-10	flexible packers w/3-5ft grouting span
CUES	Low Void	6-18	round
	Collapsible	24-96	round

TEST & SEAL LATERAL PACKERS

Company	Model	Mainline Diameter (in)	Lateral Diameter (in)
Logiball	2001L series	6-30	4-6; 30
CUES	Logiball	6-30	3-8

STRUCTURAL POINT REPAIR

Company	Model	Diameter Pipes	Type
CUES	LOCK Stents	6"-108"	round
	LOCK Sealer Sleeves	6"-108"	round
	LOCK End Sealers	6"-108"	round
GeoTree Solutions	RenewWrap	36+	CMP, concrete, brick, stone, storm, sewer, box

INTERNAL JOINT SEALS

Company	Product	Seal Application Size (in)	Seal Operating Pressures (psi)
Cretex Specialty Products	Internal Manhole Chimney Seal	20-48	6 external
	Chimney Seal	20-48	n/a
	Internal Pipe Joint Seal	24-48	6 external
	External Manhole Joint Seal	32-120	15 external
LMK Technologies	HydraTite Seal	18-216	150 external/300 internal
	CIPMH	up to 36	150 external
Miller Pipeline	Weko-Seal	18-216	300 internal
PrimeLine Products	NPC-internal joint seals	15-120	30' of head pressure
	NPC-external chimney seals	32-42	
	NPC-internal chimney seals	18-42	
	NPC-liner end seals	7.25-36	
Sauereisen	Manhole Chimney Seal No. F-88	12-60	35

Rehab Technology Selection Guide

MANHOLES				
Company	Coating	Inserts	Liners	Inverts
APM Permaform	Yes	Yes	Yes	Yes
No-Dig manhole solutions since 1975 provided through world-wide network of highly trained applicators; PERMAFORM, PERMACAST, CONMICSHIELD and COR-GARD offer the "hole" solution.				
Cherne	Yes	Yes	Yes	Yes
Cherne® Air-Loc® Bladder Styel Manhole Testers provide an efficient, cost-effective method of testing new, existing and rehabilitated manholes, per ASTM C 1244.				
Containment Solutions	No	No	Yes	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	No	Yes	No	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	No	Yes	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.				
Epoxytec	Yes	No	Yes	No
Epoxytec offers coating solutions since 1979 to repair, rehabilitate, coat and line wastewater and water infrastructure.				
GeoTree Solutions	Yes	No	Yes	Yes
Leading manufacturer of geopolymer lining systems for spray or han-applied (including GeoSpray and GeoSpray HCE mortar solutions).				
Granite Inliner	Yes	Yes	Yes	Yes
Manholes renewal contractor with over 35,000 manhole restorations completed utilizing a portfolio of comprehensive technologies that include CIPMH and epoxy-based methods.				
HOBAS Pipe USA	No	Yes	Yes	No
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.				
Infrastructure Repair Systems	Yes	No	No	No
Infragard, a durable topcoat and Chim Coat; a flexible mastic, trowel-on 100% solid epoxy rehab material.				
LMK Technologies	No	No	Yes	No
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.				
Madewell Products Corporation	Yes	No	Yes	Yes
The Mainstay-branded restoration mortars and epoxy liners provide corrosion protection and structural integrity through a unique process yielding single cure time.				
Miller Pipeline	No	Yes	No	No
OBIC, LLC	Yes	No	Yes	Yes
Structural, semi-structural or multilayer polymer liner systems for structures with damage from infiltration or corrosion.				
PrimeLine Products	Yes	No	No	No
Based on advanced anti-microbial epoxy mortar technology, the liner contains broad-spectrum anti-microbial material that protects from mold, mildew & bacterial growth, and is highly chemical-resistant.				
Quadex LLC (member of the Vortex family)	Yes	No	Yes	No
Since 1991, Quadex has been manufacturing and delivering the highest-quality geopolymer, hybrid cements and patching materials for the manhole/sewer infrastructure rehab market.				
Raven Lining Systems	Yes	No	Yes	No
Raven Lining Systems offers products that are solvent free 100% solids, ultra high-build epoxy coating for new and rehabilitated water/wastewater infrastructures.				
Sauereisen	Yes	No	Yes	No
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.				
Sealing Systems	Yes	Yes	No	No
Sealing Systems manufactures a variety of manhole rehab products: manhole inserts, coatings (external & internal) and chemical grout.				
SewperCoat by Imerys	Yes	No	Yes	No
SewperCoat has been providing owners challenged by biogenic corrosion with a long-lasting solution for 30 years.				
Spectrashield® Liner Systems	Yes	No	Yes	Yes
Stops infiltration, prevents corrosion, and has a 10-year warranty.				
Sprayroq Inc.	Yes	No	Yes	Yes
Structural polyurethane that is self-priming, and provides infiltration control and fast return to service.				
Standard Cement Materials	Yes	No	Yes	Yes
Since 1990, Minority Business Enterprise manufactures cementitious, geopolymer and calcium aluminates for CMP pipes, concrete, brick and fiberglass manholes; and epoxy coatings for lift stations.				
The Strong Company	Yes	No	Yes	No
Manhole rehab solution since 1989. The fast, cost-effective solution for stopping infiltration, restoring structural integrity and protecting against corrosion.				
Warren Environmental	Yes	No	Yes	Yes
Warren Environmental is a manufacturer of environmentally safe, non-hazardous, 100% solids, structural epoxy systems used to protect or rehabilitate a variety of infrastructure in one, time-saving coat.				

REMOTE INSPECTION SYSTEMS						
Company	Model	Pipe Size (in)	Pipe Length (ft)	Video	Camera	Adjust Focus
CUES	Digital Universal Camera DUC	6 - 60	2,000	side scan color	mainline	virtual*
	SPIDER Manhole Scanner	15' wide	100'deep	color 3D	manhole	yes*
	Q23 Advanced Camera	6 - 48	300	HD PTZ	mainline	yes*
	MP2020 Push System	2 - 12	100 -300	color	mini	no*
	Evolution Mainline	2 - 200	4,000	color	mini & mainline	yes*
	Workhorse Mainline	2 - 200	4,000	color	mini & mainline	yes*
	LAMP II Lateral & Mainline Probe II	6 retined - 36	1,500	color	mini & mainline	no*
	OZ II Camera	6 - 200	n/a	color	mainline	yes*
	Pipe Ranger Transporter	7 - 60	2,000	n/a	mainline	n/a
	Quickzoom III Camera	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 Pipe Ranger	5 - 30	1,500	color	mainline	yes*
	OZ III/ Ultra Shorty III	5 - 30	1,500	color	mainline	yes*
	OZ III Camera	5 - 72	n/a	color	mainline	yes*
	Ultra Shorty 21 Transporter	6 - 36	1,500	n/a	mainline	n/a
	WTR III Wheeled / Track Transporter	6 - 30	1,500	n/a	mainline	n/a
	K2 Series	6 - 200	1,200	color	mainline	yes*
	Ultra Shorty III Track Transporter	5 - 30	1,500	n/a	mainline	n/a
Steerable Mudmaster	24 - 200	2,000	n/a	mainline	n/a	
<i>*Remote Adjustable Focus</i>						
EnviroSight	ROVVER X 95	4'+	+1,650'	color pan/ tilt/zoom	lateral, mainline	yes
	ROVVER X 140	6'+	+1,650'	color pan/ tilt/zoom	mainline	yes
	ROVVER X 400	24'+	+1,650'	color pan/ tilt/zoom	mainline	yes
	ROVVER X Laser	8'+	+1,650'	color pan/ tilt/zoom, side-scan	mainline	yes
	ROVVER X Digisewer	8'+	+1,650'	color side-scan	mainline	yes
	QuickView	6'+	+400'	color zoom	manhole, mainline	yes
	VeriSight Pro	2'+	+330'	color	drain, lateral	yes
VeriSight Pro 360	4'+	+330'	color pan/tilt	drain, lateral	yes	
JetScan HD Video Nozzle	6'+	as long as jetter hose	color	mainline	no	
PearPoint	C550c Flexitrax Portable Mainline System	6 - 60	1,000	PTZ	mainline	yes*
	C540c Flexiprobe Push Camera	2 - 12	500	color	lateral	no*
	P540c Flexiprobe Push Camera	2 - 12	500	color	lateral	no*
	<i>*Remote Adjustable Focus</i>					
Subsite Electronics	Private Eye 2	6-200	1,000	color	mainline	yes
	Cube	6-200	1,500	color	mainline	yes
	High Cube VMS	4-200	2,000	color	mainline	yes
	Van VMS	4-200	2,000	color	mainline	yes
	Trailer VMS	4-200	2,000	color	mainline	yes
	Gen2 Lateral Launch	4-24	500	color	mini/mainline	no/yes
	TrakStar Camera	6-60	n/a	color	mainline	yes
	TrakStar II Camera	6-60	n/a	color	mainline	yes
	TranStar Transporter	6-30	2,000	n/a	mainline	n/a
	TranStar II Transporter	6-24	2,000	n/a	mainline	n/a
	ProTrak Crawler	6-30	2,000	n/a	mainline	n/a
	Steerable Storm Drain Tractor	24-200	2,000	n/a	mainline	n/a
	Mighty Mini Tractor	4-12	2,000	n/a	mainline	n/a
Pontoon	24-1,200	2,000	n/a	mainline	n/a	
SPC Push System	2-12	150-500	color	mini	no	

LATERAL INSPECTION SYSTEMS

Company	Model	Pipe Size (in)	Pipe Length (ft)	Air/Electric	Material	Motion
CUES	LAMP II	6 relined-36	1,500	electric	all pipes	extend/retract into lateral from mainline
Note: Both units simultaneously inspect mainlines.						
Envirosight	ROVER X SAT	6+	500	electric	all pipes	extends 150' into lateral from mainline; performs pan/tilt inspection
HammerHead Trenchless	PortaVision	2-6	200	electric	all pipes	
Subsite Electronics	Gen2 Lateral Launch	4-24	500	electric	all	extends/retracts into lateral from mainline up to 200'
	SPC Push System	2-12	150-500	Manual	All	

CUTTERS

Company	Model	Pipe Size (in)	Pipe Length (ft)	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
	CURRAHEE	6-12	500	air/electric	all pipes	in/out-up/down-rotate
Perma-Liner Industries/IMS Robotics	MICRO S automatic	3-10	164	air	any	90°
	MICROlight	3-10	98	air	any	90°
	MICROlight plus	3-10	98	air	any	90°
	MICROautomatic plus	3-10	164-230	air	any	90°
	NANOeasy	3-6	49-82	air	any	90°
Pipeline Renewal Technologies	Micro	3-6	100'	air	any	clamping, arm rotation, arm bend
	Micro Pro	3-6	100'	air	any	self-propelled, clamping, arm rotation, arm bend
	Micro Premium	3-6	100'	air	any	self-propelled, clamping, arm rotation, arm bend
	PC200	8-28	300'	air	any	self-propelled, arm rotation, arm bend, tool pivot
Vortex/Schwalm	Talpa 1300	6-12	600'	both	all	360°
	Talpa 2060	8-24	600'	both	all	360°

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	PortaBurst PB30G2	hydraulic	2-6
	HydroBurst HB5058	hydraulic	2-12
	HydroBurst 100XT	hydraulic	3-16
	3" HammerHead Mole Pipe Bursting Tool	pneumatic	4
	5 1/2" 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

PNEUMATIC PIPE BURSTING

Company	Model	Tool Length (in)	Tool Diameter (in)	Host Pipe Diameter (in)	Host Pipe Type
HammerHead Trenchless	3" SR	52	3	4	ACP, VCP, RCP, concrete, cast iron
	5.125" SR	66	5.125	6	ACP, VCP, RCP, concrete, cast iron
	5.75" SR	79.5	5.75	6	ACP, VCP, RCP, concrete, cast iron
	7" AR	81	7	6-10	ACP, VCP, RCP, concrete, cast iron
	8" AR	105	8	8-12	ACP, VCP, RCP, concrete, cast iron
	12" AR	89.2	12	10-18	ACP, VCP, RCP, concrete, cast iron
	16" AR	85.5	16	12-24	ACP, VCP, RCP, concrete, cast iron
	20" AR	108.4	20	18-26	ACP, VCP, RCP, concrete, cast iron
	26XPR	138	25.6	15-36	ACP, VCP, RCP, concrete, cast iron

Note: SR = Screw Reverse; AR = Air Reverse; AI = Air Impactor

TRENCHLESS PIPE REPLACEMENT (cont.)

PNEUMATIC PIPE BURSTING (cont.)

Company	Model	Tool Length (in)	Tool Diameter (in)	Host Pipe Diameter (in)	Host Pipe Type
Inland Pipe Rehabilitation (IPR)	all	n/a	n/a	6-42	all
Note: IPR is a pipe-bursting contractor that uses all equipment manufacturers.					
TT Technologies	PCF 130	53.5	5	6-7	ACP, VCP, RCP, concrete, cast iron
	PCF 145	63	5.75	7-8	ACP, VCP, RCP, concrete, cast iron
	PCF 180	66.5	7	8-10	ACP, VCP, RCP, concrete, cast iron
	PCF 220	77	8.5	10-12	ACP, VCP, RCP, concrete, cast iron
	Mini-Atlas	36	5	6-7	ACP, VCP, RCP, concrete, cast iron
	Titan	61	5.75	6-7	ACP, VCP, RCP, concrete, cast iron
	PCG 130	50.5	5	6-7	ACP, VCP, RCP, concrete, cast iron
	PCG 145	60	5.75	7-8	ACP, VCP, RCP, concrete, cast iron
	Olympus	66.5	7	6-8	ACP, VCP, RCP, concrete, cast iron
	PCG 180*	66	7	8-12	ACP, VCP, RCP, concrete, cast iron
	Hercules	75	8.5	8-12	ACP, VCP, RCP, concrete, cast iron
	HV 220*	79	9	10-12	ACP, VCP, RCP, concrete, cast iron
	Mini-Gigant	49	10	10-12	ACP, VCP, RCP, concrete, cast iron
	Gigant	79	10	12-16	ACP, VCP, RCP, concrete, cast iron
	PCG 270*	84	11	14-16	ACP, VCP, RCP, concrete, cast iron
	Koloss	92	14	16-24	ACP, VCP, RCP, concrete, cast iron
	Goliath	112	18	22-30	ACP, VCP, RCP, concrete, cast iron
	Taurus	144	24	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 S teel 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 Trenchless	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, RC concrete, cast iron, ductile iron, steel
	PortaBurst PB30G2	hydraulic	N/A	60,000	pack	2-6	ACP, VCP, RCP, concrete, cast iron
Inland Pipe Rehabilitation (IPR)	all	n/a	n/a	n/a	all	6-42	all
Note: IPR is a pipe-bursting contractor that uses all equipment manufacturers.							
TT Technologies/Grundoburst	400S (manhole)	hydraulic	80,000	90,000		4-8	iron
	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