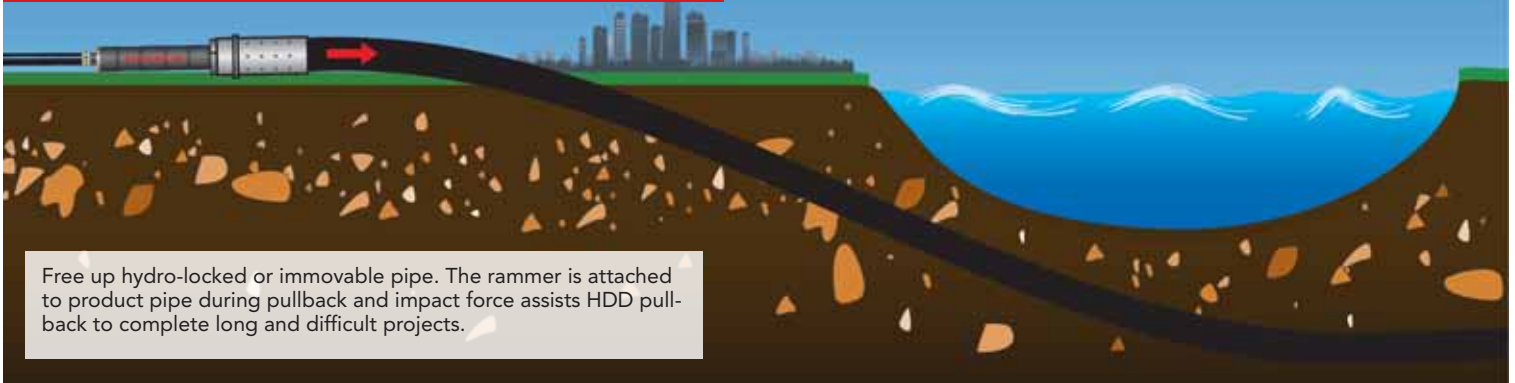




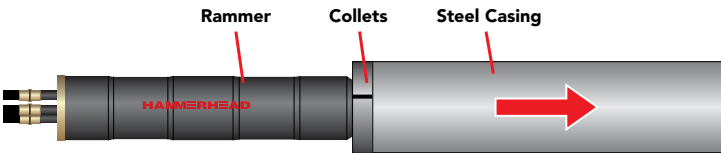
# HAMMERHEAD® PIPE RAMMING SYSTEMS HDD ASSIST METHODS

## PULLBACK ASSIST METHOD

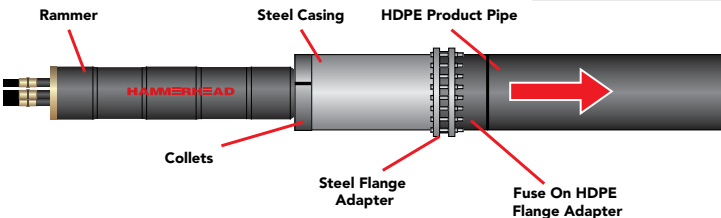


## PULLBACK ASSIST CONNECTION METHODS

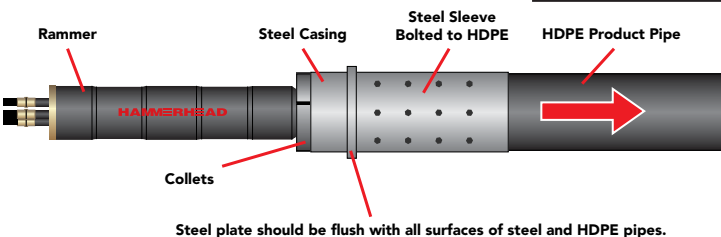
The rammer is locked into steel casing using collets. The steel casing is installed using the pullback force of the horizontal directional drill and the percussive force of the hammer.



The rammer is locked into a steel casing via collets. The steel casing is connected to the HDPE product pipe via steel to HDPE flange compression kit. HDD pull force is used in conjunction with the rammer to install the pipe.



The rammer is locked into steel casing via collets. The steel casing is welded to a steel ring that is flush with the HDPE pipe face and welded to a steel sleeve. The steel sleeve is bolted to the HDPE product pipe and pull force is used in conjunction with the rammer to install the pipe.



## HDD ASSIST METHODS HAMMER SELECTION CHART

Model in (mm)	Weight lb (kg)	Blows Per Min	Tons of Force*	HDD Assist Recommended HDD Class
7 (180)	511 (232)	295	92	16,000 – 24,000 lb
8 (200)	900 (408)	223	126	24,000 – 50,000 lb
12 (300)	1,568 (711)	256	372	30,000 – 80,000 lb
16 (400)	2,701 (1,225)	231	547	70,000 – 100,000 lb
20 (500)	5,750 (2,608)	190	870	80,000 – 150,000 lb
24 (600)	9,831 (4,459)	177	1,010	150,000 lb and larger

## PIPE EXTRACTION METHOD



Recover your product pipe using the extraction method. The impact force of the rammer is combined with static pullback to extract product pipe so you can save expensive pipe and bore again.

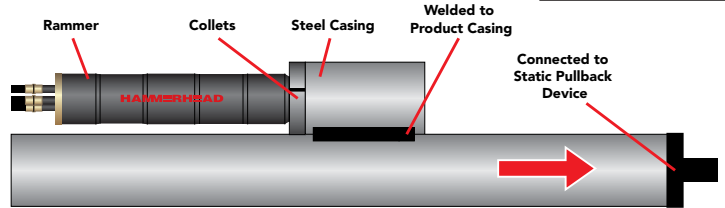
## DRILL ROD EXTRACTION METHOD



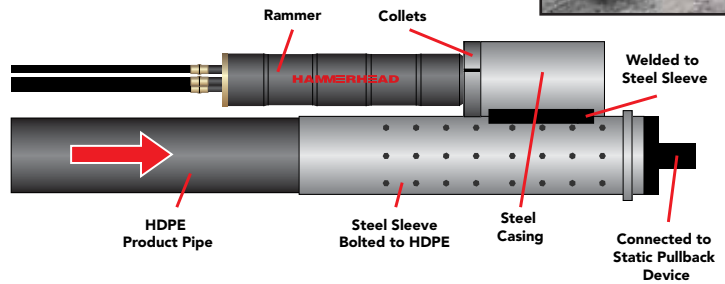
Recover your expensive, stuck drill stems! Attach the rammer to the drill stem with a fabricated adapter. The impact force of the rammer combined with static pullback is used to extract stuck drill stems.

## PIPE & DRILL ROD EXTRACTION CONNECTION METHODS

A steel casing is welded onto the product casing and a rammer is locked into the steel casing via collets. Static pull force is used in conjunction with the rammer to extract the product casing.



The rammer is locked into a steel casing that is welded onto a steel sleeve. The steel sleeve is bolted to the HDPE product pipe. Static pull force is used in conjunction with the rammer to extract the product casing.



## WASHOVER CASING METHOD



Start your job off right in tough conditions. Casings are rammed through difficult soil conditions to more desirable drill starting points. The rammed casing provides a path for recycling of drill fluids and a friction free section for product pullback.

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FOR A FREE PROJECT CONSULTATION TODAY.



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