

Norco JD 3032e Tractor

Rear Ballast Options

JD 3032e Operator Manual Ballast Recommendation

http://manuals.deere.com/omview/OMW57755_19/?tM=

REQUIRED MINIMUM BALLAST FOR 3032E, 3036E, AND 3038E TRACTORS	
Option	Ballast¹
1	370 kg (816 lb.) of rear hitch ballast ²
2	250 kg (551 lb.) of rear hitch ballast ² and fluid-filled rear tires (108 kg [238 lb.] fluid and tire).
3	170 kg (375 lb.) of rear hitch ballast ² and fluid-filled rear tires (108 kg [238 lb.] fluid and tire) and 6 rear wheel weights (140 kg [309 lb.] total).
4	295 kg (650 lb.) of rear hitch ballast ² and 6 rear wheel weights (140 kg [309 lb.] total).

Rear hitch ballast is required in all instances. Fluid filled tires are only required in some instances. Fill tires 3/4 full with a mixture of 1.6 kg (3.5 lb.) calcium chloride and 4 L (1 U.S. gal).

¹ Ballast given is required with minimum rear tread setting.

² See *ADDING BALLAST TO TRACTOR HITCH* in this section.

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Norco 3032e tractor tires do have ballast added as part of 12/2019 ordered configuration.

38 gallons, 410 pounds per tire, for rear tire size 43x16-20 R4 ; total of 800 lbs

Before doing FEL work with heavy payload, add ballast. Maximum front-end loader payload is between 1000lbs -1300lbs including the weight of the FEL implement - bucket or pallet forks- at 3ft to 4 ft off the ground. Additionally, the tractor is carrying the load of the FEL frame too, which is 425 lbs. So, the front end maximum weight bearing with 6 ply tires is 1800 lbs. Max payload with implement plus FEL weight = 1725 lbs . Estimated safe payloads are not to exceed 500-600 lbs, this would be the maximum FEL lifting capability that add in the weight of either the forks or a bucket

Match the rear ballast with similar total weight to the front end implement weight plus payload. The rear ballast total will be 820 lb of tire ballast plus the implement option from the table below..

Norco implements as of 3/2020 that can be attached to the 3 point hitch to add ballast.

The heavier the planned front end payload in the bucket or forks, up to their limits, the heavier the ballast option should be considered on the rear 3 point hitch. This may mean using reduced front end payloads if doing tasks requiring bucket+ material and rear blade work (due to the lighter weight of the rear implement), or breaking up the tasks into dedicated phases (e.g., have a rear heavy ballast, do a series of bucket tasks; then change rear ballast to the lighter implement and complete task with the rear implement, e.g. blade out the material).

Norco Rear Implement	Implement Weight	Notes
72" Frontier rear blade	240 lbs	green , standard duty model
48" Woods brush mower	450 lbs	blue, light duty
Ballast cast iron block	Estimated 200-250 lbs	DIY with harrow weight
Ballast box	500-550 lbs	sreen, filled with sand
60" Land Pride finish mower	575 lbs	tan, FDR 16 series
Loggers receiver hitch	47 lbs	black, stored in the garage
Spreader w/o material	175 lbs	
6' York rake	200 lbs	
Norco Front Implement	Implement Weight	Notes
60" HLA Bucket with b.o. edge	490 lbs	Bucket 455 lbs + bo edge
72" HLA Bucket with tooth bar	610 lbs	Bucket 510 lbs + toothbar
Titan Pallet Forks, 48" Tines	385 lbs	Frame 185 lb + 100 lb per tine

Options Norco can consider for heavier rear ballast

- 1) Ballast metal box, typically 5.4cu ft , maximum weight 800 lb it can hold
 - a. Remove sand,replace with steel or iron, or add suitcase weight on lip
- 2) Tractor suitcase weights and weight hitch
 - a. Weights typically come in 2 sizes, 40 lb and 100 lb made of steel
- 3) Make a home-made ballast – with cast iron engine block
 - a. To get closer to 800 lbs, need 8 cyl , large block
 - i. <https://www.gomog.com/allmorgan/engineweights2.html>

Weights of materials by cu foot to determine ballast weight based on container size

Weights of Various Metals in Pounds Per *Cubic Foot

Aluminum	168.48	Copper	559.87	Manganese	463.10	Silver	654.91
Antimony	419.99	Gold	1206.83	Mercury	849.00	Stainless Steel (18-8)	494.21
Beryllium	113.70	Gun Metal (Aver.)	544.00	Molybdenum	637.63	Steel, Cast/Rolled	490.00
Bismuth	611.00	Iridium	1396.00	Monel Metal	556.00	Tin	455.67
Brass (Approx.)	535.68	Iron	491.09	Nickel	555.72	Titanium	283.39
Bronze, Alum.	481.00	Iron, Cast Grey	442.00	Osmium	1402.00	Tungsten	1204.41
Bronze (Approx.)	541.00	Iron, Wrought	480.00	Palladium	712.00	Vanadium	374.97
Cadmium	540.86	Iron, Slag	172.00	Platinum	1339.20	Zinc	445.30
Chromium	428.00	Lead	707.96	Rhodium	755.00		*1728 CU. IN. PER CU. FT.
Cobalt	552.96	Magnesium	108.51	Ruthenium	765.00		

Weights of Other Materials in Pounds Per *Cubic Foot

Acids, Muriatic, 40%	75.00	Earth, Common Loam	75.00-90.00	Maple, Hard	43.00	Rubber, Goods	94.00
Acids, Nitric, 91%	94.00	Earth, Dry/Loose	76.00	Maple, White	33.00	Sand, Clay & Earth, Dry	100.00
Acids, Sulphuric, 87%	112.00	Earth, Dry/Packed	95.00	Marble	170.00	Sand, Clay & Earth, Wet	120.00
Alcohol, 100%	49.00	Earth, Mud/Packed	115.00	Masonry, Rubble	130.00-150.00	Sand, Pure Quartz, Dry	90.00-106.00
Asbestos	153.00	Elm, White	45.00	Masonry, Ashlar	140.00-160.00	Sandstone, Bluestone	147.00
Ash, White, Red	40.00	Fats	58.00	Mortar	100.00	Slate	175.00
Asphaltum	81.00	Fir, Douglas	30.00	Mud, River	90.00	Snow, Freshly Fallen	10.00
Basalt	184.00	Fir, Eastern	25.00	Oil, Kerosene	52.00	Snow, Wet	50.00
Brick, Paving	150.00	Flour, Loose	28.00	Oil, Mineral	57.00	Soap Stone, Tall	169.00
Brick, Com. Building	120.00	Flour, Pressed	47.00	Oil, Vegetable	58.00	Soda Ash	74.00
Brick, Soft Building	100.00	Gasoline	42.00	Oak, White	50.00	Sodium	61.00
Cedar, White, Red	22.00	Glass, Common Window	156.00	Paper, Newspaper	33.00-44.00	Spruce	25.00
Cement, Portland	100.00	Granite	170.00	Paving, Asphaltum	100.00	Spruce, White, Black	27.00
Cereals, Bulk	32.00-48.00	Graphite	131.00	Pine, Oregon	32.00	Sulphur	125.00
Chestnut	41.00	Gravel, Dry/Loose	90.00-105.00	Pine, White	25.00	Tar, Bituminous	75.00
Clay, Hard-ordinary	150.00	Hay, Bales	20.00	Pine, Yellow	40.00	Water, Pure, 32°F	62.40
Coal	78.00-97.00	Hemlock	25.00	Pitch	60.00	Water, Sea	64.00
Concrete, Stone	130.00-150.00	Hickory	49.00	Plaster of Paris	140.00	Water, Solid Ice	56.00
Concrete, Cinder	70.00	Ice-.917 to .922	54.70	Poplar	30.00	Wool	82.00
Cypress	30.00	Leather	59.00	Pumice, Natural	40.00		
Dolomite	181.00	Lye, Soda, 66%	106.00	Redwood, Calif.	26.00		