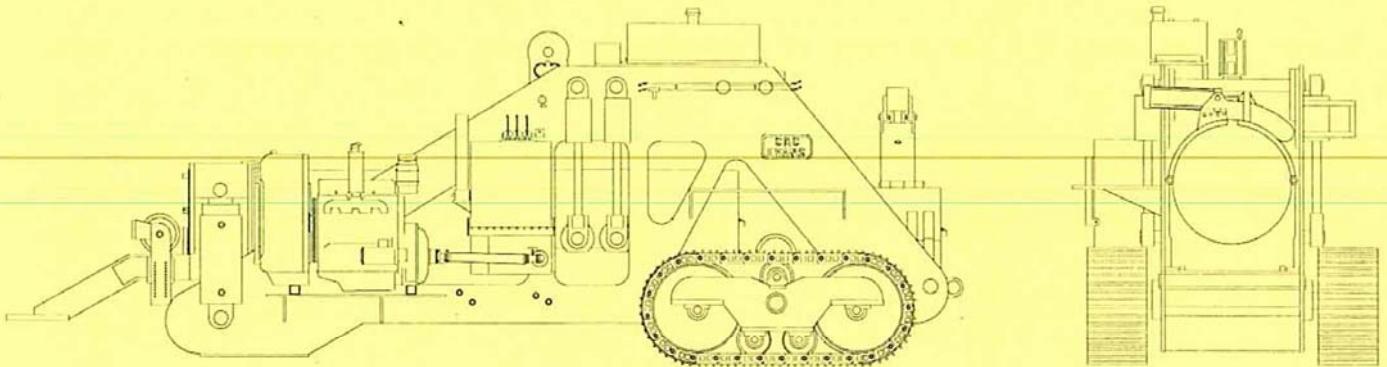




PIPE BENDING MACHINES

For pipe diameters 6" (152mm) to 36" (914mm)

1F



VERTICAL HYDRAULIC PIPE BENDING MACHINES

- Hydraulic controls give one operator complete command of all machine operations from a convenient platform.
- Hydraulically driven winch moves pipe through machine. Pipe moves easily on contoured rollers.
- Calibrated indicator rod allows operator to make consistently uniform bends.
- Pin-up shoe automatically grips pipe to prevent distortion.
- Conversion to another pipe size within the machine range is made simply by fitting an alternative bending set.
- The machine is capable of bending all grades of currently available API-5L pipe within its range.
- The machine frame is constructed from steel to give long life without fatigue failure.
- Unitized construction makes for easy maintenance and repairs.
- The towing eye is attached to the hydraulically actuated stiff-back and may be raised and lowered to facilitate attachment to the towing tractor.
- The machine may be towed on the right-of-way by a suitable tractor, normally the side boom feeding the pipe to the bending machine.

For each pipe size to be bent, a Bending Set, a Mandrel and a Bending Belt are required.

Refer to the the following literature sheets for associated information:

- Sheet 3F: Information on recommended maximum bends and wall thicknesses
- Sheet 6F: Extra Cost options are available to suit special applications
- Sheet 9F: Information on working principles
- Sheet 10F: Bending Sets and Pipe End Support
- Section G: Bending Mandrels
- Sheet 7J: Bending Belt to load and control pipe (Steel lined choker belt)

PIPE BENDING MACHINE

For pipe 6" (152mm) to 36" (914mm)



2F

SPECIFICATIONS

MODEL	PB 6 - 20	PB 16 - 30	PB 22 - 36
PIPE DIAMETER inches (meters)	6.625 - 20 (168 - 508)	16 - 30 (406 - 762)	22 - 36 (559 - 914)
POWER UNIT hp (kW)	Diesel 36 (27)	Diesel 60 (45)	Diesel 85 (63)
LENGTH inches (meters)	13' - 4" (4.06)	22' - 8" (6.91)	24' - 2" (7.37)
WIDTH inches (meters)	6' - 4" (1.93)	8' - 4" (2.54)	8' - 6" (2.59)
HEIGHT inches (meters)	8' - 10" (2.69)	8' - 6" (2.59)	9' - 0" (2.74)
NET WEIGHT (COM- PLETE) lb (kg)	9250 (4196)	28450 (12905)	38440 (17436)
UNDERCARRIAGE	Pneumatic tires 11.00 x 16	Track type CRCE-15T	Track type CRCE-15T
OUT-BOARD CYLINDER BORE X STROKE	Two - 7" x 11" (178mm x 152mm)	Two - 9" x 19.25" (229mm x 489mm)	Two - 11" x 19" (279mm x 483mm)
IN-BOARD CYLINDER BORE X STROKE	Two - 7" x 6" (178mm x 152mm)	Two - 7" x 5" (178mm x 127mm)	Four - 7" x 5" (178mm x 127mm)
HYDRAULIC SYSTEM MAX. OPER. PRESSURE	2000 psi (141 kg/cm ²)	2000 psi (141 kg/cm ²)	2200 psi (255 kg/cm ²)

EXTRA COST OPTIONS (Available at the time of Manufacture)

- Power units to customer specifications.
- Electric motor.
- Gasoline engine (as available).
- Stationary base to replace undercarriage.
- Wheels to replace tracks PB 16-30, PB 22-36.
- Tracks to replace wheels on PB 6-20.
- Cold weather operating kit (-40°C or F).
- Cab.
- Hydraulic power take off for either a plug mandrel or a wedge mandrel.

EXTRA COST OPTIONS (Available for Customer Installation)

- Bending sets for out-of-range pipe.
- Bending sets for specific coating.
- Hydraulic power take-offs.
- Bending belts (steel lined choker belts).

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- Edmonton, Alberta, Canada - Telephone: 403/440-2005 - Fax: 403/440-4952 - Telex: 0372966
- Burnley, United Kingdom - Telephone: 282-835000 - Fax: 282-835035 - Telex: 635018 CRC UK G
 - Hoevelaken, Holland - Telephone: 3495-34369 - Fax: 3495-35709 - Telex: 73454 NL

Due to the CRC-EVANS PIPELINE INTERNATIONAL, INC. program of constant improvement, specifications are subject to change without notice or obligation.



PIPE BENDING DATA (US)

3F

CRC-EVANS VERTICAL HYDRAULIC BENDING MACHINES 6" - 36" PIPE BENDING DATA - ALL DIMENSIONS IN INCHES

PIPE O.D. in/mm	MAXIMUM WALL THICKNESS BY GRADE					RECOMMENDED BEND		
	X52	X60	X65	X70	X80	Degree Arc per Foot	Radius Feet	Max degree per 40 ft. joint
PB 6 - 20								
06 / 168	**	**	**	1.210*	1.062	4.41	13	132.20
08 / 219	**	2.000	1.210*	1.185*	1.037	3.82	15	114.60
10 / 273	2.000*	1.210*	1.185*	1.165*	1.000	2.86	20	85.80
12 / 324	1.890*	1.125	1.000	1.000	.875	2.30	25	69.00
14 / 356	1.575*	.938	.875	.812	.688	1.70	34	51.00
16 / 406	1.250	.750	.688	.625	.562	1.51	28	45.30
18 / 457	.938	.562	.500	.469	.406	1.10	52	33.00
20 / 508	.625	.406	.375	.312	.273	0.83	69	24.90
PB 16 - 30								
16 / 406	2.250*	1.790*	1.585*	1.430*	1.250	1.15	38	40.80
18 / 457	1.875*	1.500*	1.212*	1.188	1.040	1.10	52	29.70
20 / 508	1.480*	1.125	1.062	.938	.812	0.90	64	24.40
22 / 559	1.062	.875	.812	.750	.656	0.80	72	21.60
24 / 620	.688	.625	.562	.500	.438	0.75	76	20.25
26 / 660	.625	.500	.469	.438	.388	0.70	82	18.90
28 / 711	.500	.438	.406	.375	.328	0.65	88	17.60
30 / 762	.438	.375	.344	.312	.273	0.60	96	16.20
PB 22 - 36								
22 / 559	1.710*	1.312	1.250	1.188	1.000	0.80	72	21.60
24 / 610	1.500	1.250	1.188	1.062	.938	0.75	76	20.30
26 / 660	1.325*	1.060*	1.000	.938	.812	0.70	82	18.90
28 / 711	1.100*	1.000	.875	.750	.688	0.65	88	17.60
30 / 762	.875	.750	.688	.625	.562	0.60	95	16.20
32 / 813	.812	.688	.625	.562	.500	0.58	98	15.60
34 / 864	.750	.562	.500	.469	.410	0.55	104	14.80
36 / 914	.750	.500	.469	.438	.375	0.50	115	13.50

* Non-standard size per API-5L, ** No Limit

These figures are recommended only and do not constitute a warranty.

All bends shown include the use of CRC-EVANS Bending Mandrels. The figures given are "average". They will vary due to:

- The wall thickness of the pipe.
- The actual (as opposed to the nominal) yield of the pipe.
- Skill of the operator in handling the bending machine and the mandrel.
- The origin of the pipe (pipe mill, plate mill, etc.) and the quality of the pipe.
- The type of pipe. Spiral seam pipe will normally accept only 75% of the recommended bend.
- The type of die and/or bending set being used (e.g., polyurethane lining or special radius dies).

An unbent end (tangent) is produced at each end of the pipe where the pipe contacts the stiff-back. Normal tangents are as follows: PB 6-20, 5 feet; PB 16-30 and PB 22-36, 6 feet.

See Sheet F14 for bending set recommendations.



PIPE BENDING DATA (METRIC)

3F-1

CRC-EVANS VERTICAL HYDRAULIC BENDING MACHINES 6" - 36" PIPE BENDING DATA - ALL DIMENSIONS IN METERS

PIPE O.D. mm/in	MAXIMUM WALL THICKNESS BY GRADE					RECOMMENDED BEND		
	X52	X60	X65	X70	X80	RATIO Radius: O.D.	Radius Meters	Max degree per 12 meter joint
PB 6 - 20								
168 / 06	**	**	**	30.73*	26.98	23.6	3.96	132.20
219 / 08	**	50.80	30.73*	30.10*	26.34	20.9	4.57	114.60
273 / 10	50.80*	30.73*	30.10*	29.59*	25.40	22.3	6.10	85.80
324 / 12	48.01*	28.58	25.40	25.40	22.23	23.5	7.62	69.00
356 / 14	40.01*	23.83	22.23	20.362	17.48	29.1	10.36	51.00
406 / 16	31.75	19.05	17.48	15.88	14.28	28.5	11.58	45.30
457 / 18	23.83	14.27	12.70	11.91	10.31	34.7	15.85	33.00
508 / 20	15.88	10.31	9.53	7.92	6.93	41.4	21.03	24.90
PB 16 - 30								
406 / 16	57.15*	45.47*	40.26*	36.32*	31.75	28.5	11.58	40.80
457 / 18	47.63*	38.10*	33.32*	30.18	26.42	34.7	15.85	29.70
508 / 20	37.59*	28.58	26.97	23.83	20.63	38.4	19.51	24.40
559 / 22	26.97	22.23	20.62	19.05	16.66	39.3	21.95	21.60
620 / 24	17.48	15.88	14.27	12.70	11.13	38.0	23.16	20.25
660 / 26	15.88	12.70	11.91	11.13	9.86	37.9	24.99	18.90
711 / 28	12.70	11.13	10.31	9.53	8.33	37.7	26.82	17.60
762 / 30	11.13	9.53	8.74	7.92	6.93	38.4	29.26	16.20
PB 22 - 36								
559 / 22	43.43*	33.32	31.75	3.18	25.40	23.9	21.95	21.60
610 / 24	38.10	31.75	30.18	26.97	23.82	38.0	23.16	20.30
660 / 26	33.66*	26.92*	25.40	23.83	20.63	37.9	24.99	18.90
711 / 28	27.94*	25.40	22.23	19.05	17.48	37.7	26.82	17.60
762 / 30	22.23	19.05	17.42	15.88	14.28	38.0	28.96	16.20
813 / 32	20.62	17.48	15.88	14.27	12.70	36.7	29.87	15.60
864 / 34	19.05	14.27	12.70	11.91	10.41	36.7	31.70	14.80
914 / 36	19.05	12.70	11.91	11.13	9.53	38.3	35.05	13.50

* Non-standard size per API-5L, ** No Limit

These figures are recommended only and do not constitute a warranty.

All bends shown include the use of CRC-EVANS Bending Mandrels. The figures given are "average". They will vary due to:

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