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# Motor Selection Guide For Rolling Shutters and Doors

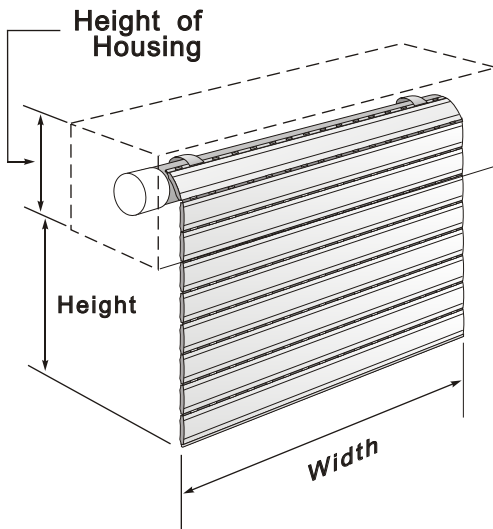
To select a motor in this guide you need to know the following:

1. Type of Slat: Height and Width
2. Total weight of shutter
3. Diameter of the tube



## Type of slat:

It is important to consider the total size of the product you plan to produce before choosing an operator, since these variables affect the weight of what an operator can lift. The following charts represent some of the most common motor solutions. Choose the one that most closely corresponds to the weight that you calculate.



## Total Weight of Shutter

$$\text{Total weight} = \text{Width} \times \underbrace{(\text{Height} + \text{Height of Housing})}_{\text{surface}} \times \text{Weight per sq. ft.}$$

## Important Note:

The choice of a motor also depends on the type of installation.

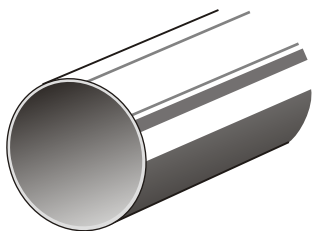
- If you use one motor for two or more shutters add 20% for the first additional shutter to derive the total weight. Add an additional 10% for every shutter after that.

Examples: 2 shutters/one motor = + 20% to the total weight.

3 shutters/one motor = + 20% + 10% to the total weight.

- If the shutter is over 9 feet in height, add 10% to the total weight for every three feet beyond.

Example: 11 feet in height= total weight + an additional 10% to the effective load to be lifted.



## Diameter of Tube:

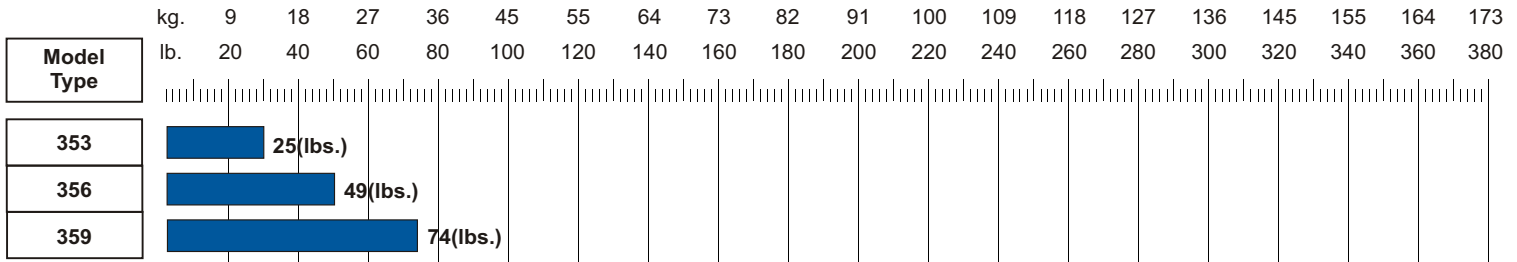
The lifting capacity of an operator decreases when the tube diameter increases. Therefore, it is necessary to choose the smallest tube while considering the load capacity of the tube and the optimum roll-up diameter of the slats. Keep in mind that if tube spacer rings are used, you have increased the tube diameter.

After choosing the chart that corresponds to the tube size being used, select the operator according to the total weight of the shutter.

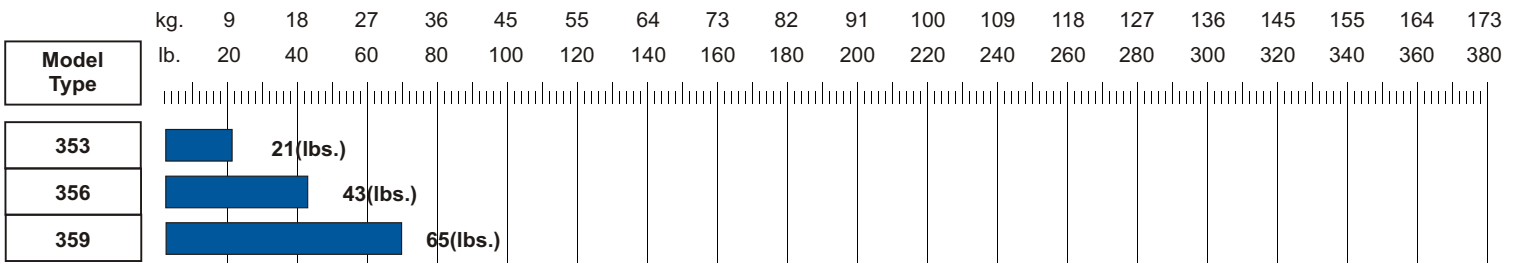


# Motor Selection Guide For Type 3.5 Operators

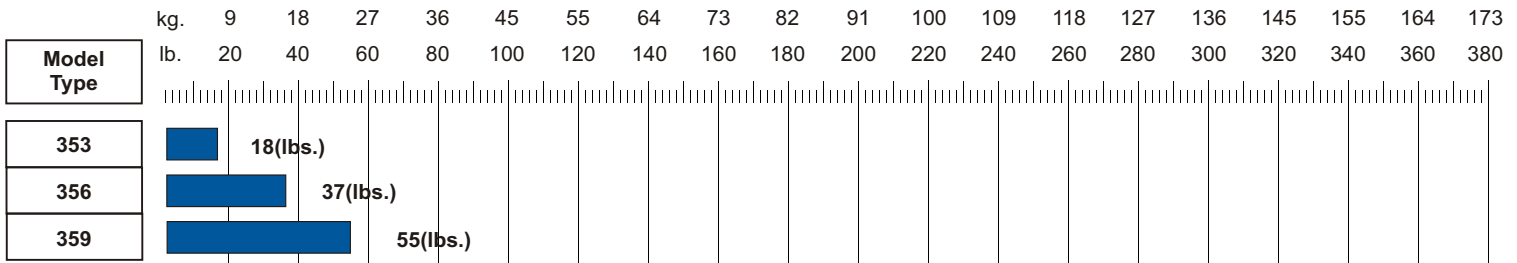
## 36mm (1.5 inch) TUBE DIAMETER



## 40mm (1.7 inch) TUBE DIAMETER



## 50mm (2.0 inch) TUBE DIAMETER



-This chart reflects the recommended 30% security factor that is used for most applications.

-Shutters more than 9 feet high: add 10% to the effective load for every additional 3 feet.

-Double span shutters: add 20% to the effective load to be lifted.

-All chart calculations are based on the (O.D.) outside diameter. Please take caution when sizing shutters with tube spacer rings as this will reduce the amount of operator lifting capacity.

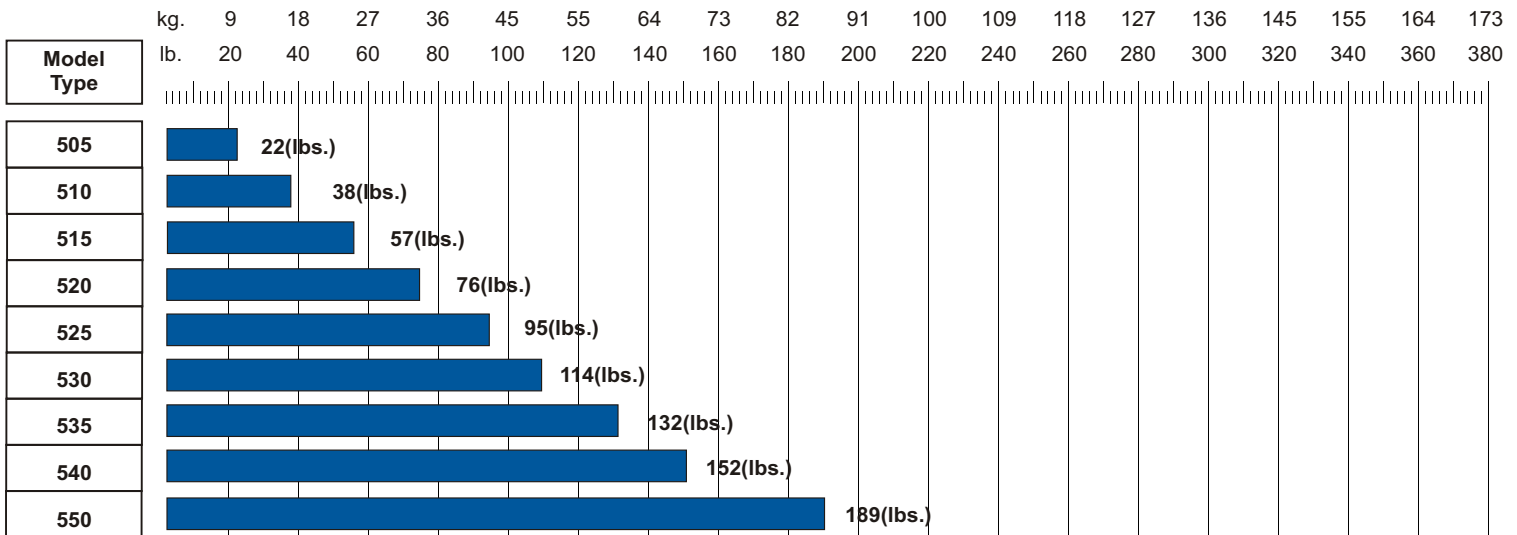




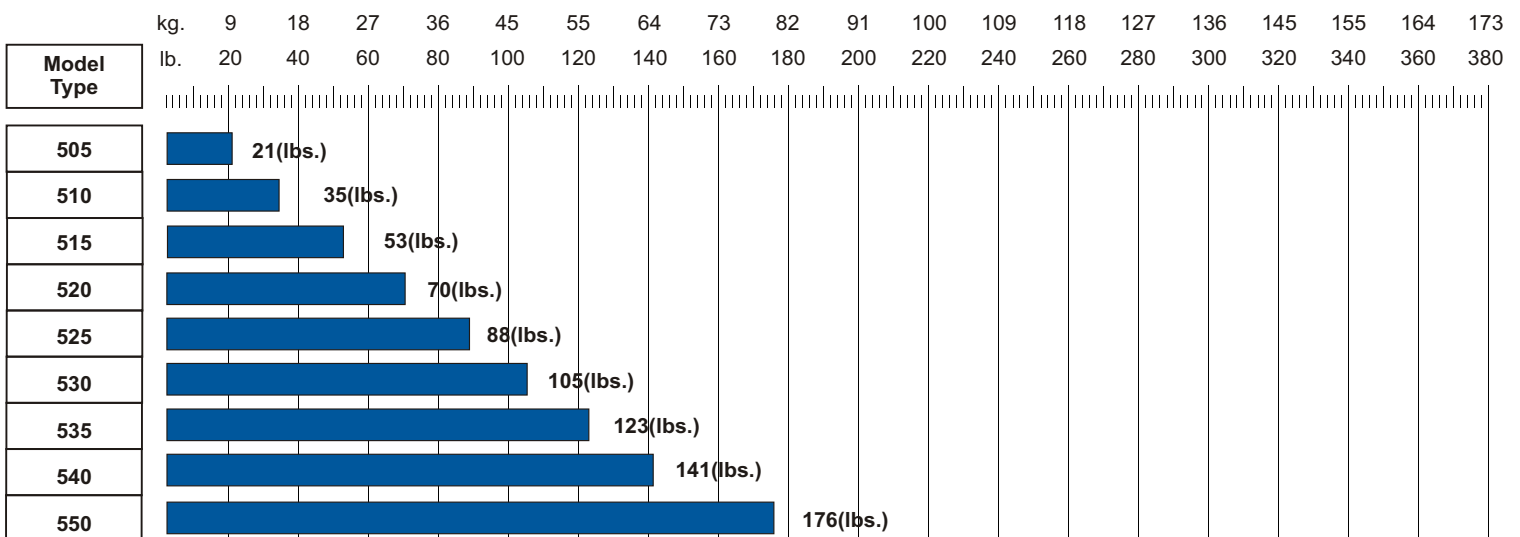


# Motor Selection Guide For Type 5 Operators

## 85mm (3.25 inch) TUBE DIAMETER



## 90mm (3.5 inch) TUBE DIAMETER



-This chart reflects the recommended 30% security factor that is used for most applications.

-Shutters more than 9 feet high: add 10% to the effective load for every additional 3 feet.

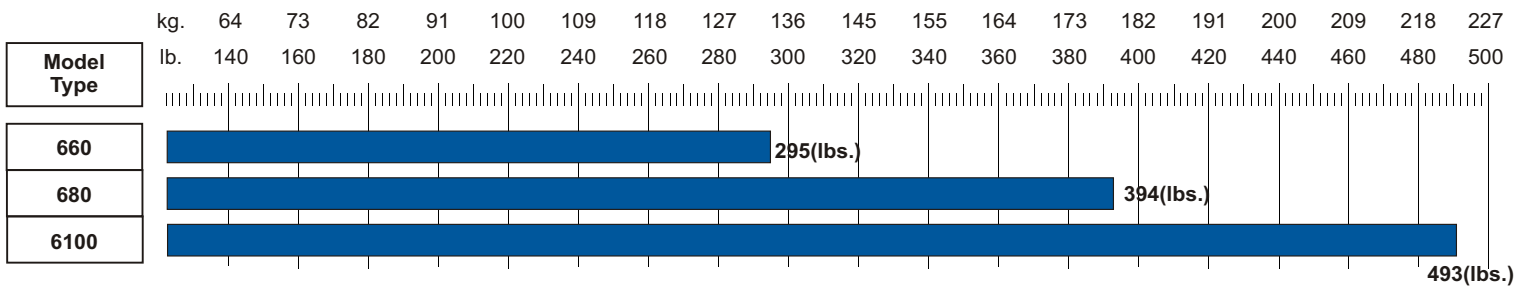
-Double span shutters: add 20% to the effective load to be lifted.

-All chart calculations are based on the (O.D.) outside diameter. Please take caution when sizing shutters with tube spacer rings as this will reduce the amount of operator lifting capacity.

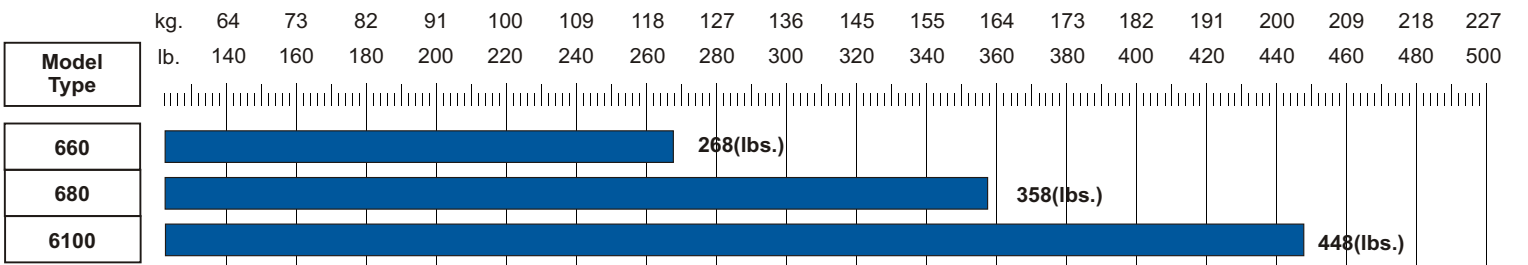


# Motor Selection Guide For Type 6 Operators

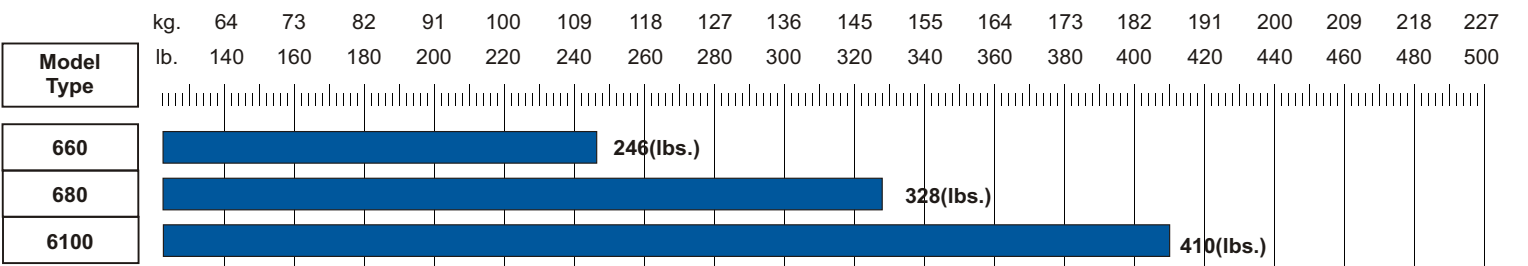
## 60mm (2.5 inch) TUBE DIAMETER



## 70mm (2.75 inch) TUBE DIAMETER



## 78mm (3.0 inch) TUBE DIAMETER



-This chart reflects the recommended 30% security factor that is used for most applications.

-Shutters more than 9 feet high: add 10% to the effective load for every additional 3 feet.

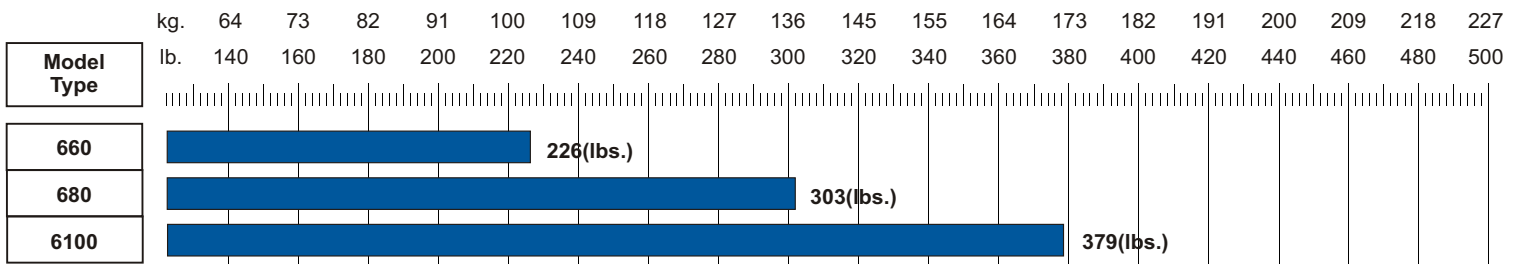
-Double span shutters: add 20% to the effective load to be lifted.

-All chart calculations are based on the (O.D.) outside diameter. Please take caution when sizing shutters with tube spacer rings as this will reduce the amount of operator lifting capacity.

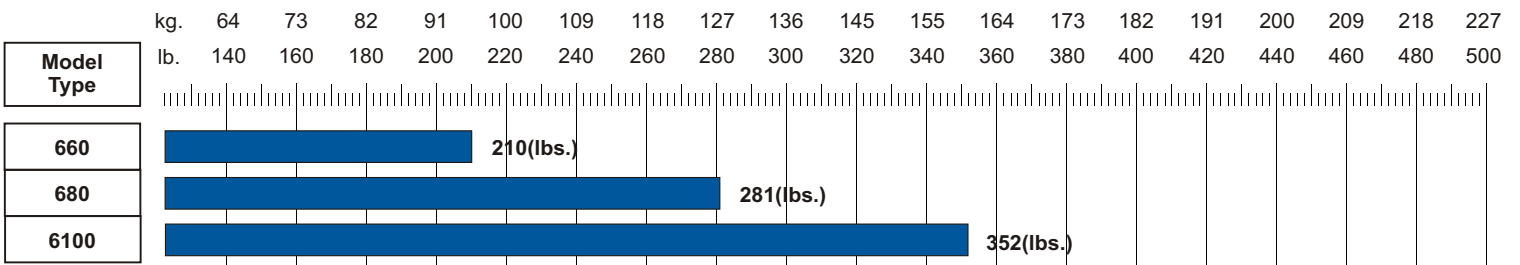


# Motor Selection Guide For Type 6 Operators

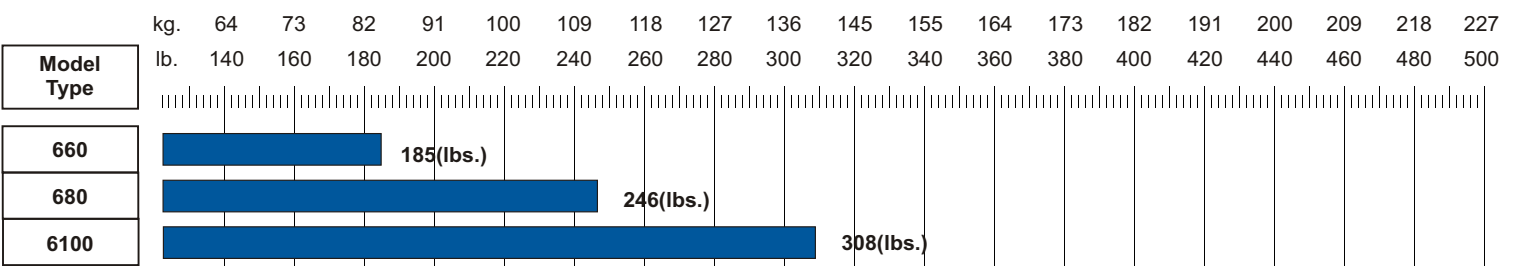
## 85mm (3.25 inch) TUBE DIAMETER



## 90mm (3.5 inch) TUBE DIAMETER



## 100mm (4.0 inch) TUBE DIAMETER



-This chart reflects the recommended 30% security factor that is used for most applications.

-Shutters more than 9 feet high: add 10% to the effective load for every additional 3 feet.

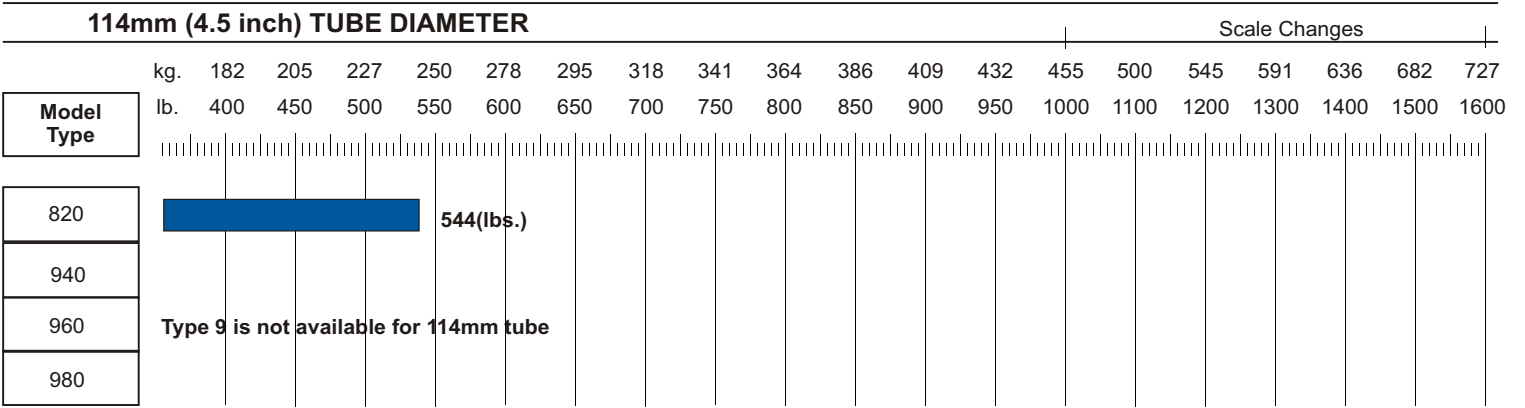
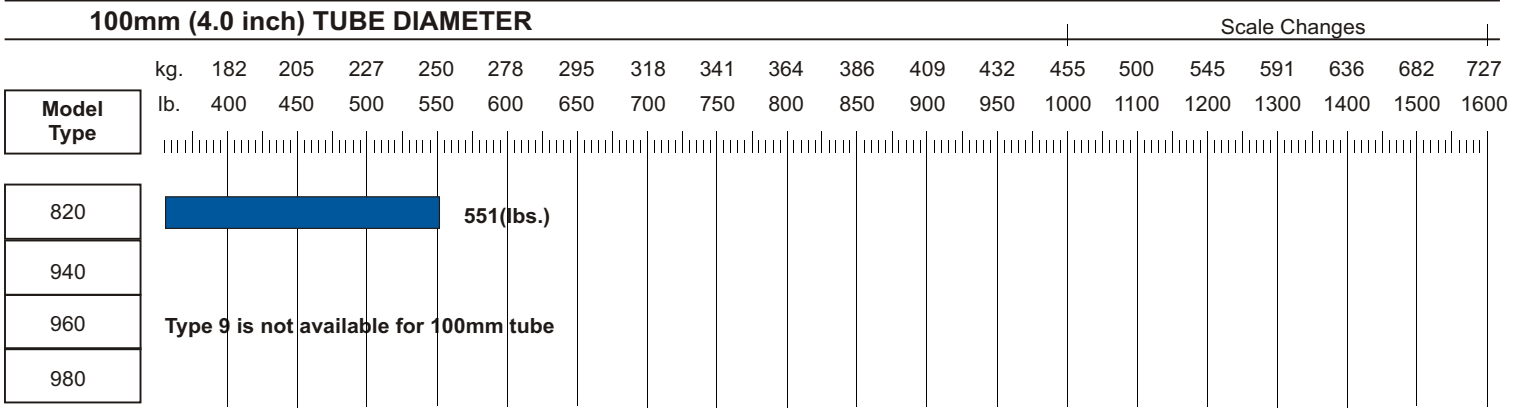
-Double span shutters: add 20% to the effective load to be lifted.

-All chart calculations are based on the (O.D.) outside diameter. Please take caution when sizing shutters with tube spacer rings as this will reduce the amount of operator lifting capacity.





# Motor Selection Guide For Type 8 Operators



-This chart reflects the recommended 30% security factor that is used for most applications.

-Shutters more than 9 feet high: add 10% to the effective load for every additional 3 feet.

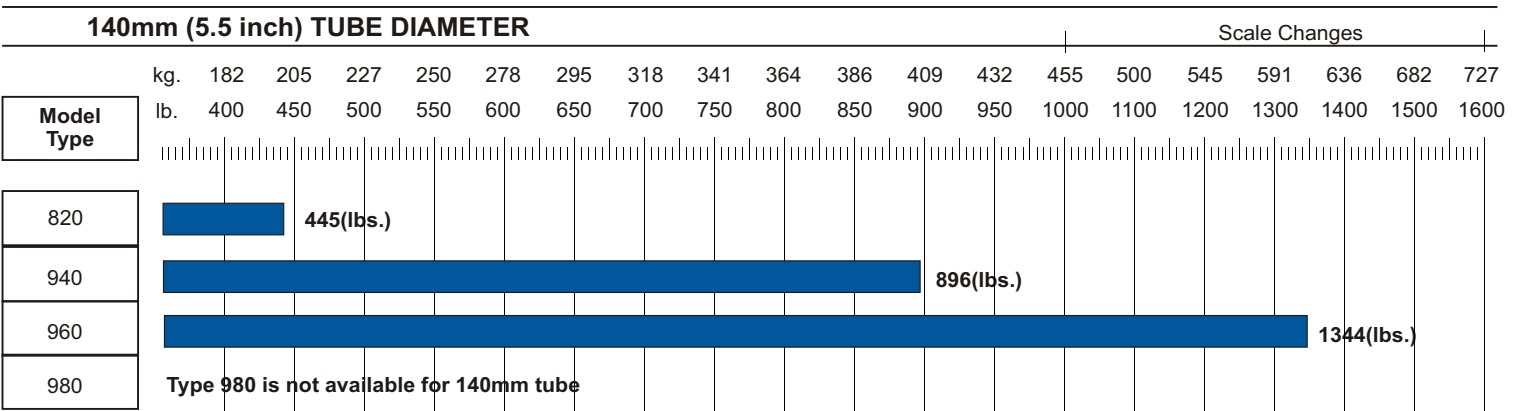
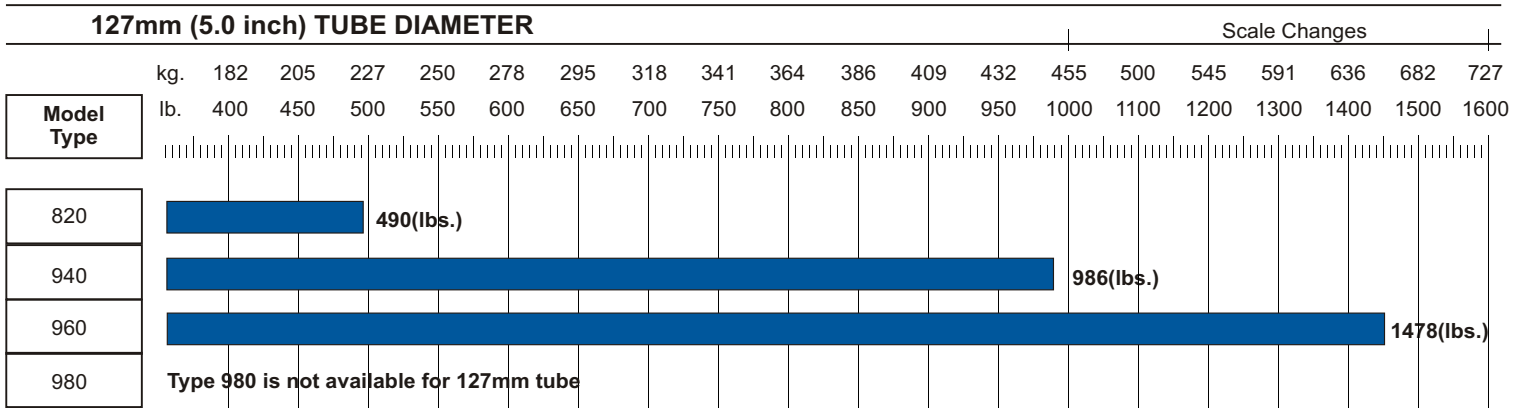
-Double span shutters: add 20% to the effective load to be lifted.

-All chart calculations are based on the (O.D.) outside diameter. Please take caution when sizing shutters with tube spacer rings as this will reduce the amount of operator lifting capacity.



# Motor Selection Guide

## For Type 8 and Type 9 Operators



-This chart reflects the recommended 30% security factor that is used for most applications.

-Shutters more than 9 feet high: add 10% to the effective load for every additional 3 feet.

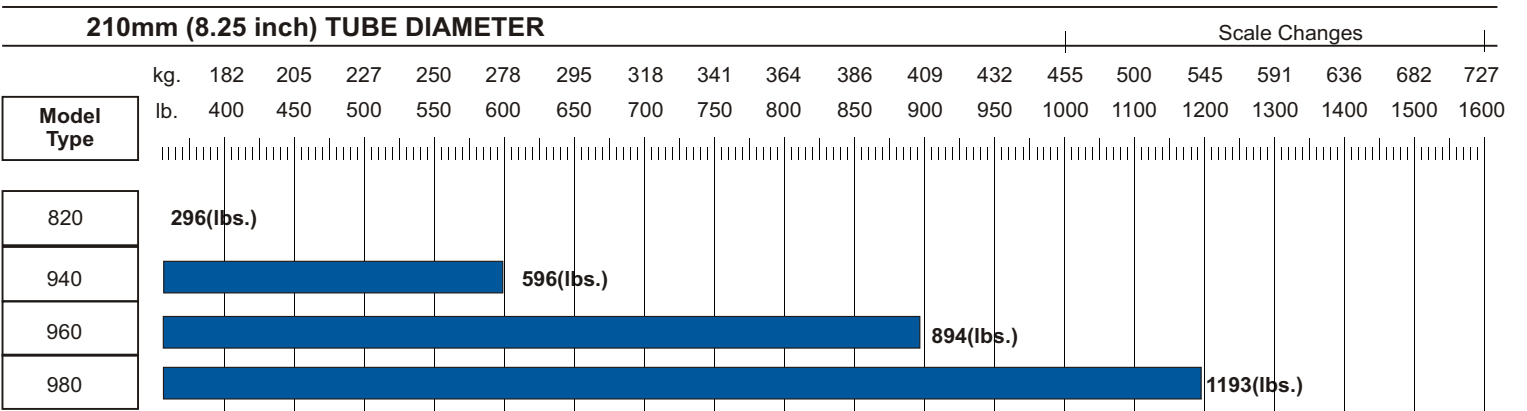
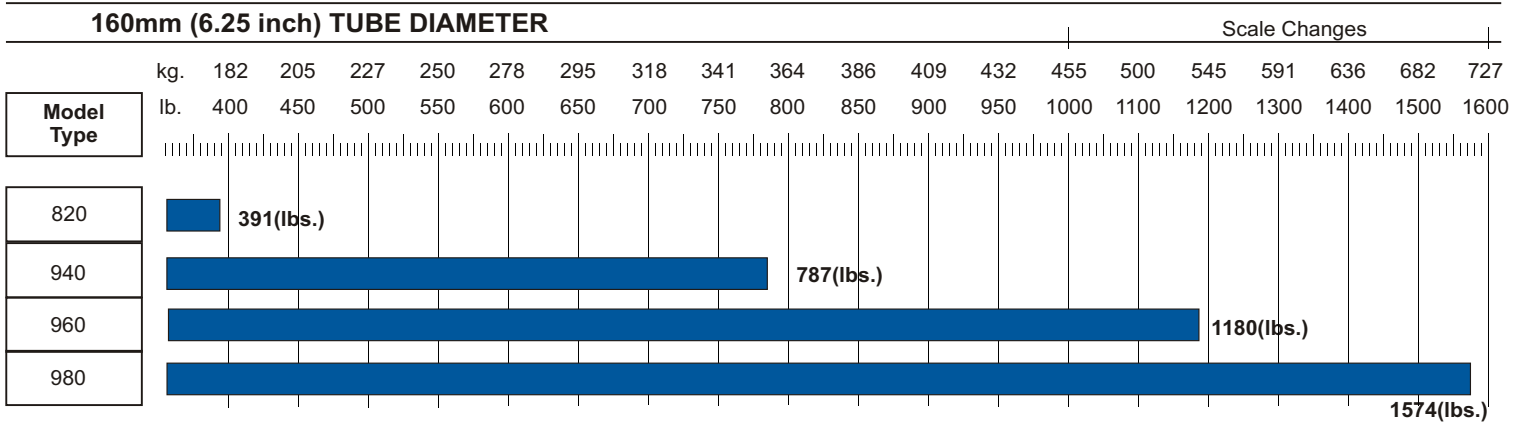
-Double span shutters: add 20% to the effective load to be lifted.

-All chart calculations are based on the (O.D.) outside diameter. Please take caution when sizing shutters with tube spacer rings as this will reduce the amount of operator lifting capacity.



# Motor Selection Guide

## For Type 8 and Type 9 Operators



-This chart reflects the recommended 30% security factor that is used for most applications.

-Shutters more than 9 feet high: add 10% to the effective load for every additional 3 feet.

-Double span shutters: add 20% to the effective load to be lifted.

-All chart calculations are based on the (O.D.) outside diameter. Please take caution when sizing shutters with tube spacer rings as this will reduce the amount of operator lifting capacity.



# Motor Selection Guide For Retractable Awning Systems

		1 Pair (2 arms)	2 Pair (4 arms)	3 Pair (6 arms)	4 Pair (8 arms)	5 Pair (10 arms)	6 Pair (12 arms)
		20 ft. (6m)	33 ft. (10m)	50 ft. (15m)	66 ft. (20m)	82 ft. (25m)	100 ft. (30m)
A	D						
Projection of Arms	Roller Tube O.D. Sizes						
5 ft. (1.50m)	2.5" (63)	525		535	550	660	
	3.0" (78)	535		550	660	680	
	3.5" (89)	535	550	660	680		
6.5 ft. (2.00m)	2.5" (63)	525	535	540	660	680	6100
	3.0" (78)	535	540	550	660	680	
	3.5" (89)	540	550	660	680		
8 ft. (2.40m)	2.5" (63)	535	550		660	6100	
	3.0" (78)	550		660	680		
	3.5" (89)	550	660	680			
9 ft. (2.70m)	2.5" (63)	540	550	660	680		
	3.0" (78)	550	660	680	6100		
	3.5" (89)	550	660	680	6100		
10 ft. (3.00m)	2.5" (63)	540	550	680			
	3.0" (78)	550	680			6100	
	3.5" (89)	660	680	6100			
13.5 ft. (4.00m)	2.5" (63)	550	680	6100			
	3.0" (78)	680	6100				
16.5 ft. (5.00m)	2.5" (63)	550	680				
	3.0" (78)	680	6100				

Above chart is approximate.  
For more specific information, refer to factory.

This chart can be used to select the most suitable type of motor for your lateral arm awning system.

**Important:** The lateral arms referred to here are the standard aluminum type with built-in tension springs. When considering arms made of steel and/or using other types of spring mechanisms, please request additional information.

1. Locate the projection of your lateral arm on the above chart at point (A); e.g. 5 ft., 6 ft., 8 ft., etc.
2. Determine which roller tube diameter (D) is being used in your installation.

3. Locate the number of arms (B) and the length of your installation (C).
4. Read the correct motor from the chart at the intersection of your selections.

**NOTE:**

Because this chart must take into consideration lateral arms being manufactured by many different companies, it is only approximate. The relationship between the number of arms and the length of the awning is only a guide and will vary slightly from manufacturer to manufacturer.