



Made in Italy...  
Loved in America

## Variable Pulley System

Mechanical Speed Variators

[www.tvtamerica.com](http://www.tvtamerica.com)





# TVT America

**Motor flange**



**TVT America**

*Made in Italy... Loved in America*

TVT America was formed to support and develop the North American market for the Italian gear manufactures Tramec S.r.l., Varmec S.r.l., and Techno-Line-Service (aka TLS Riduttori) S.r.l. In 2004, TVT America, Incorporated as an Oklahoma Limited Liability Corporation. In a highly competitive market, TVT America is organized to offer American customers factory direct service & pricing from the middle of North America.

Our rapidly growing service & assembly center is capable of quickly shipping, and is backed by a Friday-Monday turnaround from Italy to USA on out of stock items and specials. Urgent Care program is available for 2-3 day shipping from Italy. For 2012 TVT is proud to present Poggi Spa as its newest manufacturing partner for North America. Click on Poggi's icon to the right to learn more about this exciting new partner. For 2013, TVT is introducing ComInTec torque limiters, shaft couplings, variable speed pulleys, and precision machined components to North America

**YOU WILL LOVE THE SAFETY DELIVERED BY OUR ATEX MOTORS, GEAR REDUCERS, AND VARIABLE SPEED DRIVES, THE SAFETY ASSURED BY OUR TORQUE LIMITING CLUTCHES, AND THE SAFETY OF A UL/CSA/CE LISTED MOTOR THAT EXCEEDS COMPETITORS.**



Motor flange

# TVT America Mechanical Speed Variators



## **Mechanical Speed Variator**

*Variable Pulley Drives*

Looking to control a lot of horse power and need variable speed? Mechanical Speed Variators (*Variable Pulley Drives*) from TVT America is your solution. The Mechanical Speed Variator offers a completely straight forward, simple, and reliable design in a trusted method for speed control in heavy duty industrial pumping, conveying, mixing, and many other variable drive applications where reliability and simplicity rule.

Mechanical Speed Variators use Pulleys & Belts manufactured by Berges GmbH, and thus is directly interchangeable with the German Berges Mechanical Variable Speed Drives from 0.25 to 160 KW, and can

replace many variable pulley drives from other manufactures who use the Berges Pulley System; such as Nord Unicase(R), SEW-Eurodrive's Varigear(R). Millions of the RGAE type of design are working around the world in some of the harshest conditions and nearly every kind of machine or equipment requiring reliable variable speed control.

We could develop a more complex design, but the Mechanical Speed Variator customer needs simplicity, reliability, smooth operation, low maintenance, and a global organization to back it up. Mechanical Speed Variator is power you can understand.


# MECHANICAL VARIABLE SPEED

## Technical Data

**The most important technical data is specified on the name (rating) plate**

|   |                      |
|---|----------------------|
|  <b>BERGES</b> Antriebstechnik |                      |
| 51709 Marienheide - Tel. 02264/17-0   |                      |
| Typ   | <input type="text"/> |
| KB-Nr   | <input type="text"/> |
| Baujahr   | <input type="text"/> |

- This data and the contractual agreements for the drives stipulate the limits to use as intended.
- Please refer to the product catalogs to further technical data.
- On complete gears ( RGAE with reduction gear and motor ), three rating plates are normally attached. One rating plate is attached to the motor, one is attached to the gear and one attached to the RGAE.

|   |                        |
|---|------------------------|
|  <b>BERGES</b> Antriebstechnik |                        |
| 51790 Marienheide   |                        |
| Typ   | <input type="text"/> 1 |
| Date  | <input type="text"/> 2 |
| N0.   | <input type="text"/> 3 |
| i   | <input type="text"/> 4 |
| n1/n2   | <input type="text"/> 5 |
| M2max   | <input type="text"/> 6 |

Lubricant - see maintenance instructions

1. Type ( type of construction, size)
2. Date of manufacture
3. Gear number
4. Transmission ratio
5. Output Speed in rpm
6. Max torque



TVT Americas Mechanical speed variators are constructed on the basis of a modular system They consist of:

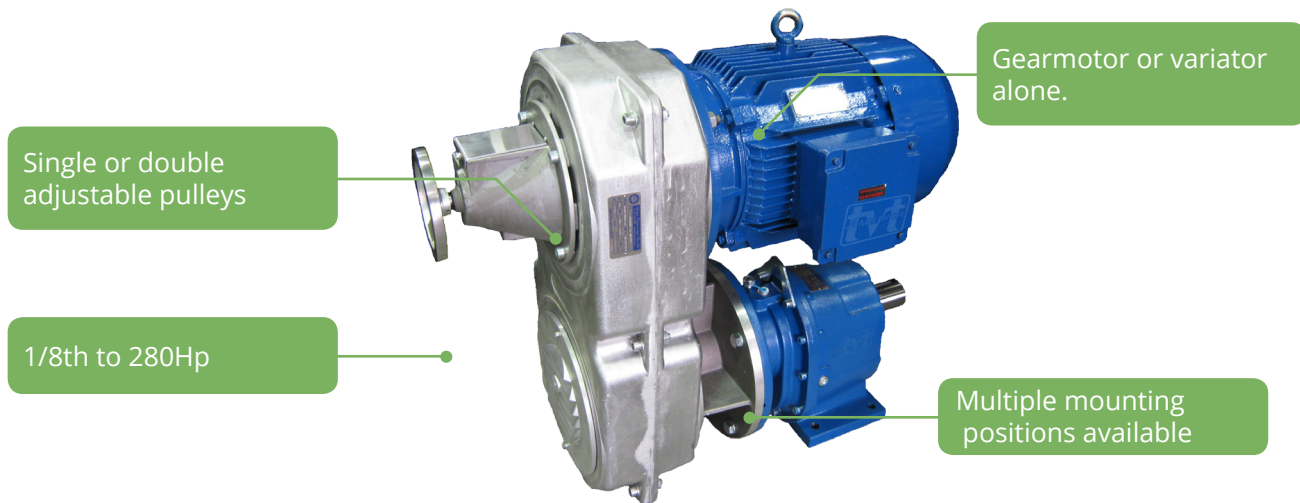
- BERGES assembly units VG
- Output flanges or output bases GFL or GTF
- Gear boxes ( helical -, worm -, bevel -and helical shaft mount. Gearboxes )
- Three-phase motors to IEC standard
- Speed controls SS, WS, HS, EFV or EFH
- Speed indicators DVM 120 01 or FFA 96



Caution ! Variable -speed geared motors may be operated only at the frequency specified on the rating plate.

# GENERAL DESCRIPTION

## Replaces Nord and SEW



TVT Americas mechanical variable speed units are designed for continuous duty under difficult operating conditions. These units have the following standard construction features:

- Supplied as a variable-speed gear attachment unit, of base or flange design, or with reduction gear and are suitable for all conventional installation positions
- Consists of aluminum and have a symmetrical design. They are sturdy, vibration-damping and designed for continuous operation.
- All shafts are mounted in rolling-contact bearings and are packed with rolling-contact bearing grease for lifetime lubrication.

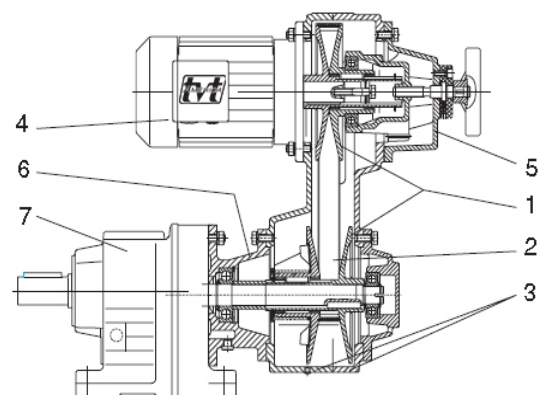
### AVAILABLE FEATURES

- Nitrided pulleys for corrosion resistance.
- Severe Duty option for motor protection in outdoor service or humid environments.
- Totally enclosed belt case on sizes 01-41 for dusty environments.
- Brake on the motor or on the driven pulley shaft.
- Speed adjustment through front hand wheel, right angle hand wheel, or electro mechanical remote control.
- Digital Speed Readout
- Hand wheel with speed indicator
- Input shaft in lieu of a motor
- Adapters for C-face motors

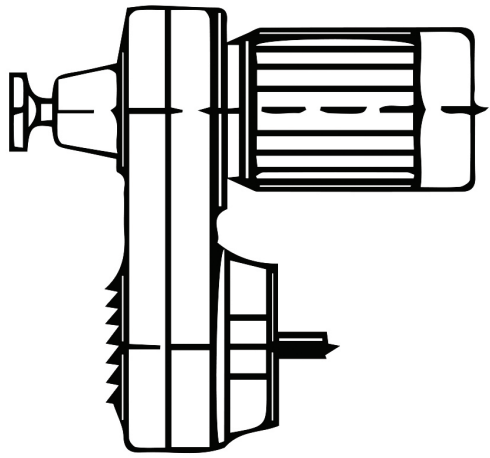
### Component Identification

Variable speed geared motors with reduction gearing are comprised of the following component parts:

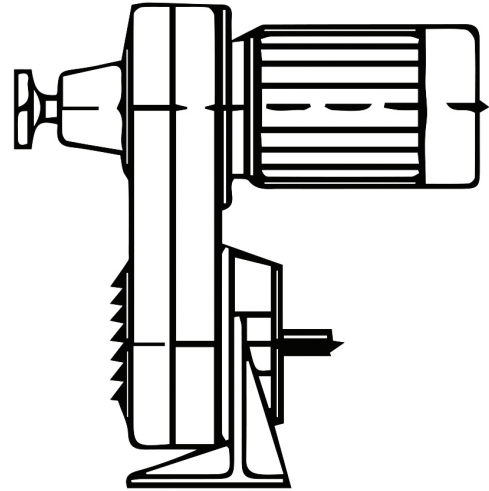
1. Adjustable pulleys
2. Wide V-belt
3. Split belt case housing
4. Drive motor
5. Adjusting and indicating devices
6. Mounting adapter and bearing cover
7. Gear reduction unit



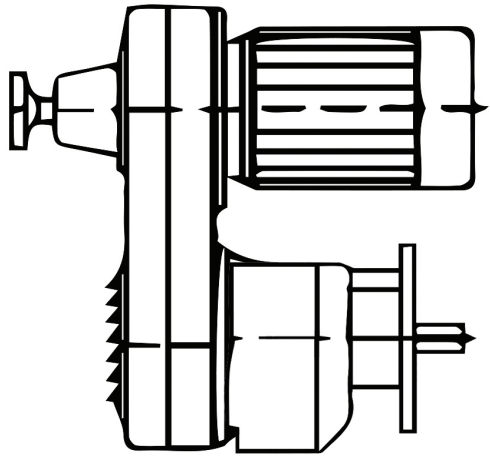
# BASIC COMPONENTS



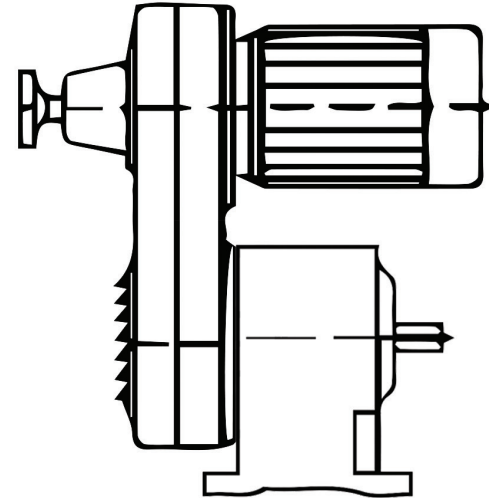
Flange Type



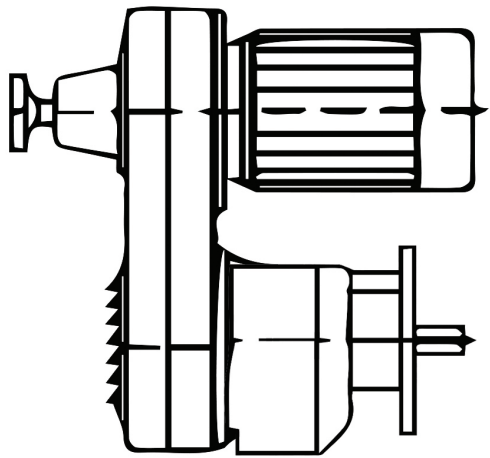
Pedestal type



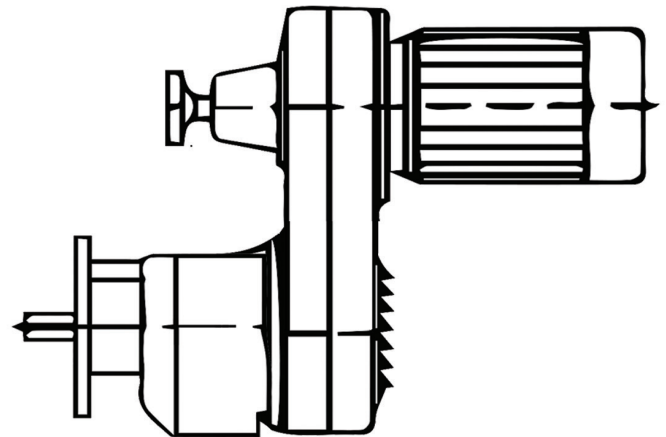
Flanged gear unit



Pedestal gear unit

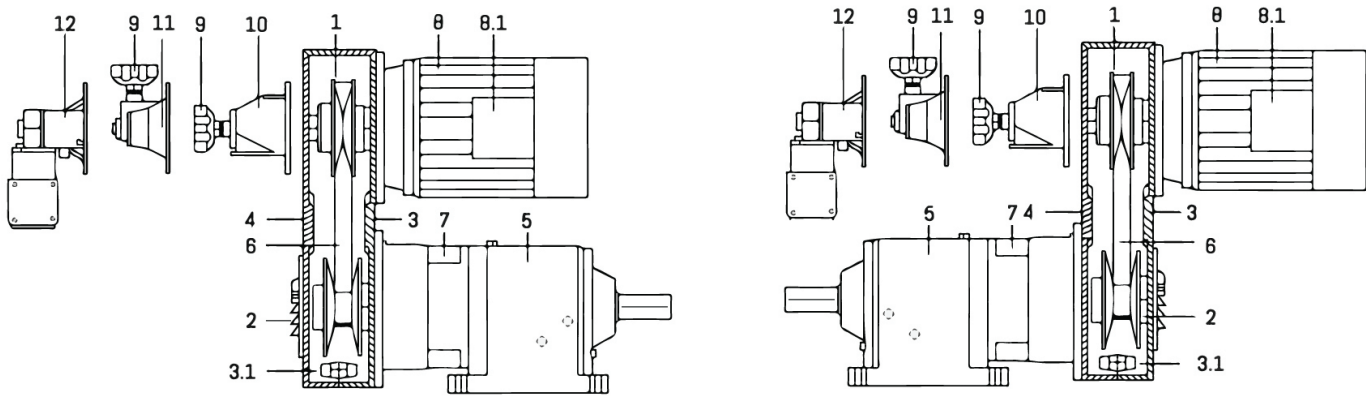


U Orientation



Z Orientation

BASIC COMPONENTS WITH POSSIBILITIES OF SYSTEMATIC EXTENSIONS



## MODE OF OPERATION

- The three-phase motor ( Item 8 ) drives the mechanically adjustable regulation pulley R ( Item 1 ) This drives the spring-loaded spring pulley F ( Item 2 ) which is arranged on the drive shaft of the gear flange GFL ( Item 7 resp. Item 7.1, Figure 5, Page 13 ) or the drive shaft of the reduction gear ( Item 5 ), via the wide V-belt ( Item 6 ). Depending on gearbox type, the gearbox is attached either directly to one of the two casing halves ( Item 3 I Item 4 ) or using the gear flange GFL resp. Gear base GTF. (Item 7.1 wsp. 7.2)
- The rotational speed is adjusted by the adjustment device ( Items 10, 11, 12 ) by shifting the moving running surface of the mechanically adjustable regulating pulley R in axial direction by turning the hand wheel resp. Operating the variable-speed motor. A rotational speed indication ( option ) is provided by the position indicator in the scale hand wheel or electrically by means of the pulse generator and indicator.

## INSTALLATION

The consignment must be examined immediately on arrival for completeness and transport damage. We are able to replace damaged equipment free of charge only if an advice of damage is drawn up in the presence of the haulage contractor.

### Caution!

Use only slinging equipment with a adequate load-carrying capacity to transport the drive. Ensure that the equipment is correctly secured. Avoid shocks and jolts.

### Important!

Equipment of Z -type of construction is not stable! Ensure that such equipment is appropriately supported.

Drives which are not be installed immediately must be covered and stored in dry rooms not subject to major temperature differences and in the position of normal use.

### Important!

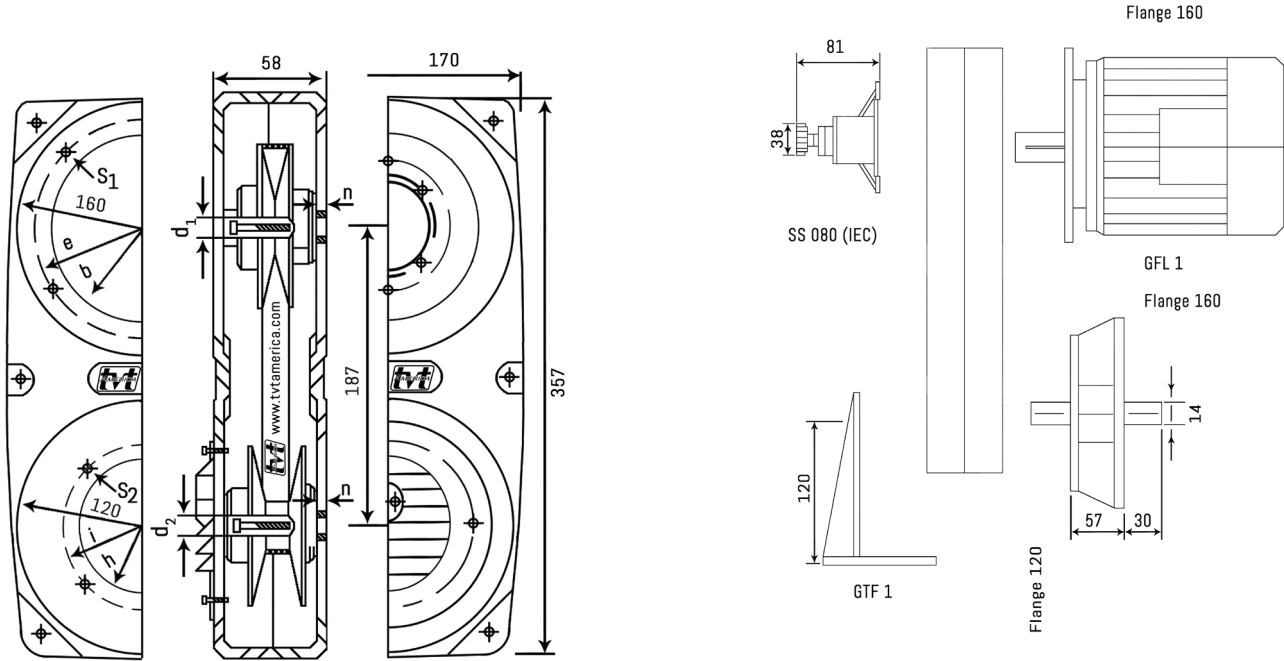
Do not store drives in the open air. (Should it be necessary to store drives in the open air, carefully cover the drive and protect it against moisture and soiling ).

- Exposed flange surfaces and shaft ends are preserved as standard, and we provide 6 months warranty on this preservation. The warranty period commences on the date of delivery.
- If the equipment is to be stored for longer than three months, remove the wide V-belt.
- If the equipment is to be stored for longer than six months, inspect the preservation and renew it if necessary.

# ASSEMBLY UNITS

## RGAE 1

$$P_{1max} = 0.37 \text{ kW}$$



ASSEMBLY UNIT RGAE 1 P<sub>1MAX</sub> = 0.73kW

### RGAE 1

#### Specifications

| Motor size type | Power kW | Nominal speed | RGAE type | Output power max/min kW | Output speed | Belt     | Speed range | Weight (lbs.) |
|-----------------|----------|---------------|-----------|-------------------------|--------------|----------|-------------|---------------|
| 71 B5           | 0.37     | 1370          | RGAE 1-90 | 0.33/0.19               | 3210/585     | 17x6x578 | 1:5.5       | 7             |

### RGAE 1

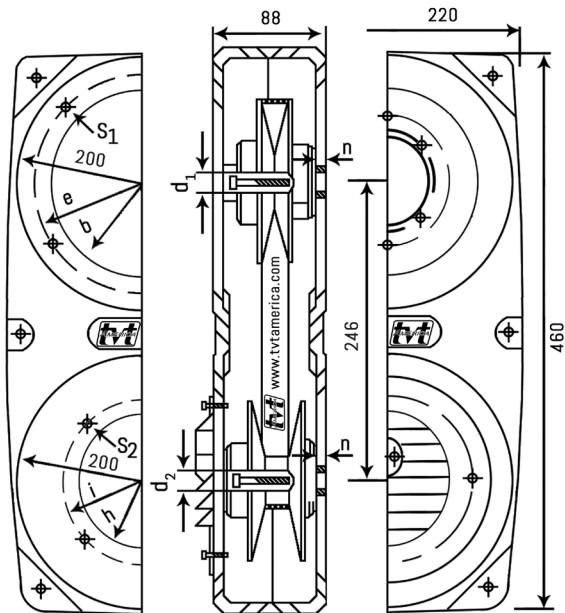
#### Dimensions in mm

| RGAE type  | D <sub>1</sub> | e   | b   | S <sub>1</sub> | d <sub>2 max</sub> | i   | h  | S <sub>2</sub> | n |
|------------|----------------|-----|-----|----------------|--------------------|-----|----|----------------|---|
| RGAE 1-080 | 11<br>14       | 130 | 113 | 9              | 11<br>14           | 100 | 81 | 6.5            | 4 |

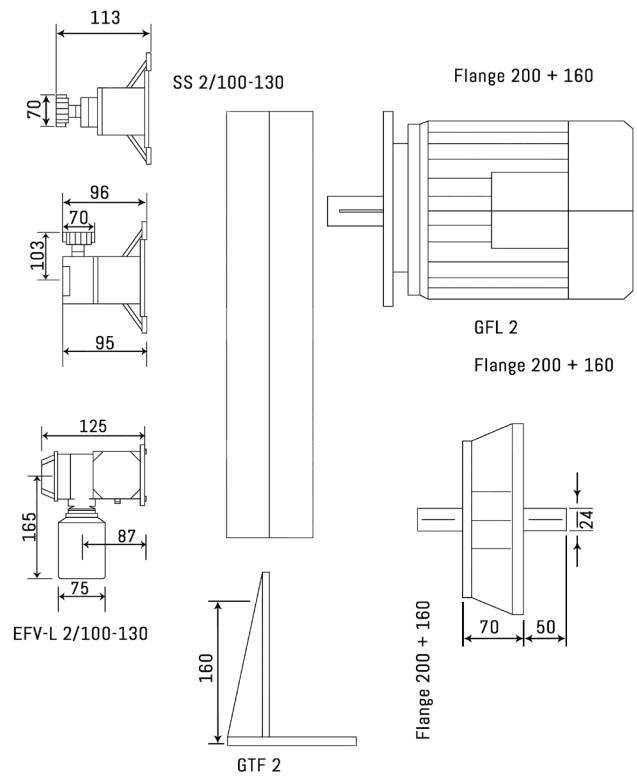


# ASSEMBLY UNITS

## RGAE 2



$$P_{1max} = 1.5 \text{ kW}$$



### RGAE 2

#### Specifications

| Motor size type | Power kW | Nominal speed | RGAE type  | Output power max/min kW | Output speed max/ min | Belt     | Speed range | Weight (lbs.) |
|-----------------|----------|---------------|------------|-------------------------|-----------------------|----------|-------------|---------------|
| 90 B5           | 1.5      | 1390          | RGAE 2-100 | 1.3/06                  | 3260/595              | 22x7x758 | 1:5.5       | 14            |

### RGAE 2

#### Dimensions in mm

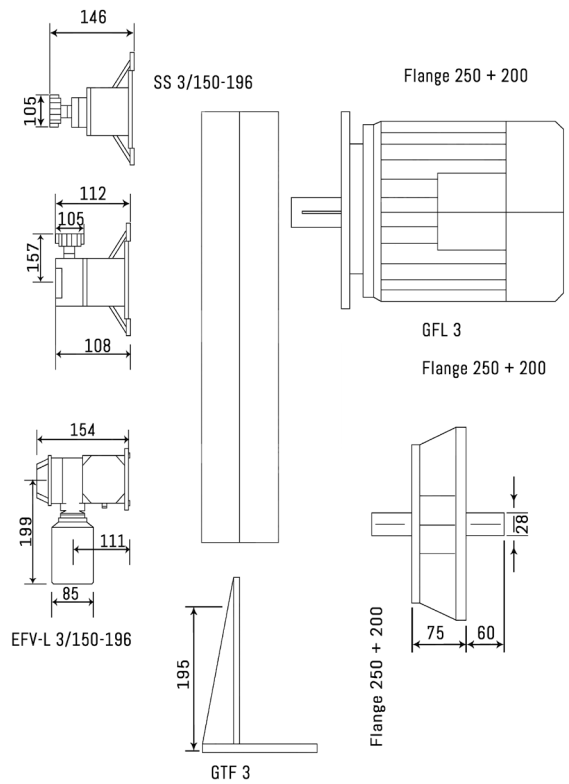
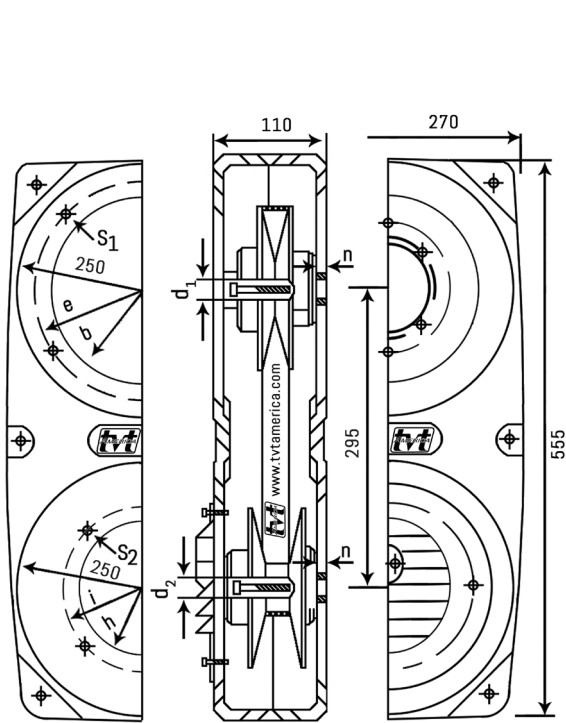
| RGAE type  | D <sub>1</sub> | e   | b   | s <sub>1</sub> | d <sub>2 max</sub> | i   | h   | s <sub>2</sub> | n |
|------------|----------------|-----|-----|----------------|--------------------|-----|-----|----------------|---|
| RGAE 2-100 | 14             | 165 | 133 | 9              | 14                 | 165 | 133 | 11             | 8 |
| RGAE 2-130 | 19             |     |     |                | 19                 |     |     |                |   |
| RGAE 2-130 | 24             |     |     |                | 24                 |     |     |                |   |

ASSEMBLY UNIT RGAE 2 P<sub>1 MAX</sub> 1.5kW

# ASSEMBLY UNITS

## RGAE 3

$P_{1max} = 4.0 \text{ kW}$



### RGAE 3

#### Specifications

| Motor size type | Power kW | Nominal speed | RGAE type      | Output power max/min kW | Output speed max./min | Belt       | Speed range | Weight (lbs.) |
|-----------------|----------|---------------|----------------|-------------------------|-----------------------|------------|-------------|---------------|
| 90 B5           | 1.5      | 1410          | RGAE 3-190/1.5 | 1.3/0.75                | 4560/435              | 28x8x988   | 1:10.5      | 28            |
| 100B5           | 3.0      | 1430          | RGAE 3-150     | 2.7/0.9                 | 3595/555              | 28x8x938   | 1:6.5       | 25            |
| 100B5           | 3.0      | 1430          | RGAE 3-190/3.0 | 2.7/0.85                | 4230/470              | 28x8x996   | 1:9.0       | 28            |
| 112 B5          | 4.0      | 1140          | RGAE 3-196     | 3.6/1.2                 | 4040/505              | 33x10x1020 | 1:8.0       | 32            |

### RGAE 3

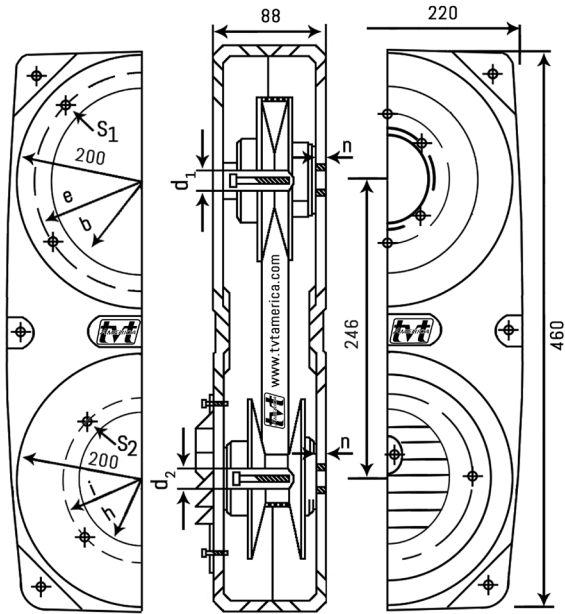
#### Dimensions in mm

| RGAE type                   | $D_1$ | e   | b   | $s_1$ | $d_{2max}$ | i   | h   | $s_2$ | n  |
|-----------------------------|-------|-----|-----|-------|------------|-----|-----|-------|----|
| RGAE 3-190/1.5              | 19    | 165 | 133 | 11    | 19         | 215 | 183 | 13    | 10 |
|                             | 24    |     |     |       | 24         |     |     |       |    |
|                             | 28    |     |     |       | 28         |     |     |       |    |
| RGAE 3-150<br>RGAE3-190/3.0 | 19    | 215 | 183 | 13    | 19         | 215 | 183 | 13    | 10 |
|                             | 24    |     |     |       | 24         |     |     |       |    |
|                             | 28    |     |     |       | 28         |     |     |       |    |
| RGAE 3-196                  | 19    | 215 | 183 | 13    | 19         | 215 | 183 | 13    | -  |
|                             | 24    |     |     |       | 24         |     |     |       |    |
|                             | 28    |     |     |       | 28         |     |     |       |    |

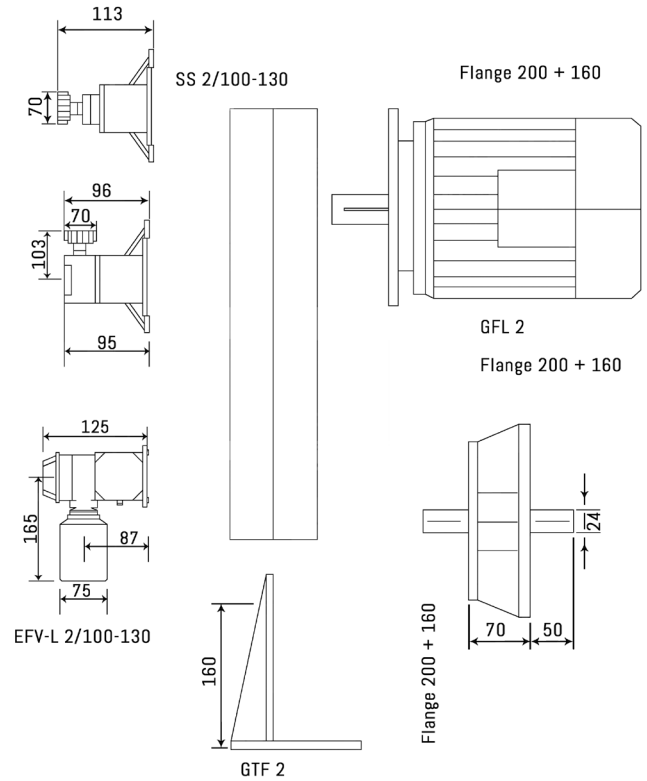
ASSEMBLY UNIT RGAE 3  $P_{1MAX} = 4.0kW$

# ASSEMBLY UNITS

## RGAE 4



$$P_{1max} = 7.5 \text{ kW}$$



## RGAE 4

### Specifications

| Motor size type | Power kW | Nominal speed | RGAE type   | Output power max/min kW | Output speed max/ min | Belt       | Speed range | Weight (lbs.) |
|-----------------|----------|---------------|-------------|-------------------------|-----------------------|------------|-------------|---------------|
| 112 B5          | 4.0      | 1430          | RGAE 4-235  | 3.6/1.6                 | 4610/439              | 37x10x1180 | 1:10.5      | 49            |
| 132 B5          | 7.5      | 1450          | RGAE 4-4210 | 6.7/1.85                | 3970/530              | 37x10x1167 | 1:7.5       | 215           |

## RGAE 4

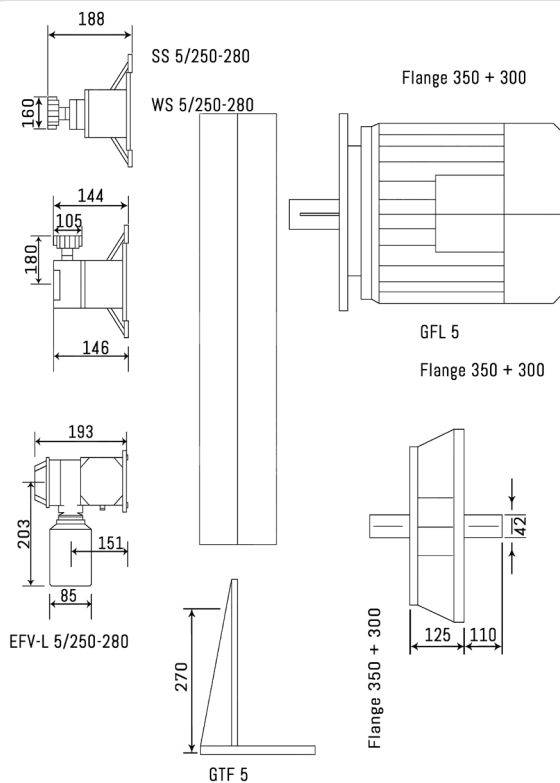
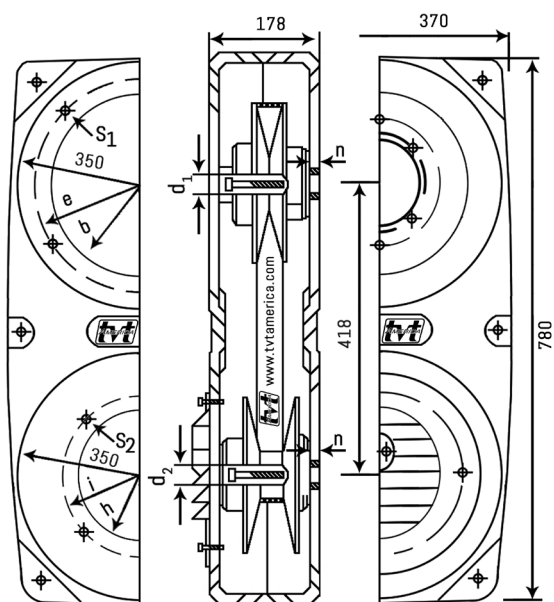
### Dimensions in mm

| RGAE type  | D <sub>1</sub> | e   | b   | s <sub>1</sub> | d <sub>2 max</sub> | i          | h          | s <sub>2</sub> | n |
|------------|----------------|-----|-----|----------------|--------------------|------------|------------|----------------|---|
| RGAE 4-235 | 24<br>28       | 215 | 183 | 13             | 24<br>28           | 265<br>215 | 233<br>183 | 13<br>11       | 9 |
| RGAE 4-210 | 24<br>28<br>38 | 265 | 233 | 13             | 24<br>28<br>38     | 265<br>215 | 233<br>183 | 13<br>11       | 9 |

ASSEMBLY UNIT RGAE 4 P<sub>1 MAX</sub> 7.5kW

## RGAE 5

$P_{1max} = 15.0 \text{ kW}$



### RGAE 5

#### Specifications

| Motor size type | Power kW | Nominal speed | RGAE type  | Output power max/min kW | Output speed max./min | Belt       | Speed range | Weight (lbs.) |
|-----------------|----------|---------------|------------|-------------------------|-----------------------|------------|-------------|---------------|
| 160 B5          | 11       | 1450          | RGAE 5-250 | 9.9/22.7                | 3970/530              | 47x12x1383 | 1:7.5       | 85            |
| 160 B5          | 15       | 1455          | RGAE 5-280 | 13.5/4.1                | 4240/500              | 55x15x1475 | 1:8.5       | 101           |

### RGAE 5

#### Dimensions in mm

| RGAE type  | $D_1$ | e   | b   | $s_1$ | $d_{2max}$ | i   | h   | $s_2$ | n    |
|------------|-------|-----|-----|-------|------------|-----|-----|-------|------|
| RGAE 5-250 | 28    | 300 | 253 | 17    | 28         | 300 | 253 | 17    | 16.5 |
|            | 38    |     |     |       | 38         |     |     |       |      |
|            | 42    |     |     |       | 42         |     |     |       |      |
| RGAE 5-280 | 28    | 300 | 253 | 17    | 28         | 300 | 253 | 17    | 8    |
|            | 38    |     |     |       | 38         |     |     |       |      |
|            | 42    |     |     |       | 42         |     |     |       |      |

$P_{1max} = 15 \text{ kW}$

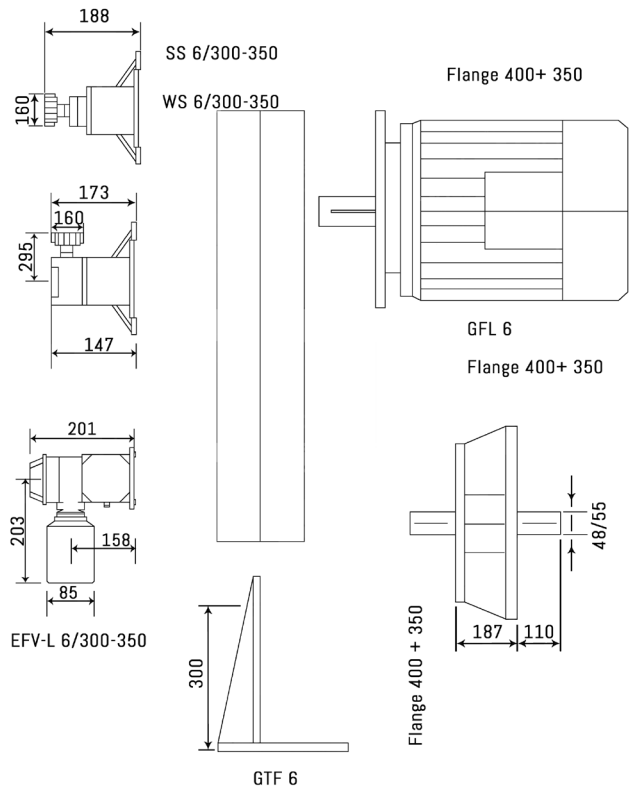
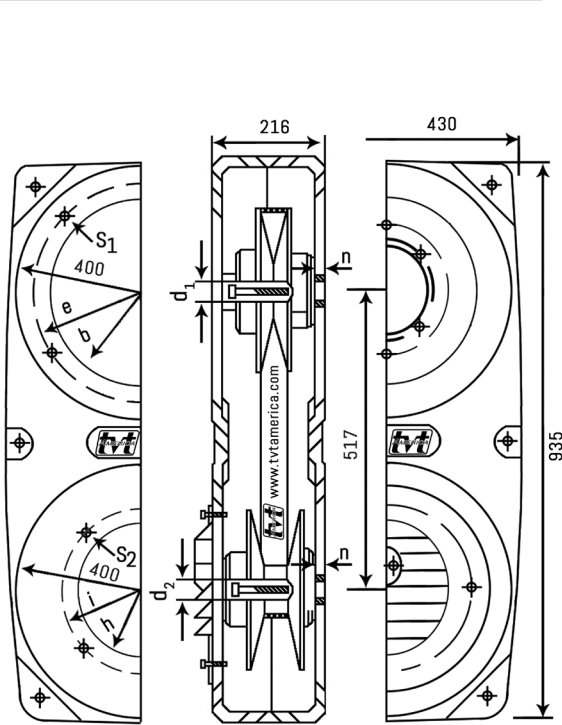
RGAE 5

ASSEMBLY UNIT

# ASSEMBLY UNITS

## RGAE 6

$$P_{1max} = 1.5 \text{ kW}$$



## RGAE 6

### Specifications

| Motor size type | Power kW | Nominal speed | RGAE type  | Output power max/min kW | Output speed max/ min | Belt       | Speed range | Weight (lbs.) |
|-----------------|----------|---------------|------------|-------------------------|-----------------------|------------|-------------|---------------|
| 180 B5          | 18.5     | 1460          | RGAE 6-300 | 16.6/6.1                | 3920/545              | 51x16x1695 | 1:7.2       | 157           |
| 180 B5          | 22       | 1460          | RGAE 6-300 | 19.8/6.1                | 3920/545              | 52x16x1695 | 1:7.2       | 157           |
| 200 B5          | 30       | 1465          | RGAE 6-350 | 27/10                   | 4000/540              | 72x22x1778 | 1:7.4       | 169           |

## RGAE 4

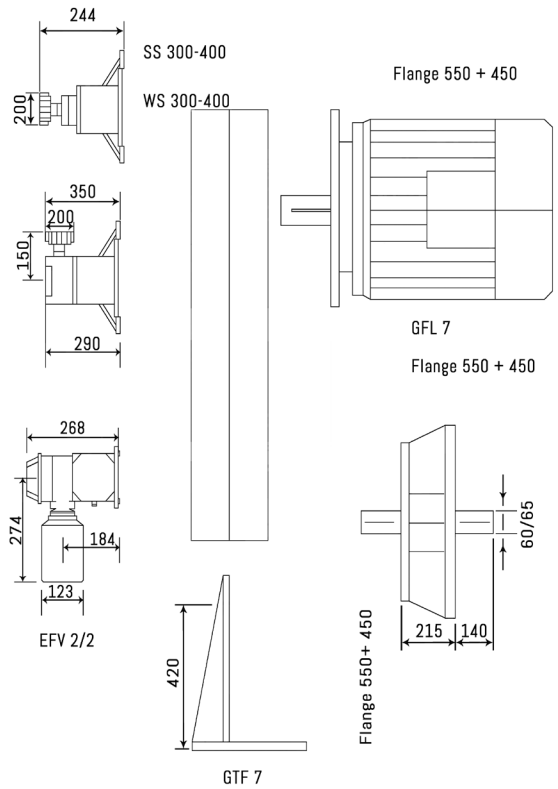
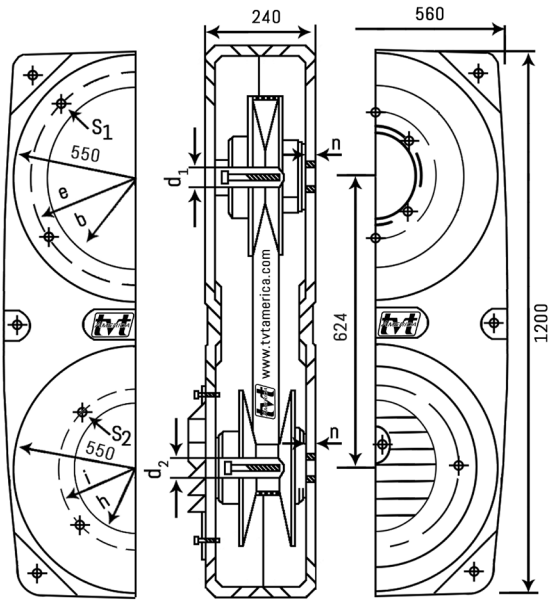
### Dimensions in mm

| RGAE type  | D <sub>1</sub> | e   | b   | s <sub>1</sub> | d <sub>2 max</sub> | i   | h   | s <sub>2</sub> | n    |
|------------|----------------|-----|-----|----------------|--------------------|-----|-----|----------------|------|
| RGAE 6-300 | 42             | 300 | 253 | 17             | 42                 | 350 | 303 | 17             | 15.5 |
|            | 48             |     |     |                | 300                | 253 | 17  |                |      |
| RGAE 6-350 | 42             | 350 | 303 | 17             | 42                 | 350 | 303 | 17             | 11   |
|            | 48             |     |     |                | 300                | 253 | 17  |                |      |
|            | 55             |     |     |                | 300                | 253 | 17  |                |      |

ASSEMBLY UNIT RGAE 6 P<sub>1 MAX</sub> = 30 kW

## RGAE 7

$P_{1max} = 55.0 \text{ kW}$



### RGAE 7

#### Specifications

| Motor size type | Power kW | Nominal speed | RGAE type  | Output power max/min kW | Output speed max./min | Belt       | Speed range | Weight (lbs.) |
|-----------------|----------|---------------|------------|-------------------------|-----------------------|------------|-------------|---------------|
| 225 B5          | 37       | 1475          | RGAE 7-375 | 33.3/16.0               | 2760/520              | 83x23x2066 | 1:5.3       | 202           |
| 225 B5          | 45       | 1475          | RGAE 7-375 | 40.5/16.0               | 2760/520              | 83x23x2066 | 1:5.3       | 202           |
| 250 B5          | 55       | 1475          | RGAE 7-400 | 49.5/16.8               | 2575/515              | 93x23x2145 | 1:5.0       | 225           |

### RGAE 7

#### Dimensions in mm

| RGAE type  | $D_1$          | e   | b   | $S_1$ | $d_{2max}$     | i          | h          | $s_2$    | n  |
|------------|----------------|-----|-----|-------|----------------|------------|------------|----------|----|
| RGAE 7-375 | 55<br>60       | 400 | 353 | 17    | 55<br>60       | 500<br>400 | 453<br>353 | 17<br>17 | 10 |
| RGAE 7-400 | 55<br>60<br>65 | 500 | 453 | 17    | 55<br>60<br>65 | 500<br>400 | 453<br>353 | 17<br>17 | 10 |

ASSEMBLY UNIT RGAE 7  $P_{1MAX} = 55kW$

# ASSEMBLY UNITS

## RGAE 8 & 9

$P_{1max} = 160 \text{ kW}$

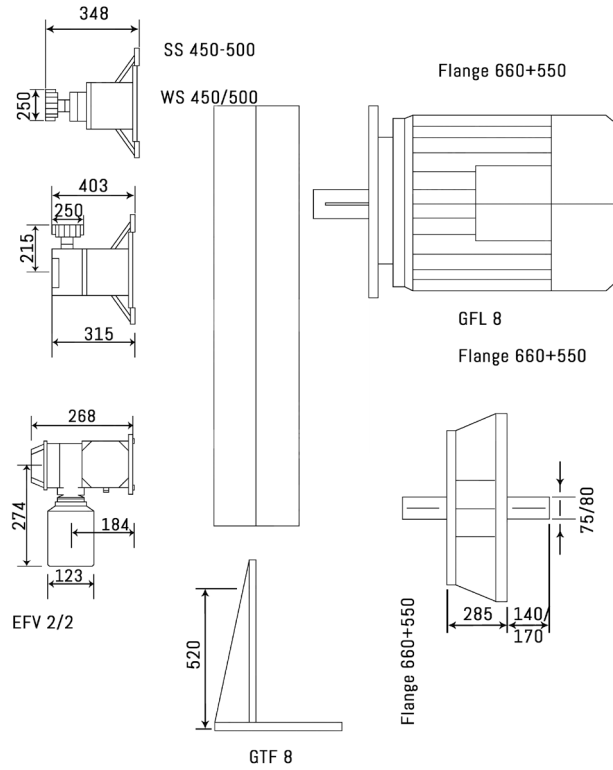
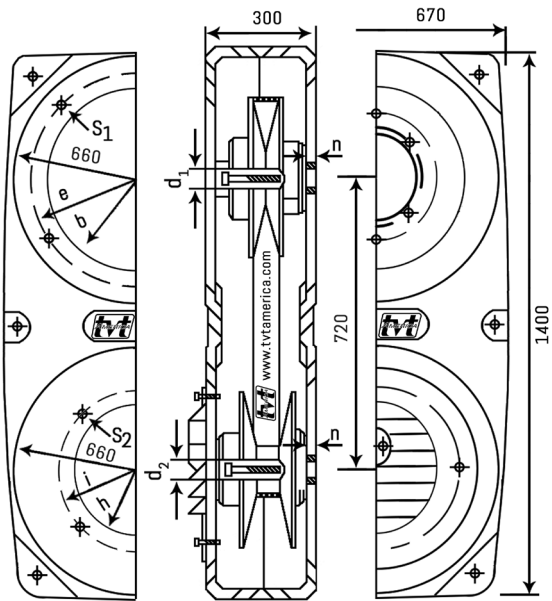


Diagram only valid for RGAE8

### RGAE 8 & 9

#### Specifications

| Motor size type | Power kW | Nominal speed | RGAE type  | Output power max/min kW | Output speed max/ min | Belt       | Speed range | Weight (lbs.) |
|-----------------|----------|---------------|------------|-------------------------|-----------------------|------------|-------------|---------------|
| 280 B5          | 75       | 1480          | RGAE 8-450 | 67.5/21.2               | 2770/630              | 83x26x2488 | 1:4.4       | 517           |
| 280 B5          | 90       | 1480          | RGAE 8-500 | 81.0/36.5               | 1992/498              | 83x26x2675 | 1:4.0       | 562           |
| 315 B5          | 110      | 1480          | RGAE 8-500 | 99/36.5                 | 1992/498              | 83x26x2675 | 1:4.0       | 562           |
| 315 B5          | 132      | 1480          | RGAE 9-600 | 119/75                  | 1965/655              | *          | 1:3.0       | *             |
| 315 B5          | 160      | 1480          | RGAE 9-600 | 145/75                  | 1965/655              | *          | 1:3.0       | *             |

### RGAE 8

#### Dimensions in mm

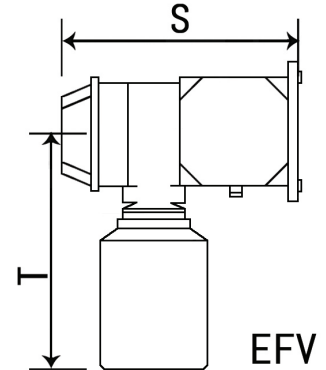
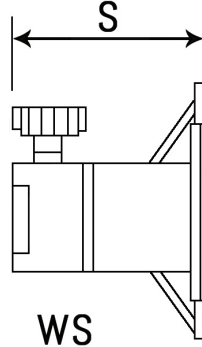
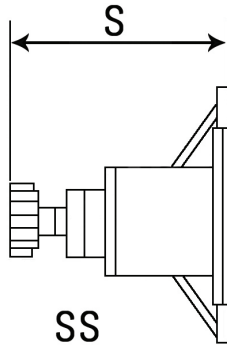
| RGAE type      | D <sub>1</sub> | e   | b   | S <sub>1</sub> | d <sub>2max</sub> | i          | h          | S <sub>2</sub> | n  |
|----------------|----------------|-----|-----|----------------|-------------------|------------|------------|----------------|----|
| RGAE 8-450     | 65<br>75       | 500 | 453 | 17             | 80                | 600<br>500 | 553<br>453 | 21<br>17       | 10 |
| RGAE 8-500/90  | 65<br>75       | 500 | 453 | 17             | 80                | 600<br>500 | 553<br>453 | 21<br>17       | 10 |
| RGAE 8-500/110 | 75<br>80       | 600 | 553 | 21             | 80                | 600<br>500 | 553<br>453 | 21<br>17       | 10 |
| RGAE 9-600/132 | 75<br>80       | *   | *   | *              | 90                | *          | *          | *              | *  |
| RGAE 9-600/160 | 75<br>80       | *   | *   | *              | 90                | *          | *          | *              | *  |

\* Please enquire

ASSEMBLY UNIT RGAE 8 & 9  $P_{1max} = 160 \text{ kW}$

# SPEED CONTROLS SS, WS & EFV

The control devices SS and ES are also available with a scale hand-wheel, if required. The compact electric remote control EFV is additionally available with the slop clutch and or potentiometer for analog indication. In contrast to the otherwise normal wheel chain arrangement, there are no bending moments thanks to the linear stroke adjustment. Speed indicators and tachometers are available on request. EFV can also be used in conjunction with double pulley drives.



SPEED ADJUSTMENT CONTROLS FOR RGAE

| SS                        |              |     |
|---------------------------|--------------|-----|
| Speed adjustment controls |              |     |
| RGAE                      | Control      | S   |
| RGAE 2-100                | SS 2/100-130 | 113 |
| RGAE 2-130                | SS 2/100-130 | 113 |
| RGAE 3-150                | SS 3/150-196 | 146 |
| RGAE 3-190                | SS 3/150-196 | 146 |
| RGAE 3-196                | SS 3/150-196 | 146 |
| RGAE 4-210                | SS 4/210-235 | 148 |
| RGAE 4-235                | SS 4/210-235 | 148 |
| RGAE 5-250                | SS 5/250-280 | 185 |
| RGAE 5-280                | SS 5/250-280 | 188 |
| RGAE 6-300                | SS 6/300-350 | 185 |
| RGAE 6-350                | SS 6/300-350 | 188 |
| RGAE 7-375                | SS-375-400   | 244 |
| RGAE 7-400                | SS-375-400   | 244 |
| RGAE 8-450                | SS-450-500   | 348 |
| RGAE 8-500                | SS-450-500   | 348 |
| RGAE 9-600                | *            | *   |

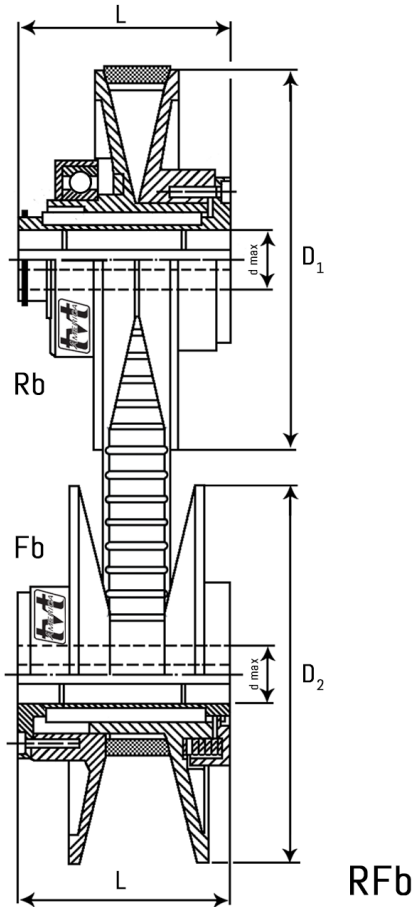
| WS                        |              |     |
|---------------------------|--------------|-----|
| Speed adjustment controls |              |     |
| RGAE                      | Control      | S   |
| RGAE 2-100                | WS 2/100-130 | 96  |
| RGAE 2-130                | WS 2/100-130 | 96  |
| RGAE 3-150                | WS 3/150-196 | 112 |
| RGAE 3-190                | WS 3/150-196 | 112 |
| RGAE 3-196                | WS 3/150-196 | 112 |
| RGAE 4-210                | WS 4/210-235 | 112 |
| RGAE 4-235                | WS 4/210-235 | 112 |
| RGAE 5-250                | WS 5/250-280 | 141 |
| RGAE 5-280                | WS 5/250-280 | 144 |
| RGAE 6-300                | WS 6/300-350 | 172 |
| RGAE 6-350                | WS 6/300-350 | 173 |
| RGAE 7-375                | WS-375-400   | 350 |
| RGAE 7-400                | SS-375-400   | 350 |
| RGAE 8-450                | SS-450-500   | 403 |
| RGAE 8-500                | SS-450-500   | 403 |
| RGAE 9-600                | *            | *   |

| EFV                       |                 |     |     |
|---------------------------|-----------------|-----|-----|
| Speed adjustment controls |                 |     |     |
| RGAE                      | Control         | S   | T   |
| RGAE 2-100                | EFV-L 2/100-130 | 125 | 165 |
| RGAE 2-130                | EFV-L 2/100-130 | 125 | 165 |
| RGAE 3-150                | EFV-L 3/150-196 | 154 | 199 |
| RGAE 3-190                | EFV-L 3/150-196 | 154 | 199 |
| RGAE 3-196                | EFV-L 3/150-196 | 154 | 199 |
| RGAE 4-210                | EFV-L 4/210-235 | 155 | 199 |
| RGAE 4-235                | EFV-L 4/210-235 | 155 | 199 |
| RGAE 5-250                | EFV-L 5/250-280 | 193 | 203 |
| RGAE 5-280                | EFV-L 5/250-280 | 193 | 203 |
| RGAE 6-300                | EFV-L 6/300-350 | 201 | 203 |
| RGAE 6-350                | EFV-L 6/300-350 | 201 | 203 |
| RGAE 7-375                | EFV 2/2         | 268 | 274 |
| RGAE 7-400                | EFV 2/2         | 268 | 274 |
| RGAE 8-450                | EFV 2/2         | 268 | 274 |
| RGAE 8-500                | EFV 2/2         | 268 | 274 |
| RGAE 9-600                | *               | *   | *   |

\* Please inquire



# DOUBLE PULLEY FOR WIDE V-BELTS



RF b  $P_{1max} = 160 \text{ kW}$

A mechanical variable pulley Rb, mounted on the driving shaft (motor shaft) and a spring-loaded variable pulley Fb, mounted on the driven shaft\* form a variable pulley set with constant center distance RF b. Also suitable for reversing operation.

Optimum pressure spring characteristics in the spring-loaded variable pulley guarantee a favorable power ratio over the whole speed range.

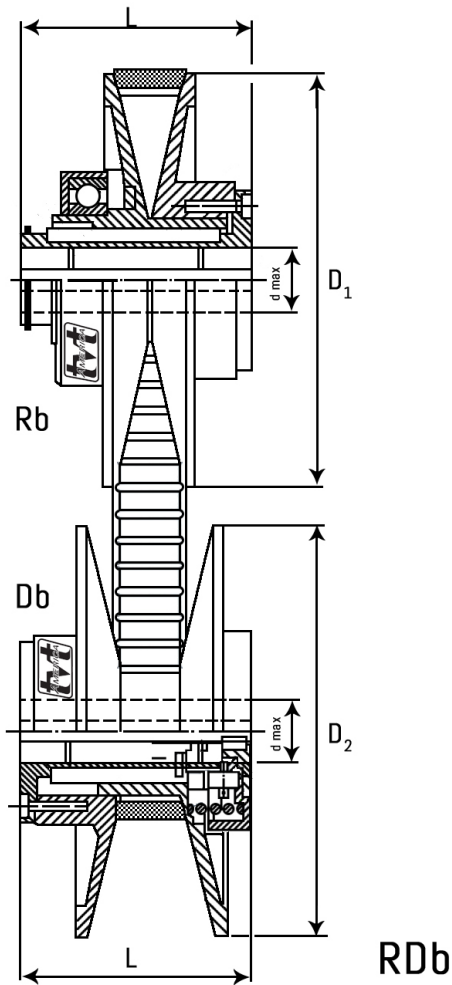
\* Reverse arrangement possible on request

RF b:

| TYPE    | SPEED RANGE | MOTOR | Kw    | n max/min | Pmax/min  | D <sub>1</sub> | L   | D <sub>2</sub> | dmax | Belt  |
|---------|-------------|-------|-------|-----------|-----------|----------------|-----|----------------|------|-------|
| RF 080b | 5.5         | 1370  | 0.37  | 3210/585  | 0.33/0.17 | 91.4           | 50  | 91.4           | 14   | 17x6  |
| RF100b  | 5.5         | 1410  | 1.5   | 3260/595  | 1.35/0.55 | 120            | 72  | 120            | 24   | 22x7  |
| RF 130b | 7.0         | 1410  | 1.5   | 3733/534  | 1.35/0.53 | 135            | 72  | 135            | 24   | 22x7  |
| RF190b  | 10.5        | 1410  | 1.5   | 4560/435  | 1.35/0.75 | 190            | 90  | 190            | 24   | 28x8  |
| RF150b  | 6.5         | 1420  | 3.0   | 3595/555  | 2.7/0.9   | 159            | 90  | 159            | 28   | 28x8  |
| RF190b  | 9.0         | 1420  | 3.0   | 4230/470  | 2.7/0.85  | 190            | 90  | 190            | 28   | 28x8  |
| RF196b  | 8.0         | 1430  | 4.0   | 4040/505  | 3.6/1.2   | 198            | 110 | 198            | 28   | 33x10 |
| RF235b  | 10.5        | 1430  | 4.0   | 4610/439  | 3.6/1.6   | 236            | 122 | 236            | 32   | 37x10 |
| RF210b  | 7.5         | 1450  | 7.5   | 3970/530  | 6.7/1.85  | 220            | 122 | 220            | 38   | 37x10 |
| RF250b  | 7.5         | 1450  | 11    | 3970/530  | 9.9/2.7   | 255            | 145 | 255            | 42   | 47x10 |
| RF280b  | 8.5         | 1455  | 15.0  | 4240/500  | 13.5/4.1  | 296            | 162 | 296            | 42   | 55x15 |
| RF300b  | 7.2         | 1460  | 22    | 3920/545  | 19.8/6.1  | 305            | 185 | 305            | 48   | 51x16 |
| RF350b  | 7.4         | 1465  | 30.0  | 4000/540  | 27/10     | 346            | 195 | 346            | 55   | 70x18 |
| RF375b  | 5.3         | 1475  | 45    | 2760/520  | 40.5/16   | 346            | 220 | 390            | 60   | 83x23 |
| RF400b  | 5.0         | 1475  | 55.0  | 2575/515  | 49.5/16.8 | 372            | 220 | 420            | 65   | 83x23 |
| RF450b  | 4.4         | 1480  | 75.0  | 2770/630  | 67.5/21.2 | 450            | 280 | 470            | 80   | 83x26 |
| RF500b  | 4.0         | 1480  | 110.0 | 1992/498  | 99/36.5   | 470            | 280 | 580            | 80   | 83x26 |
| RF600b  | 3.0         | 1480  | 160.0 | 1965/655  | 145/75    | 506            | 360 | 569            | 90   | 87x28 |

DOUBLE PULLEY FOR WIDE V-BELTS

# DOUBLE PULLEY TORQUE LIMITING



RD b       $P_{1max} = 160 \text{ kW}$

This drive unit has a torque dependent control cam in addition to the pressure springs to absorb intermittent overloading or torque peaks.

The output pulley operates as a spring pulley up to the nominal power. From this point, the integrated control cam makes the output pulley function like a rigid V-belt drive. Double pulley drives of the type RD b therefore offer a high level of protection against overloading. Not suitable for reversing operation.

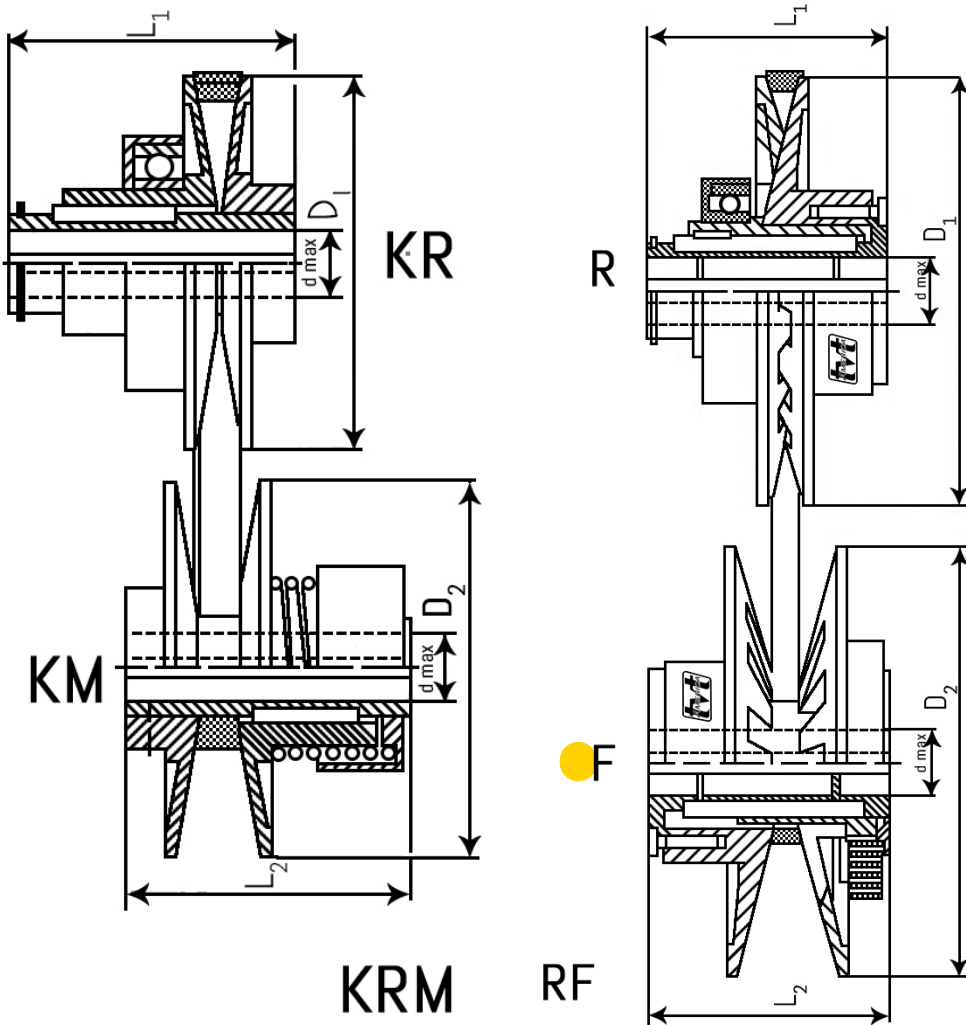
RD b:

| TYPE   | SPEED RANGE | MOTOR | Kw    | n max/min | Pmax/min  | D <sub>1</sub> | L <sub>1</sub> | D <sub>2</sub> | L <sub>2</sub> | d <sub>max</sub> | C    | Belt  |
|--------|-------------|-------|-------|-----------|-----------|----------------|----------------|----------------|----------------|------------------|------|-------|
| RD210b | 7.5         | 1450  | 7.5   | 3970/530  | 6.7/1.85  | 220            | 122            | 220            | 135            | 21               | 21   | 37x10 |
| RD280b | 8.5         | 1455  | 15.0  | 4240/500  | 13.5/4.1  | 296            | 162            | 296            | 182            | 42               | 35.5 | 55x15 |
| RD350b | 7.4         | 1465  | 30.0  | 4000/540  | 27.0/10   | 346            | 195            | 346            | 215            | 55               | 38   | 70x18 |
| RD400b | 5.0         | 1475  | 55.0  | 2575/515  | 49.5/16.8 | 372            | 220            | 420            | 250            | 65               | 33   | 83x23 |
| RD500b | 4.0         | 1480  | 110.0 | 1992/498  | 99.0/36.5 | 470            | 280            | 580            | 305            | 80               | 25   | 83x26 |
| RD600b | 3.0         | 1480  | 160.0 | 1965/655  | 145/75    | 506            | 360            | 596            | 400            | 90               | 40   | 87x28 |

DOUBLE PULLEY FOR WIDE V-BELTS

# DOUBLE PULLEY STANDARD V-BELTS

$$KRM + RF \quad P_{1max} = 160 \text{ kW}$$



A mechanical variable pulley Rb, mounted on the driving shaft (motor shaft) and a spring-loaded variable pulley Fb, mounted on the driven shaft\* form a variable pulley set with constant center distance RF b. Also suitable for reversing operation. Optimum pressure spring characteristics in the spring-loaded variable pulley guarantee a favorable power ratio over the whole speed range.  
\* Reverse arrangement possible on request

## KRM:

| TYPE       | SPEED RANGE | MOTOR | Kw   | n max/min | Pmax/min  | D <sub>1</sub> | L <sub>1</sub> | D <sub>2</sub> | L <sub>2</sub> | dmax | Belt  |
|------------|-------------|-------|------|-----------|-----------|----------------|----------------|----------------|----------------|------|-------|
| KRM 80.10  | 6.0         | 1370  | 0.25 | 3280/550  | 0.33/0.13 | 80             | 60             | 80             | 65             | 14   | 10X6  |
| KRM 105.13 | 6.0         | 1370  | 0.55 | 3350/560  | 0.68/0.41 | 105            | 80             | 105            | 80             | 19   | 13X8  |
| KRM 127.17 | 6.0         | 1420  | 0.75 | 3480/580  | 1.0/0.46  | 127            | 80             | 127            | 80             | 24   | 17X11 |

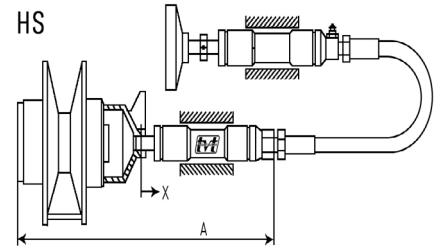
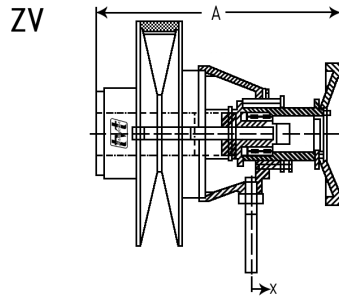
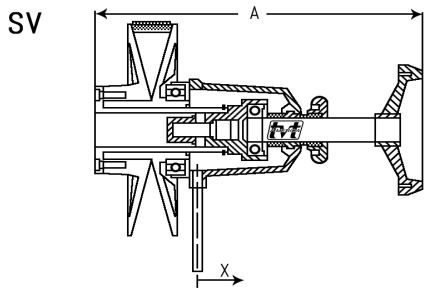
## RF :

| TYPE   | SPEED RANGE | MOTOR | Kw   | n max/min | Pmax/min  | D <sub>1</sub> | L <sub>1</sub> | D <sub>2</sub> | L <sub>2</sub> | dmax | Belt  |
|--------|-------------|-------|------|-----------|-----------|----------------|----------------|----------------|----------------|------|-------|
| RF 100 | 5.0         | 1370  | 0.37 | 3065/612  | 0.33/0.14 | 110            | 72             | 110            | 72             | 24   | 10X6  |
| RF 150 | 6.5         | 1410  | 1.5  | 3595/550  | 1.4/0.6   | 158            | 90             | 158            | 90             | 24   | 13X8  |
| RF 210 | 8.0         | 1420  | 3.0  | 4100/500  | 2.7/1.4   | 220            | 122            | 220            | 122            | 28   | 17X11 |
| RF 280 | 8.5         | 1450  | 5.5  | 4230/497  | 4.9/2.7   | 292            | 162            | 292            | 162            | 42   | 22X14 |

DOUBLE PULLEY FOR WIDE V-BELTS

# SPEED CONTROLS SV,ZV & HS

The Variable pulley control and control device are mounted together centrally on the drive shaft. This arrangement has the advantage of no axial loads on the motor shaft bearings. The hand wheels are optionally available as scale wheels.



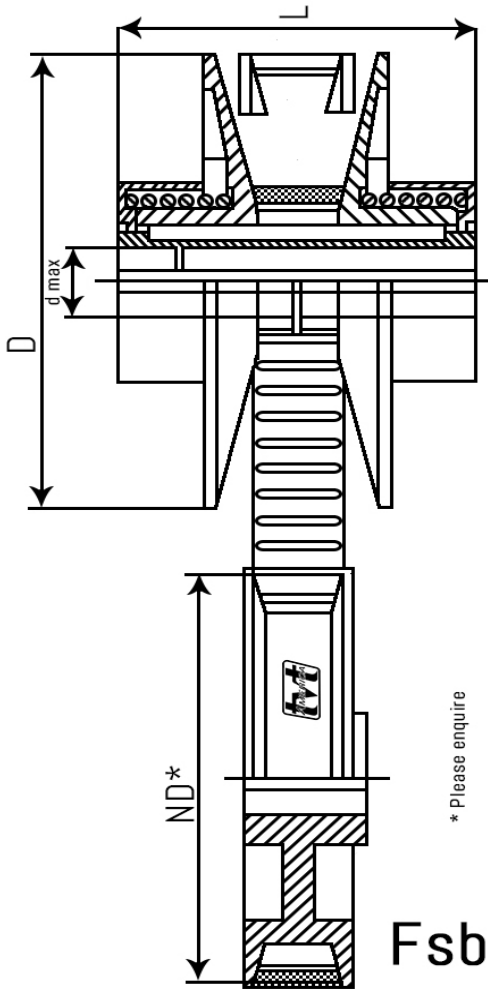
SPEED ADJUSTMENT CONTROLS FOR RGAE

| SV                        |      |                |                |     | ZV                        |            |                |                |     | HS                        |             |                |                |     |
|---------------------------|------|----------------|----------------|-----|---------------------------|------------|----------------|----------------|-----|---------------------------|-------------|----------------|----------------|-----|
| Speed adjustment controls |      |                |                |     | Speed adjustment controls |            |                |                |     | Speed adjustment controls |             |                |                |     |
| Size                      | Type | X <sub>1</sub> | X <sub>2</sub> | A   | Size                      | Type       | X <sub>1</sub> | X <sub>2</sub> | A   | Size                      | Type        | X <sub>1</sub> | X <sub>2</sub> | A   |
| 105.13                    | SV1  | -              | 10.2           | 230 | 375 b                     | ZV 375     | 48.0           | -              | 386 | 100 b                     | HS 100-130  | 15.5           | 16.3           | 263 |
| 100 (b)                   | SV1  | 15.5           | 15.7           | 222 | 400 b                     | ZV 400     | 50.0           | -              | 367 | 130 b                     | HS 100-130  | 18.0           | -              | 263 |
| 130 b                     | SV1  | 18.0           | -              | 222 | 450 b                     | ZV 450/500 | 57.0           | -              | 467 | 150 (b)                   | HS 150-196  | 22.0           | 24.5           | 298 |
| 127.17                    | SV2  |                | 13.4           | 249 | 500 b                     | ZV 450/500 | 59.0           | -              | 467 | 190 b                     | HS 150-196  | 24.0           | -              | 298 |
| 150 (b)                   | SV2  | 22.0           | 24.5           | 259 | 600 b                     | ZV 600     | 61.5           | -              | 610 | 196 b                     | HS 150-196  | 27.0           | -              | 298 |
| 190 (b)                   | SV2  | 24.0           | -              | 259 |                           |            |                |                |     | 210 (b)                   | HS 210-235  | 30.6           | 37.0           | 310 |
| 196 b                     | SV2  | 27.0           | -              | 279 |                           |            |                |                |     | 234 b                     | HS 210-2350 | 31.5           | -              | 332 |
| 210 (b)                   | SV2  | 30.6           | 37.5           | 291 |                           |            |                |                |     | 250 b                     | HS 250-280  | 36.6           | -              | 360 |
| 235 b                     | SV2  | 31.5           |                | 291 |                           |            |                |                |     | 280 (b)                   | HS 250-280  | 44.0           | 50.5           | 387 |
| 250 b                     | SV3  | 36.6           | -              | 356 |                           |            |                |                |     |                           |             |                |                |     |
| 280 (b)                   | SV3  | 44.0           | 51.5           | 373 |                           |            |                |                |     |                           |             |                |                |     |
| 300 b                     | SV3  | 40.4           | -              | 396 |                           |            |                |                |     |                           |             |                |                |     |
| 350 b                     | SV3  | 50.0           | -              | 406 |                           |            |                |                |     |                           |             |                |                |     |

X<sub>1</sub> Adjustment for wide V-belt

X<sub>2</sub> Adjustment for standard V-belt

# SINGLE PULLEY DRIVE FOR WIDE BELTS



$$F(s)b \quad P_{1max} = 55 \text{ kW}$$

In this system, a spring pulley which opens on one side (Fb) or on both sides (Fbs) is used in conjunction with a fixed driven pulley. Speed adjustment takes place by adjusting the center distance by way of the motor carriage or tilting base. With angled movement for the pulleys opening on one side only linear movement for pulleys opening on both sides. The spring loaded variable pulley is mounted on the drive shaft as standard.

\*Reverse arrangement is possible on request.

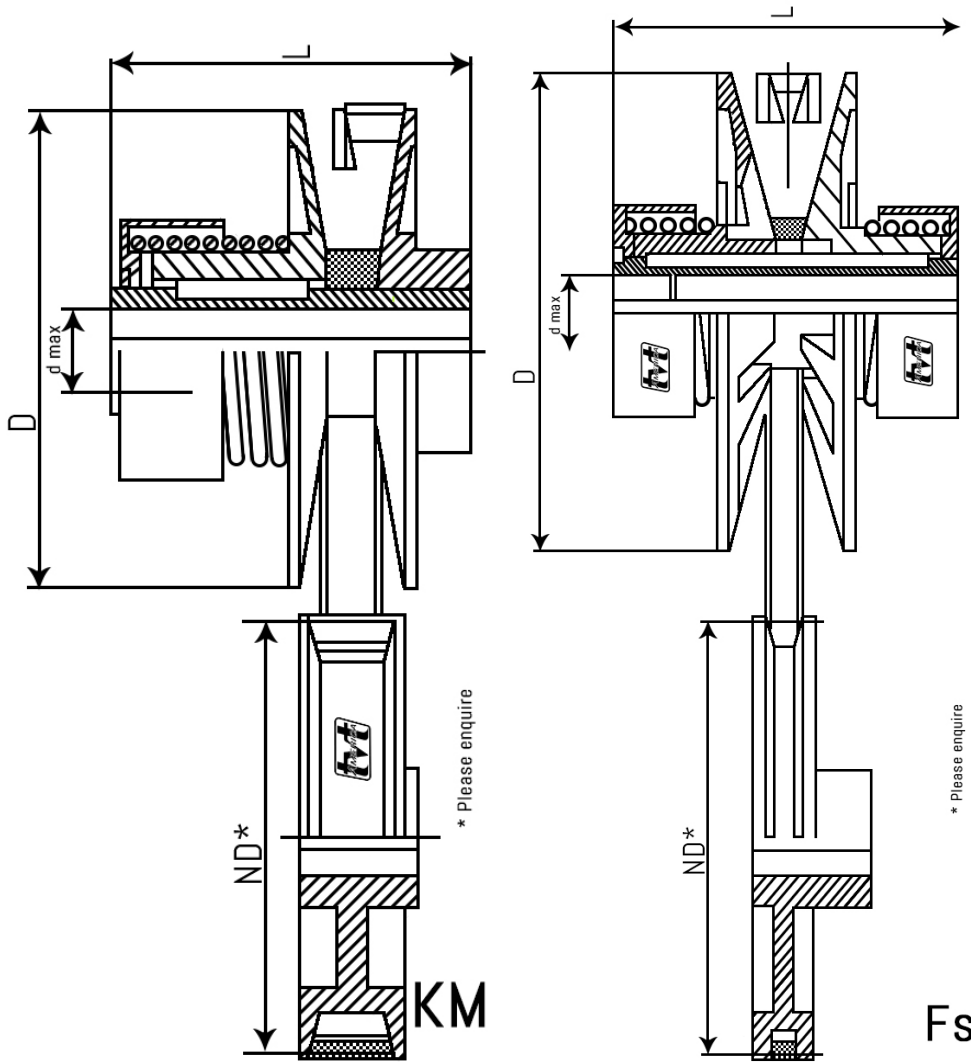
Fsb

| TYPE     | SPEED RANGE | MOTOR | Kw   | Pmax/min  | D <sub>1</sub> | L   | dmax | Belt  |
|----------|-------------|-------|------|-----------|----------------|-----|------|-------|
| F100 sb  | 2.3         | 1380  | 0.75 | 0.66/0.29 | 120            | 80  | 24   | 22x7  |
| F130 sb  | 2.6         | 1380  | 0.75 | 0.67/0.26 | 135            | 80  | 24   | 22x7  |
| F150 sb  | 2.5         | 1410  | 1.5  | 1.35/0.55 | 159            | 115 | 28   | 28x8  |
| F190 sb  | 3.2         | 1410  | 1.5  | 13.5/0.44 | 190            | 115 | 28   | 28x8  |
| F210 sb  | 2.7         | 1420  | 3.0  | 2.7/1.2   | 220            | 148 | 38   | 37x10 |
| F235 sb  | 3.2         | 1420  | 3.0  | 2.7/1.0   | 236            | 148 | 32   | 37x0  |
| F250 sb  | 2.7         | 1430  | 4.0  | 3.6/1.5   | 255            | 170 | 42   | 47x12 |
| F280 ssb | 2.9         | 1450  | 7.5  | 6.7/2.1   | 296            | 190 | 42   | 55x15 |
| F325 sb  | 2.8         | 1450  | 11.0 | 9.9/4.6   | 346            | 240 | 48   | 70x18 |
| F350 sb  | 2.7         | 1450  | 18.5 | 16.6/7.0  | 346            | 240 | 55   | 72x22 |
| F400 sb  | 2.7         | 1475  | 30.0 | 27.0/11.3 | 400            | 300 | 65   | 93x23 |

# SINGLE PULLEY FOR STANDARD BELT

KM + Fs

$$P_{1max} = 5.5kW$$



A fixed driven pulley is required in each case for use with these single pulley drives for standard V-belts. The spring-loaded variable pulley can be opened with on one side (KM) as a smooth pulley or on both sides (Fs) as an interlacing type pulley. The spring loaded pulley is mounded on the drive shaft as standard. Reverse arrangement is possible on request.

## KM

| TYPE       | SPEED RANGE | MOTOR | Kw   | n max/min | Pmax/min  | D <sub>1</sub> | L <sub>1</sub> | D <sub>2</sub> | L <sub>2</sub> | dmax | Belt  |
|------------|-------------|-------|------|-----------|-----------|----------------|----------------|----------------|----------------|------|-------|
| KRM 80.10  | 6.0         | 1370  | 0.25 | 3280/550  | 0.33/0.13 | 80             | 60             | 80             | 65             | 14   | 10X6  |
| KRM 105.13 | 6.0         | 1370  | 0.55 | 3350/560  | 0.68/0.41 | 105            | 80             | 105            | 80             | 19   | 13X8  |
| KRM 127.17 | 6.0         | 1420  | 0.75 | 3480/580  | 1.0/0.46  | 127            | 80             | 127            | 80             | 24   | 17X11 |

## DOUBLE PULLEY FOR WIDE V-BELTS

## Fs:

| TYPE    | SPEED RANGE | MOTOR | Kw   | P max | P min | D   | L   | dmax | Belt  |
|---------|-------------|-------|------|-------|-------|-----|-----|------|-------|
| F 100 s | 2.2         | 1370  | 0.37 | 0.33  | 0.14  | 110 | 72  | 110  | 10X6  |
| F 150 s | 2.5         | 1410  | 1.1  | 1.0   | 0.4   | 158 | 115 | 28   | 13X8  |
| F 210 s | 2.8         | 1420  | 3.0  | 2.8   | 0.9   | 220 | 148 | 38   | 17X11 |
| F 280 s | 2.9         | 1450  | 5.5  | 5.0   | 1.7   | 292 | 190 | 42   | 22X14 |



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