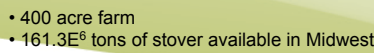
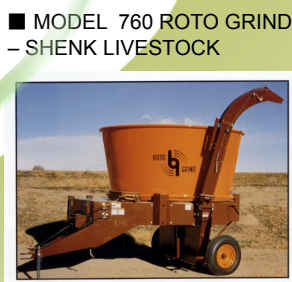


I PRO 349 Solid Fuel from Biomass for Cogeneration



- Cost: \$18,032. This includes all baling, transportation, and storage costs of large square bales.
- Separate shredding & windrowing operation followed by large rectangular baling.
- Collected using a self-propelled automatic stacker wagon that stacks the bale automatically.
- An average distance between the farm and storage of 8 km (5 miles) was used.



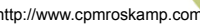
- <http://www.shenklivestock.com>

- Price : \$19,800
 - Minimum HP of Tractor : 65HP
 - Average HP : 80HP
 - Grinder Weight : 3500lb
 - Hitch Weight : 660lb
 - Height : 8' 6" – Standard
7' 6" – Low Profile
 - Capacity : 5 to 30 ton/hour
- * capacity depends on the type of material,
condition of material, how fine it is being ground,
and the size of the tractor

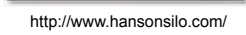


- Main Motor Power : 160 – 200 kW
- Capacity : 12/18(min/max, ton/hr)

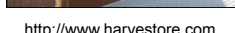
■ Model 7900 – CALIFORNIA
PELLET MILL



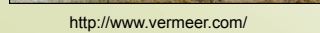
- Main Motor Power : Up to 800 HP
- Pellet size: ¼ " Diameter



- Hanson Company
- Concrete silo
- Cost 2/3 of steel
- Triple seal, ply vinyl door gaskets
- Compatible with all unloaders



- <http://www.harvestore.com>
- Harvestore Company
- Steel Silo
- Material : glass-fused-to-steel sheets
- Capacity : 1000 tons

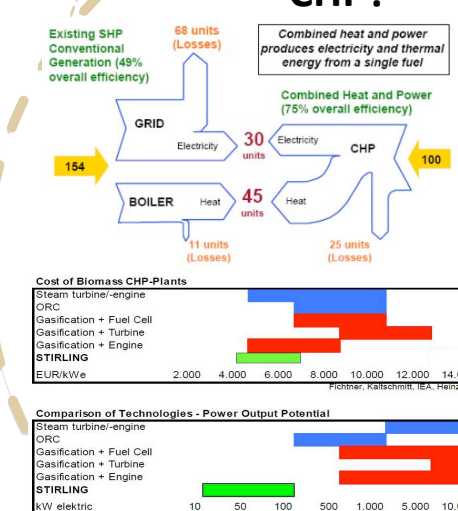


■ BP 8000 Grinder - Vermeer

- Main Motor Power : Up to 800 HP
- Pellet size: ¼ " Diameter

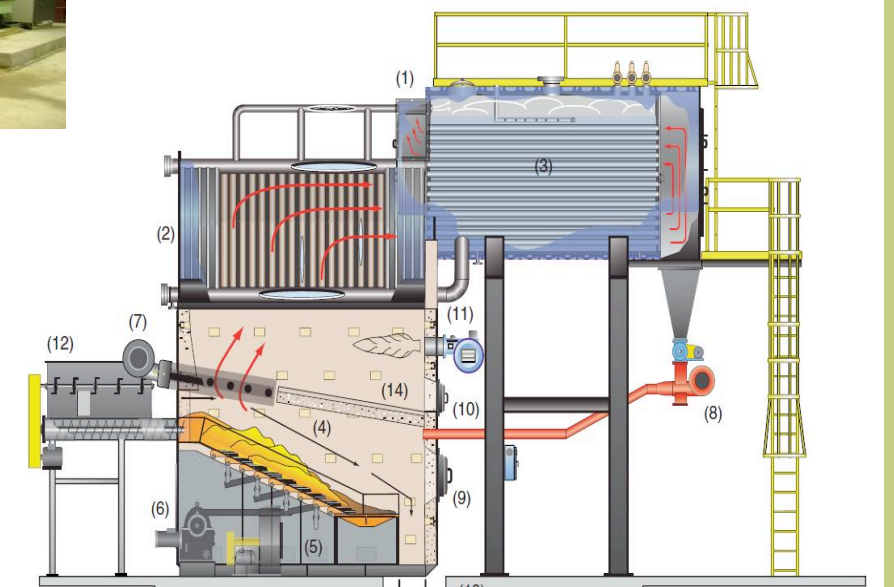
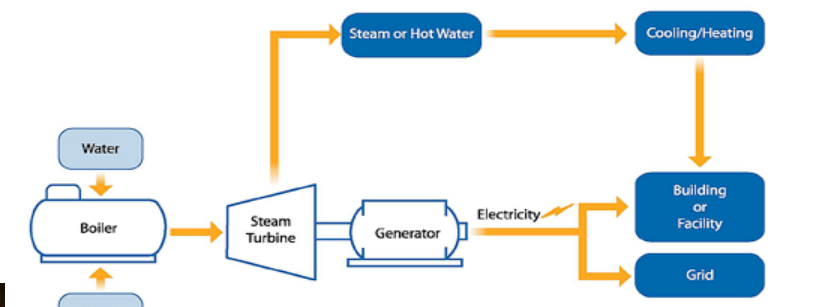
B8PRO00 SPECIFICATIONS	
CAPACITY	Two bays (12 x 4" x 12.8" (3.03 m)) Maximum 2X200 (4 TB) HDD each
DIMENSIONS (W x H x D) (mm)	
Length	149 x 97 (3.78 x 2.46)
Width	178 (4.52)
Height	370 (9.40)
Weight	2.0 (4.41 lb) (3.00 kg)
Net (Rail/Drive In/Installed)	Net 11.1 (2.43 lb) (1.10 kg) balanced
Max (Rail/Drive In/Installed)	22 (4.85 lb) (2.27 kg) balanced
Max (Rail/Drive In/Installed)	26 (5.73 lb) (2.59 kg) unbalanced
Max (Rail/Drive In/Installed)	30 (6.61 lb) (3.00 kg) unbalanced
Max (Rail/Drive In/Installed)	34 (7.50 lb) (3.40 kg) unbalanced
Max (Rail/Drive In/Installed)	38 (8.38 lb) (3.80 kg) unbalanced
Max (Rail/Drive In/Installed)	42 (9.26 lb) (4.20 kg) unbalanced
Max (Rail/Drive In/Installed)	46 (10.14 lb) (4.60 kg) unbalanced
Max (Rail/Drive In/Installed)	50 (11.02 lb) (5.00 kg) unbalanced
Max (Rail/Drive In/Installed)	54 (11.90 lb) (5.40 kg) unbalanced
Max (Rail/Drive In/Installed)	58 (12.78 lb) (5.80 kg) unbalanced
Max (Rail/Drive In/Installed)	62 (13.66 lb) (6.20 kg) unbalanced
Max (Rail/Drive In/Installed)	66 (14.54 lb) (6.60 kg) unbalanced
Max (Rail/Drive In/Installed)	70 (15.42 lb) (7.00 kg) unbalanced
Max (Rail/Drive In/Installed)	74 (16.30 lb) (7.40 kg) unbalanced
Max (Rail/Drive In/Installed)	78 (17.18 lb) (7.80 kg) unbalanced
Max (Rail/Drive In/Installed)	82 (18.06 lb) (8.20 kg) unbalanced
Max (Rail/Drive In/Installed)	86 (18.94 lb) (8.60 kg) unbalanced
Max (Rail/Drive In/Installed)	90 (19.82 lb) (9.00 kg) unbalanced
Max (Rail/Drive In/Installed)	94 (20.70 lb) (9.40 kg) unbalanced
Max (Rail/Drive In/Installed)	98 (21.58 lb) (9.80 kg) unbalanced
Max (Rail/Drive In/Installed)	102 (22.46 lb) (10.20 kg) unbalanced
Max (Rail/Drive In/Installed)	106 (23.34 lb) (10.60 kg) unbalanced
Max (Rail/Drive In/Installed)	110 (24.22 lb) (11.00 kg) unbalanced
Max (Rail/Drive In/Installed)	114 (25.10 lb) (11.40 kg) unbalanced
Max (Rail/Drive In/Installed)	118 (25.98 lb) (11.80 kg) unbalanced
Max (Rail/Drive In/Installed)	122 (26.86 lb) (12.20 kg) unbalanced
Max (Rail/Drive In/Installed)	126 (27.74 lb) (12.60 kg) unbalanced
Max (Rail/Drive In/Installed)	130 (28.62 lb) (13.00 kg) unbalanced
Max (Rail/Drive In/Installed)	134 (29.50 lb) (13.40 kg) unbalanced
Max (Rail/Drive In/Installed)	138 (30.38 lb) (13.80 kg) unbalanced
Max (Rail/Drive In/Installed)	142 (31.26 lb) (14.20 kg) unbalanced
Max (Rail/Drive In/Installed)	146 (32.14 lb) (14.60 kg) unbalanced
Max (Rail/Drive In/Installed)	150 (33.02 lb) (15.00 kg) unbalanced
Max (Rail/Drive In/Installed)	154 (33.90 lb) (15.40 kg) unbalanced
Max (Rail/Drive In/Installed)	158 (34.78 lb) (15.80 kg) unbalanced
Max (Rail/Drive In/Installed)	162 (35.66 lb) (16.20 kg) unbalanced
Max (Rail/Drive In/Installed)	166 (36.54 lb) (16.60 kg) unbalanced
Max (Rail/Drive In/Installed)	170 (37.42 lb) (17.00 kg) unbalanced
Max (Rail/Drive In/Installed)	174 (38.30 lb) (17.40 kg) unbalanced
Max (Rail/Drive In/Installed)	178 (39.18 lb) (17.80 kg) unbalanced
Max (Rail/Drive In/Installed)	182 (40.06 lb) (18.20 kg) unbalanced
Max (Rail/Drive In/Installed)	186 (40.94 lb) (18.60 kg) unbalanced
Max (Rail/Drive In/Installed)	190 (41.82 lb) (19.00 kg) unbalanced
Max (Rail/Drive In/Installed)	194 (42.70 lb) (19.40 kg) unbalanced
Max (Rail/Drive In/Installed)	198 (43.58 lb) (19.80 kg) unbalanced
Max (Rail/Drive In/Installed)	202 (44.46 lb) (20.20 kg) unbalanced
Max (Rail/Drive In/Installed)	206 (45.34 lb) (20.60 kg) unbalanced
Max (Rail/Drive In/Installed)	210 (46.22 lb) (21.00 kg) unbalanced
Max (Rail/Drive In/Installed)	214 (47.10 lb) (21.40 kg) unbalanced
Max (Rail/Drive In/Installed)	218 (47.98 lb) (21.80 kg) unbalanced
Max (Rail/Drive In/Installed)	222 (48.86 lb) (22.20 kg) unbalanced
Max (Rail/Drive In/Installed)	226 (49.74 lb) (22.60 kg) unbalanced
Max (Rail/Drive In/Installed)	230 (50.62 lb) (23.00 kg) unbalanced
Max (Rail/Drive In/Installed)	234 (51.50 lb) (23.40 kg) unbalanced
Max (Rail/Drive In/Installed)	238 (52.38 lb) (23.80 kg) unbalanced
Max (Rail/Drive In/Installed)	242 (53.26 lb) (24.20 kg) unbalanced
Max (Rail/Drive In/Installed)	246 (54.14 lb) (24.60 kg) unbalanced
Max (Rail/Drive In/Installed)	250 (55.02 lb) (25.00 kg) unbalanced
Max (Rail/Drive In/Installed)	254 (55.90 lb) (25.40 kg) unbalanced
Max (Rail/Drive In/Installed)	258 (56.78 lb) (25.80 kg) unbalanced
Max (Rail/Drive In/Installed)	262 (57.66 lb) (26.20 kg) unbalanced
Max (Rail/Drive In/Installed)	266 (58.54 lb) (26.60 kg) unbalanced
Max (Rail/Drive In/Installed)	270 (59.42 lb) (27.00 kg) unbalanced
Max (Rail/Drive In/Installed)	274 (60.30 lb) (27.40 kg) unbalanced
Max (Rail/Drive In/Installed)	278 (61.18 lb) (27.80 kg) unbalanced
Max (Rail/Drive In/Installed)	282 (62.06 lb) (28.20 kg) unbalanced
Max (Rail/Drive In/Installed)	286 (62.94 lb) (28.60 kg) unbalanced
Max (Rail/Drive In/Installed)	290 (63.82 lb) (29.00 kg) unbalanced
Max (Rail/Drive In/Installed)	294 (64.70 lb) (29.40 kg) unbalanced
Max (Rail/Drive In/Installed)	298 (65.58 lb) (29.80 kg) unbalanced
Max (Rail/Drive In/Installed)	302 (66.46 lb) (30.20 kg) unbalanced
Max (Rail/Drive In/Installed)	306 (67.34 lb) (30.60 kg) unbalanced
Max (Rail/Drive In/Installed)	310 (68.22 lb) (31.00 kg) unbalanced
Max (Rail/Drive In/Installed)	314 (69.10 lb) (31.40 kg) unbalanced
Max (Rail/Drive In/Installed)	318 (69.98 lb) (31.80 kg) unbalanced
Max (Rail/Drive In/Installed)	322 (70.86 lb) (32.20 kg) unbalanced
Max (Rail/Drive In/Installed)	326 (71.74 lb) (32.60 kg) unbalanced
Max (Rail/Drive In/Installed)	330 (72.62 lb) (33.00 kg) unbalanced
Max (Rail/Drive In/Installed)	334 (73.50 lb) (33.40 kg) unbalanced
Max (Rail/Drive In/Installed)	338 (74.38 lb) (33.80 kg)

CHP?



Vartiainen, E et al, 2002; Gala Group Oy, 2004; Obermberger, I., 2003

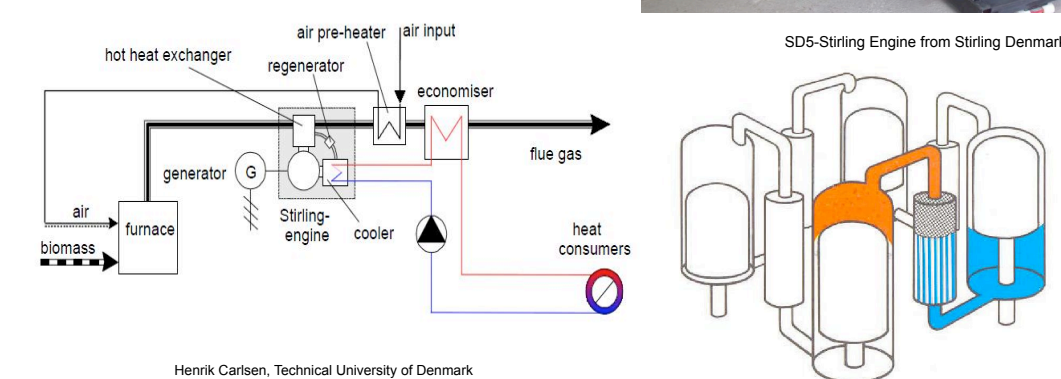
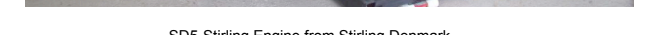
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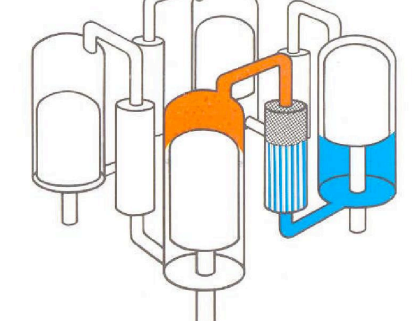
Hurst RG Biomass Fired Boiler

- Lower emissions to the environment, in particular of CO₂, the main greenhouse gas

- High efficiency by avoiding transmission losses and increasing flexibility in system use



Henrik Carlsen, Technical University of Denmark



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