

Select	Part #	#	Unit Description	Specification	Comply Yes-No
Controller					
	CCU208	1	Portable Control Unit		
		A	Dimensions	Dimensions shall not exceed: 17 x 11 x 5.9in (L x W x H)	
		B	Screen	> XGA (1024 x 768) > Daylight viewable	
		C	Interfaces	> Built in WI-FI > RS232 > USB2.0 > (2) BNC out connections	
		D	Internal Storage	Built in 30 GB minimum storage (SSD) NO EXCEPTION	
		E	External Storage	> Two (2) USB ports > One (1) SD card port	
		F	Weight	Controller weight not to exceed 13 lbs	
		G	Setup / Case	A clamshell style case which must: > Close in transit for screen protection > Have (2) locking latches > Have an attached handle NO EXCEPTION	
		H	Video Recording File Format	Videos recorded directly onto command module shall be recorded in MPEG - 4 format	
		I	Picture Recording File Format	Ability to take .jpeg pictures during live inspections	
		J	General Controls	> Twin Joysticks - Left joystick controls crawler functions - Right joystick controls camera functions > Grouping of controls based on function, groups consist of: - Crawler - Camera - Media - Survey - Cable reel > 6 color coded keys (F1-F6) - keys will allow selection within various menus	
		K	Crawler Controls	> Six (6) speed cruise control forward and reverse - "Stop" function for cruise control > Option of 33HZ / 512HZ or 640HZ frequencies - Ability to turn frequency mode to "Pulse" > Toggle camera display from front to rearview camera > Menu to select the following: - Tire size - Cable reel mode - Motorized arm/lift location - Start/Stop inclinometer report	
		L	Camera Controls	Built-in keyboard controls to operate the following: > Zoom > Auto focus versus manual focus > Adjustable camera lighting > Auto-Home camera position and zoom home > Laser measurement - Defect measurement - Diameter measurement - Water level - Point measurement - Clock measurement > "Go to" options automatically position camera head - Up / Down / Right / Left - Auto-rotate 360 degrees clockwise & counter clockwise	
		M	Power Source	Built in Battery	
		N	External Power Input	> 24V Power supply - Provides power for the Controller - Charges control unit's internal battery source	
		O	Key Board	> Built-in to controller Separate keyboards or touch screen not accepted	

		P	Text Overlay	> Ability to type text overlay during video recording AND/OR > In Pro Pipe software, ability to: - Add observations automatically - Add text overlay describing observations	
		Q	Built-In Software	> Built in Pro Pipe software > Software to utilize lasers for measuring - Pipe diameter - Defects - Water level > All done directly through command module > No external 3rd party software required NO EXCEPTION	
		R	Built-In Reporting Capabilities	> Reporting software with PACP 6 and 7 Codes > Generate Pipe Graphic & Picture reports > No 3rd party software required NO EXCEPTION	
		S	Help Button	Help menu: > 'How to' videos to provide step by step instruction on various operations of the system	
		T	Camera System Settings & Performance Displays	Camera diagnostics displayed on right side of monitor inform operator of the following: > Storage space - Internal SSD - USB A Port - USB B Port > Crawler settings - Speed of crawler - Slope/Inclinometer of tractor - Pressurization - Joystick operational status indicator > Camera settings - Clock position - Degrees up/down of camera position - Pressurization - Joystick operational status indicator > Cable settings - Cable footage remaining on reel - Torque settings > Ability to display camera diagnostics on external monitor SYSTEM SETTINGS MUST ALWAYS BE ON DISPLAY NO EXCEPTION	
		U	Video/Picture Recording Capabilities	Easy one-touch icon option to: > Start > Stop > Pause > Fast forward & rewind on playback > Snapshot	
	VCU500	2	Vehicle Mounted Control Unit		
		A	Dimensions	17 x 10 x 5.5in (L x W x H)	
		B	Material	Stainless steel & aluminium	
		C	Interfaces	> Built in WI-FI > RS232 > USB2.0 > (2) BNC out connections	
		D	Internal Storage	Built in 30 GB minimum storage (SSD). NO EXCEPTION	
		E	External Storage	> Two (2) USB ports > One (1) SD card port	
		F	Weight	9.8lbs	
		G	Setup	> Designed for stationary operation > Physical controls, NOT touch screen	
		H	Video Recording File Format	Videos recorded directly onto command module shall be recorded in MPEG - 4 format	
		I	Picture Recording File Format	Ability to take .jpeg pictures during live inspections	

	J	General Controls	<ul style="list-style-type: none"> > Twin Joysticks <ul style="list-style-type: none"> - Left joystick controls crawler functions - Right joystick controls camera functions > Grouping of controls based on function, groups consist of: <ul style="list-style-type: none"> - Crawler - Camera - Media - Survey - Cable reel > 6 color coded keys (F1–F6) <ul style="list-style-type: none"> - keys will allow selection within various menus 	
	K	Crawler Controls	<ul style="list-style-type: none"> > Six (6) speed cruise control forward and reverse <ul style="list-style-type: none"> - “Stop” function for cruise control > Option of 33HZ / 512HZ or 640HZ frequencies <ul style="list-style-type: none"> - Ability to turn frequency mode to “Pulse” > Toggle camera display from front to rearview camera > Menu to select the following: <ul style="list-style-type: none"> - Tire size - Cable reel mode - Motorized arm/lift location - Start/Stop inclinometer report 	
	L	Camera Controls	<p>Built-in keyboard controls to operate the following:</p> <ul style="list-style-type: none"> > Zoom > Auto focus versus manual focus > Adjustable camera lighting > Auto-Home camera position and zoom home > Laser measurement <ul style="list-style-type: none"> - Defect measurement - Diameter measurement - Water level - Point measurement - Clock measurement > “Go to” options automatically position camera head <ul style="list-style-type: none"> - Up / Down / Right / Left - Auto-rotate 360 degrees clockwise & counter clockwise 	
	M	Power Source	Built in Battery	
	N	External Power	<ul style="list-style-type: none"> > 24V Power supply <ul style="list-style-type: none"> - Provides power for the Controller - Charges control unit's internal battery source 	
	O	Key Board	<ul style="list-style-type: none"> > Built-in to desk mounted controller <p><i>Separate keyboards or touch screen not accepted</i></p>	
	P	Text Overlay	<ul style="list-style-type: none"> >Ability to type text overlay during video recording <p>AND/OR</p> <ul style="list-style-type: none"> > In ProPipe software, ability to: <ul style="list-style-type: none"> - Add observations automatically - Add text overlay describing observations 	
	Q	Built-In Software	<ul style="list-style-type: none"> > Built in Pro Pipe software > Software to utilize lasers for measuring <ul style="list-style-type: none"> - Pipe diameter - Defects - Water level > All done directly through command module > No external 3rd party software required. <p><i>NO EXCEPTION</i></p>	
	R	Built-In Reporting Capabilities	<ul style="list-style-type: none"> > Reporting software with PACP 6 and 7 Codes > Generate Pipe Graphic & Picture reports > No 3rd party software required <p><i>NO EXCEPTION</i></p>	
	S	Help Button	<p>Help menu:</p> <ul style="list-style-type: none"> > 'How to' videos to provide step by step instruction on various operations of the system 	

		T	Camera System Settings & Performance Displays	<p>Camera diagnostics displayed on right side of monitor inform operator of the following:</p> <ul style="list-style-type: none"> > Storage space <ul style="list-style-type: none"> - Internal SSD - USB A Port - USB B Port > Crawler settings <ul style="list-style-type: none"> - Speed of crawler - Slope/Inclinometer of tractor - Pressurization - Joystick operational status indicator > Camera settings <ul style="list-style-type: none"> - Clock position - Degrees up/down of camera position - Pressurization - Joystick operational status indicator > Cable settings <ul style="list-style-type: none"> - Cable footage remaining on reel - Torque settings > Ability to display camera diagnostics on external monitor <p>SYSTEM SETTINGS MUST ALWAYS BE ON DISPLAY NO EXCEPTION</p>	
		U	Video/Picture Recording Capabilities	<p>Easy one-touch icon option to:</p> <ul style="list-style-type: none"> > Start > Stop > Pause > Fast forward & rewind on playback > Snapshot 	
Reel					
	RMPL250	3	Manual Reel		
		A	Manual Cabel Reel	<ul style="list-style-type: none"> > Hand crank operation for maximum portability > Friction break built in > Level wind guide 	
		B	Dimensions	21.6 x 15 x 27.5in (L x W x H)	
		C	Weight	64.5lbs	
		D	Cable Length	820'	
		E	Cable Strength	Minimum of 2000lb tensile strength	
		F	Connector	Maximum of 6 pin connector NO EXCEPTION	
	RMP300	4	Manual Reel		
		A	Manual Cabel Reel	<ul style="list-style-type: none"> > Hand crank operation for maximum portability > Friction break built in > Level wind guide 	
		B	Dimensions	21 x 16 x 20.5in (L x W x H)	
		C	Weight	77lbs	
		D	Cable Length	1,150'	
		E	Cable Strength	Minimum of 2000lb tensile strength	
		F	Connector	Maximum of 6 pin connection NO EXCEPTION	
	RAP200	5	Motorized Reel		
		A	Motorized Cable Reel	<ul style="list-style-type: none"> > Free wheel operation on payout > Motorized retraction with adjustable torque 	
		B	Dimensions	21 x 12.5 x 20.5in (L x W x H)	
		C	Weight	67lbs	
		D	Environmental Protection	IP54	
		E	Cable Length	820'	
		F	Cable Strength	Minimum of 2000lb tensile strength	
		G	Connector	Maximum of 6 pin connector NO EXCEPTION	
		H	Controls	4 button Bluetooth remote controls cable reel & tractor drive	
		I	Cable Arm Guide	Extending cable arm with 180 degree swivel	
	RAP300	6	Motorized Reel		
		A	Motorized Cable Reel	<ul style="list-style-type: none"> > Free wheel operation on payout > Motorized retraction with adjustable torque 	
		B	Dimensions	21 x 17.5 x 20.5in (L x W x H)	
		C	Weight	89lbs	
		D	Environmental Protection	IP54	

		E	Cable Length	1,150'	
		F	Cable Strength	Minimum of 2000lb tensile strength	
		G	Connector	Maximum of 6 pin connector NO EXCEPTION	
		H	Controls	4 button Bluetooth remote controls cable reel & tractor drive	
		I	Cable Arm Guide	Extending cable arm with 180 degree swivel	
	ACR350	7	1,148' Automatic Reel		
		A	Synchronized Cable Reel	> Reel pays out cable in sync with the speed of the crawler > Reel and crawler reverse in sync Reels requiring crawler to be in neutral while retracting will not be considered as equal	
		B	Dimensions	26 x 15.5 x 25.5in (L x W x D)	
		C	Weight	99LB (Cannot exceed)	
		D	Environmental Protection	IP45	
		E	Power Consumption	600W	
		F	Cable Length	Minimum cable length 1148 ft	
		G	Cable Strength	Minimum of 2000lb tensile strength	
		H	Connector	Maximum of 6 pin connector NO EXCEPTION	
		I	Controls	> Controls on reel to perform following functions: - Reel "Reset" - Change mode of reel - Rewind the cable reel	
		J	Cable Arm Guide	> Adjustable guide arm - Seven (7) locking positions - 180 degree swivel > 4 locking positions extending guide beyond vehicle bumper	
	ACR500	8	1,640' Automatic Reel		
		A	Synchronized Cable Reel	> Reel pays out cable in sync with the speed of the crawler > Reel and crawler reverse in sync Reels requiring crawler to be in neutral while retracting will not be considered as equal	
		B	Dimensions	26 x 20 x 25.5in (L x W x D)	
		C	Weight	120LB (Cannot exceed)	
		D	Environmental Protection	IP45	
		E	Power Consumption	600W	
		F	Cable Length	Minimum cable length 1640 ft	
		G	Cable Strength	Minimum of 2000lb tensile strength	
		H	Connector	Maximum of 6 pin connector NO EXCEPTION	
		I	Controls	> Controls on reel to perform following functions: - Reel "Reset" - Change mode of reel - Rewind the cable reel	
		J	Cable Arm Guide	> Adjustable guide arm - Seven (7) locking positions - 180 degree swivel > 4 locking positions extending guide beyond vehicle bumper	
	CCP60R	9	200' Push Rod		
		A	Dimensions	27 x 14.5 x 35in (L x W x H)	
		B	Weight	44lbs	
		C	Push Rod Length	200'	
		D	Construction	> Welded steel > Powder coated finish > Built in friction brake > Wheels for transportation	
		E	Control Module	> Must operate with portable control unit > Must be capable of operating ALL fully automatic, motorized, & manual mainline sewer inspection reels, as well as push rod system	
		F	Camera Head	> Self leveling axial camera head > Color > Effective Pixels 512 x 582 > 420 HTVL > 8.6 x 1.6 x 1.6in > Pressure rating 1 bar	
		G	Sonde	33kHz, 512Hz and 640Hz	

		H	Camera Connection	> Contact point connection <i>Pin and socket style connection will not be accepted</i>	
		I	Accessories	> Included centering skids - 4", 6" & 8" centering skids > Allen Key for locking camera in place > Slotted wrench for locking centering skid	
	CCP60D	10	200' Push Rod		
		A	Dimensions	27 x 14.5 x 35in (L x W x H)	
		B	Weight	44lbs	
		C	Push Rod Length	200'	
		D	Contstruction	> Welded steel > Powder coated finish > Built in friction brake > Wheels for transportation	
		E	Control Module	> Must operate with portable control unit > Must be capable of operating ALL fully automatic, motorized, & manual mainline sewer inspection reels, as well as push rod system	
		F	Camera Head	> Self leveling axial camera head > Color > Effective Pixles 512 x 582 > 420 HTVL > 8.6 x 1.6 x 1.6in > Pressure rating 1 bar	
		G	Pan & Tilt adapter	Adapter for utilizing pan & tilt mainline inspection camera	
		H	Sonde	33kHz, 512Hz and 640Hz	
		I	Camera Connection	> Contact point connection <i>Pin and socket style connection will not be accepted</i>	
		J	Accessories	> Included centering skids - 4", 6" & 8" centering skids > Allen Key for locking camera in place > Slotted wrench for locking centering skid	
	CCP100R	11	330' Push Rod		
		A	Dimensions	31 x 14.5 x 37.8in (L x W x H)	
		B	Weight	66lbs	
		C	Push Rod Length	330'	
		D	Contstruction	> Welded steel > Powder coated finish > Built in friction brake > Wheels for transportation	
		E	Control Module	> Must operate with portable control unit > Must be capable of operating ALL fully automatic, motorized, & manual mainline sewer inspection reels, as well as push rod system	
		F	Camera Head	> Self leveling axial camera head > Color > Effective Pixles 512 x 582 > 420 HTVL > 8.6 x 1.6 x 1.6in > Pressure rating 1 bar	
		G	Sonde	33kHz, 512Hz and 640Hz	
		H	Camera Connection	> Contact point connection <i>Pin and socket style connection will not be accepted</i>	
		I	Accessories	> Included centering skids - 4", 6" & 8" centering skids > Allen Key for locking camera in place > Slotted wrench for locking centering skid	
	CCP100D	12	330' Push Rod		
		A	Dimensions	31 x 14.5 x 37.8in (L x W x H)	
		B	Weight	66lbs	
		C	Push Rod Length	330'	
		D	Contstruction	> Welded steel > Powder coated finish > Built in friction brake > Wheels for transportation	

		E	Control Module	> Must operate with portable control unit > Must be capable of operating ALL fully automatic, motorized, & manual mainline sewer inspection reels, as well as push rod system	
		F	Camera Head	> Self leveling axial camera head > Color > Effective Pixles 512 x 582 > 420 HTVL > 8.6 x 1.6 x 1.6in > Pressure rating 1 bar	
		G	Pan & Tilt adapter	Adapter for utilizing pan & tilt mainline inspection camera	
		H	Sonde	33kHz, 512Hz and 640Hz	
		I	Camera Connection	> Contact point connection Pin and socket style connection will not be accepted	
		J	Accessories	> Included centering skids - 4", 6" & 8" centering skids > Allen Key for locking camera in place > Slotted wrench for locking centering skid	
Crawler					
	CRP90	13	Crawler for 4"		
		A	Dimensions	11.4" x 3.4" x 2.9"	
		B	Weight	12 lbs (excluding camera)	
		C	Drive	> 6 wheel drive (no exceptions) - Direct gear-to-gear operation - Two internal motors for steering functionality Chain driven operations will not be accepted	
		D	Elevator	> Built in Elevator operates from main controls > 2 inches of elevation Manual Elevation will set screws will not be accepted	
		E	Internal Pressure	14.5 psi	
		F	Inclination sensor	Built in	
		G	Connector	> Heavy-duty 6 pin Connector > No external strain relief accepted > Any connection requiring tools will not be accepted	
		H	Wheel Lock	> Single bolt – Quick Change Wheel Lock - All wheel configurations shall fit on same quick lock design - Removal of bolt not required for wheel change	
		I	Sensors	> Pressure > Tilt - More than 15% tilt in either direction shall alarm operator > Inclination > Internal Temperature	
		J	Lowering Device	> Built in Lowering Device - Non-proprietary J-hook for lowering and retrieval of crawler	
		K	Sonde transmitter	> Built-in Multi-Frequency Sonde Features: - 33 MHZ, 512 MHZ, and 640 MHZ - Must have all three (3) frequencies NO EXCEPTIONS	
	CPL150	14	Crawler for 6"		
		A	Dimensions	12.5" x 3.3" x 3.9" L-W-H	
		B	Weight	20.4 lbs (excluding camera)	
		C	Drive	> 6 wheel drive (no exceptions) - Direct gear-to-gear operation - Two internal motors for steering functionality Chain driven operations will not be accepted	
		D	Elevator	Manual elevator with 3" of elevation	
		E	Internal Pressure	15.5 psi	
		F	Inclination sensor	Built in	
		G	Connector	> Heavy-duty 6 pin Connector > No external strain relief accepted > Any connection requiring tools will not be accepted	
		H	Wheel Lock	> Single bolt – Quick Change Wheel Lock - All wheel configurations shall fit on same quick lock design - Removal of bolt not required for wheel change	

		I	Sensors	> Pressure > Tilt - More than 15% tilt in either direction shall alarm operator > Inclination > Internal Temperature	
		J	Lowering Device	> Built in Lowering Device - Non-proprietary J-hook for lowering and retrieval of crawler - Braided stainless steel cable loop fixed on crawler	
		K	Sonde transmitter	> Built-in Multi-Frequency Sonde Features: - 33 MHZ, 512 MHZ, and 640 MHZ - Must have all three (3) frequencies NO EXCEPTIONS	
	CRP140	15	Crawler for 6"		
		A	Dimensions	Dimensions not to exceed 15.1 x 5.2 x 4.2 in (L x W x H)	
		B	Weight	Crawler with 6" tires not to exceed 25lbs (excluding camera)	
		C	Drive	> 6 wheel drive (no exceptions) - Direct gear-to-gear operation - Two internal motors for steering functionality Chain driven operations will not be accepted	
		D	Elevator	> Electronic Elevator - 6" of elevation - Built-in clutch - Air piston lift - Permanently fixed - Crawler must fit in relined 6" pipe with lift attached - Any crawler requiring removal or remounting of lift for any configurations will not be accepted - Dual function to power or manually raise and lower lift - Any lift requiring power to operate shall not be accepted - Lift will collapse under minimal pressure	
		E	Internal Pressure	14.5 psi	
		F	Inclination sensor	> Built-In Inclinator sensor - Continuous display of pipe slope inclination - Inclination reporting is standard feature through controller - Must generate inclination report without 3rd party software No 3rd party software generated reports accepted	
		G	Connector	> Heavy-duty 6 pin Connector > No external strain relief accepted > Any connection requiring tools will not be accepted	
		H	Wheel Lock	> Single bolt – Quick Change Wheel Lock - All wheel configurations shall fit on same quick lock design - Removal of bolt not required for wheel change	
		I	Sensors	> Pressure > Tilt - More than 15% tilt in either direction shall alarm operator > Inclination > Internal Temperature	
		J	Lowering Device	> Built in Lowering Device - Non-proprietary J-hook for lowering and retrieval of crawler	
		K	Sonde transmitter	> Built-in Multi-Frequency Sonde Features: - 33 MHZ, 512 MHZ, and 640 MHZ - Must have all three (3) frequencies NO EXCEPTIONS	
	CRP300	16	Crawler for 12"		
		A	Dimensions	22" x 9.2" x 7" L-W-H	
		B	Weight	67.2 lbs (excluding camera)	
		C	Drive	> 6 wheel drive (no exceptions) - Direct gear-to-gear operation - Two internal motors for steering functionality - Built in electronic clutch to allow freewheel operation - Clutch will automatically reengage upon forward motion Chain driven operations will not be accepted Momentum driven clutch assemblies will not be accepted	

		D	Elevator	> Electronic Elevator - 10.25" of elevation - Gear driven - Air piston assist - Permanently fixed - Crawler must fit in relined 12" pipe with lift attached Any crawler requiring removal or remounting of lift for any configurations will not be accepted	
		E	Internal Pressure	14.5 psi	
		F	Inclination sensor	Built into crawler	
		G	Sensors	> Pressure > Tilt - More than 15% tilt in either direction shall alarm operator > Inclination > Internal Temperature	
		H	Wheel Lock	> Single bolt – Quick Change Wheel Lock - All wheel configurations shall fit on same quick lock design - Removal of bolt not required for wheel change	
		I	Lowering Device	> Built in Lowering Device - Non-proprietary J-hook for lowering and retrieval of crawler	
		J	Sonde transmitter	> Built-in Multi-Frequency Sonde Features: - 33 MHZ, 512 MHZ, and 640 MHZ - Must have all three (3) frequencies NO EXCEPTIONS	
Camera					
	CAM025	17	Self-Leveling Axial Camera		
		A	Camera	Camera for push rod	
		B	Effective Pixels	512 x 582	
		C	Resolution	470 HTVL	
		D	Sensitivity	< 1.0 Lux	
		E	Aperture/Field of View	F2.5 / 75°	
		F	Illumination Intensity	Adjustable to 12.5k Lux at 150mm	
		G	Pressure Depth Rating	1 bar (14.50psi)	
		H	Dimensions	8.6" x 1.6" x 1.6"	
		I	Weight	1.3lbs	
		J	Compatibility	For operation on push rod	
		K	Camera Connection	> Contact point connection Pin and socket style connection will not be accepted > Camera's connection to crawler will utilize a wedge lock	
		L	Self-Leveling	Camera must automatically self level in the pipe	
	CAM026	18	Pan & Rotate Camera		
		A	Camera	Pan & Rotate Zoom Camera	
		B	Rotation	360° endless rotation range	
		C	Pan	±135° pan	
		D	Dimensions	4.7" x 2.9" x 2.9"	
		E	Weight	1.9lbs	
		F	Pressure Rating	1 bar (14.50psi)	
		G	Image Sensor	High resolution color CCD image sensor	
		H	Lighting	> Six (6) adjustable LED lights > 12.5k Lux at 150mm	
		I	Focus and Iris Control	Auto focus / Auto iris	
		J	Zoom factor	3x digital zoom	
		K	Camera Connection	> Contact point connection Pin and socket style connection will not be accepted > Camera's connection to crawler will utilize a wedge lock	
		L	Self-Leveling	> Camera will have automatic self-level mode > Self level mode has the ability to be overridden	
	CAM026L	19	Pan & Rotate Camera with Built in Laser		
		A	Camera	Pan & Rotate Zoom Camera	
		B	Rotation	360° endless rotation range	
		C	Pan	±135° pan	
		D	Dimensions	4.7" x 2.9" x 2.9"	
		E	Weight	1.9lbs	
		F	Pressure Rating	1 bar (14.50psi)	
		G	Image Sensor	High resolution color CCD image sensor	

		H	Lighting	> Six (6) adjustable LED lights > 12.5k Lux at 150mm	
		I	Focus and Iris Control	Auto focus / Auto iris	
		J	Laser	> Camera to be equipped with 3 Lasers - Built-in defect measurement - Built-in pipe diameter measurement - Point measurement - Water level measurement	
		K	Zoom factor	3x digital zoom	
		L	Camera Connection	> Contact point connection Pin and socket style connection will not be accepted > Camera's connection to crawler will utilize a wedge lock	
		M	Self-Leveling	> Camera will have automatic self-level mode > Self level mode has the ability to be overridden	
	CAM027	20	Axial Camera Head		
		A	Camera	Stright view non-pan/rotate camera for mainline crawler	
		B	Dimensions	2.4" x 2" x 2"	
		C	Weight	.5lbs	
		D	Pressure Rating	1 bar (14.50psi)	
		E	Image Sensor	High resolution color CCD image sensor	
		F	Lighting	> Nine (9) adjustable LED lights > 12.5k Lux at 150mm	
		G	Focus and Iris Control	Auto focus / Auto iris	
		H	Camera Connection	> Contact point connection Pin and socket style connection will not be accepted > Camera's connection to crawler will utilize a wedge lock	
	CAM028	21	Pan & Rotate Camera with Built in Laser		
		A	Camera	Pan & Rotate Zoom Camera	
		B	Rotation	360° endless rotation range	
		C	Pan	±135° pan	
		D	Dimensions	5.6 x 3.1 x 3.1 in OD	
		E	Weight	2.5 lbs	
		F	Pressure Rating	1 bar (14.50psi)	
		G	Image Sensor	High resolution color CCD image sensor	
		H	Lighting	> Six (6) adjustable LED lights > 12.5k Lux at 150mm	
		I	Focus and Iris Control	Auto focus / Auto iris	
		J	Laser	> Camera to be equipped with 3 Lasers - Built-in defect measurement - Built-in pipe diameter measurement - Point measurement - Water level measurement	
		K	Zoom factor	10 x optical 12 digital (120x)	
		L	Camera Connection	> Contact point connection Pin and socket style connection will not be accepted > Camera's connection to crawler will utilize a wedge lock	
		M	Self-Leveling	> Camera will have automatic self-level mode > Self level mode has the ability to be overridden	
Soft Rubber- Quick Release Wheel (QRW)					
	60SR/90	22	4" Soft Rubber		
		A	Material	Soft rubber	
		B	Size	Minimum 4" pipe: For use with small diameter crawler	
	90SR/90	23	6" Soft Rubber		
		A	Material	Soft rubber	
		B	Size	Minimum 6" pipe: For use with small diameter crawler	
	90SR/150	24	6" Soft Rubber		
		A	Material	Soft rubber	
		B	Size	Minimum 6" pipe: For use with mid-size crawler	
	115SR/150	25	8" Soft Rubber		
		A	Material	Soft rubber	
		B	Size	Minimum 8" pipe: For use with mid-size crawler	
	140SR/150	26	10" Soft Rubber		
		A	Material	Soft rubber	

		B	Size	Minimum 10" pipe: For use with mid-size crawler	
140SRXL/150	27		12" Soft Rubber		
	A		Material	Soft rubber	
	B		Size	> Minimum 12" pipe: For use with mid-size crawler > Includes extended axle	
140SR/300	28		12" Soft Rubber		
	A		Material	Soft rubber	
	B		Size	Minimum 12" pipe: For use with large diameter crawler	
Carbide- Quick Release Wheel (QRW)					
60CB/90	29		4" Carbide		
	A		Material	Fragments fused to a heavy duty stainless steel body	
	B		Size	Minimum 4" pipe: For use with small diameter crawler	
90CB/90	30		6" Carbide		
	A		Material	Fragments fused to a heavy duty stainless steel body	
	B		Size	Minimum 6" pipe: For use with small diameter crawler	
90CBXL/90	31		8" Carbide		
	A		Material	Fragments fused to a heavy duty stainless steel body	
	B		Size	> Minimum 8" pipe: For use with small diameter crawler > Includes extended axle	
90CB/150	32		6" Carbide		
	A		Material	Fragments fused to a heavy duty stainless steel body	
	B		Size	Minimum 6" pipe: For use with mid-size crawler	
115CB/150	33		8" Carbide		
	A		Material	Fragments fused to a heavy duty stainless steel body	
	B		Size	Minimum 8" pipe: For use with mid-size crawler	
140CB/150	34		10" Carbide		
	A		Material	Fragments fused to a heavy duty stainless steel body	
	B		Size	Minimum 10" pipe: For use with mid-size crawler	
High Grit- Quick Release Wheel (QRW)					
90HG/90	35		6" Grit		
	A		Material	Hard wearing carborundum	
	B		Size	Minimum 6" pipe: For use with small diameter crawler	
90HGXL/90	36		8" Grit		
	A		Material	Hard wearing carborundum	
	B		Size	> Minimum 8" pipe: For use with small diameter crawler > Includes extended axle	
90HG/150	37		6" Grit		
	A		Material	Hard wearing carborundum	
	B		Size	Minimum 6" pipe: For use with mid-size crawler	
115HG/150	38		8" Grit		
	A		Material	Hard wearing carborundum	
	B		Size	Minimum 8" pipe: For use with mid-size crawler	
140HG/150	39		10" Grit		
	A		Material	Hard wearing carborundum	
	B		Size	Minimum 10" pipe: For use with mid-size crawler	
Balloon Tire- Quick Release Wheel (QRW)					
250BT/300	40		18" Pneumatic		
	A		Material	Pneumatic Rubber	
	B		Size	10" Diameter	
250BTXL/300	41		24" Pneumatic		
	A		Material	Pneumatic Rubber	
	B		Size	>10" Diameter > Includes extended axle	
Lighting Options					

	ALN300	42	Auxiliary Light		
		A	Lighting	> 3 Ultra bright LED lights	
		B	Minimum Pipe Diameter	> 6" pipe when used with 4" diameter crawler > 8" pipe when used with 6" diameter crawler	
	ALB300	43	Auxiliary Light with Backup Camera		
		A	Lighting	> 3 Ultra bright LED lights	
		B	Minimum Pipe Diameter	> 6" pipe when used with small diameter crawler > 8" pipe when used with mid- size diameter crawler	
		C	Backup camera	Built in	
	APN300	44	Auxiliary Light with Adjustable Pods		
		A	Lighting	> (3) Ultra bright LED lights > (2) Manually adjustable pods	
		B	Minimum Pipe Diameter	> 10" pipe when used with small diameter crawler > 12" pipe when used with mid- size diameter crawler	
	APB300	45	Aux Light w/ Adjustable Pods & Backup Camera		
		A	Lighting	> (3) Ultra bright LED lights > (2) Manually adjustable pods	
		B	Minimum Pipe Diameter	> 10" pipe when used with small diameter crawler > 12" pipe when used with mid- size diameter crawler	
		C	Backup camera	Built in	
Specialty Application Accessories					
	PCC01	46	Cradle Attachment for Mid-Size Crawler		
		A	Compatibility	Adaptable to mid-size crawler	
		B	Drive System	> Cradle shall drive off the center axle of mid-size crawler - The cradle must be 4 wheel drive > A provided key-way style adapter will secure to the crawlers center axle with a quick lock design > Crawler attaches to mounting plate with 4 screws > Must be capable of high or low torque settings	
		C	Pipe Range	Must be capable of centering in 24 - 42" pipe	
		D	Wheels	> Built in quick-lock design utilizing a triangular nut > Cradle will come provided with 8" pneumatic wheels > Additional 10" aggressive balloon wheels available	
	CEP300	47	Telescopic lift for Large Diameter Crawler		
		A	Compatibility	Adaptable to large diameter crawler	
		B	Pipe Range	Capable of centering in 40 - 87" pipe	
		C	Telescopic	> 2 sections of manually telescoping C- Channel > Lockable via (3) Compression latches	
		D	Mounting	> Secured by a bracket at the base of crawler > Locks to the lifts camera connection for communication	
		E	Lighting	> Attachment will have 3 ports for additional lighting pods > 3 Light pods will be provided	
		F	Camera	Must be modular with ALL available cameras	
	FRP01	48	Floatable Raft		
		A	Size	Physical width not to exceed 18"	
		B	Material	> Molded plastic > Hollow to allow for balast (as needed)	
		C	Lighting	> Attachment will have 3 ports for additional lighting pods > 3 Light heads will be provided	
		D	Camera	Must be modular with ALL available cameras	
		E	Tow capabilities	> Mounted plate at rear for attachment of tow line > Eye-hooks on front corners for attachment of tow line	
		F	Cable connection	> Float uses same cable connection as mainline crawler > Strain relief to be built into cable system	
	BEP150	49	Support for Oval Pipe Inspections		
		A	Compatibility	Adaptable to mid-size crawler	
		B	Size	14.7" x 7" x 8.2" L-W-H	

		C	Weight	4.5lbs	
	BEP300	50	Support for Oval Pipe Inspections		
		A	Compatibility	Adaptable to large diameter crawler	
		B	Size	17.7" x 7.4" x 8.6" L-W-H	
		C	Weight	6.5lbs	
Additional Accessories					
	PTP01	51	Portable Cart		
		A	Compatibility	> Compatible with- - Manual reel for 820' of inspection cable - Motorized reel for 820' of inspection cable	
		B	Weight	21.5lbs (without equipment)	
		C	Dimensions	25.6" x 45.3" x 29.5" W-H-D	
	BPP24	52	Portable Cart Battery Pack		
		A	Compatibility	Portable cart	
		B	Weight	8.8lbs	
		C	Dimensions	11" x 3.9" x 4.7" L-W-H	
		D	Battery life	Up to 5 hours	
	EWP01	53	Weight Plate		
		A	Compatibility	> Compatible with- - Mid-size crawler with manual lift - Mid-size crawler with automatic lift	
		B	Weight	5.5lbs	
	CGP01	54	Cable Roller Guide		
		A	Design	> Flexible with 2 hinge points > 4 tapered nylon rollers	
		B	Deployment	Attached to a rope	
	TRP01	55	Manhole Roller		
		A	Design	> Square tubing construction with welded capped ends > 36" in length > powder coated finish > Tapered delrin roller	
	PKP01	56	Pressurization Kit		
		A	Regulator	> 5/8th female thread for CO2 cartridges > Pressure gauge > Standard female valve-stem adapter with locking latch	
		B	Storage	Comes standard with padded hard case for protection	
Build Options					
	ECONO-TRAILER	57	Economy Trailer		
		A	Buildout	Economy package installation into economy trailer - 7x12' Single Axle Trailer with Barn Door - Side Entrance - Non Slip Flooring - Ceiling Mounted LED Lights (4) - 110V Electrical Receptacle Outlets - Workbench - 41x18" 9 Drawer Tool Box- Curbside - Curbside Closet - NO Interior Partition Wall - 32x22x36" Reel Rack with 2 Compartment Drawer & Slide Tray - 10 Gallon Wash Down Tank with Pump - 3000 Watt Generator - 50 Amp Converter Charger with Shore Power Plug & Cord	
	PREMIUM-TRAILER	58	Premium Trailer		

		A	Front office	Premium package installation into cargo trailer - 7x14' Tandem Axle Trailer with Barn Doors - Side Entrance - Non Slip Flooring - Covered & Insulated Walls & Ceiling - 13,500 BTU Roof Mounted A/C with Heat Strip - Rack Mount Storage Drawers (3) - 34" PBP Monitor - Printer/ Scanner - Interior Partition Wall with Observation Window - Partition Wall Pass Thru Door - Control Room Counter Top Workstation - Overhead Storage Cabinet - Ceiling Mounted LED Lights (2) - 110V Electrical Receptacle Outlets - 50 Amp Converter Charger w/Shore Power Plug & Cord - 5500 watt Onan Gasoline Generator - Worksite Viewing Monitor	
		B	Rear work area	Rear work area - Workbench Curbside - 41x18" 9 Drawer Tool Box- Curbside - 32x22x36" Reel Rack with 2 Compartment Drawer & Slide Tray - 32" TV for Inspection Viewing- Mounted - Backup Camera for Worksite Tied To Control Room Monitor - LED Ceiling Mounted Lights (2) - Rear Flood Light (1) - LED Directional signals Sub-Roofline Mounted - 110V Electrical Receptacle Outlets - Sanitary Station- Sanitizer, Towel & Rubber Glove Holder - 15 Gallon Wash Down Tank with Pump - Overhead Cabinet Curbside	
	PREMIUM-CARGO VAN	59	Premium Cargo Van		
		A	Front office	Premium package installation into cargo van - Non Slip Flooring - Kemlite Covered & Insulated Walls & Ceiling - Interior Partition Wall with Observation Window - 62"x11" Utility Shelf Mounted On Partition Wall - Control Room Counter Top Workstation - Rack Mount Storage Drawers (3) - Control Room LED Ceiling Mounted Light - 110V Electrical Receptacle Outlets (2) W/USB - Printer/ Scanner - 34" PBP Monitor - Worksite Viewing Monitor	
		B	Rear work area	Rear work area - LED Ceiling Mounted Lights (2) - 110V Electrical Receptacle Outlets (4). (1) with USB - 41x18" 9 Drawer Tool Box- Curbside - 84x19" Working Counter Top - Curbside - 42x17" Shelf Over Wheel Well- Curbside - 45x25" Cabinet Holds Inverter/ Batteries - Streetside - 10 Gallon Wash Down Tank - Water Pump & 25' Retractable Reel - 32x22x36" Reel Rack- 2 Compartment Drawer & Slide Tray - (4) 6' Fiberglass Poles With Camera Hook - Sanitary Station- Sanitizer, Towel & Rubber Glove Holder - Rear Flood Light (1) - Backup Camera for Worksite. Tied To Control Room Monitor - 32" TV for Inspection Viewing- Mounted - LED Directional signals Sub-Roofline Mounted - 14 LED Strobes on Chassis - 3000 Watt Go-Power Inverter - 30 Amp Converter Charger w/Shore Power Plug & Cord	
	PREMIUM-BOX-GAS	60	Premium Gas Box Truck		

		A	Front office	Premium package installation into box body truck - High Traction Flooring - Kemlite Covered & Insulated Walls & Ceiling - 13,500 BTU Roof Mounted A/C w/Heat Strip - Interior Partition Wall w/Observation Window - Partition Wall Pass-Through Door - Control Room Counter Top Workstation - Overhead Storage Cabinet w/ Sliding Doors- Streetside - (3) Rack Mount Locking Drawers - 3 Drawer File Cabinet - Bench Seat w/ Storage - Control Room LED Ceiling Mounted Lights (2) - 110V Electrical Receptacle Outlets - 120V Forced Air Heater - Printer/ Scanner - 34" PBP Monitor - Worksite Viewing Monitor	
		B	Rear work area	Rear work area - LED Ceiling Mounted Lights (2) - 110V Electrical Receptacle Outlets - Counter Top - Curbside - 41x18" 9 Drawer SoftClose Tool Box- Curbside - Overhead Storage Cabinet with Sliding Doors- Curbside - Floor to Ceiling Storage Closet- Curbside - 32x22x36" Reel Rack- 2 Compartment Drawer & Slide Tray - 20 Gallon Wash Down Tank - Water Pump & 25' Retractable Reel - Sanitary Station- Sanitizer, Towel & Rubber Glove Holder - Rear Flood Light (2) - Rear Backup Camera Tied to Worksite Viewing Monitor - LED Directional signals. Sub-Roofline Mounted - High Visibility Strobe Light Package - 5500 Watt Onan Gasoline Generator - 50 Amp Converter Charger w/Shore Power Plug & Cord	