

# **Straight Seam Welded Pipe Mill**

## **I. Introduction**

The plate in certain width after slitting line and stripping is unfolded and leveled. Then, they are sent into forming machine. Used the roller, the plate is bent into pipe state. The edge of the steel plate is melted by making use of the proximity effect and skin effect of high frequency current. Then, the plate is extruded and welded into the pipe by extruding roller. Straight seam welded pipe mill also is called ERW mill.

The forming styles of straight seam welded pipe can be divided into roll forming, cage forming, flexible forming (or F F X forming), full auto flexible forming (F F X forming) . The mill developed by our company adopts roll forming when having small diameter ( $\Phi \leq 114$ ) . The cage forming is adopted when having small DC thin wall ( $\Phi \leq 165, \delta \leq 6$ ) . Flexible forming is adopted when having middle diameter ( $\Phi \leq 340$ ) . Full auto flexible forming is adopted when having large diameter ( $\Phi \leq 711$ ) .

According to the products functions, straight seam mills are divided into API model, national standard model.

API model mainly produces high level steel pipes, such as delivery pipe of petroleum and natural gas, oil well casing and so on. The requirements for material and quality are very strict. The mill is equipped with section equipment and technological equipment, such as IF annealing air-cooled roll table, ultrasonic inspection, and high pressure hydraulic pressure testing machine, and drifter and so on.

National standard model mainly produces the steel pipe, such as water-gas pipe, structure pipe and so on.

## **II. Typical projects**

1. Tianjin United Steel Pipe Company( $\Phi 140 \sim 355$  straight seam welded pipe machine)

The mill is designed and manufactured by our company with advanced technology for Tianjin United Steel Pipe Company. The mill can produce high

standard API-5L and API-5CL steel pipe adopting full auto flexible forming (F.F.X forming), equipping with completed testing equipment and completed equipment in precise area. The production efficiency of mill is high with good quality and easy operation advantages.

## 2. Korea Tongyong Steel Pipe Company ( $\Phi$ 219- $\Phi$ 508 straight seam welded pipe machine)

The mill is designed and manufactured by our company with advanced technology for Korea Tongyong Steel Pipe Company. The mill can produce high standard API-5L and API-5CL steel pipe adopting full auto flexible forming (F.F.X forming), equipping with completed testing equipment and completed equipment in precise area. The production efficiency of mill is high with good quality and easy operation advantages. Also, the mill can produce specified square pipe.

### III. Production process

Loading coil – uncoiling - leveling – cutting and coil welding – accumulator and material storage – forming – high frequency welding – IF annealing - air cooling - water cooling – sizing - flying cut off - flat head chamfering – hydraulic tester - ultrasonic inspection – spraying – products connection

### IV. Available types of straight seam welded pipe mill

No	Model	Specification (mm)	Speed(m/min)	Thickness(mm)	Coil weight(ton)	Capacity(kw)	Area(M <sup>2</sup> )
1	ZFJZ-100	$\Phi$ 25~ $\Phi$ 114	30~60	3~8	15	~1100	2x 18x200
2	ZFJZ-160	$\Phi$ 60~ $\Phi$ 165	30~55	3~10	10	~1600	2x 21x260
3	ZFJZ-200	$\Phi$ 114~ $\Phi$ 219	20~45	4~14	15	~1800	2x 21x260
4	ZFJZ-300	$\Phi$ 165~ $\Phi$ 325	10~40	5~16	20	~3000	2x 24x300
5	ZFJZ-350	$\Phi$ 165~ $\Phi$ 355	8~35	5~16	20	~3500	2x 24x300
6	ZFJZ-400	$\Phi$ 219~ $\Phi$ 406	8~30	5~20	30	~5000	2x24x400

7	ZFJZ -500	Φ219~Φ508	8~25	5~20	30	~7000	2x30x400
8	ZFJZ -600	Φ219~Φ610	8~20	5~22	40	~9000	2x30x400
9	ZFJZ-7 00	Φ273~Φ711	8~20	5~25	40	~10000	2x30x400

#### V. Main projects and clients on straight seam welded pipe mill

No.	Equipment	Clients	Remark
1	Φ114 straight seam welded pipe mill	Lin enterprises in Indonesia	Export project
2	Φ114 straight seam welded pipe mill(straight edge cage forming)	Tangshan Jianlong Jianzhou steel Co., Ltd	
3	Φ114 straight seam welded pipe mill	Kungang in Kuming	X60
4	Φ168 straight seam welded pipe mill(straight edge cage forming)	Thailand Puyi industrial company	Export project
5	Φ168×10 straight seam welded pipe mill(F.F forming)	Wuxi Yulong precision steel pipe Co., Ltd	API-5L
6	Φ180 straight seam welded pipe mill(straight edge cage forming)	Guangdong Shunanda peaceful container Co., Ltd	
7	Φ140~Φ340 straight seam welded pipe mill(F.F forming)	Tianjin Shenzhoutong steel pipe company	J55 X65
8	Φ140~Φ355 straight seam welded pipe mill	Tianjin Lianzong steel pipe Co., Ltd	API-5C T
9	Φ426 straight seam welded pipe mill(F.F forming)	Haicheng northern steel pipe taint Co., Ltd	J55 X65
10	Φ219×14 thick wall straight seam welded pipe mill	Tianjin Youfa steel pipe Co., Ltd	API
11	508(400×400)straight seam welded pipe mill	Korea Tongyong steel pipe Co., Ltd	Export project
12	Φ530 straight seam welded pipe machine(F.F.X)	Russia Guotong steel pipe Co., Ltd	Export project
13	Φ711 straight seam welded pipe machine(F.F.X)	Anshan Hongxiang steel pipe Co., Ltd	API-5L