Jerry Stiller Super Duper Almost Zero Dead Time Moving Backer Mechanism

How's that for a title? Actually, the mechanism works real well and does just about a zero dead time for the turnaround. The old arm style has a much longer dead zone and the single long pull type usually doesn't have enough speed. You can still have a shot on a shot with this backer, but in use last year the number of close calls went down to about 10% from the standard arm type.

It is very simple to build. At this point all I have is pictures without real drawings, but I think most anyone clever enough to build anything, can get it from the pictures. I also have a parts list from Grainger for most of the parts. It is about $500 if I remember right. The only tricky part is the bearing assembly that hooks to the cable. It is a master link that is carefully welded to a stud and hooks into the chain like any other master link. The stud has a bearing on it with an outer sleeve that rotates and the cable loops through. I will try to draw up a cross section for it. The only dimension that matters is the distance between the motor and the idler. It should be about 2 inches less then the amount the backer needs to move. With that distance and the gear diameters added, it will give the correct travel distance. All the parts are hooked to a piece of plate or angle and then some type of mount has to be hooked on. We have pipes in the ground, so I just built an adaptor to go in a pipe to hold it. All and all I spent about 2 hours designing it and maybe another hour building all but the pivot. The pivot took about another hour on the lathe and TIG welder. I also welded in the master link pins to the plate from the rear so they would not come out. The master link was then welded into the pivot parts. Here is the parts list and pictures, so have fun and good luck.

Qty	Part Number	Description	Price in 2005
1	6Z816	8.0 RPM Gearmotor	355.00
2	4X724	5/8 Bearing Supports	13.52
2	1L105	5/8 Bore Gear, 1.8 Diameter, Size 40	8.68
1	5X293	Master Link, Size 40	3.83
1	2W093	Chain, Size 40, 10 feet	24.36
1		5/8 x 8 inch shafting	
4		3/8 x 1.50 bolts and nuts	
4		1/4 x 1.00 bolts and nuts	
1		Power cord	
1		Aluminum plate	
1		Small bearing and aluminum rod for rotating mechanism.	