

# GROVE®

## FULL HYDRAULIC

# CARRIER-MOUNTED CRANE

# TM180

## 18 TON CAP.

PCSA CLASS NO. 10-69 (28-70 FT. BOOM)  
PCSA CLASS NO. 10-60 (24-78 FT. BOOM)

### RATED LIFTING CAPACITIES (In Pounds)

#### 8 Ft. WIDE CARRIER WITH 16 Ft. OUTRIGGERS

#### OUTRIGGERS FULLY EXTENDED

#### OVER SIDE - 28-70 ft. BOOM

| Radius in Feet | Boom Length in Feet |        |        |        |        |        |        |        |
|----------------|---------------------|--------|--------|--------|--------|--------|--------|--------|
|                | 28                  | 34     | 40     | 46     | 52     | 58     | 64     | 70     |
| 10             | 36,000              | 34,000 | 31,900 | 29,800 |        |        |        |        |
| 12             | 32,000              | 31,000 | 30,000 | 29,800 | 27,800 |        |        |        |
| 15             | 27,000              | 27,000 | 27,000 | 27,000 | 27,000 | 25,750 | 23,700 |        |
| 20             | 21,250              | 21,250 | 21,000 | 21,000 | 20,750 | 20,500 | 20,400 | 20,250 |
| 25             |                     | 16,500 | 16,500 | 16,200 | 15,900 | 15,600 | 15,300 | 15,000 |
| 30             |                     | 11,850 | 11,850 | 11,850 | 11,850 | 11,850 | 11,850 | 11,700 |
| 35             |                     |        | 8,900  | 8,900  | 8,900  | 8,900  | 8,900  | 8,900  |
| 40             |                     |        |        | 6,900  | 6,900  | 6,900  | 6,900  | 6,900  |
| 45             |                     |        |        |        | 5,600  | 5,600  | 5,600  | 5,600  |
| 50             |                     |        |        |        |        | 4,500  | 4,500  | 4,500  |
| 55             |                     |        |        |        |        |        | 3,600  | 3,600  |
| 60             |                     |        |        |        |        |        | 2,900  | 2,900  |
| 65             |                     |        |        |        |        |        |        | 2,300  |
| 66.5           |                     |        |        |        |        |        |        |        |

#### OVER REAR - 28-70 ft. BOOM

| Radius in Feet | Boom Length in Feet |        |        |        |        |        |        |        |
|----------------|---------------------|--------|--------|--------|--------|--------|--------|--------|
|                | 28                  | 34     | 40     | 46     | 52     | 58     | 64     | 70     |
| 10             | 36,000              | 34,000 | 31,900 | 29,800 |        |        |        |        |
| 12             | 32,000              | 31,000 | 30,000 | 29,800 | 27,800 |        |        |        |
| 15             | 27,000              | 27,000 | 27,000 | 27,000 | 27,000 | 25,750 | 23,700 |        |
| 20             | 21,250              | 21,250 | 21,000 | 21,000 | 20,750 | 20,500 | 20,400 | 20,250 |
| 25             |                     | 16,500 | 16,500 | 16,200 | 15,900 | 15,600 | 15,300 | 15,000 |
| 30             |                     | 12,250 | 12,250 | 12,250 | 12,250 | 12,100 | 11,900 | 11,700 |
| 35             |                     |        | 9,250  | 9,250  | 9,250  | 9,250  | 9,250  | 9,250  |
| 40             |                     |        |        | 7,400  | 7,400  | 7,400  | 7,400  | 7,400  |
| 45             |                     |        |        |        | 6,000  | 6,000  | 6,000  | 6,000  |
| 50             |                     |        |        |        |        | 4,900  | 4,900  | 4,900  |
| 55             |                     |        |        |        |        |        | 3,950  | 3,950  |
| 60             |                     |        |        |        |        |        | 3,200  | 3,200  |
| 65             |                     |        |        |        |        |        |        | 2,550  |

#### OVER SIDE - 24-78 ft. BOOM

| Radius in Feet | Manual Fly Section Retracted Boom Length in Feet |        |        |        |        |        |        | Manual Fly Ext. *78 |
|----------------|--|--------|--------|--------|--------|--------|--------|---------------------|
|                | 24   | 30     | 36     | 42     | 48     | 54     | 60     |                     |
| 10             | 36,000   | 34,500 | 32,700 | 30,800 |        |        |        |                     |
| 12             | 32,000   | 32,000 | 31,000 | 29,900 | 28,000 |        |        |                     |
| 15             | 26,000   | 26,000 | 26,000 | 25,500 | 24,000 | 22,000 | 20,000 |                     |
| 20             | 20,000   | 20,000 | 20,000 | 20,000 | 20,000 | 19,000 | 17,500 |                     |
| 25             |  | 14,000 | 14,000 | 14,000 | 14,000 | 14,000 | 13,000 |                     |
| 30             |  |        | 10,500 | 10,500 | 10,500 | 10,500 | 11,000 |                     |
| 35             |  |        |        | 7,600  | 7,600  | 7,600  | 8,500  |                     |
| 40             |  |        |        |        | 6,000  | 6,000  | 7,000  |                     |
| 45             |  |        |        |        |        | 4,500  | 5,400  |                     |
| 50             |  |        |        |        |        |        | 3,250  |                     |
| 55             |  |        |        |        |        |        | 2,600  |                     |
| 60             |  |        |        |        |        |        |        | 2,300               |
| 65             |  |        |        |        |        |        |        | 1,700               |
| 70             |  |        |        |        |        |        |        | 1,200               |

#### OVER REAR - 24-78 ft. BOOM

| Radius in Feet | Manual Fly Section Retracted Boom Length in Feet |        |        |        |        |        |        | Manual Fly Ext. *78 |
|----------------|--|--------|--------|--------|--------|--------|--------|---------------------|
|                | 24   | 30     | 36     | 42     | 48     | 54     | 60     |                     |
| 10             | 36,000   | 34,500 | 32,700 | 30,800 |        |        |        |                     |
| 12             | 32,000   | 32,000 | 31,000 | 29,900 | 28,000 |        |        |                     |
| 15             | 26,000   | 26,000 | 26,000 | 25,500 | 24,000 | 22,000 | 20,000 |                     |
| 20             | 20,000   | 20,000 | 20,000 | 20,000 | 20,000 | 19,000 | 17,500 |                     |
| 25             |  | 15,000 | 15,000 | 15,000 | 15,000 | 14,500 | 13,000 |                     |
| 30             |  |        | 11,175 | 11,175 | 11,175 | 11,175 | 11,000 |                     |
| 35             |  |        |        | 8,450  | 8,450  | 8,450  | 9,250  |                     |
| 40             |  |        |        |        | 6,400  | 6,400  | 7,675  |                     |
| 45             |  |        |        |        |        | 4,975  | 5,975  |                     |
| 50             |  |        |        |        |        |        | 3,850  |                     |
| 55             |  |        |        |        |        |        | 2,900  |                     |
| 60             |  |        |        |        |        |        |        | 3,135               |
| 65             |  |        |        |        |        |        |        | 2,425               |
| 70             |  |        |        |        |        |        |        | 1,875               |

In all charts, capacities appearing in the shaded area are based on machinery strength and tipping should not be relied upon as a capacity limitation. Capacities do not exceed 85% of tipping loads as determined by test in accordance with SAE J-765. \*Indicates maximum capacity of Extended Fly Section regardless of boom length.

### ON RUBBER CAPACITIES

#### 28-70 ft. BOOM

| Radius in Feet | Over Rear  | Over Side  |
|----------------|------------|------------|
| 10             | 20,000 (a) | 15,000 (a) |
| 12             | 17,500 (a) | 12,000 (b) |
| 15             | 13,750 (b) | 8,400 (c)  |
| 20             | 9,250 (c)  | 5,000      |
| 25             | 6,300 (d)  | 3,000      |
| 30             | 4,200      | 1,750      |
| 35             | 2,990      | 750        |
| 40             | 2,200      |            |
| 45             | 1,300      |            |
| 50             | 750        |            |

#### 24-78 ft. BOOM

| Radius in Feet | Over Side  | Over Rear  |
|----------------|------------|------------|
| 10             | 13,000 (b) | 20,000 (a) |
| 12             | 10,500 (c) | 16,750 (b) |
| 15             | 7,000 (d)  | 12,000 (c) |
| 20             | 3,800      | 7,300 (d)  |
| 25             | 2,000      | 4,800 (e)  |
| 30             | 400        | 3,100      |
| 35             |            | 2,000      |
| 40             |            | 1,200      |
| 45             |            | 400        |

Maximum Permissible Boom Length:

(a) 28 ft. (c) 46 ft.  
(b) 34 ft. (d) 58 ft.

Maximum Permissible Boom Length:

(a) 24 ft. (d) 46 ft.  
(b) 28 ft. (e) 56 ft.  
(c) 34 ft.

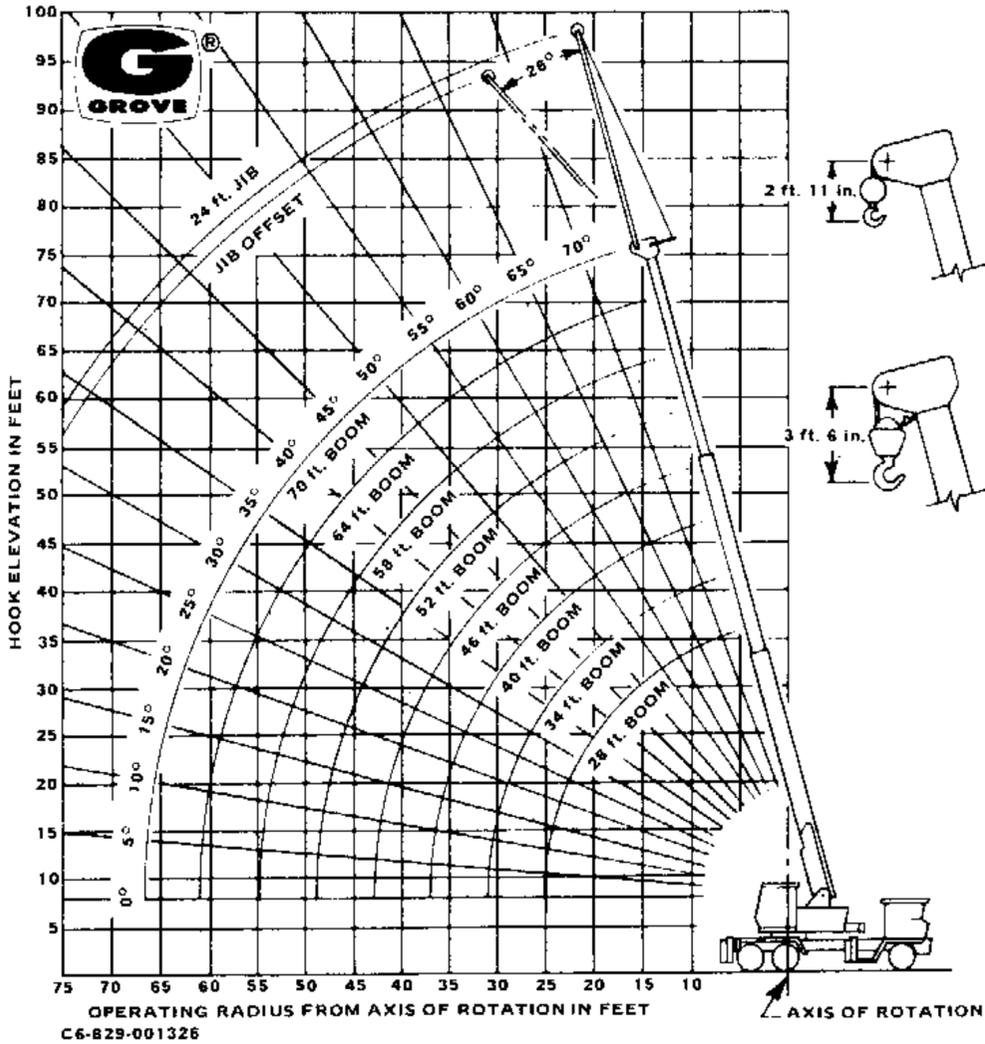
Use of manual fly section not recommended.

### NOTES TO LIFTING CAPACITIES

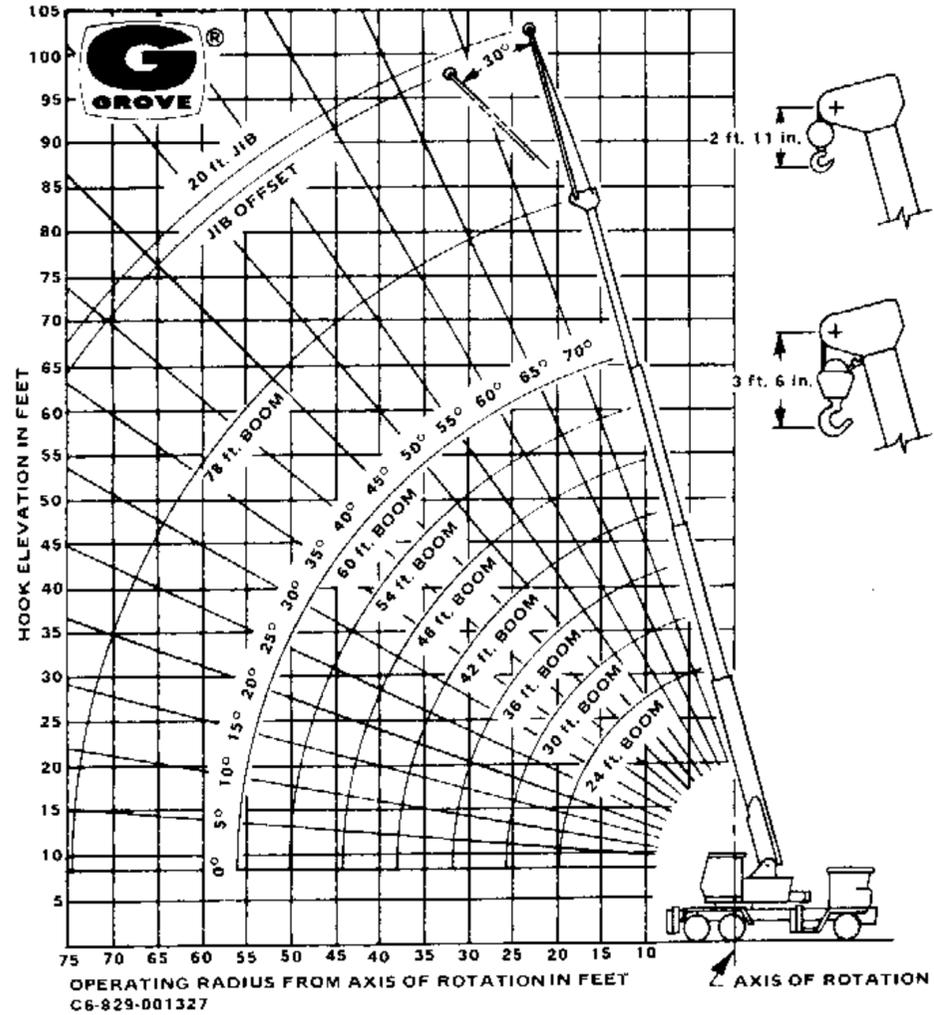
- Rated lifting capacities are based on freely suspended loads. They are the maximum covered by the manufacturer's warranty with the machine leveled and standing on a firm supporting surface. Ratings with outriggers are based on outriggers being extended to their maximum positions.
- Practical working loads for each particular job shall be established by the user depending on operating conditions; including the supporting surface, wind and other factors affecting stability, hazardous surroundings, experience of personnel, handling of load, etc.
- Operating radius is the horizontal distance from the axis of rotation to the centerline of the hoist line or tackle with loads applied.
- "On Rubber" lifting (if permitted) depends on proper tire inflation, capacity, and condition. "On Rubber" loads may be transported at a maximum vehicle speed of 2.5 mi/hr. (4 km./hr.) on a smooth and level surface only.
- Jibs may be used for single line lifting crane service only. Jib capacities are based on structural strength of jib or main boom. Jib loads must not exceed main boom lifting capacities for the actual operating radius.
- Operation is not intended or approved for any conditions outside of those shown hereon. Handling of personnel from the boom is not authorized except with equipment furnished and installed by Grove Manufacturing Company.
- For clamshell or concrete bucket operation, weight of bucket and load must not exceed 90% of rated lifting capacities.
- Power-telescoping boom sections must be extended equally at all times. Long cantilever booms can create a tipping condition when in extended and lowered position.
- The maximum load which may be telescoped is limited by hydraulic pressure, boom angle, boom lubrication, etc. It is safe to attempt to telescope any load within the limits of rated lifting capacity chart.
- With certain boom and hoist tackle combinations, maximum capacities may not be obtainable with standard rope lengths.
- With certain boom and load combinations, raising of load with boom lift cylinders may not be possible. Operational safety is not affected by this condition.
- Keep load handling devices a minimum of 12 inches (30 CM) below boom head when lowering or extending boom.
- For multiple part reeving, use one part of line for each 6,000 lbs. of load.
- All load handling devices and/or boom attachments are considered part of the load and suitable allowances must be made.

## RANGE DIAGRAMS

### 28 ft. - 70 ft. BOOM



### 24 ft. - 78 ft. BOOM



## JIB CAPACITIES

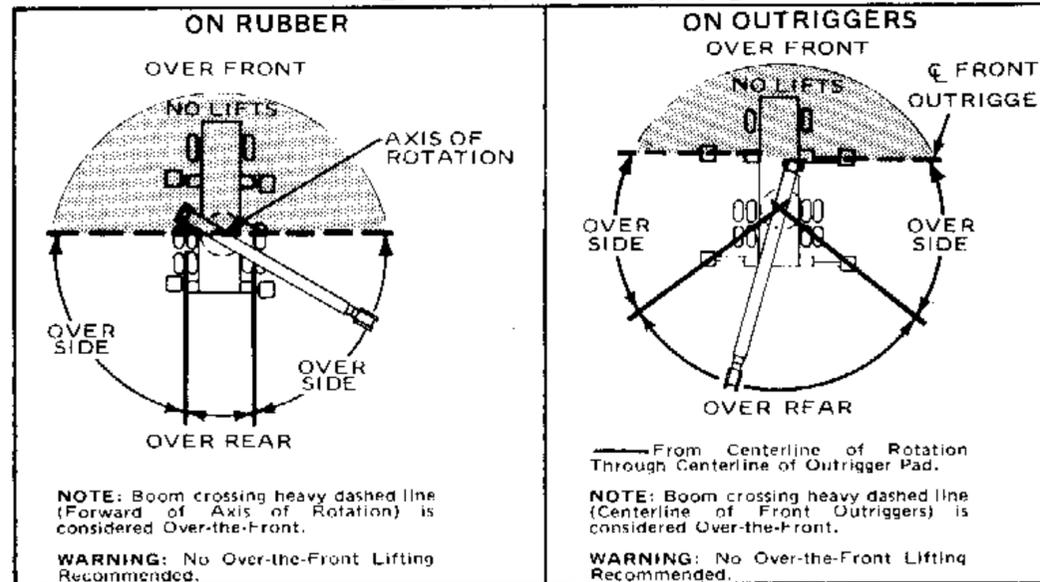
### 24 ft. JIB

| MIN. BOOM ANGLE | NO OFFSET | MAX. OFFSET (26°) |
|-----------------|-----------|-------------------|
| 75              | 6400      | 3100              |
| 70              | 5150      | 2850              |
| 65              | 4350      | 2650              |
| 60              | 3700      | 2450              |
| 55              | 3300      | 2275              |
| 50              | 2950      | 2170              |
| 45              | 2650      | 2125              |
| 40              | 2550      | 2085              |
| 35              | 2475      | 2040              |
| 30              | 2400      | 2000              |
| 26              | 2300      | 1950              |

### 20 ft. JIB

| MIN. BOOM ANGLE | NO OFFSET | MAX. OFFSET (30°) |
|-----------------|-----------|-------------------|
| 75              | 6200      | 2600              |
| 70              | 5000      | 2400              |
| 65              | 4300      | 2300              |
| 60              | 3700      | 2150              |
| 55              | 3300      | 2100              |
| 50              | 2800      | 1850              |
| 45              | 2400      | 1500              |
| 40              | 2200      | 1460              |
| 30              | 1900      | 1200              |

## LIFTING AREA DIAGRAMS



**GROVE MANUFACTURING COMPANY**

A DIVISION OF WALTER KIDDE & COMPANY, INC.

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MEMBER: POWER CRANE & SHOVEL ASSOCIATION

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