

**RETROFIT**



# Dryer Drum

**...Just dry it**

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## DRYER

### DRYER RANGE

#### LEGENDA:

E = dryer drum

160, etc... = refer to the diameter of dryer drum

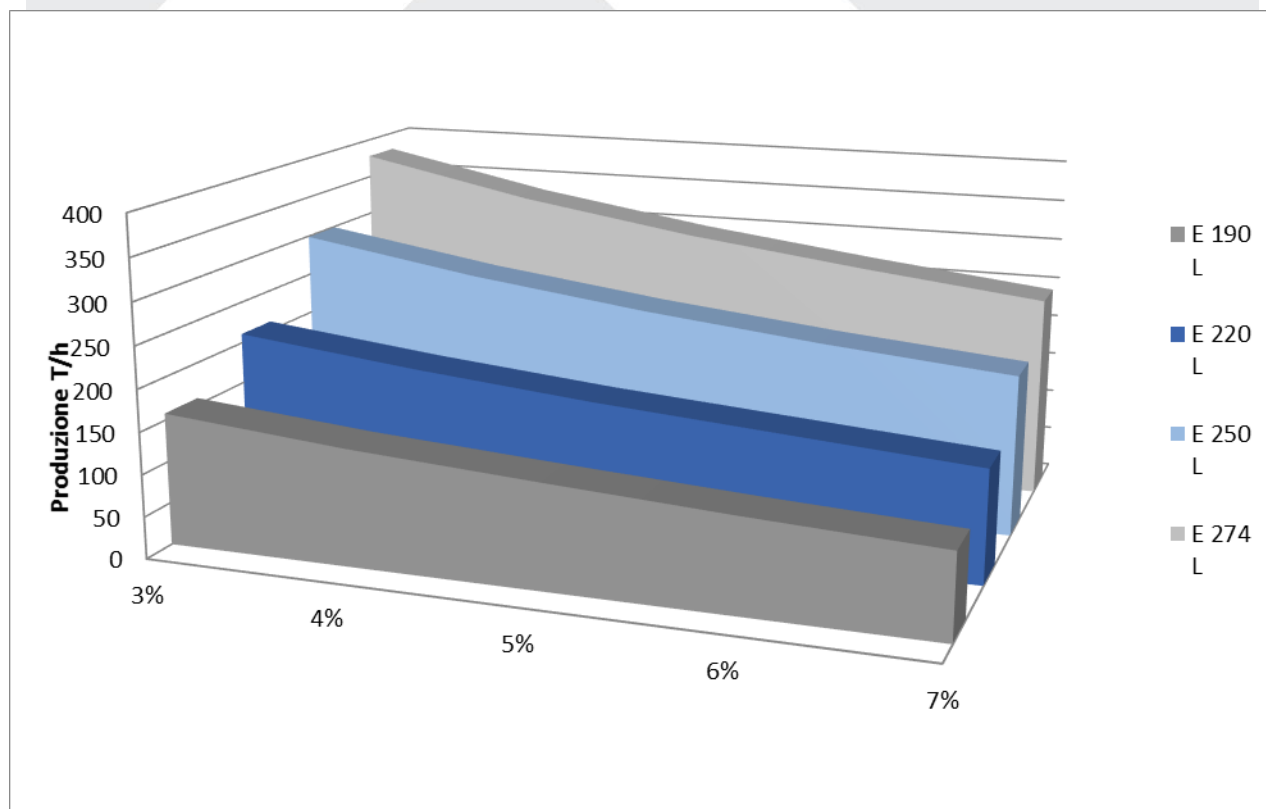
L = standard length / LB = burner downsized / XL = extra length, due to some special requirement or needs

#### DRYER DRUM RANGE:

E160LB, E160L, E190LB, E190L, E220L, E220XL, E250L, E250XL, E274L, E274XLP, E300L, E330L.

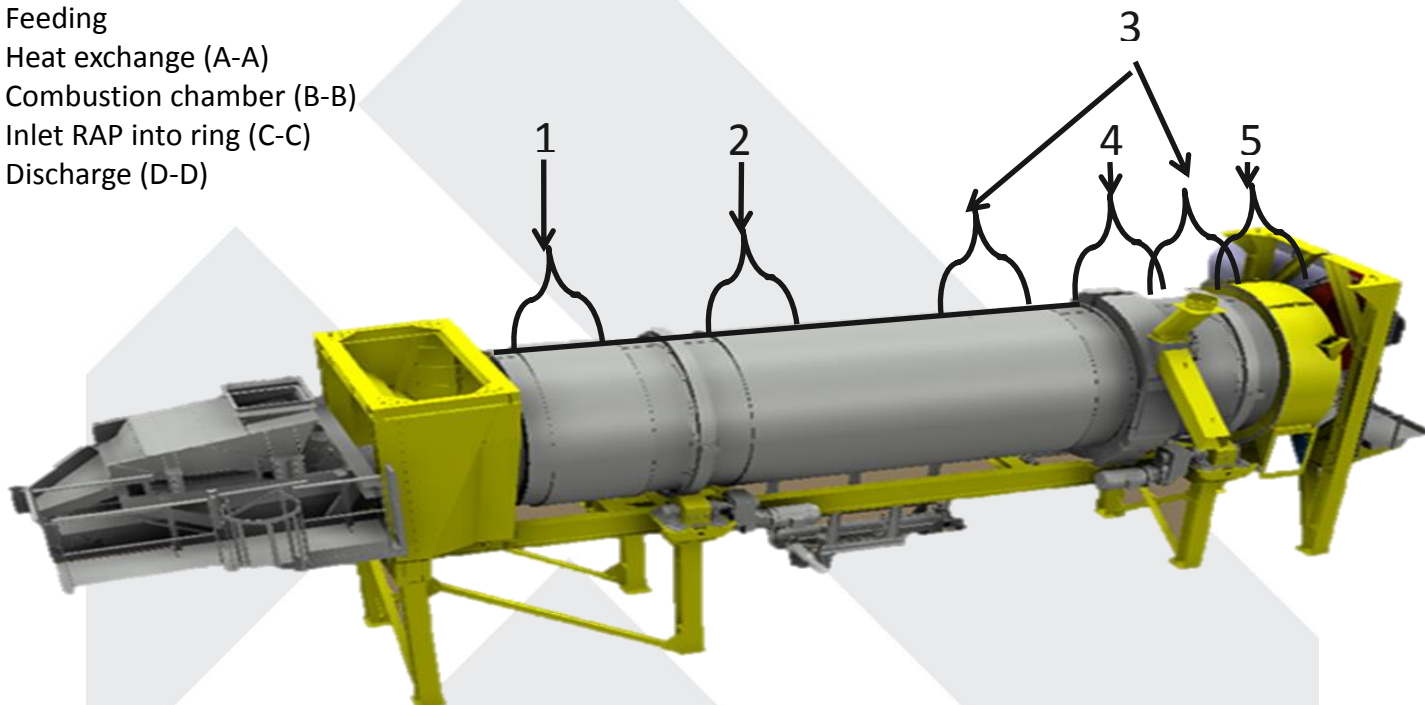
### PRODUCTION FEATURES

The hourly production of the MARINI dryers is indicated below according to the temperature and moisture of the aggregates.



*Hourly production of the Marini dryer drum range*

- 1) Feeding
- 2) Heat exchange (A-A)
- 3) Combustion chamber (B-B)
- 4) Inlet RAP into ring (C-C)
- 5) Discharge (D-D)



## FRAME

All MARINI dryer frames have the following constructive features:

- They are made of electro-welded steel profiles.
- Ground support feet bolted to the frame.
- 4 support rollers for the drum on roller bearings.
- 2 vertical support rollers on roller bearings.
- Transmission of the rotation by means of an electric motor and an oil bath gearbox, both coupled with each support roller.
- Lubrication by grease using easily accessible grouped grease nipples.

## BRUM

The drums of the MARINI dryers have the following constructive features:

- They are made of electro-welded steel sheets with internal fans which direct the incoming aggregates to the special lifting paddles having the purpose of discharging the aggregates as rain in order to promote the counterflow thermal exchange with the hot air from the burner.
- In the burner zone, special heat recovery paddles create a gap between the flame and the drum thus reducing the outward heat dissipation.
- They have 2 rolling rings guided by special supports.
- Smoke box connecting the rotary part and the suction line.
- Labyrinth device between the rotary and the fixed part.
- Burner support pediment with discharge chute and thermometer for the temperature detection of dried aggregates.

## ELECTRIC SYSTEM

The electrical systems conform with all the relevant standards and have the following constructive features:

- Pre-wired electrical system on board the machine, with cable ducts and junction boxes.
- Temperature probe in the discharge chute of the dryer.
- Connection cables to the cabin.
- Protection, control and command components in the cabin.

## RATED PRODUCTION

Rated production values of the MARINI range in t/h according to temperature and  $\Delta T$

DRYER	Moisture 3%	Moisture 4%	Moisture 5%	Moisture 6%	Moisture 7%
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E 190 L (9 MW)					
140 $\Delta^{\circ}\text{C}$	142	125	112	101	92
160 $\Delta^{\circ}\text{C}$	130	116	105	95	87
180 $\Delta^{\circ}\text{C}$	120	108	98	89	82
200 $\Delta^{\circ}\text{C}$	112	101	92	85	78
220 $\Delta^{\circ}\text{C}$	104	95	87	80	75
E 220 L (13.4 MW)					
140 $\Delta^{\circ}\text{C}$	211	187	167	151	135
160 $\Delta^{\circ}\text{C}$	193	173	156	141	129
180 $\Delta^{\circ}\text{C}$	179	161	146	134	123
200 $\Delta^{\circ}\text{C}$	166	150	137	126	116
220 $\Delta^{\circ}\text{C}$	155	141	130	120	111
E 250 L (19 MW)					
140 $\Delta^{\circ}\text{C}$	299	264	236	213	194
160 $\Delta^{\circ}\text{C}$	274	245	220	200	183
180 $\Delta^{\circ}\text{C}$	253	228	207	189	174
200 $\Delta^{\circ}\text{C}$	235	213	195	179	165
220 $\Delta^{\circ}\text{C}$	220	200	184	169	157
E 270 L (24 MW)					
140 $\Delta^{\circ}\text{C}$	378	333	298	270	245
160 $\Delta^{\circ}\text{C}$	346	309	278	253	231
180 $\Delta^{\circ}\text{C}$	320	288	261	239	219
200 $\Delta^{\circ}\text{C}$	297	269	246	226	208
220 $\Delta^{\circ}\text{C}$	277	253	232	214	199

*Rated production table of the Marini dryer drum range (values from spreadsheet)*

## STANDARD DIMENSION OF DRYERS AND ELEVATING CONVEYOR BELT

DRYER		E190L	E220L	E250L	E270L
External diameter of drum.	m	1.90	2.20	2.50	2.74
Length of rotary part.	m	8.50	9.00	9.00	9.00
Standard thickness.	mm	8	8	10	10
Extra-standard thickness.	mm	10/12	10/12/15	12/15	12/15
Inclination	°	3° 30'	3° 30'	3° 30'	3° 30'

## POWER AND CONSUMPTION OF INSTALLED BURNERS

BURNER MODEL		56-050	56-070	56-090	63-100	63-134	71-168	71-190	78-240	78-300
	MW/h	5	7	9	10	13.4	16.8	19	24	30
Thick oil consumption	kg/h	431	603	776	862	1155	1448	1637	2069	2586
Gasoil consumption	kg/h	416	583	750	832	1117	1400	1583	2000	2500
Nat. gas consumption	Nm3/h	501	702	903	1002	1344	1685	1905	2407	3009
LPG consumption	kg/h	391	547	703	782	1047	1313	1484	1875	2343

## REQUIRED STANDARD POWER

The following table shows the power required by the various dryers.

DRYER		E190L	E220L	E250L	E270L
Feed belt	kW	5.5	5.5	7.5	7.5
Drum rotation	kW	4 x 11	4 x 18.5	4 x 22	4 x 30
Burner fan	kW	30	55	75	75
High pressure pump	kW	4	7.5	7.5	7.5
Feed pump	kW	1.5	2.2	2.2	2.2
Diathermic oil circ. pump for D.O. exchanger	kW	2.2	2.2	2.2	2.2

## DRYER/BURNER COMBINATION

The following table shows the possible combinations of MARINI dryers and burner sizes.

	9 MW	10 MW	13.4 MW	16.8 MW	19 MW	24 MW
E 190 L	x	x				
E 220 L			x			
E 250 L				x	x	
E 270 L						x

PLEASE NOTE:  
YOU CAN FIND ALL DATA CONCERNING THE CONSUMPTION OF BURNERS IN THE SPECIFIC FILE



## RECYCLING RING

Introduction of RAP through a recycling ring in an intermediate area of the dryer.

This device is very environmental friendly : no introduction of vapour in the mixing tower and no reduction of the production at the tower. Special drying and pre-mixing paddles for RAP.

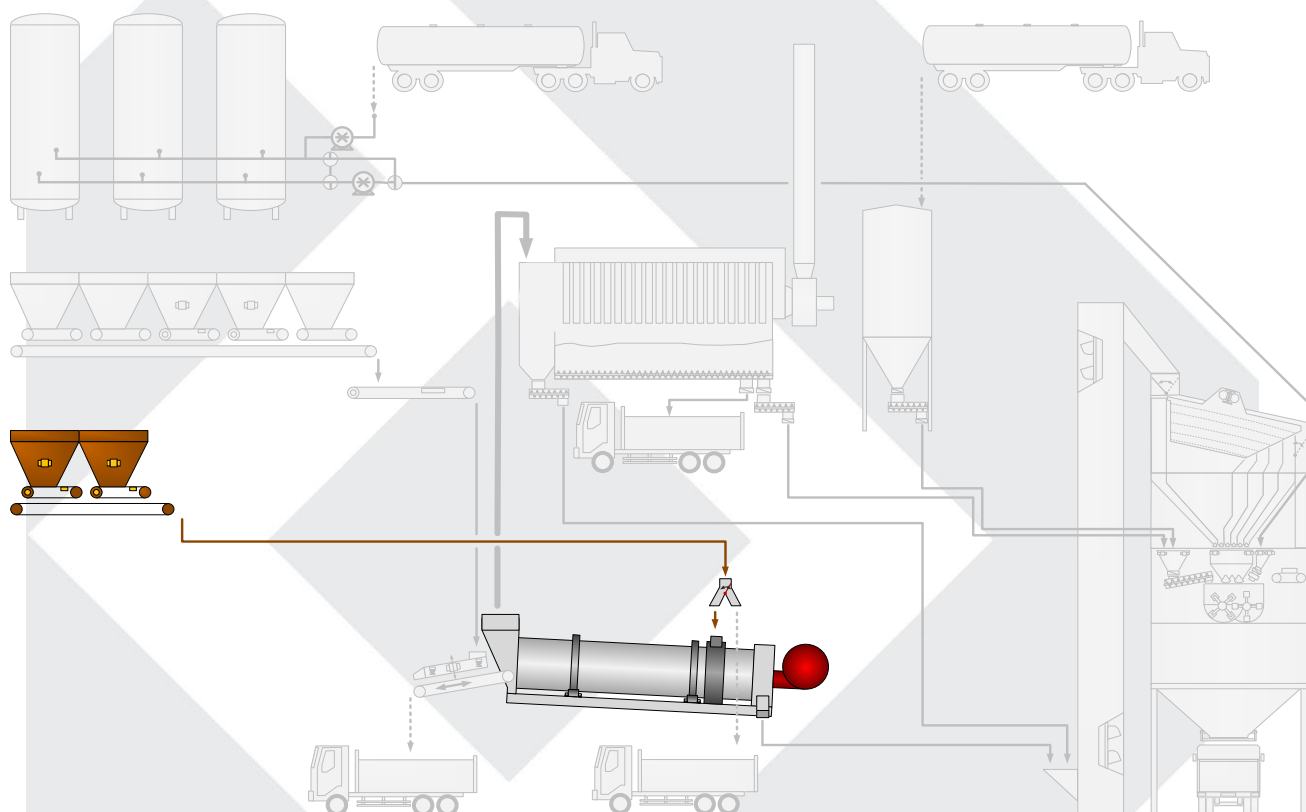
The maximum quantity of material to be recycled is equal to 35% of total production; this percentage may change depending on the nature and on the moisture of the material to be recycled. In particular, the reclaimed material has to be pre-crushed and with max. 35% of material passing the 5 mm sieve.

The recycling ring is designed to minimize the issues related to the introduction of material into the dryer.

The main features of the MARINI recycling rings are indicated below:

- Casing with feed hopper.
- External unloading by-pass.
- Recycling paddles for mixing with virgin aggregates.
- Thermal exchange in the heat recovery zone without direct contact between the recycled material and the flame.
- Anti-clogging discharge chute to the hot elevator, use of direct discharge hopper (except the screen).
- RAP feeders.
- Optional roughing screen.
- Optional granulating mill.
- Feed belt.
- Optical thermometer at dryer discharge.
- Optional weighing station on the belt and aggregates/recycled material ratio control.
- Heating and direct discharge wall insulation.





## BUDGET TABLE OVERVIEW

COMPONENT	DESCRIPTION	MARINI NET PRICE [indicative]	INDICATIVE INSTALLATIONS DAYS [minimum]
DRYER (E190L base)	ONLY STANDARD ROTATING PART E190 WITHOUT RECYCLING RING.	€ 54.500	12 days
	"BASIC" E190 DRYER COMPLETE WITH FRAME, FRONT/REAR WALL, CLOSED RECYCLING RING.	€ 104.500	10 days
	"COMPLETE" E220 DRYER COMPLETE WITH FRAME, FRONT/REAR WALL, OPEN RECYCLING RING, CYLINDER INSULATION	€ 112.500	12 days
DRYER (E220L base)	ONLY STANDARD ROTATING PART E220 WITHOUT RECYCLING RING.	€ 64.500	12 days
	"BASIC" E220 DRYER COMPLETE WITH FRAME, FRONT/REAR WALL, CLOSED RECYCLING RING.	€ 123.500	10 days
	"COMPLETE" E220 DRYER COMPLETE WITH FRAME, FRONT/REAR WALL, OPEN RECYCLING RING, CYLINDER INSULATION	€ 132.000	12 days
DRYER (E250L base)	ONLY STANDARD ROTATING PART E250 WITHOUT RECYCLING RING.	€ 77.000	20 days
	"BASIC" E250 DRYER COMPLETE WITH FRAME, FRONT/REAR WALL, CLOSED RECYCLING RING.	€ 148.500	15 days
	"COMPLETE" E250 DRYER COMPLETE WITH FRAME, FRONT/REAR WALL, OPEN RECYCLING RING, CYLINDER INSULATION	€ 157.500	17 days
DRYER (E270L base)	ONLY STANDARD ROTATING PART E270 WITHOUT RECYCLING RING.	€ 103.000	20 days
	"BASIC" E270 DRYER COMPLETE WITH FRAME, FRONT/REAR WALL, CLOSED RECYCLING RING.	€ 221.500	15 days
	"COMPLETE" E270 DRYER COMPLETE WITH FRAME, FRONT/REAR WALL, OPEN RECYCLING RING, CYLINDER INSULATION	€ 231.500	17 days

**NOTE:** For correct qualification of the best technical solution and final economical proposal of the investment, please contact the area manager and the retrofitting department at the following e-mail address:

[export.dept2@marini.fayat.com](mailto:export.dept2@marini.fayat.com)

**CONDITIONS OF SUPPLY:** DELIVERY EXW ALFONSINE ITALY – WITHOUT INSTALLATION SERVICE

