

# Forming Rack



## Semi-dry machining

Using the Dual Forming Rack together with the Precision Roll Forming Machine PFM-610E supporting semi-dry operation, clean roll forming can be realized

## Long tool life

Even with semi-dry machining, tool life exceeds that of conventional racks using oil coolant

## Energy saving

The oil-less design of the PFM-610E saves up to 70% in energy consumption

Spline & thread rolling

# Semi-dry Forming Rack & Forming machine



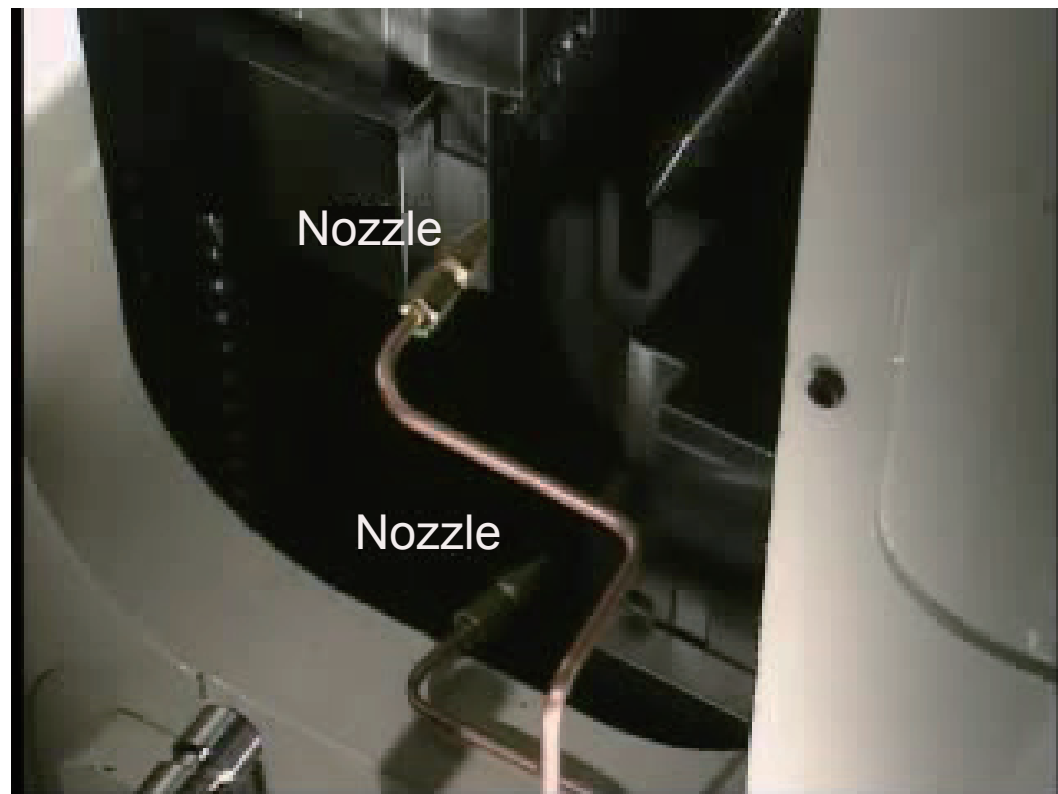
## ● Dual Forming Rack

- Tool surface treated to provide lubrication characteristics
- Long tool life, both with conventional oil coolant and semi-dry machining

## ● Precision Roll Forming Machine PFM610E

Oil-less design reduces energy consumption by 70%.  
Integrated weldment results in compact machine dimensions.

# Roll forming machine for semi-dry machining



Nozzle direction aligned with lead of rack



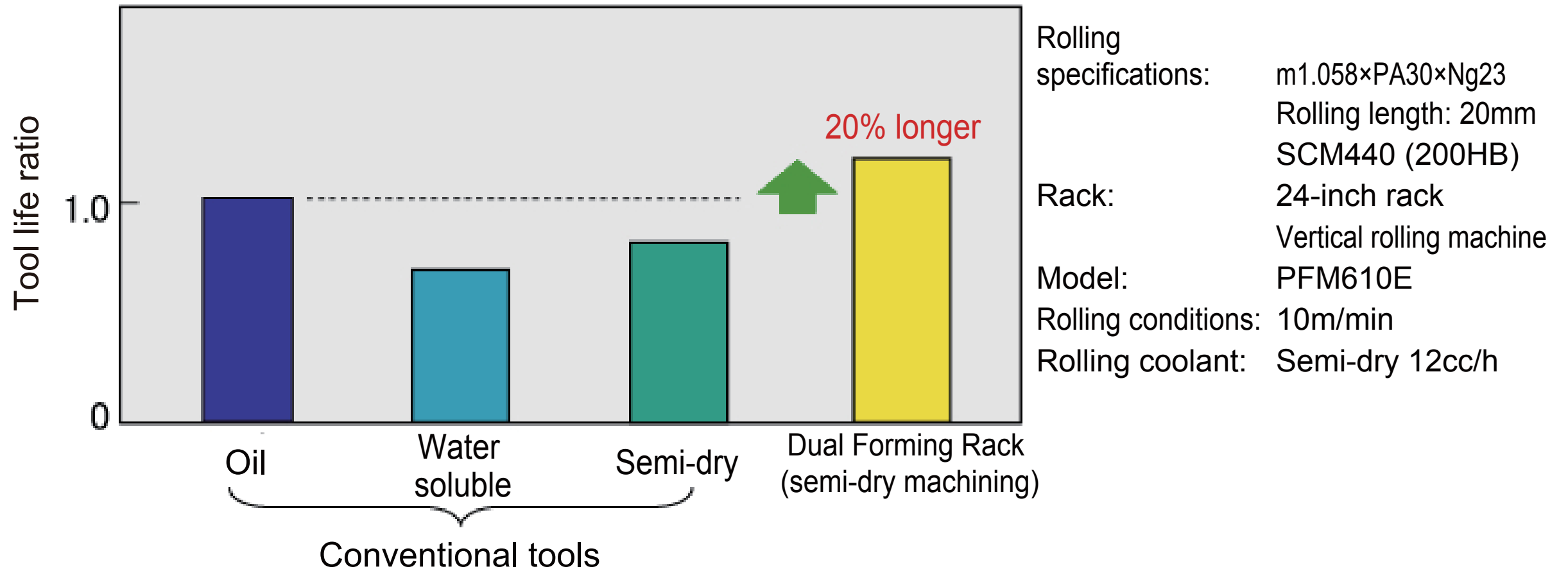
Combines gear surface lubrication  
and small burr removal



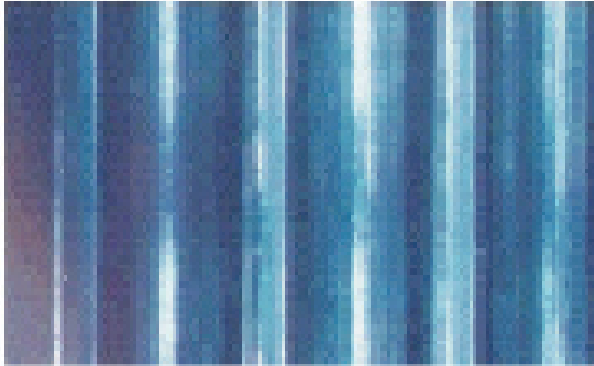
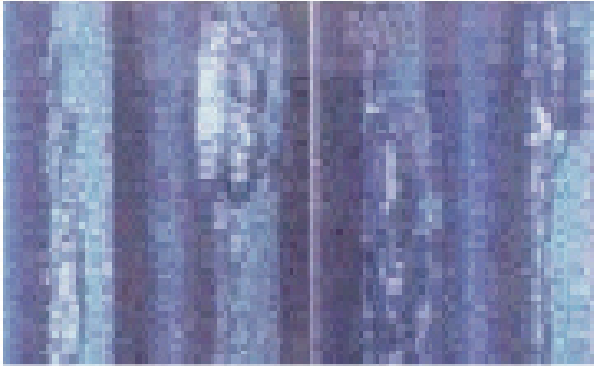

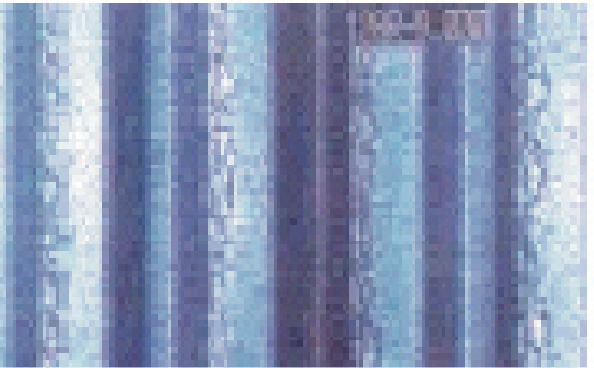
Semi-dry machining achieved

# Semi-dry machining (spline rolling)

Even with semi-dry machining, tool life is better than with conventional (oil-based) racks



# Semi-dry machining (spline rolling)

	Wear comparison after 90,000 operations (equivalent)	
	Finishing tooth edge	Sand blasted tooth edge
Conventional rack (oil-based machining)		
Dual Forming Rack (semi-dry machining)		

Rolling specifications: m1.058×PA30×Ng23  
Rolling length 20mm  
SCM440 (200HB)

Rack type: 24-inch rack  
Vertical rolling machine

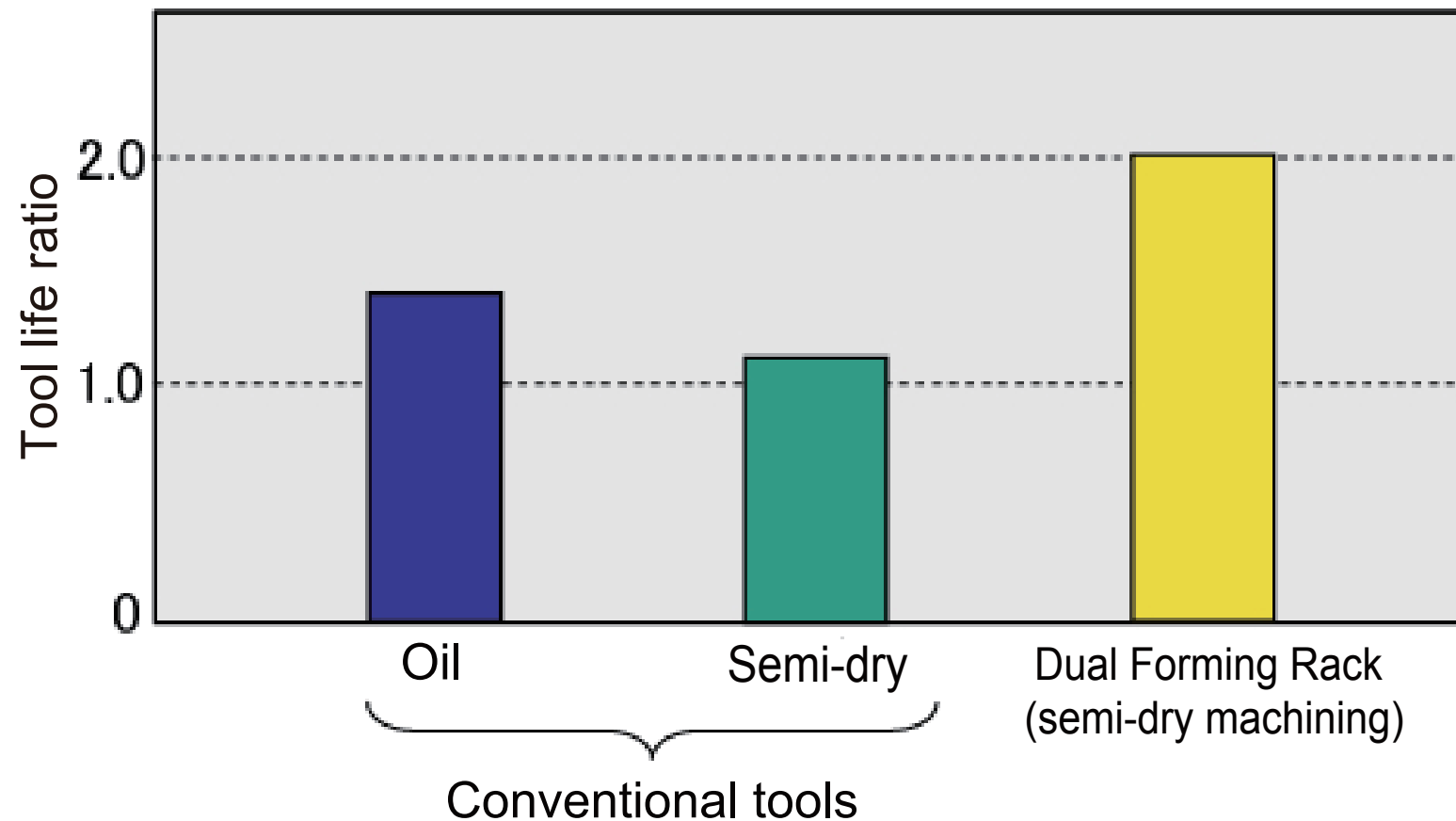
Model: PFM610E

Rolling conditions: 10m/min

Rolling coolant: Semi-dry 12cc/h

# Semi-dry machining (screw)

Semi-dry machining allows for twice the tool life of conventional racks using coolant (oil-based)



Thread parameters:

M22 x P1.5 2 grade  
Screw length 20mm  
SCM440 (200HB)

Rack type:

13-inch rack  
Vertical rolling machine

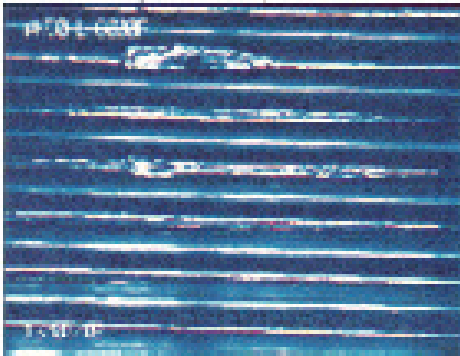
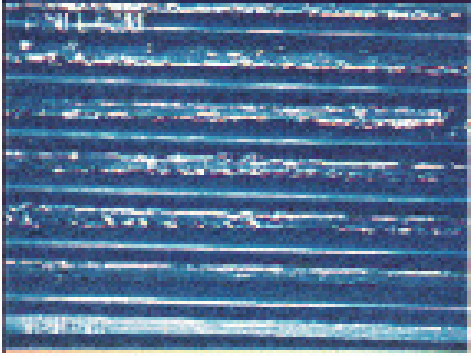
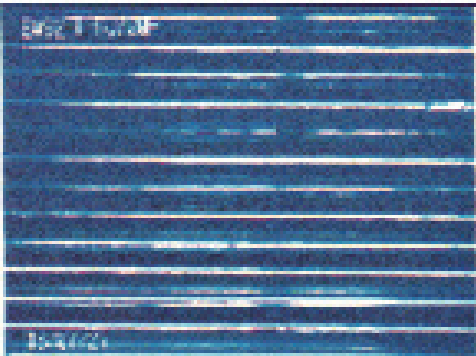
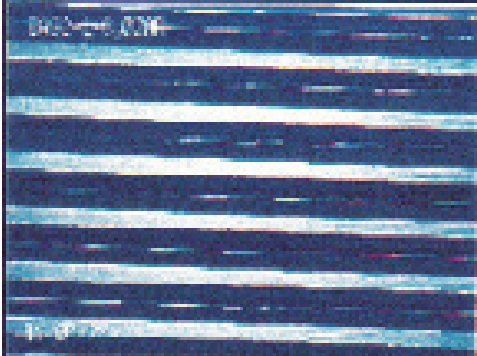
Model:

PFM610E

Rolling conditions: 10m/mm

Rolling coolant: Semi-dry  
12cc/h

# Semi-dry machining (screw)

	Wear comparison after 50,000 operations (equivalent)	
	Finishing tooth edge	Roughing tooth edge
Conventional rack (oil-based machining)		
Dual Forming Rack (semi-dry machining)		

Screw parameters: M22 x P1.5 2 grade  
Screw length 20mm  
SCM440 (200HB)

Rack type: 13-inch rack  
Vertical rolling machine

Model: PFM610E

Rolling conditions: 10m/mm

Rolling coolant: Semi-dry  
12cc/h