

LOAD LINE SPECIFICATIONS

PROCEDURE FOR DETERMINING PARTS OF LINE, MAXIMUM HOIST DISTANCE AND WIRE ROPE LENGTH USING FRONT AND REAR DRUMS

FRONT DRUM — 37¼"(.9m) WIDE X 19"(.5m) DIAMETER
SPLIT REAR DRUM — 17¾"(.4m) WIDE X 21"(.5m) DIAMETER

- A. Parts of line required to hoist a given load are shown in Table 1. Weight of jib, all load blocks, hooks, weight ball, slings, hoist lines, etc., beneath boom and jib point sheaves, is considered part of the load.
- B. (1) From job layout, determine maximum distance load is to be lifted.
 (2) Multiply hoist distance (from step B-1) x parts of line. Check this total amount of rope with drum spooling capacity (Table 2) to determine if spooling capacity is adequate.
- C. (1) To determine total length of wire rope required for main hoist, multiply parts of line x total distance from centerline of sheaves in boom top to centerline of sheaves in block with block at lowest elevation. Add twice the boom length plus wire rope constant from Table 3 corresponding to parts of line used.
 (2) To determine total length of wire rope required for whip line using right rear drum, multiply parts of line x total distance from centerline of sheaves in jib top to centerline of sheaves in block with block at lowest elevation. Add boom length, jib length plus 50'(15.2m).
 (3) Other considerations such as length of rope available and wire rope required to drop hook to grade may influence total length of wire rope selected.
- Refer to Load Line Specifications Chart No. 6144 when spooling on front drum only or full width front and rear drums.**
Refer to Load Line Hoisting Range Chart No. 6144-A for maximum hoisting ranges with Boom No. 27 and No. 6144-C for maximum hoisting ranges with Boom No. 27A-27.
Refer to Drum and Lagging Chart No. 6105.

TABLE 1: HOIST REEVING FOR MAIN LOAD BLOCK

Parts of Line	2	4	6	8	10	12	14	16	18
Max. Load - Lbs.	64,000	126,200	186,800	243,000	302,000	357,000	411,000	462,000	512,000
Max. Load — Kg.	29,020	57,240	84,730	110,220	136,980	161,930	186,420	209,550	232,230

LOAD LINE: 1½" (28.6mm) — 6x31 Warrington-Seale, Extra Improved Plow Steel, Regular Lay, IWRC. Minimum Breaking Strength 130,000 Lbs. (58,960 Kg). Approx. Weight = 2.34 Lbs. per Ft. (3.50 Kg. per M).

WHIP LINE: 1½" (28.6mm) — 6x31 Warrington-Seale, Improved Plow Steel, Regular Lay, IWRC. Minimum Breaking Strength 113,000 Lbs. (51,250 Kg). Maximum Load = 28,300 Lbs. (12,830 Kg) Per Line. Approx. Weight = 2.34 Lbs. per Ft. (3.50 Kg. per M).

TABLE 2: MAXIMUM SPOOLING CAPACITIES

Front Drum (load line) — 1½" (28.6mm) Wire Rope — 7 Layers — 1,505' (458.7m)
 Left Rear Drum (load line) — 1½" (28.6mm) Wire Rope — 6 Layers — 620' (189.0m) [with 21" (.5m) diameter lagging].
CAUTION: Simultaneous spooling of load line on full width front and split rear drums is permitted only if total line pull of the two lines does not exceed 32,500 Lbs. (14,740 Kg).
 Right Rear Drum (whip line) — 1½" (28.6mm) Wire Rope — 6 Layers — 620' (189.0m) [with 21" (.5m) diameter lagging].
 Deduct 11' (3.4m) from maximum spooling capacities for 2 dead wraps per drum or lagging.

TABLE 3: WIRE ROPE CONSTANT

AMOUNT OF WIRE ROPE REQUIRED TO REEVE SHEAVES IN SHEAVE CARRIER & LOAD BLOCK									
Parts of Line	2	4	6	8	10	12	14	16	18
Wire Rope Constant-Ft.	80	90	100	105	115	120	125	135	140
Wire Rope Constant-M	24	27	30	32	35	37	38	41	43

NOTE: Above lengths include initial wraps on front and rear drums and wire rope required from front and rear drums to sheaves on front roller carrier.