

Metso

Metso flotation

SkimAir[®] flash flotation unit





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Minimize overgrinding and improve overall mill throughput, mineral recovery and dewatering with the Metso SkimAir flash flotation unit. SkimAir is designed for flotation in the grinding circuit to process cyclone underflow where heavy minerals concentrate. The SkimAir unit improves metallurgical performance while providing a more stable feed to the conventional flotation circuit and improving dewatering with coarser final concentrate.

Benefits:

- Minimized overgrinding
- Improved overall recovery
- Increased mill throughput
- Improved dewatering
- Reduced energy consumption in the main flotation circuit

Recover valuable minerals from the grinding circuit

The SkimAir is suitable for all kinds of grinding circuits, and is applicable for heavy and soft minerals, such as lead, zinc, nickel, silver, gold, copper and platinum bearing minerals.

The unit recovers a considerable quantity of valuable minerals from the grinding circuit, resulting in a more stable feed to the conventional flotation circuit, which in turn leads to extra capacity and improved control. In addition, grinding mill throughput can be increased as a consequence of the controlled density of the SkimAir tailings. The dewatering performance is improved, as the final concentrate is coarser.

Operating principle

The SkimAir is implemented within the grinding circuit to treat the underflow stream of the hydrocyclones. The unit floats the valuable liberated particles from the recirculating load of the grinding circuit. The concentrate produced in the SkimAir can be final, or directed to the dedicated process stage. The tailings are typically directed back to the grinding mill.

Patented dual outlet technology

The patented SkimAir dual-outlet technology allows optimal operation of the grinding circuit with maximum throughput and minimal influence on the water balance. The dual-outlet enables the dilution water added to the SkimAir to be recovered from the cell and directed back to the mill discharge. As a result of this, the solids content of the mill feed can be maintained at a desired level.

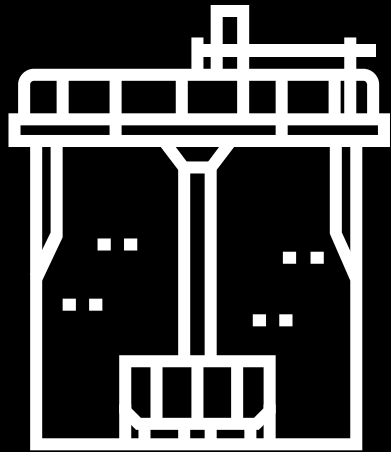
Delivery scope

For smooth integration with your process, Metso provides basic engineering and design services as part of the delivery scope. The commissioning and start-up advisory service helps to commission and start the unit efficiently without delays while ensuring quality and performance of the equipment. The service includes operation training to ensure continued optimal and reliable operation.



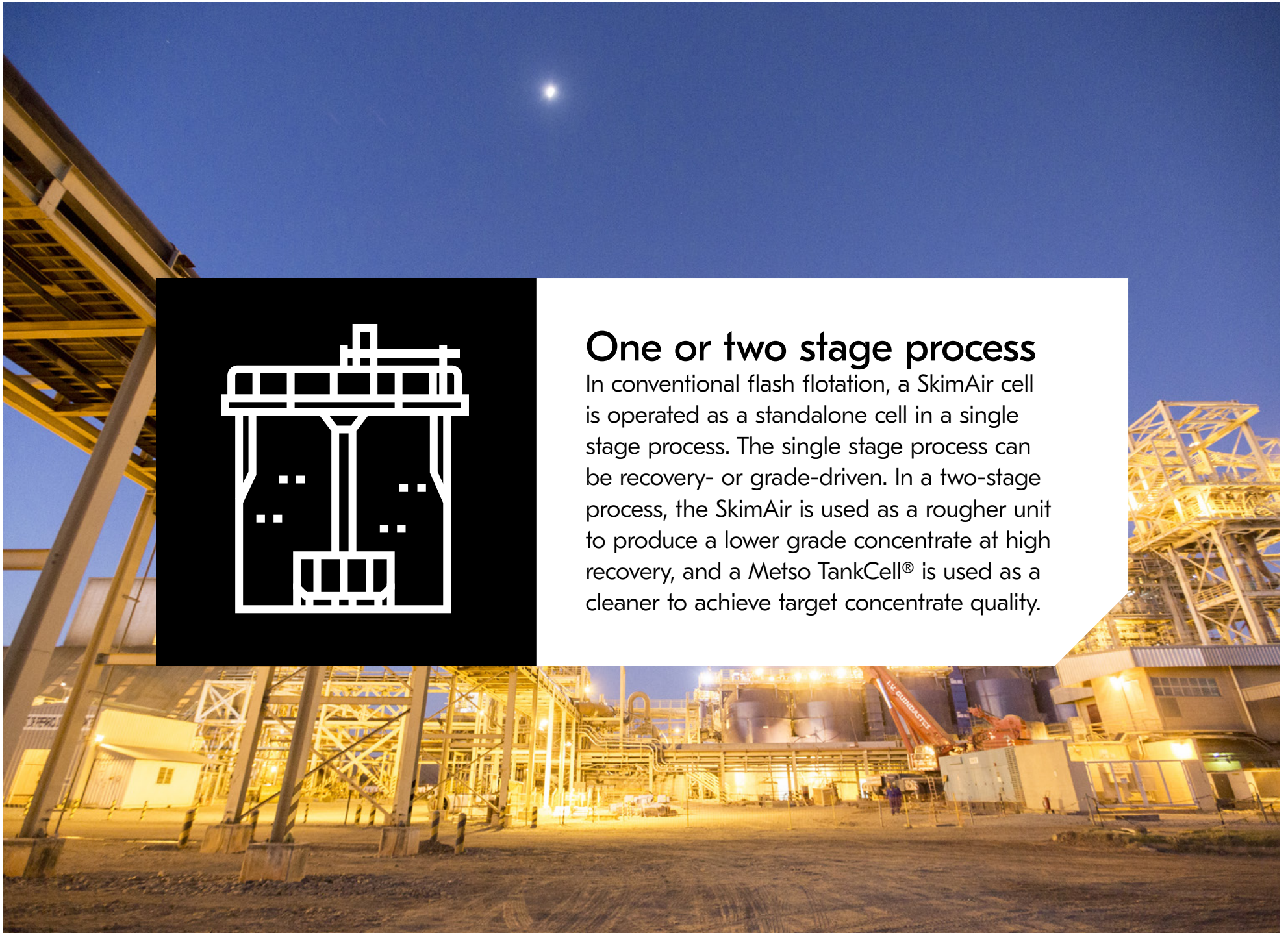
The product delivery typically includes:

- Tank, launder and froth crowder
- Metso mixing mechanism
- Forced-air feed and control
- Process control valves and instruments
- Junction box for instrument connections
- Local control panel
- Feed distribution box
- Blower
- Basic engineering and design Service
- Commissioning and start-up advisory Service

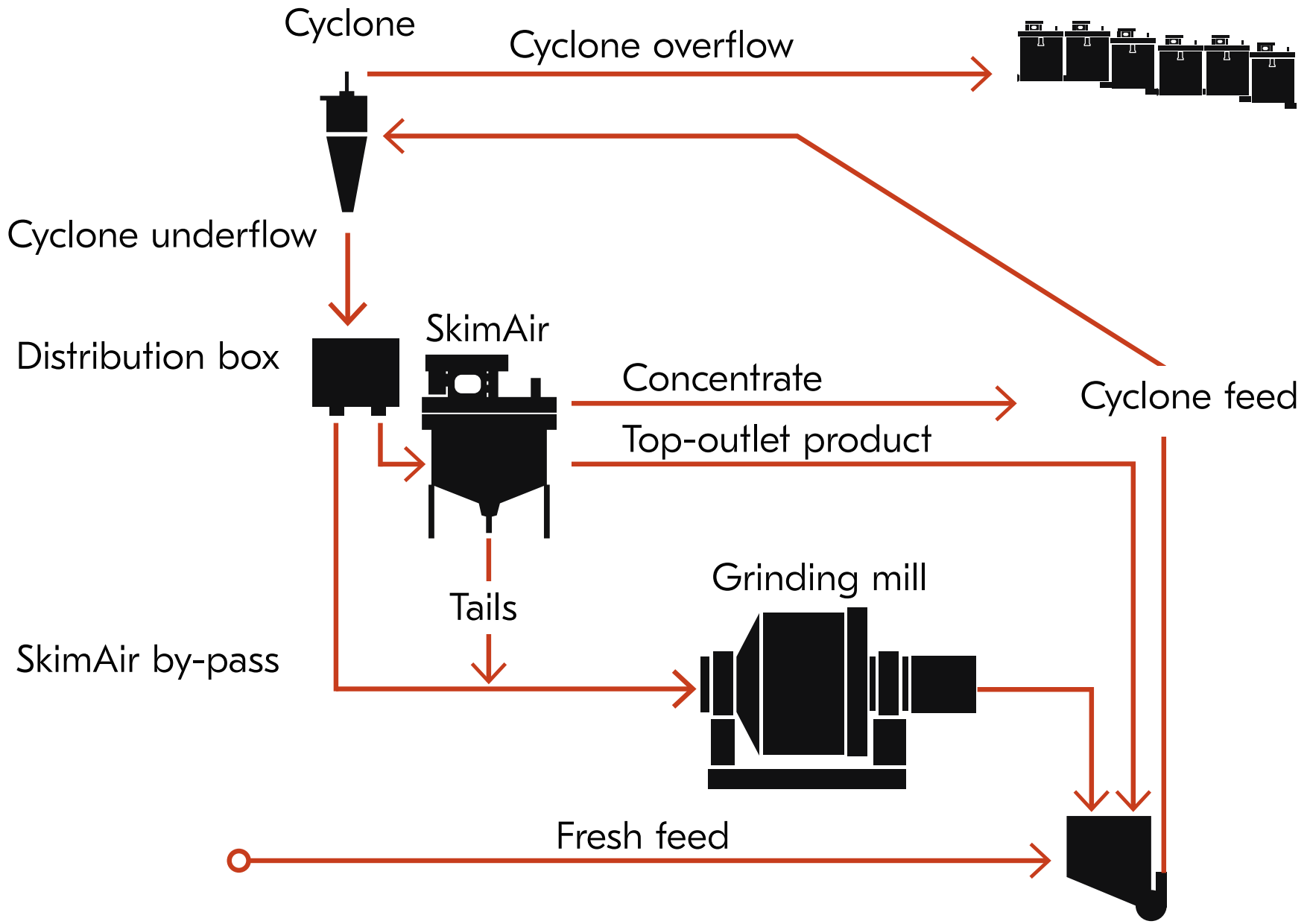


One or two stage process

In conventional flash flotation, a SkimAir cell is operated as a standalone cell in a single stage process. The single stage process can be recovery- or grade-driven. In a two-stage process, the SkimAir is used as a rougher unit to produce a lower grade concentrate at high recovery, and a Metso TankCell® is used as a cleaner to achieve target concentrate quality.



Conventional flotation circuit





Technical specifications*

Product	Effective volume		Design feed rate	Drive	Installed power		Air feed per shaft		Air pressure per cel		
	Name**	m ³			ft ³	tph	Type	kW	hp	Nm ³ /min	ACFM
SkimAir 80		2.4	85	80	V-belt/Gear	11	15	0.1-1	3.5-35	14	2.1
SkimAir 240		6.3	220	240	V-belt/Gear	22	30	0.2-2	7-71	26	3.8
SkimAir 500		25	900	500	V-belt/Gear	55	75	0.4-4	14-141	40	5.8
SkimAir 1200		53	1900	1200	V-belt/Gear	132	200	1-10	35-350	46	6.7
SkimAir 1800		85	3000	1800	Gear	150	200	1.5-15	53-530	51	7.4

* Values are subject to variations. Applicable up to 1.8 t/m³ pulp s.g. and normal site conditions (1000 m, -5 to +40C).

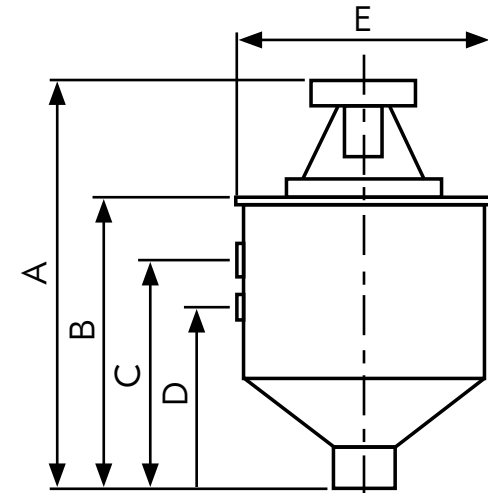
** SkimAir naming based on feed rate (tph)

Main dimensions*

Product	A	B	C	D	E	Weight
Name**	mm	mm	mm	mm	mm	kg
SkimAir 80	3,800	2,800	1,800	1,600	2,100	
SkimAir 240	4,600	3,300	2,200	2,200	2,700	
SkimAir 500	7,200	5,300	3,900	3,300	4,200	
SkimAir 1200	8,300	5,700	3,800	2,900	5,200	
SkimAir 1800	9,300	6,700	4,600	3,700	6,000	

* Values are subject to variations. Applicable up to 1.8 t/m³ pulp s.g. and normal site conditions (1000 m, -5 to +40C).

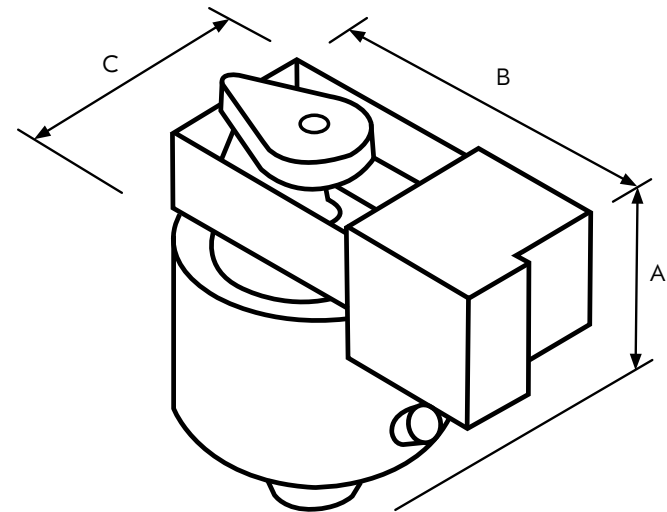
** SkimAir naming based on feed rate (tph)



Typical main dimensions*

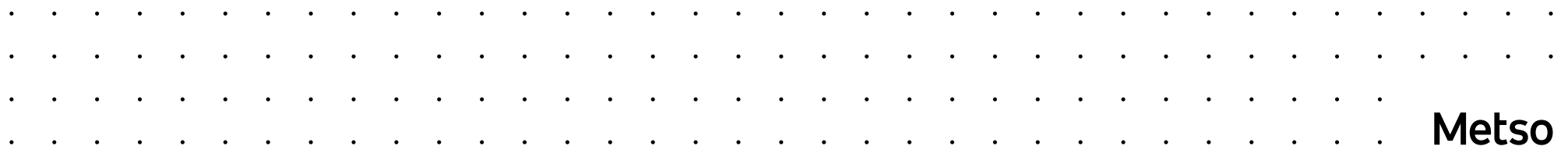
Product	A	B	C	Dead mass
Name**	mm	mm	mm	kg
SkimAir 80	4,500	4,200	2,400	3,000
SkimAir 240	5,200	4,600	2,800	6,000
SkimAir 500	7,800	7,400	4,200	17,000
SkimAir 1200	9,500	9,100	5,300	34,000
SkimAir 1800	10,000	10,100	5,800	39,000

* Values are subject to variations.



Metso is a frontrunner in sustainable technologies, end-to-end solutions and services for the aggregates, minerals processing and metals refining industries globally. We improve our customers' energy and water efficiency, increase their productivity, and reduce environmental risks with our product and service expertise. We are the **partner for positive change**.

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