

# FINE MATERIAL WASHERS

EIW Fine Material Washers have three related functions: washing, dewatering and classifying sand and hard ore nominally 3/8" or 10 mm and finer.

Washing is the primary function and is accomplished by the continuous rotation of the conveyor shaft and the velocity of the overflowing wastewater acting on the feed material. The rotating shaft causes the feed material to roll and tumble, which in turn provides particle-on-particle attrition. This action allows deleterious coatings to be removed from the sand product and discharged with the overflowing waste water.

Dewatering is the secondary function and is achieved by conveying the product up an inclined tub to allow the free water to drain from the material. This is accomplished with the use of a close-clearance curved plate on one side of the conveyor shaft and a drainage trough on the other side. Water can drain from the product as the spiraled shaft augers material up the inclined curved plate.

Classification is the tertiary function and is achieved by adjusting the volume of water over the weirs. For maximum material retention, the washer's three adjustable weirs are set level to provide a low overflow velocity. For coarser mesh hydraulic splits, the adjustable weirs are offset to provide a higher overflow velocity.



## Design Features

Eagle's designed and built heavy-duty gear reducer	Helical spiral segments with continuous submerged arc weld
Extra-thick, one-piece shaft tubing with replaceable white iron wear shoes as standard and optional urethane wear shoes available	Close-clearance curved plate runs the entire length of the shaft for improved material flow
Extra-wide side flares for maximum product retention	Adjustable weirs for out-of-level conditions
Spherical-roller rear grease bearings	Washer tub is fabricated with thick gauge steel
Feed box has internal and external baffles to deaden feed velocities	Rising current manifold

## Optional Features

Discharge Chute | Overflow Flume  
 Safety Covers | Washer Supports  
 Pillow Block Rear Bearing(s)

# FINE MATERIAL WASHERS

## Single Shaft - Fine Material Washers

Size (Dia. x Length)	Maximum Capacity	Electric Motor	Shaft (RPM)	Machine Wt. Empty	Machine Wt. Operating	Hydraulic Mesh Split		
						100 Mesh	150 Mesh	200 Mesh
20" x 22' (508 mm x 6.7 m)	30 STPH (27.2 MTPH)	5 HP (4 kW)	38	5,500 lb (2,494.7 kg)	16,850 lb (7,643.0 kg)	435 USGPM (98.7 m³/hour)	190 USGPM (43.1 m³/hour)	110 USGPM (24.9 m³/hour)
24" x 22' (609 mm x 6.7 m)	50 STPH (45.3 MTPH)	7.5 HP (6 kW)	32	6,400 lb (2,902.9 kg)	17,850 lb (8,096.6 kg)	505 USGPM (114.6 m³/hour)	225 USGPM (51.1 m³/hour)	130 USGPM (29.5 m³/hour)
30" x 25' (762 mm x 7.6 m)	75 STPH (68.0 MTPH)	15 HP (11 kW)	26	8,600 lb (3,900.8 kg)	24,900 lb (11,294.4 kg)	595 USGPM (135.1 m³/hour)	265 USGPM (60.1 m³/hour)	150 USGPM (34.0 m³/hour)
36" x 25' (914 mm x 7.6 m)	100 STPH (90.7 MTPH)	15 HP (11 kW)	21	10,250 lb (4,649.3 kg)	29,800 lb (13,517.0 kg)	720 USGPM (163.53 m³/hour)	320 USGPM (72.6 m³/hour)	180 USGPM (40.8 m³/hour)
44" x 32' (1,117 mm x 9.7 m)	175 STPH (158.7 MTPH)	25 HP (19 kW)	17	17,900 lb (8,119.3 kg)	69,900 lb (31,706.1 kg)	1,720 USGPM (390.6 m³/hour)	760 USGPM (172.6 m³/hour)	460 USGPM (104.4 m³/hour)
48" x 33' (1,219 mm x 10.0 m)	208 STPH (188.6 MTPH)	30 HP (22 kW)	17	21,150 lb (9,593.4 kg)	85,400 lb (38,736.7 kg)	1,965 USGPM (446.3 m³/hour)	872 USGPM (198.0 m³/hour)	490 USGPM (111.2 m³/hour)
54" x 34' (1,371 mm x 10.3 m)	275 STPH (249.4 MTPH)	40 HP (30 kW)	14	28,540 lb (12,945.5 kg)	115,850 lb (52,548.6 kg)	2,090 USGPM (474.6 m³/hour)	930 USGPM (211.2 m³/hour)	575 USGPM (130.5 m³/hour)
66" x 35' (1,676 mm x 10.6 m)	400 STPH (362.8 MTPH)	60 HP (45 kW)	11	40,200 lb (18,234.4 kg)	131,000 lb (59,420.6 kg)	2,590 USGPM (588.2 m³/hour)	1,150 USGPM (261.1 m³/hour)	650 USGPM (147.6 m³/hour)
72" x 38' (1,828 mm x 11.5 m)	475 STPH (430.9 MTPH)	75 HP (56 kW)	11	50,750 lb (23,019.8 kg)	202,031 lb (91,639.7 kg)	2,830 USGPM (642.7 m³/hour)	1,260 USGPM (286.1 m³/hour)	710 USGPM (161.2 m³/hour)

## Double Shaft - Fine Material Washers

Size (Dia. x Length)	Maximum Capacity	Electric Motor	Shaft (RPM)	Machine Wt. Empty	Machine Wt. Operating	Hydraulic Mesh Split		
						100 Mesh	150 Mesh	200 Mesh
36" x 25' (914 mm x 7.6 m)	200 STPH (181.4 MTPH)	30 HP (22 kW)	21	19,650 lb (8,913.0 kg)	54,550 lb (24,743.4 kg)	1,250 USGPM (283.9 m³/hour)	640 USGPM (145.3 m³/hour)	360 USGPM (81.7 m³/hour)
44" x 32' (1,117 mm x 9.7 m)	350 STPH (317.5 MTPH)	50 HP (37 kW)	17	36,200 lb (16,420.0 kg)	124,200 lb (56,336.1 kg)	2,800 USGPM (635.9 m³/hour)	1,440 USGPM (327.0 m³/hour)	810 USGPM (183.9 m³/hour)
48" x 33' (1,219 mm x 10.0 m)	416 STPH (377.3 MTPH)	2 x 30 HP (45 kW)	17	43,600 lb (19,776.6 kg)	142,000 lb (64,410.2 kg)	3,100 USGPM (704.0 m³/hour)	1,550 USGPM (352.0 m³/hour)	860 USGPM (195.3 m³/hour)
54" x 34' (1,371 mm x 10.3 m)	550 STPH (498.9 MTPH)	2 x 40 HP (60 kW)	14	55,000 lb (24,947.5 kg)	164,200 lb (74,479.8 kg)	3,700 USGPM (840.3 m³/hour)	1,750 USGPM (397.4 m³/hour)	935 USGPM (212.3 m³/hour)
66" x 35' (1,676 mm x 10.6 m)	800 STPH (725.7 MTPH)	2 x 60 HP (89 kW)	11	77,450 lb (35,130.7 kg)	253,400 lb (114,940.3 kg)	4,375 USGPM (993.6 m³/hour)	2,100 USGPM (476.9 m³/hour)	1,095 USGPM (248.7 m³/hour)
72" x 38' (1,828 mm x 11.5 m)	950 STPH (861.8 MTPH)	2 x 75 HP (112 kW)	11	104,210 lb (47,268.9 kg)	347,400 lb (157,578.0 kg)	5,040 USGPM (1,144.7 m³/hour)	2,250 USGPM (511.0 m³/hour)	1,250 USGPM (283.9 m³/hour)

## Fine Material Washer Speeds \*

### Percentage Passing 50 Mesh (300 Microns) in Discharged Washed Sand

0-15%	15-20%	20-25%	25-30%	30-35%	35-40%	40-45%	45-50%	50-55%	55-85%
100% Speed	75% Speed	60% Speed	50% Speed	45% Speed	40% Speed	35% Speed	30% Speed	25% Speed	16% Speed

\* Finer sands require a slower shaft speed rotation to allow dewatering. When washer speed is reduced, so is the unit's capacity in the same proportion of speed reduction.