BLUE GIANT®

AIR BALANCER

MANUAL

CORMAC INDUSTRIAL
A BLUE GIANT COMPANY

bluegiant.com

NOTES

PRODUCT DESCRIPTION

The air balancer contains fixed ball screws, which is maintained in position thanks to two hex screws on each end caps. Two bolts in the rear cap fit into notches that has the ball screw operating as safe anti-rotation of this. The internal assembly that moves on the ball screw, consists of a ball nut, reel and wire rope, to come into contact with this piston spool moves forward or backward.

Compressed air which operates the air balancer is controlled by an external control device. Air enters or leaves the piston Chamber through an hole on the top of front cap, this compressed air causes the sliding of the piston that in tum exerts pressure against the thrust bearing causing the reel to move form side on ball screw and winds the wire rope, suspended load falls or rises, according to the entry or exit of air.

Seesaw reaches its capacity maximum 100 PSI (6.9 bar); as line pressure is reduced, so does the ability of the air balancer. For each reduction of a PSI of air pressure, the total capacity decreases one percent.

SPECIFICATIONS

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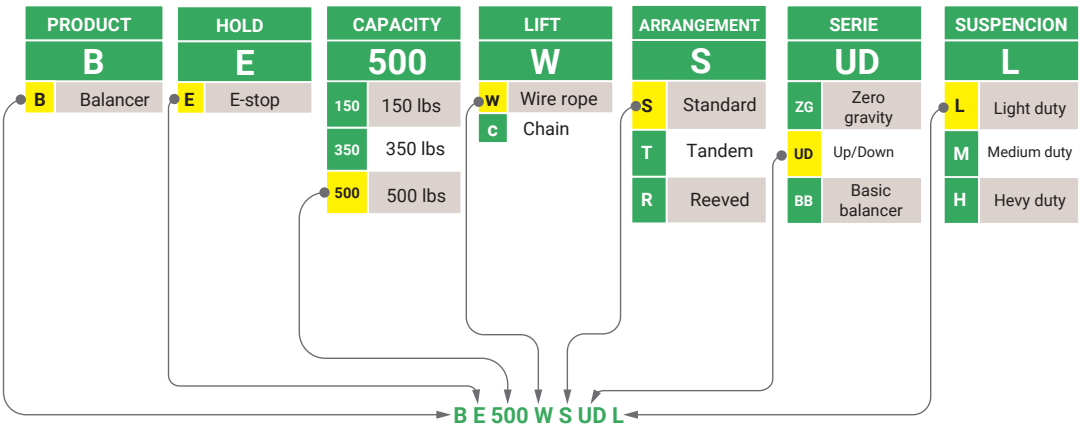

Example balancer: B E 500 W S UD L

INSTALLATION

WARNING: Before mounting the air balancer, inspect carefully for any damage that has been produced during the transport.

CAUTION: It is recommended to owners and users, before installing or operating the balancer, consult the specific normative, local or otherwise, that may apply to specific use of this product.

Types of balancer mounting
Make sure that the air balancer has to installed properly. Proper installation will contribute considerably to prevent accidents or injury and to obtain optimal results. Make sure always that element of the support that the air balancer is suspended is strong enough to support the weight of the air balancer, the weight of the maximum load rating and a factor of comprehensive security, at least 300 percent of the combined previous weights.

Hook mounted balancer installation
The support element must rest completely on the seat of the hook and focus directly on the stern of this air balancer arms suspended from a hook. Do not use a support element that tilts the balancer from one side to another. Place hook over mounting structure. Make sure that the closure of the hook is geared.

Trolley mounted balancer installation
When installing the balancer and trolley, make certain the balancer is centered under the rail or beam. After installation, operate the trolley over the entire length of the rail or beam with a capacity load. Ensure rail and beam stops are installed before operating the balancer. Use grade 5 or better bolts when attaching balancer to trolley assembly.

CAUTION: To avoid and unbalanced load which may damage the trolley, the balancer must be centered under the trolley.
Trolley mounted balancer installation

For proper installation of the balancer on a rail system refer to installation and maintenance for that rail system.

Air system
The supply air must be clean and free from water or moisture. A minimum of 100 psi (6.9 bar/690 kPa) at the balancer is required to provided rate capacity. Do not exceed 100 psi (6.9 bar).

WARNING: Do not exceed 100 psi (6.9 bar) inlet pressure. Do not use the lubricator of any kind. Oil will damage Internal components.

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Air lines
The inside diameter of balancer air supply lines must not be smaller than 3/8 in. (10 mm) based on a maximum of 100 ft (30 m) between the air supply and the balancer . Contact the factory for recommended air line sizes far distances greater than 100 ft (30 m). Before making final connections, all air supply lines should be as a short and straight as installation conditions will permit.

Long transmission lines and excessive use of fittings, elbows, tees, globe valves, etc. cause a reduction in pressure due to restrictions and surface friction in the lines. If quick-disconnect fittings are used at the inlet of the balancer, the must have at least a 3/8 in. (1 O mm) air passage. Use of sampling fittings will reduce performance.

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Air line filter
It is recommended than an air line strainer/filter be installed as closed as practical to the balancer air inlet port. The strainer/filter should provide 10 micron filtration and include a moisture trap. Clean the strainer/filter monthly to maintain its operating efficiency.

To maintain dry air, the frequency for draining the filter should also be based on the condition of the air supply. We suggest the filler be drained weekly at first.
Depending on air supply condition, a proper filler drain schedule should be established.

Moisture air lines
Moisture that reaches the balancer through the supply lines is the chief factor in determining the length of time between service overhauls. Moisture traps can help to eliminate moisture. Other methods, such as an air receiver which collects moisture before it reaches the balancer controls or an aftercooler at the compressor that cools the air prior to distribution through the supply lines, are also helpful.

CAUTION: General operating instructions

Do not continuously rotate balancer in one direction. Air line damage will occur from continuous rotation potentially allowing the load to lower. Reverse direction with each cycle of the balancer to prevent twisting and damage to air lines.

WARNING: Operational adjustment

Prior to performing operational adjustments or servicing make sure air supply is off. Press down lever until wire rope is slack.

1. Connect the manifold to the front cap.
2. Connect the blue hose UP to the opening UP of the manifold.
3. Connect the black hose (for handling device) to the dispenser opening DN.

INSTALLATION

NOTICE: When wire rope is winding, air is entering the balancer through both the up and down flow controls. Therefore, down flow control also affects the up speed when it is set for a minimal down speed.

4. Connect main air supply to the opening on the right side of the dealer.
5. Open the main air supply. Adjust the regulator to the desired air pressure.
6. Slowly rotate hook balance screw in the clockwise direction, until wire rope begins to raise, tum it to the maximum and make sure that the centrifugal brake is not activated.
7. Install load hook and handling device in the desired location of the steel cable.
8.Tum the knob from flow UP (above) in the clockwise direction until it is light.
9. If the wire rope is slack, ensure that the centrifugal brake is not activated.
10. Place UP lever in horizontal position until exercise tension in the wire rope, and then press the lever UP (above) completely, until the higher charge.
11. Press the lever DN (down) and check speed.
12. Adjust the control of flow DN (down) of the distributor in the opposite direction of the clockwise to decrease speed and counterclockwise to increase up to that achieves desired speed.
13. Lower the load until the end of the tour with the wire rope in retention.
14. Adjust the control of flow UP from the dealer in clockwise direction to increase the speed and counterclockwise to decrease until reaching the desired speed.

LOAD HOOKS, LASH-UP AND YARDING

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Lash-Up
To property install load hook on the wire rope you must determine the following:

1. Highest point which will lift the load from the ground.
2. Distance from the throat of the hook to the bottom of the load.
3. Add the measure 1 and 2, and then add 3-1 / 2 in. (89 mm).
4. Measuring from the ground with the wire rope fully collected, install hook according to the length obtained in point 3.
5. Check that the coverage is correct. Use wire cutters to remove the wire rope excess.

CAUTION: Not operate the air balancer if charging does not is centered under the steel cable. Drag the wire rope will cause premature wear, improper wear of internal parts of the air balancer and the possible invalidation of the guarantee.
Now turn the air balancer in only one direction continuously. If it does, you can cause damage to air line allowing the load to lower. Change the address wlth each cycle of the alr balancer to avoid twisting and damaging to air lines.

Yarding
The wire rope must not drag over 10 degrees of the vertical centerline of the wire rope guide. The excessive drag will cause premature failure of the air balancer arm and will reduce the life of its components.
Hook assembly
Assembly
1. Cut the wire rope to desired length for drop, allowing for up to a foot (12in - 30cm) extra, to wrap around the thimble.
2. Install hook to seat the thimble.
3. Install the shrink tubing in the closed end of the cable and make sure that the shrinkable tube is pushed up enough to allow wind the cable around the thimble and add a clamp.
4. Wrap the cord around the thimble and add a clamp.
5. Place both halves of the clamp around the wire and secure with gap with the first bolt loosely. Make sure that the wire rope is fixed between both halves and that an additional end extends about an inch (25 mm) minimum beyond the clamp.
6. Remove slack in the cable wire around the thimble. Make sure that the cable seat in the center of the thimble.
7. Install the second bolt and tighten the bolts alternately to 7 ft/lb. (1.35Nm). To assemble, clamp halves must not be touch when tightened to the appropriate value. The clamp is designed for a cable with 3/16in diameter. If both halves are flush together, a smaller clamp is required.
8. Attach the closed end of the wire rope with electrical insulating tape to prevent fraying.
9. Slip the shrink tubing over the dosed end of the cable

and make sure that it seats near the clamp.
10. Apply heat (140 degrees Celsius maximum) evenly around the shrink tubing until the tube takes the form of the dosed end of the cable. Let the shrink tubing to cool and harden.
11. The bolts must be tighten again.

WARNING: Do not use torch or any other flame to shrink tube.

Load block installation
1. Insert the cable through the Centre and around the mobile block pulleys.
2. Pull excess cord up to the bottom ring of the air balancer.
3. Place the thimble into the ring.
4. Thread the wire rope around the ring.
5. Tighten the steel cable and place the jaws.

CAUTION: The air balancer that use mobile load should not have ball detents in the wlre rope.

PREVENTIVE MAINTENANCE CHECKS AND SERVICE

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CAUTION: Clean, dry air must be used to run the air balance.

Preventive maintenance
Preventive maintenance recommendations are designed to prevent failures and unexpected problems through periodic inspection and maintenance. The maintenance intervals must be based on the frequency of use and the environment in which the arm is operated. The frequent use and the conditions of work in inadequate environments cause most common service interventions. A supply of clean, dry air will help the team to function properly.

Wire rope and load hook.
The steel cable, the load hook and the jaws should be inspected daily. Time intervals should be based on frequency of use and the specifications of the manufacturar of steel ropes.

Wire rope inspection
1. Press the button to get DN for lowering the load until the end of the tour of the balancer.
2. Use gloves to slip the cable carefully.
3. Check ali cable to the Guide.
4. Replace the cable if this is faulty.

Load hook inspection
1. The upper clamp rotates freely.
2. The tip of the hook aligns with the closure.
3. Not allowed one greater than 10% wear on the base of the hook.
4. Not allowed more than 5% in the rest of the hook.

Balancer lubrication.
Air balancer UP/DN
The only air balancer has three moving parts (nut, reel and piston) which they require cleaning and lubrication periodic cleaning required, as usual, removing the air balancer and wash at depth in a solution such as mineral spirits.

NOTICE: Use the same special lubricant used is mentioned in the installation instructions.

The process of lubrication can be to partially disassemble the air balancer while it is suspended on the rail in the following way:
1. Press the button DN (down) until the cable is loose.
2. Release the burden of the air balancer.
3. Cut the supply of air.
4. Remove the steel cable, the end cap and piston Guide.
5. Use a brush or a small brush to apply approximately a tablespoon of lubricant to the screw ball, through the window in the housing of the steel cable.
6. Use a clean cloth to clean the piston, the inside diameter of the cylinder and ball screw cap.
7. Apply lubricant on the inside diameter of the cylinder and the outside diameter of ball screw cap.
8. A device extemal control with the outer cover. Open the air supply.
9. Adjust the driver with the help of the operating control setting again.

PREVENTIVE MAINTENANCE CHECKS AND SERVICE

Air supply
Make sure that the air supply, has no water or oil and is not rusty or dirty. The use of a suitable filter of air and a regulator of lines is recommended. For the air balancer to function at maximum capacity is necessary an air pressure of 100 PSI (6.9 bar). Lower pressure reduces correspondingly the ability of the air balancer. Do not use an air line Oiler. The oil can damage the air balancer or the control.

Air balancers not in regular use

1. Air balancer arms that have not been in service for a minimum period of one month, but one year maximum, must undergo an inspection in accordance with the requirements of frequent inspection prior to use.

2. Air balancer arms of reservation should be inspected at least semiannually in accordance with the requirements of frequent inspection. If the working conditions are un usual, the air balancer arms should be inspected at shorter intervals.

PREVENTIVE MAINTENANCE SCHEDULE

Component	Inspection	Criteria For Operation	Daily (1st Operation of Shift	Frequent (Lest Than 6 Months)	Periodic (More Than 6 Month)
Wire Rope	Kinks	No Visible kinks on entire length	X	X	X
	Fraying	No Visible fraying on entire length	X	X	X
	Bird caging	No Visible separation on entire length	X	X	X
Clamps	Tightness	Clamps do not slide on wire rope. Clamps are tight	X	X	X
	Cracks	No Visible cracks	X	X	X
Load Hook	Cracks	No Visible cracks	X	-	X
	Swivel	Smooth operation and free rotation	X	-	X
	Hook Latch	Positive locking of latch	X	-	X
Reeve Block	Cracks	No Visible cracks	X	-	X
	Swivel	Smooth operation and free rotation	X	-	X
	Hook Latch	Positive locking of latch	X	-	X
	Hardware	Center pulley bolt for full engagement	X	X	X
	Pulley	Smooth operation when in motion	X	-	X
Suspension Kit	Hardware	No loose or missing hardware	X	X	X
	Trolley Body	Aluminum - no Visible cracks. Steel - no Visible broken welds	X	-	X
	Trolley Wheels	Smooth operation with no binding	X	-	X
	Hook Mount (optional)	Positive locking of latch	X	-	X
	Safety cable (optional)	No loose damps. No damage or wear to wire rope	X	X	X
Balancer	Smooth operation	No binding or resistance in motion	X	X	X
	Lubrication	Piston and ball screw for grease	-	-	X
	Wear	Internal parts for excessive wear.	-	-	X
Controls	Fittings	No Visible cracks, leaks or looseness,	X	-	X
	Tubing	No Visible bulges, cracks, kinks	X	-	X
	Handles	No Visible cracks, leaks, looseness or sticking of buttons	X	-	X
	Manifold / regulator	No Visible cracks, leaks or looseness of hardware	X	-	X
Centrifugal Brake	Break rods	Secured and straight	-	-	X
	Bearing	Smooth rotation	-	-	X
	Brake ring	No gouges - burrs removed	-	-	X
	Brake spring	Securely. No deformation	-	-	X

INSPECTION REPORT

Model number:	Date:
Serial number:	Inspected by:
Reason for inspection (check applicable box)	
1. Schedule periodic inspection	Operating Environment:
2. Discrepancy noted during frequent inspection	
3. Discrepancy noted during maintenance	Normal __ Heavy __ Severe __
4. Other:	
If you have a question, contact the nearest Cormac Industrial ® or distributor for the technical assistance.	

Component	Status		Corrective action		Notes
	Pass	Fail	Repair	Replace	
Fasteners					
Shafts					
Bearings					
Reel					
Wire rope guide					
Caps					
Controls					
Hooks					
Hook Gate					
Wire rope					
Supporting structure					
Rail system					
Labels and tags					
Other components					

LIMITED WARRANTY

Cormac Industrial ® warrants to the original user that your lifting equipment will be free from defects in material and workmanship for a period of one year from the date of purchase. Cormac Industrial, when thus deemed appropriate, will repair free of charge, any air balancer which is found to be defective, will replace such products or refund the purchase price, less a reasonable allowance for depreciation, in Exchange for the air balancer. Repairs or replacements are warranted for the time remaining of the original warranty period.
If during the original one-year warranty period, a product proves to be defective, it will be returned to any authorized service dealer of air balancers, pre transportation charges prepaid, with proof of purchase or warranty card. This warranty does not apply to air balancers that according to Cormac Industrial have used incorrect or abusive, so have been inadequately maintained by user or whose malfunction can be attributed to use of non-original parts of Cormac Industrial.

CORMAC INDUSTRIAL MAKES NO OTHER WARRANTY, CONDITION OR REPRESENTATION OF ANY KIND, EXPRESSED OR IMPLIED, STATUTORY OR OTHERWISE, AND HEREBY WAIVES ALL WARRANTIES AND IMPLIED CONDITIONS RELATING TO MERCHANTABILITY AND FITNESS FOR A SPECIFIC OBJECTIVE.

Cormac Industrial maximum liability is limited to the purchase price of the product and in any case shall be deemed responsible for any consequential, incidental or special damages of any nature that took place after the sale or use of the product Cormac Industrial inappropriate or otherwise.

Note: Some States do not allow limitations of incidental or consequential damages, or the duration of an implied warranty, so the above conditions may not be applicable in your case. This warranty provides specific legal rights. They may not add to other rights, which vary from one place to another.to other rights, which vary from one place *to another.*

IMPORTANT NOTICE

Cormac Industrial®

This shipment has been checked, packed and inspected thoroughly before leaving our plant. Any loss or damage so that it may suffer during transport may not be attributed to manufacturer.

Missing parts or visible damage
If any of the items listed in the list of packages or on the delivery note of the carrier is damaged or in less than the agreed amount, do not accept the order until the forwarder or courier the relevant annotation in your list or delivery note.

Missing parts or hidden damage
If apparently, been delivered in good condition, but opening the packing or container detects that damage or loss occurred during transportation, please contact the carrier immediately.

Damage claims
You must bring a claim for damages to the carrier. It is the responsibility of transport company to reimburse you for the repair or replacement of the goods damaged during transport. Claims for loss or damage during transport should not deduce Cormac Industrial invoices or payment of the invoice of Cormac Industrial waiting for the resolution of such claim must be locked.

If you wish, you may return to Cormac Industrial products damaged during transport for repair. The cost of the service will run on its own and will form the basis for claim with the carrier.

DESCRIPCIÓN DEL PRODUCTO

Los balancines contienen un tomillo de bola fijo, el cuál se mantiene en posición gracias a dos tomillos hexagonales en las tapas de cada extremo. Dos pernos en una de las tapas encajan en las muescas que tiene el tomillo de bola funcionando como seguros anti giro de este. El conjunto interno que se desplaza sobre el tomillo de bola, esta compuesto por una tuerca esférica, carrete y cable de acero, al entrar en contacto el carrete con el pistón este se desplaza hacia adelante o hacia atrás.

El aire comprimido que hace funcionar el balancin se controla mediante un dispositivo de control externo. El aire entra o sale de la cámara del pistón a través de un orificio en la tapa de un extremo, este aire comprimido provoca el deslizamiento del pistón que a su vez ejerce presión contra el cojinete de empuje provocando que la bobina se mueva de forma lateral sobre el tomillo de bola y enrolla el cable de acero, la carga suspendida baja o sube, según la entrada o salida de aire.

El balancin alcanza su capacidad máximo a 100 PSI (6.9 bar); a medida que la presión de la linea se reduce, también lo hace la capacidad del balancin. Por cada reducción de un PSI en la presión del aire, la capacidad total disminuye un uno por ciento.

ESPECIFICACIONES

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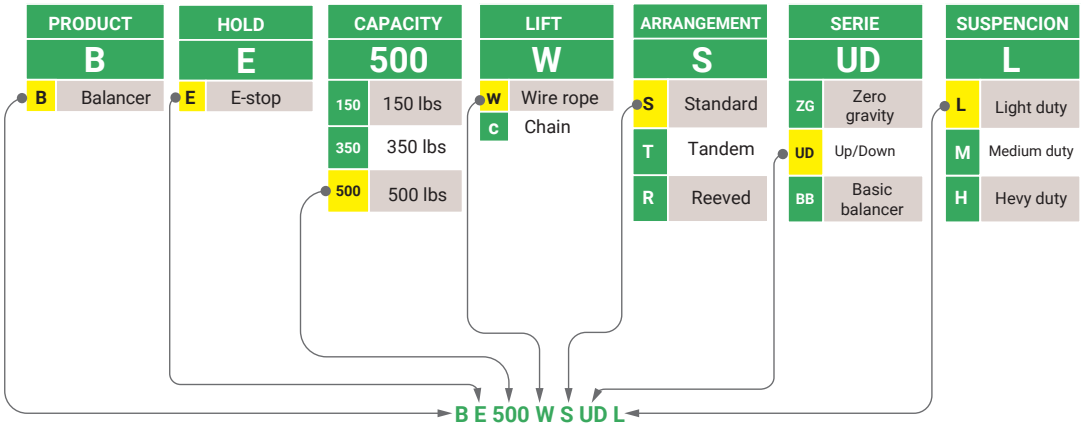


Example balancer: B E 500 W S UD L

INSTALACIÓN

ADVERTENCIA: Antes de montar el balancin, inspeccionelo
cuidadosamente para detectar cualquier daño que halla podido producido durante el transporte

CUIDADO: Se recomienda a los propietarios y usuarios que, antes de instalar o poner en funcionamiento el equilibrador, consulten las normativas especificas, locales o de otro tipo, que pueden aplicarse a uso concreto de este producto.

Tipos de montaje para balancin
Asegúrese de que el balancin se ha instalado de manera adecuada. Una instalación adecuada contribuirá considerablemente a evitar accidentes o lesiones y a obtener unos resultados óptimos.

Asegúrese siempre que el elemento del soporte que se encuentre suspendido sea lo suficientemente resistente como para sostener el peso del balancin, el peso de la carga nominal máxima y un factor amplio de seguridad de, al menos un 300 por ciento de los pesos anteriores combinados.

Instalación del balancin montado en gancho
El elemento de soporte debe descansar por completo en el asiento del gancho y centrarse directamente sobre el vástago de éste en los balancines suspendidos en un gancho. No utilice un elemento de soporte que incline el equilibrador de un lado a otro. Coloque el gancho sobre la estructura de montaje. Asegurase de que el cseguro del gancho este cerrado.

Instalación del balancin montado en carro
Al instalar el balancin y el carro, asegúrese de que el balancin está centrado debajo del riel o la viga. Después de la instalación, desplace el carro sobre el riel o la viga con una capacidad de carga adecuada. Asegúrese de que los topes del riel o de la viga estén instalados antes de utilizar el balancin. Utilice tomillos de grado 5 o superior para unir el balancin al conjunto del carro.

CUIDADO: Para evitar una carga desequilibrada que pueda dañar el carro, el balancin debe centrarse bajo éste.

Instalación del balancin montado sobre rieles
Para realizar una instalación correcta del balancin sobre un sistema de rieles, consulte el manual de instalación y mantenimiento de ese sistema de rieles.

Sistema de aire
Debe suministrarse aire limpio y exento de agua o humedad. Para proporcionar la capacidad nominal, se requiere un minimo de 100 psi (6.9 bar/690kpa) en el equilibrador. No supere los 100 psi (6.9 bar).

ADVERTENCIA: No exceda los 100 psi (6.9 bar) de presión de entrada. No utilice ningún tipo de lubricador. El aceite puede dañar los componentes internos.

Tubos de aire
EL diámetro de las lineas de suministro de aire del balancin no debe ser inferior a 3/8 in. (1 O mm), con una distancia máxima de 100 pies (30 m) entre el suministro de aire y el balancin.

Consulte con la fabrica los tamaños de lineas de aire recomendados para longitudes superiores a los 100 pies (30 m). Antes de realizar las conexiones finales y de conectarlas a la toma del balancin, purgue todas las lineas del suministro de aire.

Las lineas del suministro deben ser tan cortas y rectas como permitan las condiciones de la instalación.
Las lineas de transmisión largas y el uso excesivo de accesorios, codos, “tes” (T), válvulas esféricas (bola), etc., producen una caida de presión debido a las restricciones y a la fricción superficial de las lineas.

En caso de utilizar racores de des conexión rápida en la toma del balancin, deberán tener un pa so de aire minimo de 3/8 in. (10 mm). El uso de racores mas pequeños afectaria el rendimiento.

Filtro de la linea de aire
Se recomienda la instalación de un filtro o tamiz de linea de aire lo mas aproximada posible a la abertura de entrada de aire del equilibrador.

El filtro o tamiz debe ofrecer una capacidad de filtrado de 10 micras e incluir un colector de humedad. El filtro o tamiz debe limpiarse cada mes para conservar su rendimiento. Para mantener seco el aire, la frecuencia de vaciado del filtro deberá basarse en las condiciones del suministro de aire. Se recomienda drenar el filtro una vez por semana en el inicio. Después, debe establecerse un programa adecuado de vaciado del filtro, en función de las condiciones del suministro de aire.

Humedad en las lineas de aire
La humedad que llega hasta el equilibrador a través de las lineas de suministro es el factor principal que determina el

tiempo entre revisiones. Los colectores de humedad pueden ayudar a eliminarla.

También puede resultar útiles otros métodos, por ejemplo, un deposito de aire que recoge la humedad antes de que ésta alcance los mandos del balancin, o un sistema de post refrigeración situado en el compresor, que enfrie el aire antes de distribuirlo a través de las lineas de suministro.

CUIDADO: Instrucciones de utilización generales
No gire el balancin en una dirección continuamente. Si lo hace provocará daños en la linea de aire, lo que permitirá que la carga baje. Cambie la dirección con cada ciclo del balancin para evitar retorcer y dañar las lineas de aire.

Balancin básico de la serie UP/DN
Coloque el balancin sobre una superficie de trabajo limpia y resistente con la tapa de extremo en posición vertical. Extraiga el mecanismo de control de su embalaje y asegurase de que la junta teórica se encuentra en la parte posterior del distribuidor. Instale el distribuidor con tomillos de montaje y arandelas de seguridad.

Instalación de la manguera de control
La manguera de control esta ensamblada con la palanca de control, pero debe unirse al distribuidor. El conjunto de la manguera de control es un conducto en espiral conformado por mangueras en color azul y negro.

La manguera negra debe conectarse al lado representando con DN en el distribuidor. La manguera azul debe conectarse al lado representando con UP en el distribuidor.

ADVERTENCIA: Ajustes operativos
Antes de realizar ajustes operativos o intervenciones de servicio técnico asegúrese de que el suministro de aire está cortado. Presione la palanca de bajada hasta que el cable de acero quede flojo.

1. Conecte el distribuidor a la tapa del extremo.
2. Conecte la manguera azul UP a la apertura UP del distribuidor.
3. Conecte la manguera negra (para et dispositivo de manejo) a la abertura DN del distribuidor.

AVISO: Cuando el cable de acero se enrolla, et aire entra en et balancin a través de los mandos de flujo UP y DN. Por lo tanto, el mando de control DN también afecta la velocidad de subida cuando esta establecida en una velocidad de bajada minima.
4. Conecte el suministro de aire principal a la abertura del lado derecho del distribuidor.
5. Abra el suministro de aire principal. Ajuste el regulador a la presión de aire deseada.
6. Gire el tomillo de equilibrio de gancho lentamente en el sentido de las agujas del reloj, hasta que el cable de acero comience a elevarse, girelo al máximo y asegúrese de que el freno centrifugo no se encuentre activado.
7. Instale el gancho de carga y el dispositivo de manejo en el lugar deseado del cable de acero.
8. Gire el mando de flujo UP (arriba) en el sentido de las agujas del reloj hasta que quede apretado.
9. Si el cable de acero permanece holgado, asegúrese de que el freno centrifugo no esté activado.
10. Coloque la palanca UP (arriba) en posición horizontal hasta que se ejerza tensión en el cable de acero y, a continuación, presione la palanca UP (arriba) por completo, hasta que la carga esté en la altura superior.
11. Presione la palanca DN (abajo) y compruebe la velocidad.
12. Ajuste el mando de flujo DN (abajo) del distribuidor en el sentido contrario de las agujas del reloj para reducir la velocidad y en el sentido contrario para aumentarla, hasta que consiga la velocidad deseada.
13. Baje la carga hasta el final del recorrido con el cable de acero en tensión.
14. Ajuste el mando de flujo UP (arriba) del distribuidor en el sentido contrario a las agujas del reloj para aumentar la velocidad y en el sentido contrario para disminuirla, hasta que alcance la velocidad deseada.

GANCHOS DE CARGA, AMARRE Y ARRASTRE

Amarre
Para instalar correctamente el gancho de carga en el cable de acero debe determinar lo
siguiente:

1. Punto más atto al que se elevará la carga desde el suelo.
2. Distancia desde la garganta del gancho hasta la parte inferior de la carga.
3. Sume la medida 1 y 2, a continuación, sumele 3-1/2 in (89 mm).
4. Midiendo desde el suelo con el cable de acero completamente enrollado, instale el gancho de acuerdo a la longitud obtenida en el punto 3.
5. Compruebe que la cobertura sea correcta. Utilice corta alambres para eliminar el cable de acero sobrante.

CUIDADO: No ponga el balancin en funcionamiento si la carga no está centrada bajo el cable de acero. Arrastrar el cable de acero provocará un desgaste prematuro, el desgaste indebido de piezas internas del balancin y la posible invalidación de la garantia.

No gire el balancin en un solo sentido continuamente. Si lo hace, puede provocar daños en la linea de aire permitiendo que la carga baje. Cambie la dirección con cada ciclo del balancln para evitar retorcer y dañar las lineas de aire.

Arrastre
El cable de acero no debe arrastrarse más de 1 O grados de la linea vertical central de la guia del cable de acero. El arrastre excesivo provocará desgaste prematuro del balancin y reducirá ta vida útil de sus componentes.

Conjunto del gancho (Montaje)

1. Corte el cable de acero al largo deseado para la caida, dejando hasta 1 (12 in, 30 cm) pie adicional para enrollar el guardacabo.
2. Instale el gancho en el asiento del
guardacabo.
3. Instale el tubo termoencogible en el extremo cerrado del cable y asegúrese de que et tubo termoencojible sea empujado hacia arriba lo suficiente para permitir enrollar el cable alrededor del guardacabo y añadir una abrazadera.
4. Enrolle el cable alrededor del guardacabo y añada una abrazadera.
5. Coloque ambas mitades de la abrazadera alrededor del cable y fijelas con huelgo con el primer perno sin apretar. Asegúrese que el cable de acero quede fijado entre ambas mitades y que un adicional del extremo se extienda alrededor de una pulgada (25 mm) minimo más allá de la abrazadera.
6. Elimine la holgura del cable de alambre alrededor del guardacabo. Asegúrese que el cable asiente en el centro del guardacabo.
7. Instale el segundo perno y apriete los pernos alternadamente a 7 pie/lb (1.35 Nm).

CUIDADO: Para armar, ambas mitades de abrazadera no deben tocarse cuando se aprietan al valor apropiado. La abrazadera esta diseñada para un cable de 3/16 in de diámetro.
Si ambas mitades están a ras entre si, es necesaria una abrazadera de menor tamaño.

8. Fije el extremo cerrado del cable de alambre con cinta para aislar eléctrica evitando que se deshilache.
9. Deslice el tubo termoencogible sobre el extremo cerrado del cable y asegurese de que asiente cerca de la abrazadera.
10. Aplique calor (140 grados Celsius como máximo) uniformemente alrededor del tubo termoencongible hasta que el tubo tome la forma del extremo cerrado del cable. Deje que el tubo termoencogible se enfrie y endurezca.

ADVERTENCIA: No use soplete ni ninguna otra llama para encoger el tubo.
11. Los pernos deben reapretarse nuevamente.

CUADERNALES MOVILES

Cormac Industrial®

Instalación de cuadernales móviles.
1. Introduzca el cable por el centro y alrededor de las poleas del cuadernal móvil.
2. Lleve el cable sobrante hasta el ojillo inferiordel balancin.
3. Coloque el guardacabo en el ojillo.
4. Pase el cable de acero alrededor del cáncamo.
5. Tense el cable de acero y coloque las mordazas.

CUIDADO: Los balancines que utilicen cargas móviles no deben tener retenes de bola en el cable de acero.

INSPECCION DE SERVICIO DE MANTENIMIENTO PREVENTIVO

CUIDADO: Se debe utilizar aire limpio y seco para poner a funcionar los balancines.

Mantenimiento preventivo
Las recomendaciones de mantenimiento preventivo están diseñadas para evitar averias y problemas inesperados a través de la inspección y el mantenimiento periódicos. Los intervalos de mantenimiento deben basarse en la frecuencia de uso y el entorno en el que el balancin es operado. El uso frecuente y las condiciones de trabajo en entornos inadecuados provocará intervenciones de servicio técnico mas frecuentes. Un suministro de aire limpio y seco ayudará a que el equipo funcione de manera adecuada.

Cable de acero y gancho de carga.
El cable de acero, el gancho de carga y las mordazas deben inspeccionarse a diario. Los intervalos de tiempo deberian basarse en la frecuencia de uso y en las especificaciones de los fabricantes de cuerdas de acero.

1. Presione el botón para bajar DN para bajar la carga hasta el final del recorrido del balancin.
2. Utilice guantes para deslizar el cable cuidadosamente.
3. Compruebe todo el cable hasta la guia.
4. Reemplace el cable si está defectuoso.

Inspección del gancho de carga
1. La abrazadera superior del gancho deba de girar.
2. La punta del gancho debe alinearce con el cierre.
3. No se permite un desgaste mayor del 10% en la base del gancho.
4. No se permite más de un 5% en el resto del gancho.

Lubricación del balancin.
Balancin UP/DN

El balancin solo cuenta con tres partes móviles (tuerca, carrete y pistón) los cuales requieren de una limpieza y lubricación periódica La limpieza requiere, de manera habitual, desmontar el balancin y lavarlo a profundidad en una solución de alcoholes minerales.

AVISO: Utilizar el mismo lubricante especiale utilizados que se menciona en las instrucciones de montaje.

El proceso de lubricación se puede realizar al desmontar parcialmente el balancin mientras se encuentra suspendido en el riel de la siguiente forma:

1. Presione el botón DN (bajar) hasta que el cable quede holgado.
2. Libere la carga del balancin.
3. Corte el suministro de aire.
4. Retire la guia del cable de acero, la tapa del extremo y el pistón.
5. Utilice un pincel o brocha pequeña para aplicar aproximadamente una cucharada de lubricante al ballscrew, a través de la ventaniUa en la carcasa del cable de acero.
6. Utilice un trapo limpio para limpiar el pistón, el diámetro intervior del cilindro y la tapa del ballscrew.
7. Aplique lubricante en el diámetro interior del cilindro y en el diámetro exterior de la tapa del ballscrew.
8. Una el dispositivo de control externo con la tapa exterior. Abra el suministro de aire.
9. Ajuste de nuevo el controlador con la ayuda de los ajuste operativos del control.

Suministro de aire
Asegúrese de que el suministro de aire, no tiene agua ni aceite y que no esté oxidado ni sucio. Se recomienda la utilización de un filtro adecuado de aire y de un regulador de lineas.

Para que el balancin funcione a su capacidad máxima es necesario una presión de aire de 100 PSI (6.9 bar). La presión inferior reduce de manera correspondiente la capacidad del balancin. No utilice un engrasador de lineas de aire.
El aceite puede dañar el balancin y/o el control.

Balancines que no se utilizan con regularidad.
1. Los balancines que no han estado en servicio durante un periodo mlnimo de un mes, pero de un año como máximo, deberán someterse a una inspección conforme a los requisitos de inspección frecuente antes de volver a utilizarse.
2. Los balancines de reserva deberán inspeccionarse al menos semestralmente conforme a los requisitos de inspección frecuente. Si las condiciones de trabajo son inusuales, los balancines deberán inspeccionarse a intervalos más cortos.

PROGRAMA DE MANTENIMIENTO PREVENTIVO

Componente	Inspección	Criterios de Funcionamiento	Diaria (primer ciclo del turno)	Frecuentemente (semestral)	Periódica (anual)
Cable de acero	Dobleces	No se aprecian dobleces en todo el cable	X	X	X
	Tramos raidos	No se aprecian tramos raidos en el cable	X	X	X
	Deshiladuras	No se aprecian separaciones en el cable	X	X	X
Mordazas	Tensión	Las mordazas no resbalan por el cable de acero, las mordazas están apretadas	X	X	X
	Grietas	No se aprecian grietas	X	X	X
Gancho de carga	Grietas	No se aprecian grietas	X	-	X
	Parte giratoria	Funcionamiento suave y libertad de giro	X	-	X
	Pasador del gancho	El pasador cierra correctamente	X	-	X
Ensamble de Poleas	Grietas	No se aprecian grietas	X	-	X
	Parte giratoria	Funcionamiento suave y libertad de giro	X	-	X
	Pasador del gancho	El pasador cierra correctamente	X	-	X
	Mecanismo	La polea central esta bien engranada	X	X	X
	Polea	El funcionamiento es suave cuando está en funcionamiento	X	-	X
Mecanismo de Susupencion	Mecanismo	Las piezas no están sueltas y no falta ninguna	X	X	X
	Cuerpo del carro	No se aprecian grietas. No se aprecian soldaduras rotas	X	-	X
	Ruedas del carro	Circulación suave sin alteraciones	X	-	X
	Montaje en gancho (opcional)	El pasador cierra correctamente	X	-	X
	Cable de seguridad (opcional)	No hay mordazas sueltas. No daña ni desgasta el cable de acero	X	X	X
Balancin	Funcionamiento suave	No se atasca ni opone r esistencia al movimiento	X	X	X
	Lubricación	Pistón y ballscrew engrasados	-	-	X
	Desgaste	Las partes interiores no están excesivamente desqastadas.	-	-	X
Control	Racores	No se aprecian grietas, fugas ni holgura excesiva	X	-	X
	Conductos	No se aprecian abombamientos, grietas ni olieques	X	-	X
	Palancas	No se aprecian grietas, fugas, piezas sueltas ni botones atascados	X	-	X
	Distribuidor/ regulador	No se aprecian grietas, fugas ni piezas sueltas del mecanismo	X	-	X
Freno Centrifugo	Varillas de freno	Fijas y rectas	-	-	X
	Cojinete	Giro suave	-	-	X
	Anillo de freno	Sin rebabas ni rayones profundos	-	-	X
	Resorte de freno	Sin deformaciones. Brio adecuado	-	-	X

INFORME DE INSPECCIÓN DE MANTENIMIENTO

Número de Modelo:	Date:
Numero de Serie:	Inspeccionado por:
Motivo de la inspección. (Marque la casilla pertinente, o especifique el motivo)	
1. Inspección periódica programada	Entorno Operativo:
2. La discrepancia observada durante la inspección rutina	
3. La discrepancia durante el mantenimiento	Normal __ Intensivo __ Extremo __
4. Otro:	
En caso de dudas acerca de una condición existente, póngase en contacto con Cormac Industrial o su distribuidor para asistencia técnica.	

Componente	Estado		Correctiva		Notas
Elementos de sujeción	Valido	No Valido	Reparaciones	Sustituir	
Ejes					
Cojinetes					
Carrete					
Guia del cable de acero					
Cubierta					
Controles					
Ganchos					
Puerta del gancho					
Cable de acero					
Estructura de soporte					
Sistema de rieles					
Etiquetas y rótulos					
Otros componentes					
Other components					

GARANTIA LIMITADA

Cormac Industrial ® garantiza al usuario original que su equipo de elevación estará exento de defectos en el material y mano de o bra durante un periodo de un año desde la fecha de compra. Cormac Industrial ®, cuando asi lo estime conveniente, reparara sin costo,todo balancin que se encuentre defectuoso, substituirá dichos productos o reembolsara el precio de la compra, menos una can tidad razonable por depreciación, a cambio del balancin. Las reparaciones o sustituciones están garantizadas por el tiempo que reste del periodo de garantia original.

Si durante el periodo de garantia original de un año un producto resulta ser defectuoso, se devolverá a cualquier distribuidor autorizado de servicio de balancines, cargos de transportes pre pagados, con el comprobante de compra o tarjeta de garantia. Esta garantia no es aplicable a balancines que según Cormac Industrial se hayan utilizado de manera incorrecta o abusiva, hayan sido inadecuadamente mantenidos por el usuario o cuyo funcionamiento defectuoso pueda atribuirse a uso de piezas no originales de Cormac Industrial.

CORMAC INDUSTRIAL ® NO OFRECE NINGUNA OTRA GARANTIA, CONDICIÓN NI REPRESENTACIÓN DE NINGÚN TIPO, EXPRESA NI IMPLICITA, ESTABLECIDA POR LA LEY U OTRO, Y POR LA PRESENTE SE RENUNCIA A TODAS LAS GARANTIAS Y CONDICIONES IMPLICADAS RELATIVAS A LA MERCANTIBILIDAD Y ADECUACIÓN PARA UN OBJETIVO CONCRETO.

La máxima responsabilidad de **Cormac Industrial ®** queda limitada al precio de compra del producto y en ningún caso será considerado responsable **Cormac Industrial ®** de ningún daño consecuencial, incidental ni especial de cualquier naturaleza acontecido tras la venta o el uso del producto inadecuado u otro.

NOTA: Algunos estados no admiten limitaciones a los daños incidentales o derivados, o a la duración de una garantia implicita, por lo que las condiciones arriba indicadas pueden no ser de aplicación en su caso. Esta garantia ofrece derechos legales, especificos. No pueden sumarse a otros derechos que varian de un lugar a otro

INFORMACIÓN IMPORTANTE

Cormac Industrial®

Este envio ha sido comprobado, embalado e inspeccionado a fondo antes de salir de nuestra planta. Cualquier perdida o daño que pueda sufrir durante el transporte no podrá atribuirce al fabricante.

Pérdidas o daños visibles
Si alguno de los articulas incluidos en la lista de paquetes o en el albarán del transportista este dañado o muestre una cantidad inferior a la acordada, no acepte el pedido hasta que el transportista o mensajero haga la pertinente anotación en su lista o albarán.

Pérdidas o daños ocultos
Si, aparentemente, el pedido se le ha entregado en buenas condiciones, pero al abrir el embalaje o contenedor detecta que se han producido daños o pérdidas durante el transporte, póngase en contacto con el transportista inmediatamente.

Reclamaciones por daños
Deberá interponer una reclamación por daños al transportista. Es responsabilidad de la empresa de transporte reembolsable la reparación o sustitución de las mercancias dañadas durante el transporte. Las redamaciones por la pérdida o el daño durante el transporte no deberan deducirse de las facturas de Cormac Industrial ni debe bloquearse el pago de la factura de Cormac Industrial a la espera de la resolución de dichas reclamación.

Si lo desea, puede devolver a **Cormac Industrial ®** productos dañados durante el transporte para su reparación.
El coste del serviciocorrerá por su cuenta y constituirá la base para r eclamar ante el transportista.

NOTES

BLUE GIANT®

PRODUCT SAFETY INFORMATION

INFORMACIÓN DE SEGURIDAD SOBRE EL PRODUCTO

MANUAL

CORMAC INDUSTRIAL
A BLUE GIANT COMPANY

bluegiant.com

NOTES

SAFETY INFORMATION

This manual contains important information for the staff responsible for the installation, operation and proper maintenance of the product.

Read this manual before using the air balancer.

Danger, warning, caution and notice
This manual details procedures and steps which, if not followed, can result in bodily injury. The following words of warning identified the level of potential risk.

DANGER: Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION: Indicates a potentially hazardous situation which, if not avoided,may resuit in minor or moderate injury or property damage.

NOTICE: Indicates information or a company policy that relates directly. or indirectly to the safety of personnel or protection of property.

Safety summary

WARNING
• Ensure that staff who use the air balancer has had proper training. Do not use this air balancer or the equipment with the supplied for lifting, supporting, or transportlng people or to holdload above others.
• The supporting structures and load securing devices used in conjunction with these air balancer and must have a safety factor of, at least, three times its capacity, which is the responsibility of the customer.

NOTICE
• Lifting equipment are subject to different regulations depending on the country of use. This manual does not specify these regulations.

This edition of the manual of prevention of accidents in industrial activities establish a point: should inform employees who work near suspended loads or help to snag and have a burden that must not be under the same. From the point of view of security, there is a primary factor: carry out all lifting operations in such a way that occur a failure in the equipment staff not be wounded. This implies not placed under high loads and keep out of the path of these. Owner's and user's responsibility is to determine the suitability of the product for a particular use. It is recommended to take into account all the federal, State, local, industry and professional associations regulation which applies. Before using the tool, read carefully the instructions and wamings.
Rigging: Is considered responsible for the operator be careful, use common sense and be familiar with proper rigging techniques. For information about gear, **Cormac Industrial ®** has produced this manual in order to provide dealers, mechanics, operators and company personnel the information necessary to perform the tasks of installation, operation, maintenance and repair of the products.
It is very important that mechanics and operators be familiar with technical service of these products or other similar procedures, and that they are in the physical fitness required to perform them. General knowledge of such personnel shall include the following:

1. Secure proper use and common power tools, as well as recommended by CORMAC-IND or special tools.
2. Safety procedures, precautions and work habits established by accepted industry standards.
Cormac Industrial ® may not know or detail all procedures associated with the operation or repair of its products, or the risks and results of each method. If operating or maintenance procedures not specifically recommended by the manufacturer are conducted, it shall ensure that the actions carried out do not jeopardize the safety of the product.
If you are not sure of a certain operation, maintenance procedure or step, leave the product in a safe condition and ask for technical assistance to supervisors or the factory.
The installation and the correct functioning of the rocker depend on that read and follow all instructions in the corresponding manuals before starting work with the air balancer.

CAUTION: Clean, dry air must be used whenever you operate the air balancer.

SAFE OPERATING INSTRUCTION

Are listed below, operating instructions than are intended to avoid risky that can cause injury to persons or damage to the product use practices and third parties.

Cormac Industrial ® assumes that most companies that use these balancers have a safety program in their facilities. In the event that there is a conflict between a designated standard in this manual, and a similar standard defined by the company, shall prevail which is more restrictive.

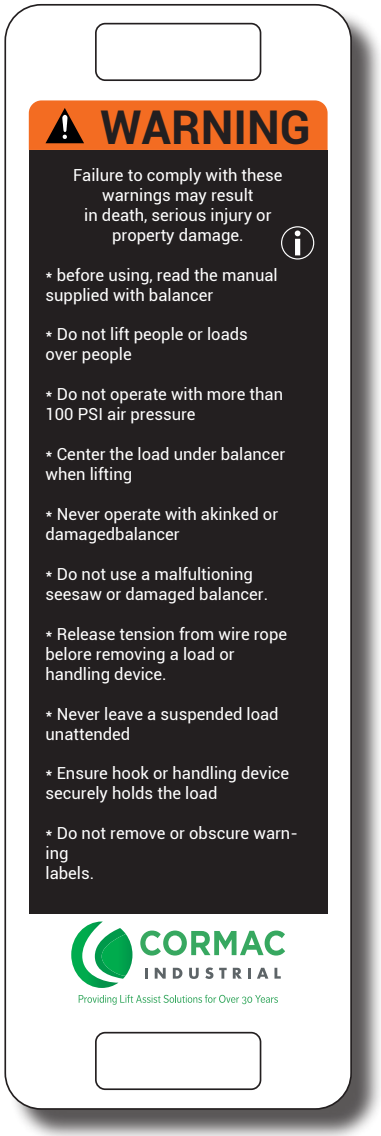
These instructions for a safe operation are intended to wam operators of unsafe practices that should be avoided and are not limited necessarily to the list offered below.

1. Ensure that only work with the air balancer properly trained people.
2. Do not use the air balancer if there are no parts.
3. When the signal (not used) appears in the air balancer or the controls, you must not use the operator until the designated staff corrected and eliminate the problem.
4. Check the optimal conditions of the hook and inspect the proper use.
5. Within each turn you must check that the air balancer is in optimalconditions in each of its parts. Do not use the rocker if wear or damage is in parts.
6. Do not exceed the rated load capacity of the rocker. See the ability to lag and nameplate attached to the air balancer.
7. Do not use wire rope as a Sling.
8. Use the air balancer only when the wire rope is centered on the charge. Not to “resort to dragging” or “push side”.
9. Inspect wire rope, do not use it if it is turned, twisted, or damaged.
10. Do not force the vertical travel of the air balancer.
11. Make sure that load is securely belted in the seat of the hook.
12. Do not hold the load with the tip of the hook.
13. Avoid contact of the cable with sharp edges.
14. Make sure that nobody is in the load path. Do not lift the load above others.
15. Do not operate the air balancer for lifting or lowering people, and do not allow anyone to stand on the top of the suspended load.
16. Avoid balancing the loads suspended.
17. Do not leave suspended load when not in use the air balancer.
18. Always watch a suspended load.
19. Do not weld or cut a load while suspended in the air balancer.
20. Do not use the rocker if the movement of the cable presents jumps, irregularities, vibrations, etc.
21. For maintenance be sure to disable the air balancer, cutting off the air supply.
22. Keep the air balancer out of hit or shock.
23. Avoid tuming the rocker in one direction. Change the address with each cycle of the air balancer to prevent kinking and damage to air lines.
24. When you use the air balancer, watch for it at all times.

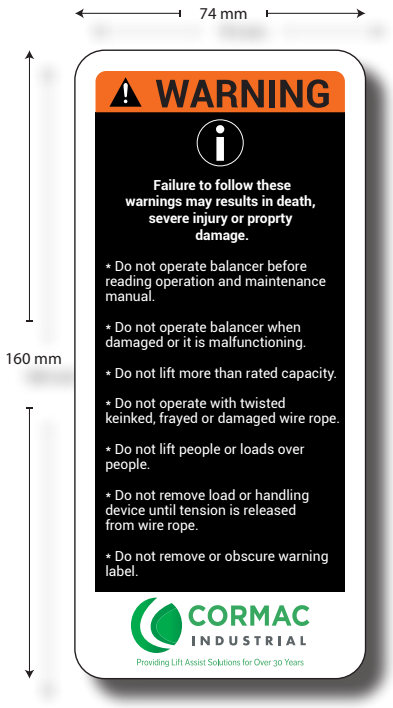
WARNING TAG LEVEL

All made air balancer arms have the warning label that is shown below, attached to the rocker and one more subject in the control lines. Labels that are displayed are representative and do not correspond to the actual size.

PENDANT CONTROL TAG



BALANCER LABEL



PRODUCT PART INFORMATION

CAUTION: It Is recommended to use **Cormac Industrial ®** parts that wlll keep the product warranty and help avold dangerous results of securlty, poor performance of the tool, extraordinary maintenance, etc.

INFORMACIÓN DE SEGURIDAD

Este manual contiene información importante para todo el personal responsable de la instalación, funcionamiento y mantenimiento adecuado del producto. Antes de utilizar el balancin, lea este manual.

Peligro, Advertencia, Precaución y Aviso
En este manual se detallan procedimientos y pasos que, de no seguirse, pueden provocar lesiones corporales. Las siguientes palabras de aviso identifican el nivel de riesgo potencial.

PELIGRO: Indica una situación de peligro inminente que, de no evitarse, resultaria en lesiones graves o muerte.
ADVERTENCIA: Indica una situación potencialmente peligrosa que, de no evitarse, podria resultar en lesiones graves o muerte.
CUIDADO: Indica una situación potencialmente peligrosa que, de no evitarse, podria producir lesiones de leves a moderadas o daños al equipo.
AVISO: Indica información o politica de la empresa directa o indirectamente relacionada con la seguridad del personal o la protección de la propiedad.

Resumen de seguridad

ADVERTENCIA
• Asegure que el personal que utiliza el balancin cuente con le capacitación adecuada.
• No utilice este balancin o el equipo que se suministra con este para elevar, sostener o transportar personas ni para soste ner carga por encima de otras personas.
• Las estructuras de soporte y los dispositivos de sujeción de la carga utilizados en conjunto con estos balancines deben contar con un factor de seguridad de, al menos, el triple de su capacidad, lo cuál es responsabilidad del cliente.
AVISO
• Los equipos de elevación están sujetos a distintas reglamentaciones dependiendo del pals de uso. Este manual no especifica dichas reglamentaciones.

Esta edición del manual de prevención de accidentes en actividades industriales establece un punto:
Deberá informarse a los empleados que trabajan cerca de cargas suspendidas o ayudan a enganchar y disponer una carga de que no deben situarse debajo de la misma. Desde el punto de vista de la seguridad, existe un factor primordial: llevar a cabo todas operaciones de elevación de forma que de producirse un fallo en el equipo el personal no resulte herido.
Esto implica no situarse bajo cargas elevadas y mantenerse fuera de la trayectoria de éstas.
Es responsabilidad del propietario y del usuario determinar la idoneidad del producto para un uso en concreto. Es recomendable tener en cuenta toda la reglamentación federal, estatal, local, industrial y de asociaciones profesionales que resulten aplicables. Antes de utiliz ar la herramienta, lea atentamente las instrucciones y advertencias.

Aparejo: Se considera responsabilidad del operario ser prudente, utilizar el sentido común y estar familiarizado con las técnicas de aparejo adecuadas.

Cormac Industrial ® ha elaborado este manual con el objetivo de ofrecer a distribuidores, mecánicos, operarios y personal de la empresa la información necesaria para realizar las tareas de instalación, funcionamiento, mantenimiento y reparación de los productos. Es muy importante que los mecánicos y operarios estén familiarizados con los procedimientos de servicio técnico de éste producto u otros similares, y que se encuentren en el estado fisico necesario para realizarlos. Los conocimientos generales de dicho personal deberán incluir lo siguiente:

1. Manejo seguro y adecuado de herramientas mecánicas comunes, asi como de herramientas especiales o recomendadas por **Cormac Industrial ®**.
2. Procedimientos de seguridad, precauciones y hábitos de trabajo establecidos por normas industriales aceptadas.
Cormac Industrial ® no puede conocer ni detallar todos los procedimientos asociados al funcionamiento o reparación de sus productos, ni los riesgos o resultados de cada método. Si se llevan a cabo procedimientos de funcionamiento o mantenimiento no recomendados especificamente por el fabricante, deberá garantizarse que las acciones que se realicen no pongan en peligro la seguridad del producto. Si no está seguro de una cierta operación, paso o procedimiento de mantenimiento, deje el producto en condiciones seguras y pida asistencia técnica a los supervisores o a la fábrica.

La instalación y el funcionamiento correcto del balancin dependen de que se lean y sigan todas las instrucciones en los manuales correspondientes antes de comenzar a trabajar con este.

CUIDADO: Se debe utilizar aire limpio y seco siempre que se haga funcionar el balancin.

INSTRUCCIONES PARA UN FUNCIONAMIENTO SEGURO

A continuación, se enlistan instrucciones de funcionamiento que tienen por objetivo evitar prácticas de uso arriesgadas que puedan provocar lesiones a las personas o daños al producto y terceros.

Cormac Industrial ® asume que la mayoria de empresas que utilizan estos balancines cuentan con un programa de seguridad en sus instalaciones. En el caso de que se produzca un conflicto entre una norma señalada en este manual y una norma similar definida por la empresa, prevalecerá la que resulte más restrictiva.

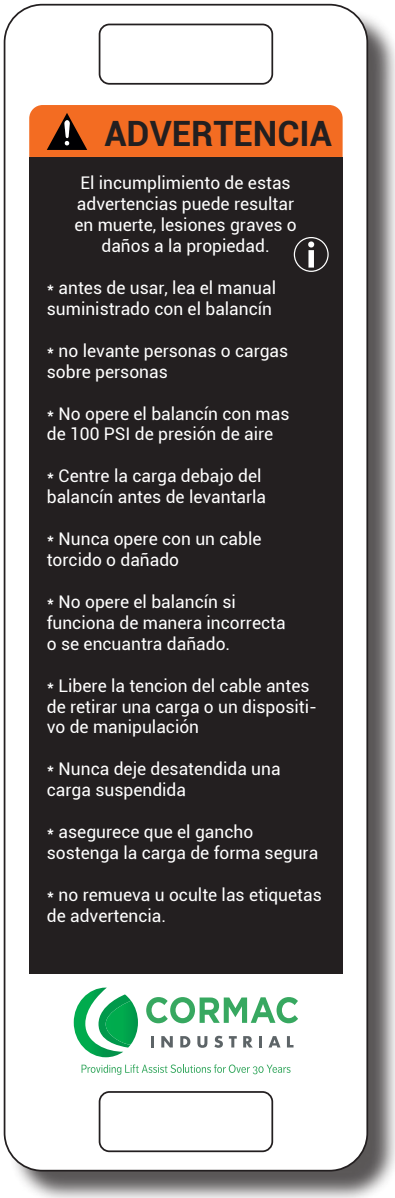
Estas instrucciones para un funcionamiento seguro tienen el objetivo de advertir a los operarios de prácticas peligrosas que deben evitarse y que no están limitadas, necesariamente, a la lista que se ofrece a continuación.

1. Asegúrese de que sólo trabajan con el balancin personas debidamente capacitadas.
2. No utilice el balancin si hay ausencia de piezas.
3. Cuando aparece la señal (NO UTILIZAR) en el balancin o en los ma ndos, el operador no debe utilizar el balancin hasta que el personal designado corrija y elimine el problema.
4. Compruebe las condiciones óptimas del gancho e inspeccione el uso adecuado.
5. Antes de cada tumo debe comprobarse que el balancin este en optimas condiciones en cada una de sus partes. No utilice el balancin si se encuentra desgaste o daño en algunas de las partes **6.** No exceda la capacidad nominal de carga del balancin. Consulte la etiqueta de capacidad y la placa de identificación adheridas al balancin o a este.
7. No utilice el cable de acero como eslinga
8. Utilice el balancin sólo cuando el cable de acero esté centrado sobre la carga. No “recurra al arrastre” o “empuje lateral”.
9. Inspeccione el cable de acero, no lo utilice si está girado, retorcido o dañado.
10. No fuerce el deslizamiento vertical del balancin.
11. Asegúrese de que la carga esté bien sujeta en el asiento del gancho.
12. No sostenga la carga con la punta del gancho.
13. Evite el contacto del cable con bordes afilados.
14. Asegúrese de que nadie se encuentre en la trayectoria de carga. No eleve la carga por encima de otras personas.
15. No utilice el balancin para levantar o bajar personas y no permita que nadie se coloque encima de la carga suspendida.
16. Evite balancear las cargas suspendidas.
17. No deje la carga suspendida cuando no esté utilizando el balancin.
18. Siempre vigile una carga suspendida.
19. No suelde ni corte una carga mientras esta suspendida en el balancin.
20. No utilice el balancin si el movimiento del cable presenta irregularidades, saltos, vibraciones, etc.
21. Para labores de mantenimiento asegúrese de inhabilitar el balancin, cortando el suministro de aire.
22. Evite que el balancin se golpee o choque.
23. Evite girar el balancin en una sola dirección. De ser posible cambie a dirección en cada ciclo del balancin para evitar retorcer y dañar las lineas de aire.
24. Cuando utilce el balancin, esté pendiente de este en todo momento.

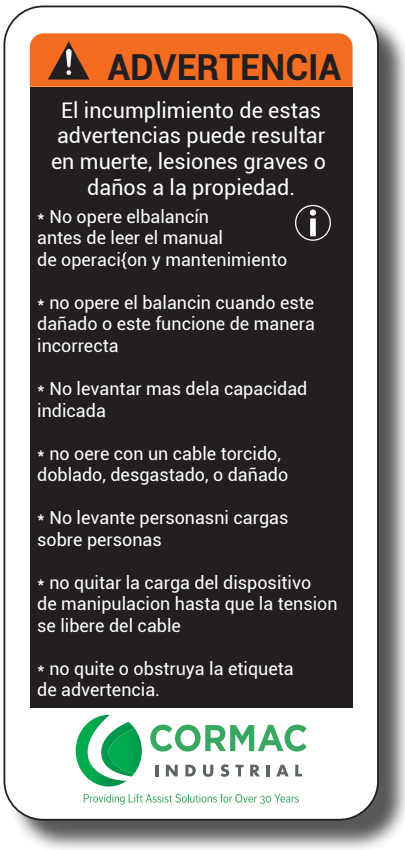
ETIQUETA DE AVISO

Todos los balancines fabricados cuentan con las etiquetas de aviso que se muestra a continuación, una adherida al balancin y una más sujeta en las lineas del control.
Las etiquetas que se muestran son representativas y no corresponden al tamaño real.

ETIQUETA DE CONTROL



ETIQUETA DE BALANCIN



INFORMACION SOBRE LAS PARTES DEL PRODUCTO

CUIDADO: Se recomienda utilizar refacciones **Cormac Industrial ®** que permitirán conservar la garantia del producto y ayudaran a evitar resultados peligrosos de seguridad, bajo rendimiento de la herramienta, mantenimiento extra etc.

BLUE GIANT®

PRODUCT SAFETY INFORMATION

INFORMACIÓN DE SEGURIDAD SOBRE EL PRODUCTO

MANUAL

CORMAC INDUSTRIAL
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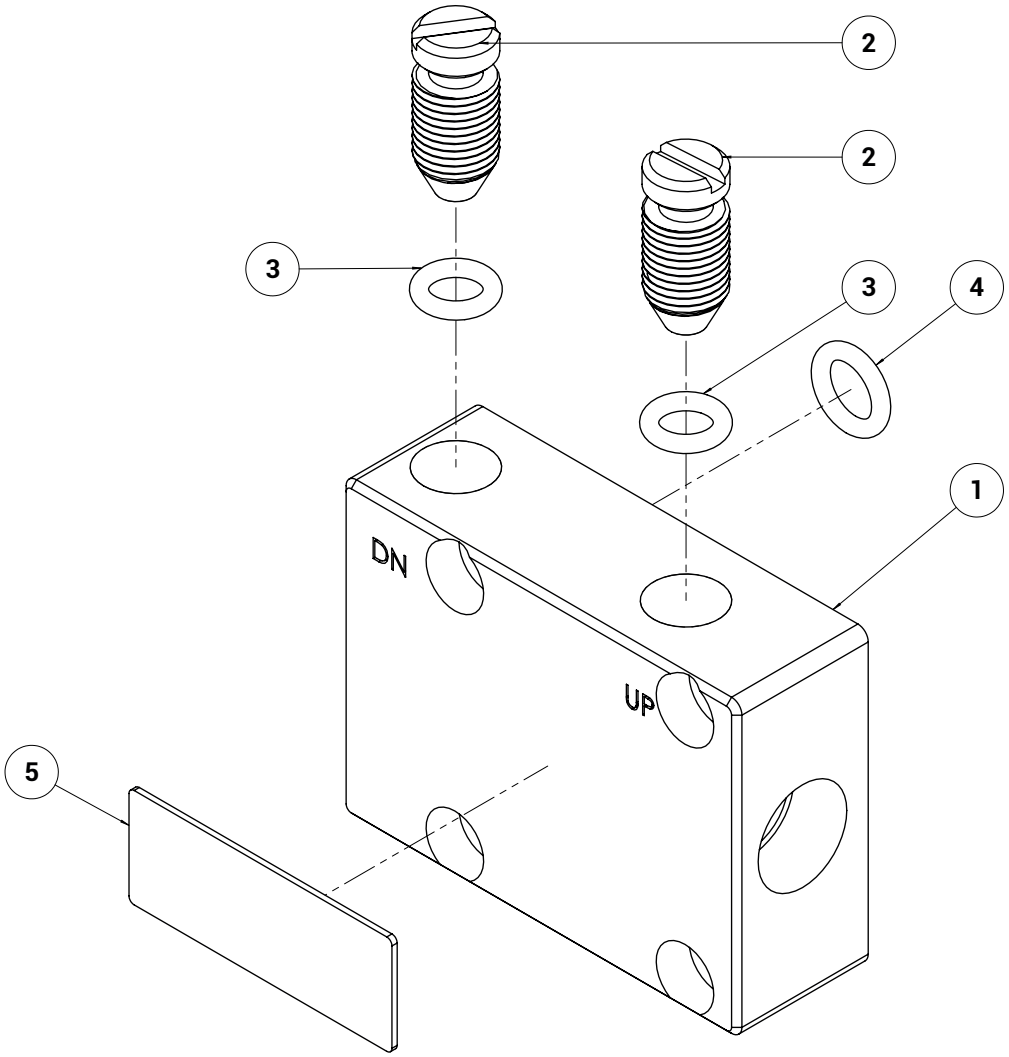
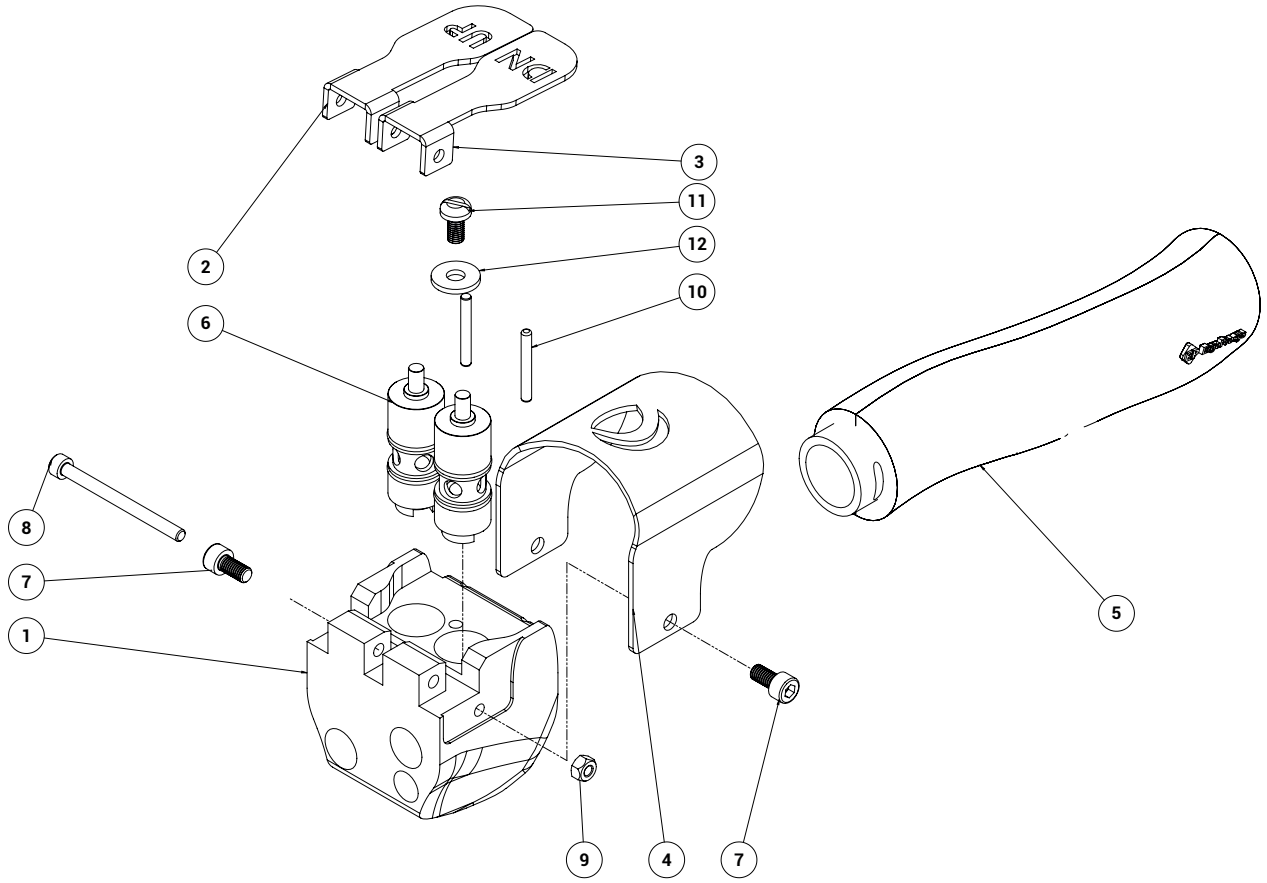
bluegiant.com

SERIES UD MANIFOLD ASSEMBLY & PARTS LIST



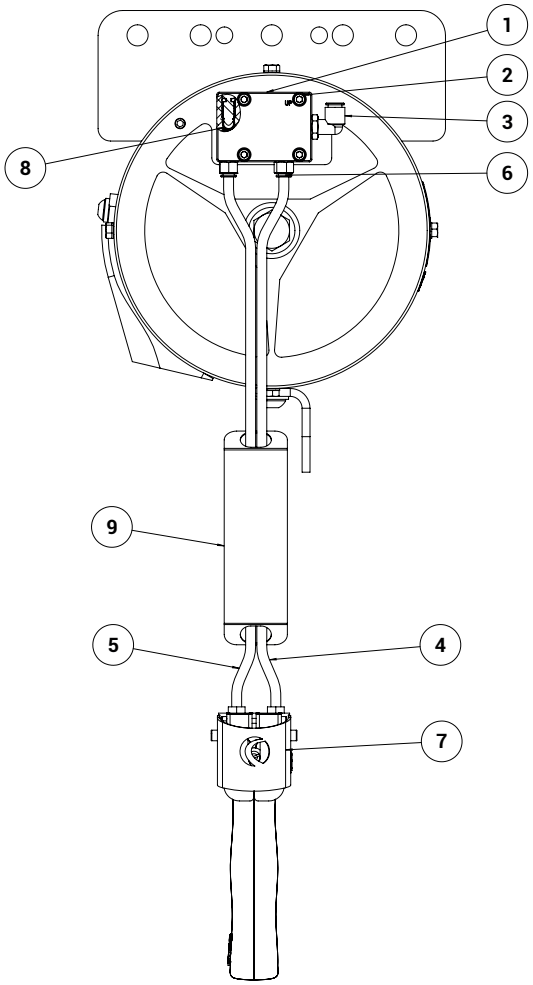
ITEM NO.	DESCRIPTION OF PART	TOTAL QTY	PART NUMBER
1	Body	1	EPMVCD01
2	Adjusting Screw	2	EPMVCD02
3	O-Ring	2	C1300058 (KIT)
4	O-Ring	1	C1300058 (KIT)
5	Laber Cormac Logo	1	EPMVCD03

SERIES PENDANT ASSEMBLY & PARTS LIST



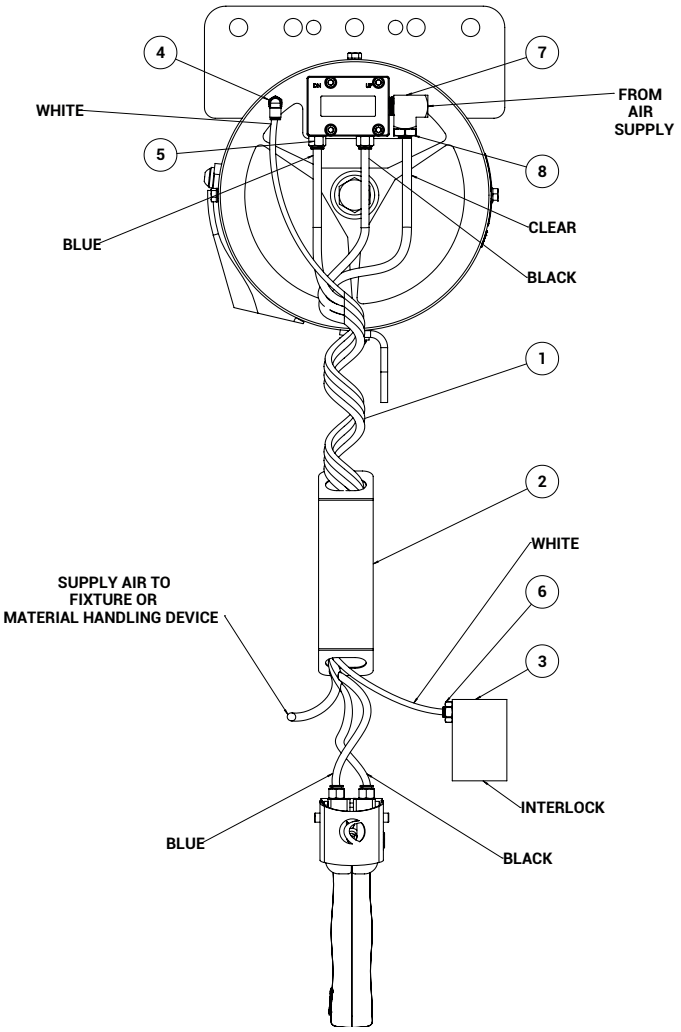
ITEM NO.	DESCRIPTION OF PART	TOTAL QTY	PART NUMBER
1	Valve Housing	1	EPABCD01
2	Lever UP	1	EPABCD03
3	Lever DOWN	1	EPABCD04
4	Guard	1	EPABCD02
5	Ergonomic handle	1	EPABCD05
6	Valve	2	C0100138
7	Screw	2	H0100196
8	Screw	1	H0100199
9	Hexnut	1	H0100201
10	Pin	2	
11	Screw	1	H0100196
12	Flat Washer	1	H0100500

SERIES UD BASIC BALANCER CONTROL KIT ASSEMBLY & PARTS LIST



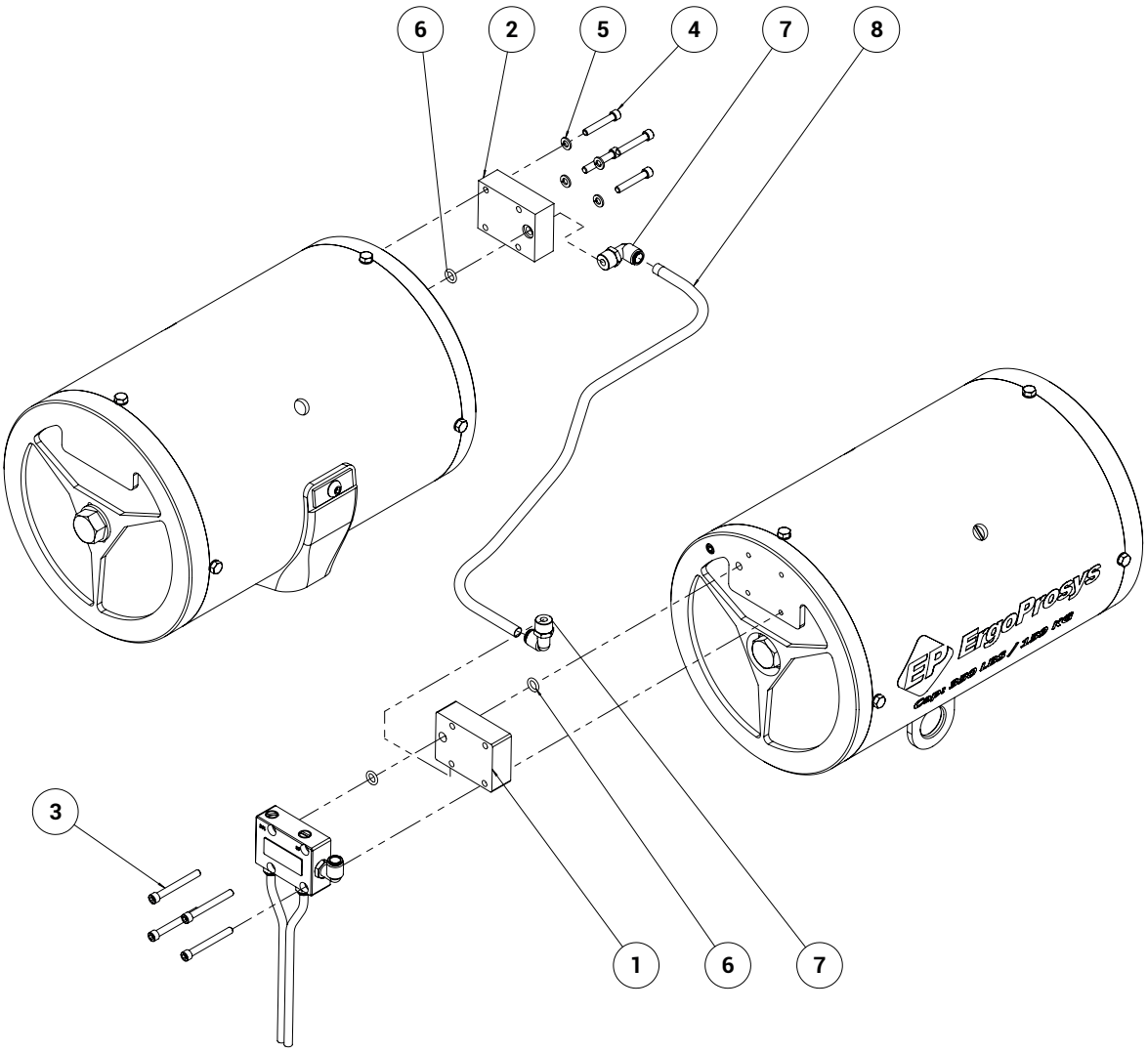
ITEM NO.	DESCRIPTION OF PART	TOTAL QTY	PART NUMBER
1	Manifold	1	EPMCVE1
2	Mounting Screw	4	H0100179
3	Fitting, Elbow	1	S0200039
4	Hose	#	S0300147
5	Hose	#	S0300043
6	Fitting, Adapter	4	S0300144
7	Pneumatic Pendant	1	EPABCE01
8	O-ring	1	C 1300058(kit)
9	Warning Tag (Do Not Remove)	1	EPAB1D0110

COIL HOSE & INTERLOCK ASSEMBLY AND PARTS LIST



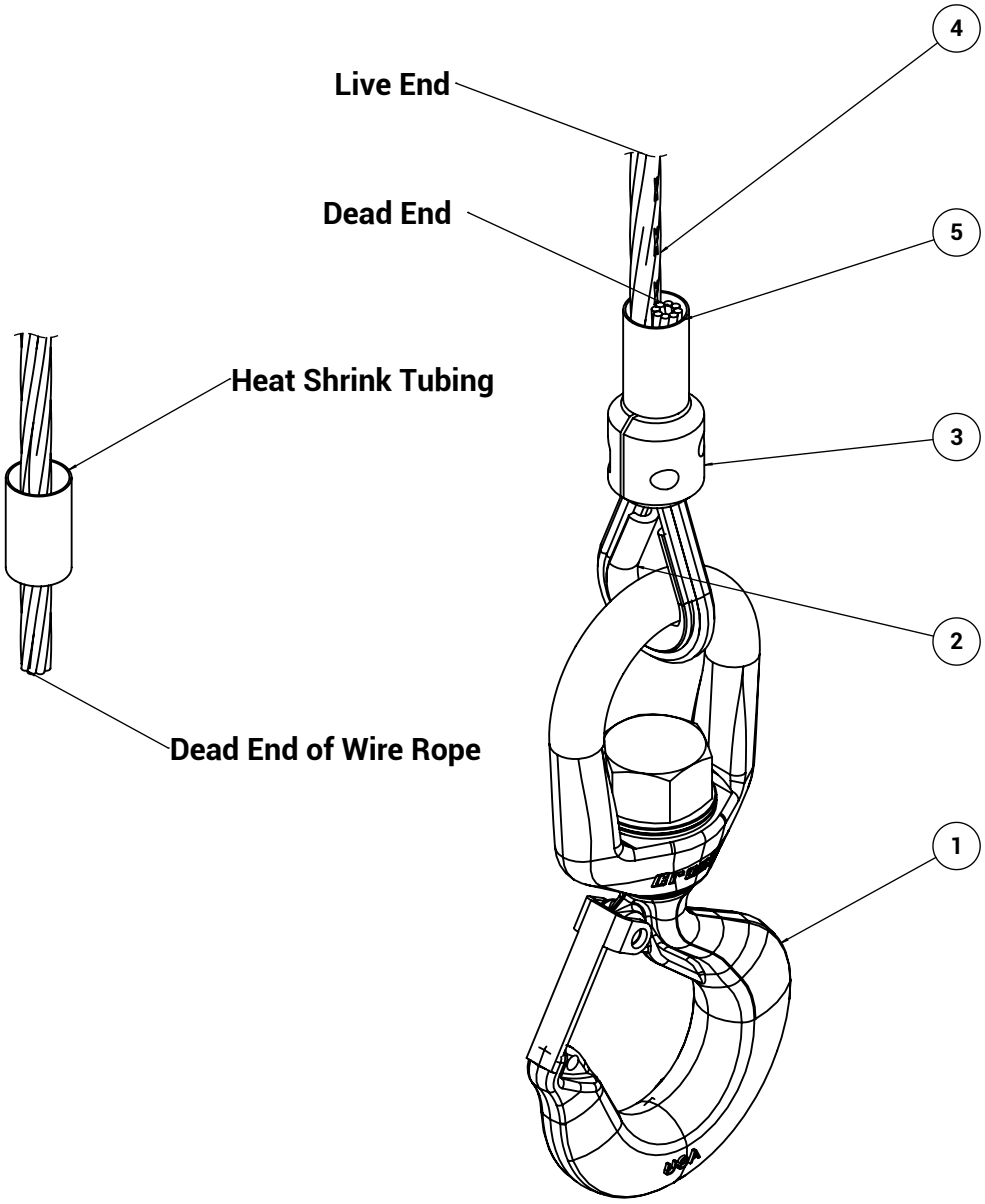
ITEM NO.	DESCRIPTION OF PART	TOTAL QTY	PART NUMBER
1	Coil Hose Assembly*	1	
2	Warning Tag	1	EPAB1O0110
3	Interlock Valve	1	S1300006
4	Elbow fitting	1	S0300010
5	Push on Fitting	4	S0300144
6	Push on Fitting	1	S0300146
7	Tee conection, 3/8” NPT	1	S0300059
8	Push on Fitting	1	S0300288

TANDEM CONTROL BALANCER ASSEMBLY AND PARTS LIST



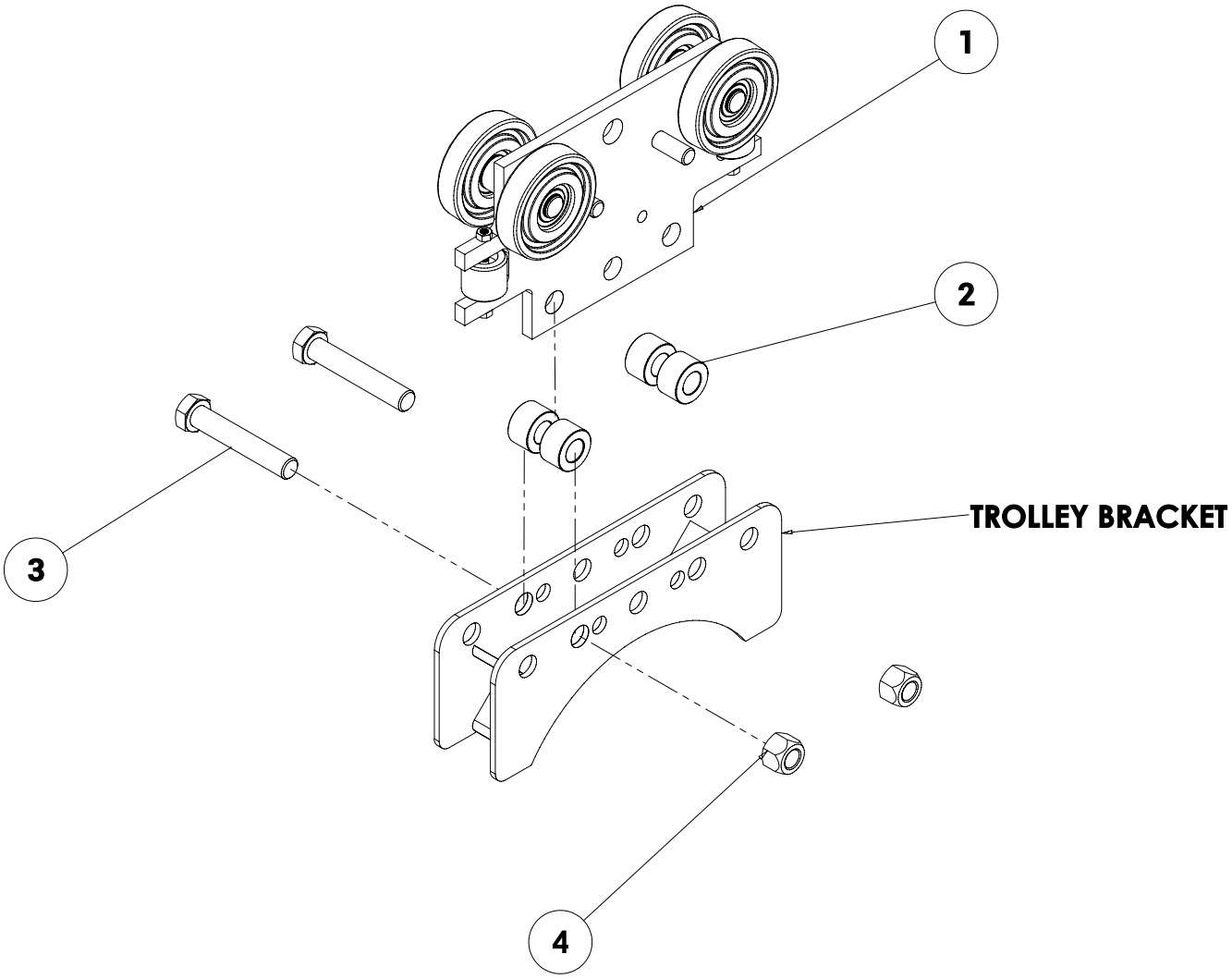
ITEM NO.	DESCRIPTION OF PART	TOTAL QTY	PART NUMBER
1	Master Tandem Manifold	1	EPABTCD01
2	Secondary Tandem Manifold	1	EPABTCB02
3	Mounting Screw	4	
4	Mounting Screw	4	H0100179
5	Lockwasher	4	H0100121
6	O-ring	2	C1300058(kit
7	Elbow fitting	2	S0100054
8	Control Hose	2.5 ft	S0300198

HOOK & WIRE TO HOOK ASSEMBLY AND PARTS LIST



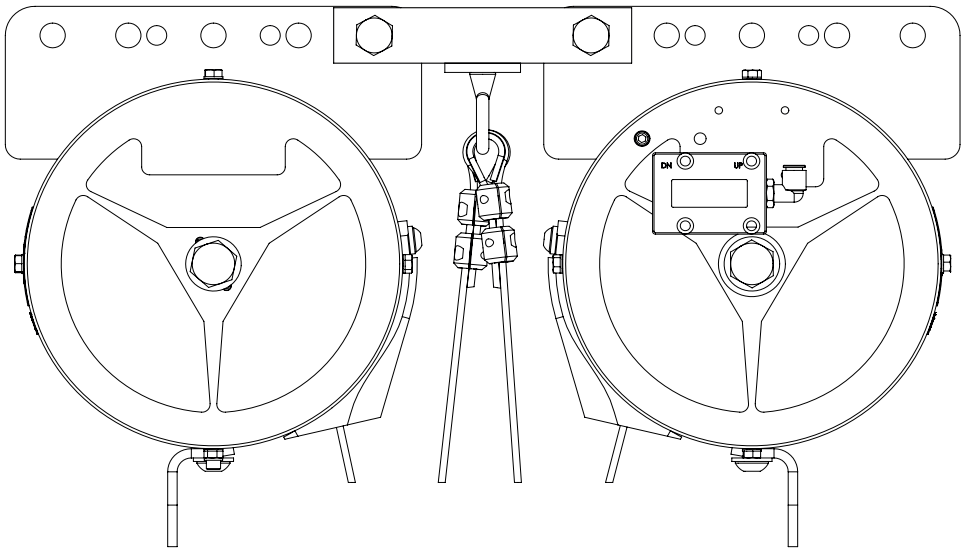
ITEM NO.	DESCRIPTION OF PART	TOTAL QTY	PART NUMBER
1	Hook Assembly	1	S1100031
2	Wire Rope Thimble	1	H0200085
3	Wire Rope Clamp	1	H0200076
4	Wire Rope	20 ft	EPAB1E07
5	Heat Shrink Tubing	1	S0500016

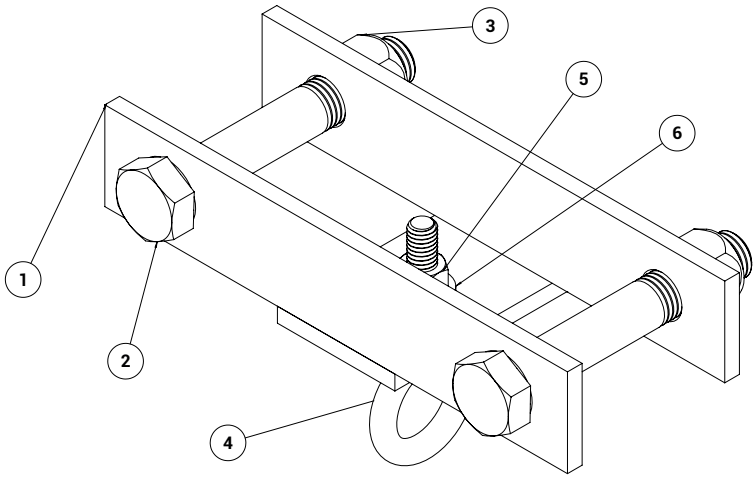
BALANCER SUSPENSION KITS AD PARTS LIST



ITEM NO.	DESCRIPTION OF PART	TOTAL QTY	PART NUMBER		
			EPR-180	EPR-140	EPR-090
1	Trolley	1	F00100462	FM140406	F03800133
2	Spacer	4	EPAB1D0111	EPAB1D0112	
3	Screw	2	H0100061	H010021	
4	Hex Nut	2	H0100059	H0100369	

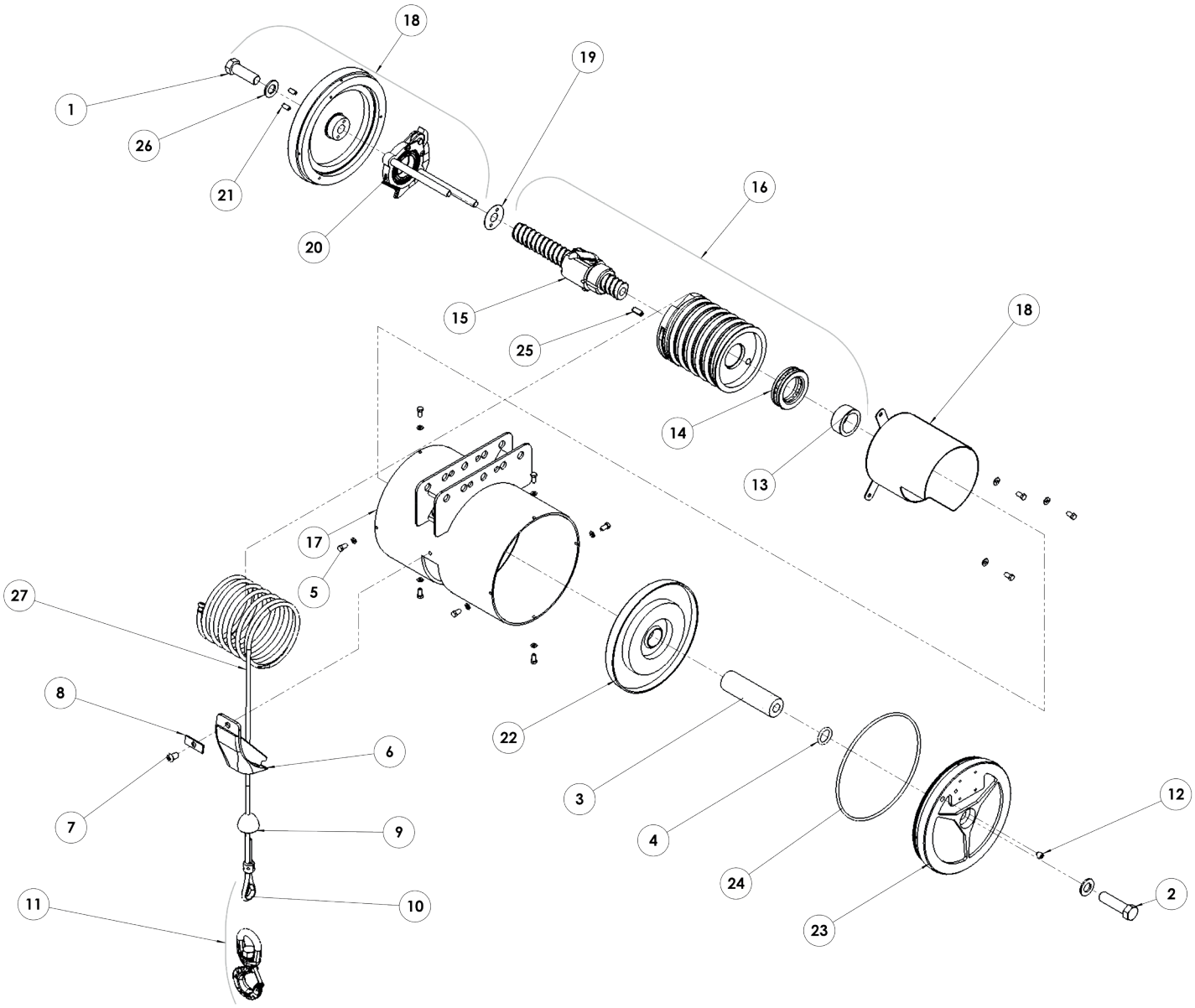
TANDEM CONNECTION BAR KIT AND PARTS LIST





ITEM NO.	DESCRIPTION OF PART	TOTAL QTY	PART NUMBER
1	Tandem Connection	1	EPTCBD01
2	Bar Screw	2	H0100107
3	Nut	2	H0100059
4	Tandem Reeved eyebolt	1	H0200063
5	Nut	1	H0100181
6	Plain Washer	1	H0100436

BASIC AIR BALANCER 350 LBS. (159 KG)
ASSEMBLY AND PARTS LIST



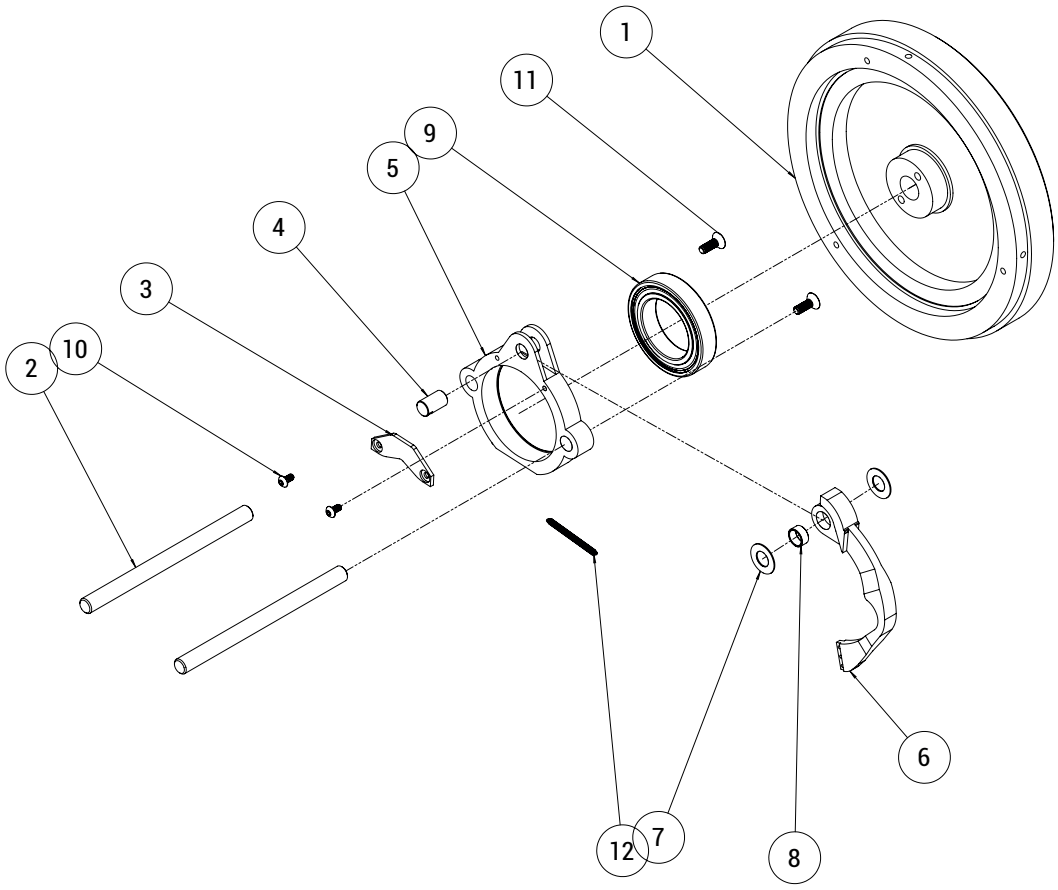
BASIC AIR BALANCER 350 LBS. (159 KG) ASSEMBLY AND PARTS LIST

ITEM NO.	DESCRIPTION OF PART	TOTAL QTY	PART NUMBER
1	Ball Screw bolt (Rear Cap)	1	H0100617
2	Ball Screw bolt (Front Cap)	1	H0100127
3	Sliding Guide	1	EPAB1D0101
4	Ball Screw seal*	1	C1300058 (KIT)
5	Screw	11	H0100629
6	Wire Rope Guide	1	EPAB1D0104
7	Screw	1	H0100595
8	Guide Retainer	1	EPAB1D0105
9	Bumper Stop*	1	81300018
10	Wire Rope Thimble*	1	H0200085
11	Accesory kit	1	EPABSKE01
12	Pipe Plug 1/8 NTP	1	EPAB1D0109
13	Thrust Bearing Retainer	1	EPAB1D0502
14	Thrust Bearing	1	C1500007
15	Ball Screw & Ball Nut	1	S1500018 / S08001

ITEM NO.	DESCRIPTION OF PART	TOTAL QTY	PART NUMBER
16	Reel Assembly	1	EPAB1E05
17	Housing Assembly	1	EPAB1E02
18	Reel Cover	1	EPAB1D0302
19	Bearing Spacer	1	EPAB1D0301
20	Brake Assembly***	1	EPAB1E04
21	Rear Cap Assembly	1	EPAB1E06
22	Anti-Rotation Pin	2	H0100417
23	Piston Assembly*	1	EPAB1D0102
24	O-Ring*	1	S0100075
25	Front Cap	1	EPAB1D0103
26	Ball Nut Dowel Pin	1	H0100618
27	Washer	2	H0100496
28	Wire Rope 20 ft (6m)	1	EPAB1E07
29	Information Label**	1	EPAB1D0108
30	Ergoprosys Label**	1	S1100051
*	Recommended Spare Parts		

* Recommended Spare Parts
** Not show
*** More information next page for brake Assembly

CENTRIFUGAL BRAKE 350 LBS. (159KG) ASSEMBLY & PARTS LIST



ITEM NO.	DESCRIPTION OF PART	TOTAL QTY	PART NUMBER
1	Rear Cap Assembly (Only reference)	*	EPAB1E06
2	Guide Shaft	2	EPAB1D0402
3	Shaft Retainer	1	EPAB1D0407
4	Pivot Shaft	1	EPAB1D0406
5	Brake Rotor	1	EPAB1D0401
6	Brake Shoe	1	EPAB1D0403
7	Washer	2	EPAB1D0405
8	Bushing	1	EPAB1D0404
9	Bearing	1	S1500100
10	Screw	2	H0100621
11	Screw	2	H0100620
12	Spring	1	EPSB35821

BLUE GIANT®

PRODUCT MAINTENANCE INFORMATION

INFORMACIÓN DE MANTENIMIENTO DEL PRODUCTO

MANUAL

CORMAC INDUSTRIAL
A BLUE GIANT COMPANY

bluegiant.com

NOTES

MAINTENANCE INFORMATION

Cormac Industrial®

Only allow **Cormac Industrial®** trained technicians to perform maintenance on this product.
For additional information contact **Cormac Industrial®** or nearest Distributor.
The use of other than genuine **Cormac Industrial®** replacement parts may result in safety hazards, decreased performance and increased maintenance and will invalidate all warranties.
Refer all communications to the nearest **Cormac Industrial®** Office or Distributor.

* Always wear eye protection when operating or performin g maintenance on this Product.
* Always shut off main air supply and bleed down before disconnecting air supply hose before installing, removing or adjusting any accessory on this Products, or before perforrning any maintenance on this Product.
* Never perform maintenance on the Product while it is supporting a load.
* Only allow personnel trained in service and repair of this Product to perform maintenance.
* After performing any maintenance on the Product, test Product before returning Product to service.
* The lower sheave block or hook assembly must be lying on the floor or a maintenance platform before beginning service.

NOTICE: When reading the instructions, refer to exploded diagrams in " Parts Infonnation Manuals" when applicable.

General Maintenance instructions
CAUTION: Use of replacement parts other than genuine Cormac Industrial ® original parts could result in damage to the product and invalidate the warranty.
NOTICE: It is recommend that maintenance work be perfomed by an Cormac Industrial ® service repair center.
Series UD Manifold

Removal from Balancer.
1. Lower suspended load to floor. Tum off air supply to balancer.
2. Press down lever until wire rope is slack and ali air is exhausted from balancer.
3. Remove air supply (3) and hoses (4,5) from manifold(1)
4. Remove the four screws(2) holdinri manifold to front call.

Disassembly.
1. Remove the two adjustment screws(2). Pull out when threads have disengaged.
2. Remove O-rings(3) From adjustment screws.

Assembly.
1. Thoroughly clean manifold body and all internal parts before reassembly. Replace all wom parts.
2. Apply a light coat of lubricant* to O-rings(3), and threaded adjustments before reassembly.
3. Assemble manifold in reverse arder of disassembly.

Series UD Pendant

Removal from Balancer.
1. lower suspended load to floor. Turn off air supply to balancer.
2. Press down lever until wire rope is slack and all air is exhausted from balancer.
3. Disconnect hoses (4 and 5) at handle (7).

Disassembly.
1. Remove screws (7) to remove guard.
2. Remove screw (8 and 9) and UP and DOWN levers (2 and 3).
3. Remove screws (11 and 12).
4. Remove the two full flow valve assemblies (6) by grasping with needle nose pliers and pulling straight out. Replace flow valve, if necessary. Examine O-rings for signs of wear or deterioration. Clean housing (1).
5. Remove pin (10) and pull out handle (5).
6. Replace 0-rings and all worn parts.

Assembly.
1. Control handle is assembled in the reverse order of disassembly.
2. Apply a light coat of lubricant* to O-rings and threaded connections before reassembly.

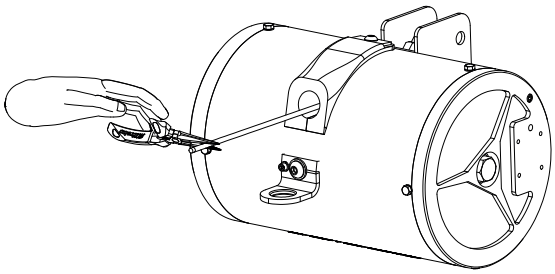
***Lubriplate 1240**

AIR BALANCER REBUILD

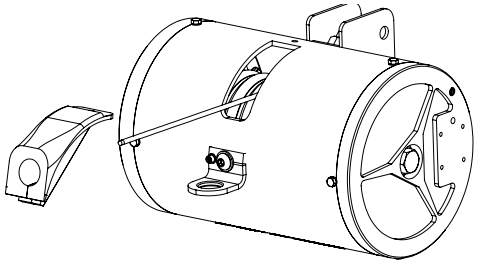
Disassembly for Air Balancer (All Series)

WARNING: Turn off air supply to balancer and be sure wire rope is slack before attempting any disassembly operations. Refer to parts list manual for specific balancer.

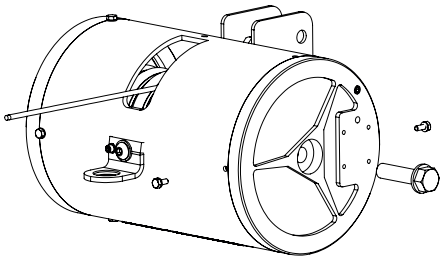
1. Place balancer on a bench or suitable clean work area.
2. Remove E-Stop if installed.
3. Cut load wire rope above ball stop (if used).



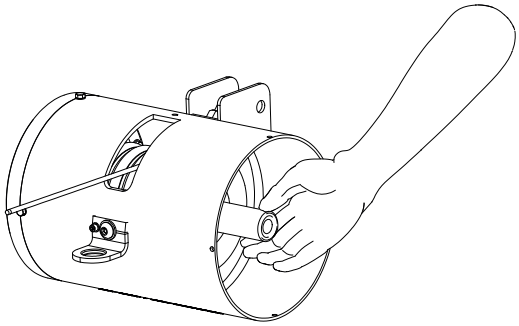
4. Remove load hook and wire rope guide.
5. Loosen center bolt in rear cap and front cap. Do not remove.



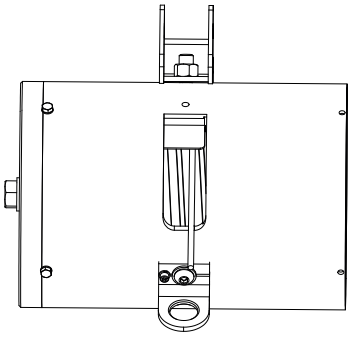
6. Remove screws around outside diameter of front cap. Remove hexhead bolt in center of front cap.
7. To remove front cap pull on wire rope.This will force piston against front cap and push front cap and piston out of housing assembly.



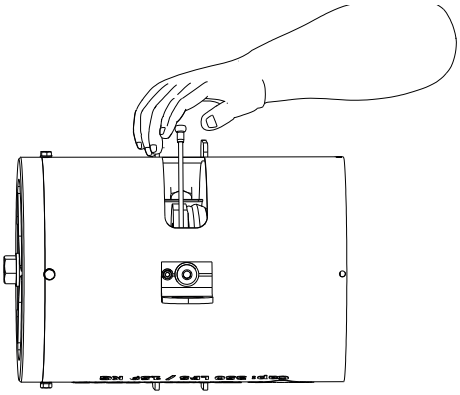
NOTICE: DO NOT run reel off end all screw or ball bearlng will drop out.
8. Remove sliding guide by slipping it out the ball screw.



NOTICE: wire rope anchor hole in reel should be visible at this time.
If not, rotate reel slightly, winding up wire rope, until hole is visible. Swaged fitting on the end of wire rope has a shank which fits into anchor hole. The fit should not be tight. If fit is tight, be careful not to damage reel assembly when removing wire rope.
9. Push wire rope into balancer until swaged fitting is exposed. Pull on swaged fitting to remove wire rope.



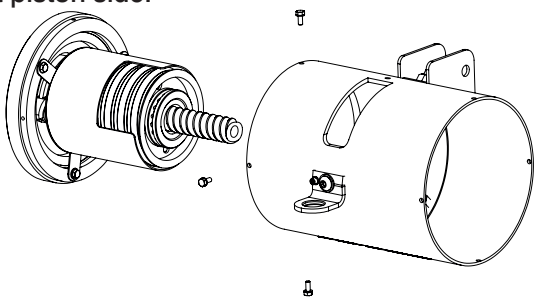
Push wire rope into balance until swaged fitting is exposed.



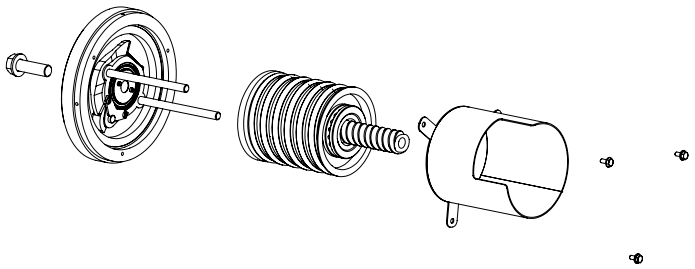
AIR BALANCER REBUILD

NOTICE: Use suitable marking pen to index ball screw notch end cover spring pin to prevent misalignment of reel.

10. Remove all screws around outside diameter of rear cap.
11. Remove rear cap and reel assembly by pushing on ball screw at piston side.



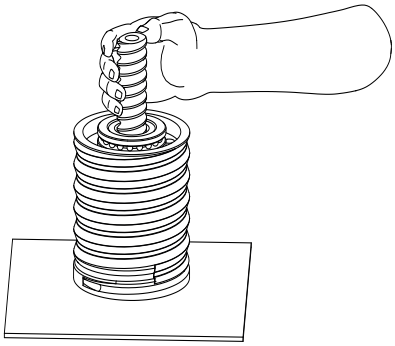
12. Separate rear cap and brake from ball screw and reel assembly, by removing center bolt from rear cap.
13. Remove screws in reel cover to remove it from rear cap.



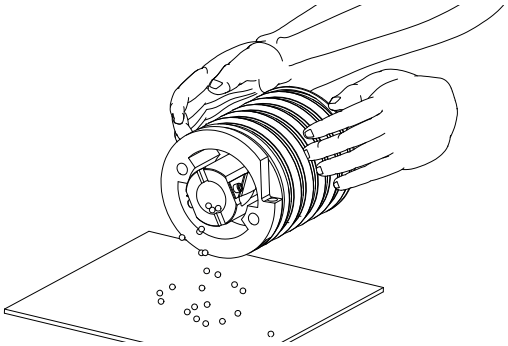
Disassembly of Ball Screw

NOTICE: If ball screw or ball nut do not show signs of excessive wear, disassembly of ball screw is not required.

1. Place ball screw and reel assembly on a shop towel, with thrust bearing facing upwards.
2. Rotate ball screw counterclockwise, removing it from reel assembly.



3. Grasp reel with both hands and gently lift up . Ball bearings will fall on shop towel.
There are 64 ball bearings for all models.
Lightly tap reel to remove any remaining ball bearings. If all balls do not fall out, it may be necessary to insert a wire through the ball nut retum tubes to push out any balls which may be lodged inside.



Cleaning and Inspection

Now that the balancer is completely disassembled, the components should be thoroughly cleaned and inspected.

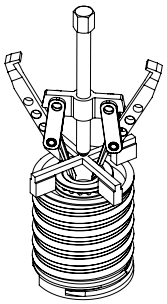
1. Examine cylinder bore surface for excessive wear. Some small scuff marks may be removed with fine emery cloth. If wear is too excessive, cylinder must be replaced.
2. Check piston for cracks and wear at flexible sealing lips. Check steel backing plate for cracks and wear.
3. Inspect ball screw and thrust bearing far excessive wear, pitting, rusting and security in reel assembly.
4. Check wire rope guide for wear. Excessively worn or grooved wire rope guides should be replaced.
5. Inspect reel assembly for cracks and wear of “V” grooves, and anchor hole for deformation.

AIR BALANCER REBUILD

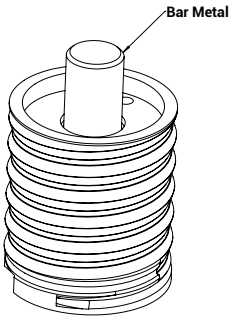
Cormac Industrial®

Ball Screw & Thrust Bearing Replacement

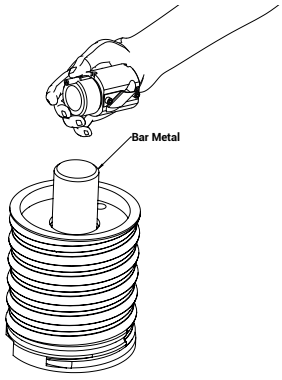
1.Removing Thrust Bearing.Thrust bearing is attached to reel with a retainer pressed into the hub of the reel approximately 1/4 in. (6.4 mm). To remove, use a bearing puller to engage under-cut at bottom of retainer inside diameter.



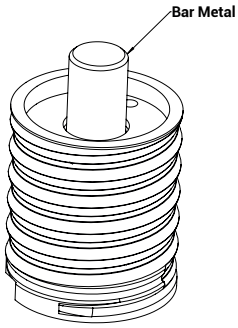
2. Removing Ball Screw Nut. Ball screw nut can be pressed out of reel using a cylindrical bar metal 2 inches (50.8 mm) in diameter. Support reel along outer portion to allow ball nut to be removed.
Press out ball nut being careful not to damage reel.



3. Installing New Ball Nut. To install ball nut, place pin in position. Align pin with groove in reel and press in ball nut.

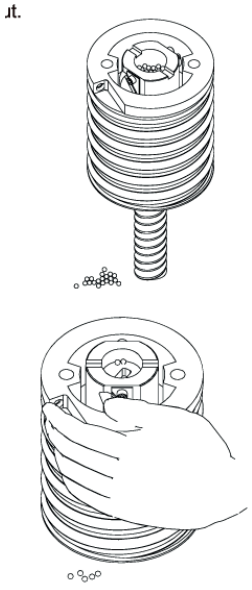


4. Installing New Thrust Bearlng.
To install thrust bearing, place ground inside diameter side of bearing race against reel, place retainer through thrust bearing and press it into reel. After retainer is pressed in, check outer bearing race to be sure it rotates freely. Thrust bearing retainer should be 0.008 to 0.012 in. (0.2 to 0.3 mm) below surface of outer bearing race.



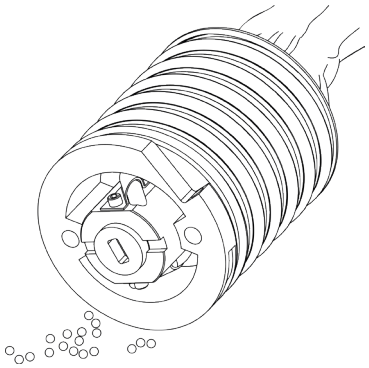
Ball Screw Reassembly

1. Plug hole on slotted end of ball screw with a small piece of paper towel, to prevent ball bearings from dropping into threaded hole.
2. Insert plugged end of ball screw into ball nut from thrust bearing side.
3. Tum ball screw clockwise to thread into ball nut. Thread ball screw to within 1 1/2in.(38 mm) of ball nut end.
4. Stand assembly on ball screw and drop in approximately half of ball bearings.
5. With one hand holding ball screw, rotate reel down and up until all ball bearings have rolled into the tubes of the ball nut.



AIR BALANCER REBUILD

6. Lay reel down on its side with ball screw in a horizontal position. Rotate ball screw three or tour times to keep ball bearings in proper location.
7. Repeat steps 4, 5 and 6 until all ball bearings are reinstalled into ball nut.
8. Remove paper plug from end of ball screw.



Centrifugal Brake Inspection

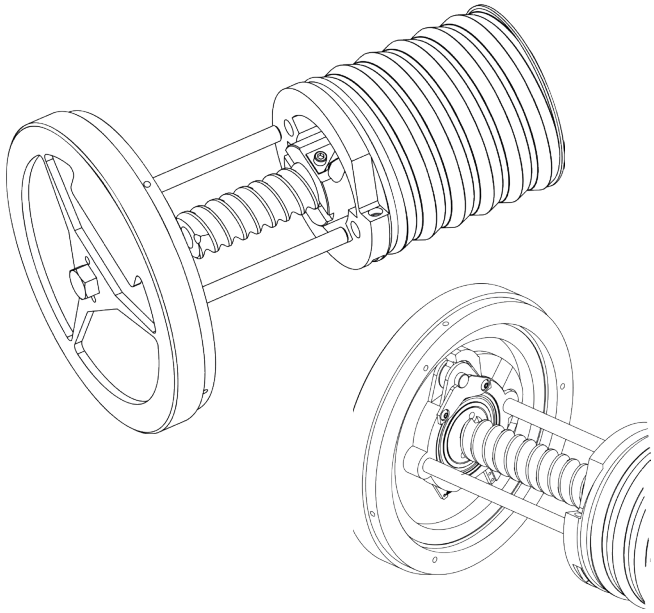
1. Remove balancer from service.
2. Remove rear cap of balancer.
3. Perform “Centrifugal Brake Preventive Maintenance. Schedule” section in Parts Information Manual.
4. Check engagement.
5. Grasp brake rods and rotate clockwise with a rapid motion. The brake shoe should engage the rear cap and stop rotation.
Refer to “Centrifugal Brake Adjustment” section if unable to engage brake.

ASSEMBLY

Cormac Industrial®

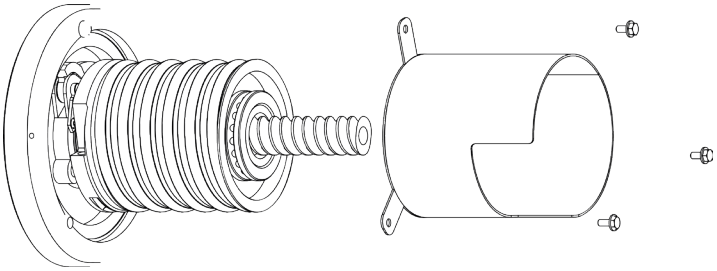
NOTICE: Before assembly, make sure all internal parts are clean, properly lubricated and all wom parts have been replaced.

1. Align and insert brake rods into holes in reel.
Anti-rotation pins in rear cap must line up with slots in ball screw and protrude 1/8 to 5/32 in. (3.2 to 4 mm)) from inside surface of rear cap. Insert shorter bolt through rear cap and thread it into ball screw.
Hand tighten bolt until ball screw is held firmly against rear cap.
2. Lubricate ball screw and thrust bearing with lubricant*.



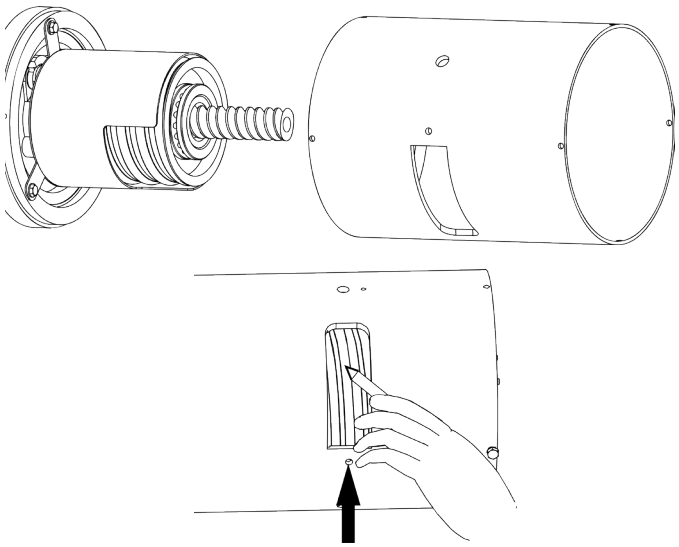
***Lubriplate 1240**

3. Position reel cover in brake and reel assembly and tighten screws.



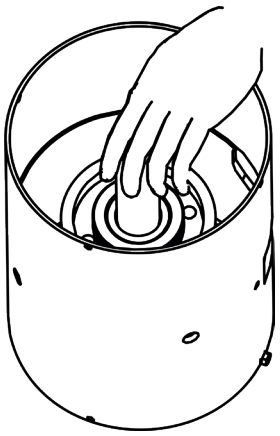
4. Position housing as show. Insert all rear cap assembly into housing.
5. Slide reel and rear cap assembly into housing.
Align screw holes in rear cap with holes in housing.
Check to see that bottom of rear ‘V’ groove is aligned with tapped hole from rope guide.
If it is not in line rotate rear cap in either directian until groove is aligned and bolt holes on outside diameter of rear cap are in line with bolt holes in housing.
Insert two screws on opposite sides af housing.
Check reel alignment did not change when screws were inserted. If alignment is correct, insert remaining screws.

ASSEMBLY

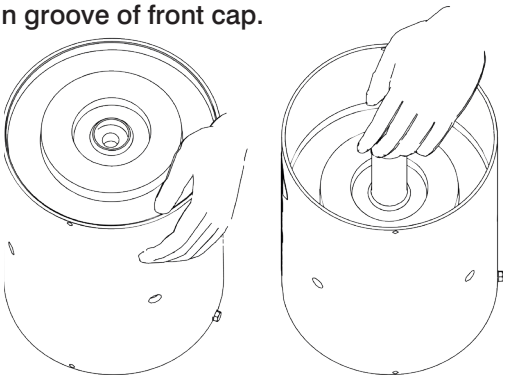


6. Stand balancer on end. Place sliding guide over ball screw.
7. Apply a very light, even coat of Lubricant* to housing cylinder bore and outside diameter of sliding guide.

***Lubriplate 1240**

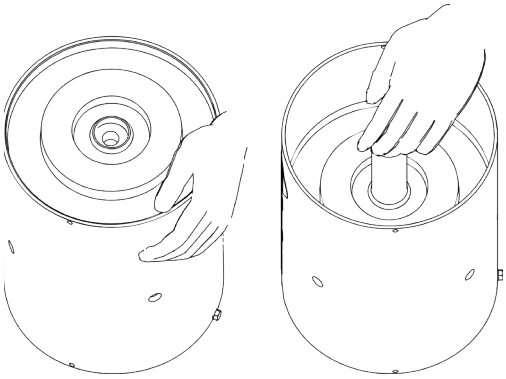


8. Insert piston into housing, steel side first and push it down until it contacts thrust bearing.
9. Apply a light coat of Lubricant* to front cap 0-ring and insert it in groove of front cap.



***Lubriplate 1240**

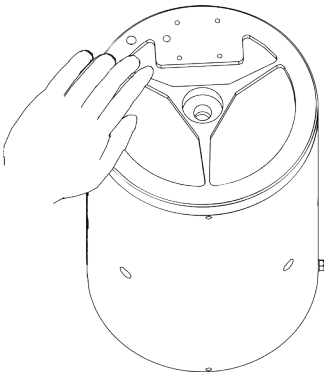
10. Apply a coat of lubricant* to one side of seal**. Press lubricated side onto end of sliding guide. Lubrication helps hold seal in place while front cap is positioned.



***Lubriplate 1240 ** (C1300058)**

NOTICE: Be careful not to damage O-ring during this operation.

11. Install front cap. Tapped holes for screws around outside diameter of front cap must be aligned with corresponding holes in housing. Make sure control kit mounting holes are at top of balancer. When front cap is properly aligned, use a soft hammer to tap it into housing.
12. Make sure seal** has not moved during intallation of front cap.
Inside diameter of seal** should not be visible through hole in center of front cap.
13. Insert bolt into center of front cap and hand tighten.
14. Insert screws around outside diameter of end cap.
15. Tighten front cap center bolt to 90-100 ft./lb. (12.4-13.8 kN/m).
14. Insert screws around outside diameter of end cap.
15. Tighten front cap center bolt to 90-100 ft./lb. (12.4-13.8 kN/m).



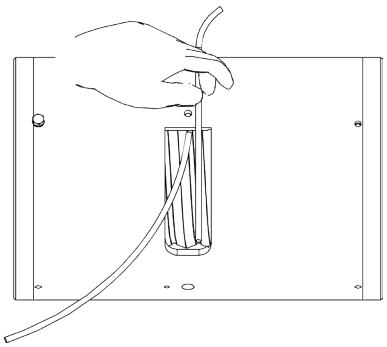
ASSEMBLY

Cormac Industrial®

Installing Wire Rope

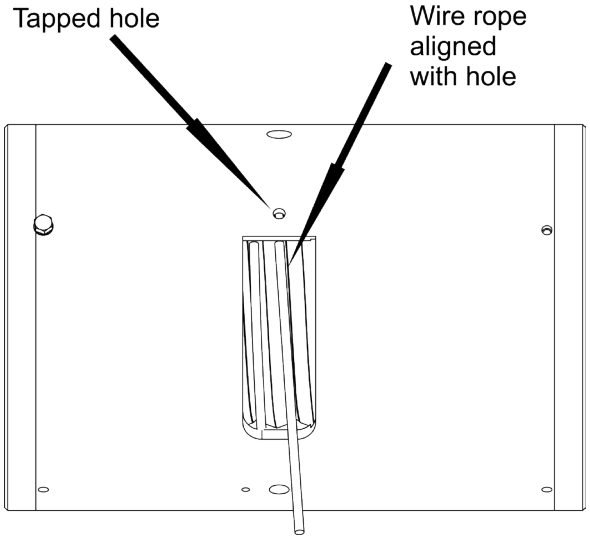
CAUTION: Use of wire rope other than Cormac Inc. wire rope assembly should be avoided. Internal damage to the Balancer may result.

1. Install new wire rope assembly, by first rotating reel own (direction of arrow) until anchor hale in reel is visible.
2. End of wire rope is inserted down through anchor hole in reel and into groove. Continue pushing wire rope into roove until end appears at top of reel. Grasp this end and pull until swaged fitting on end of wire rope is pulled into anchor hole in reel.



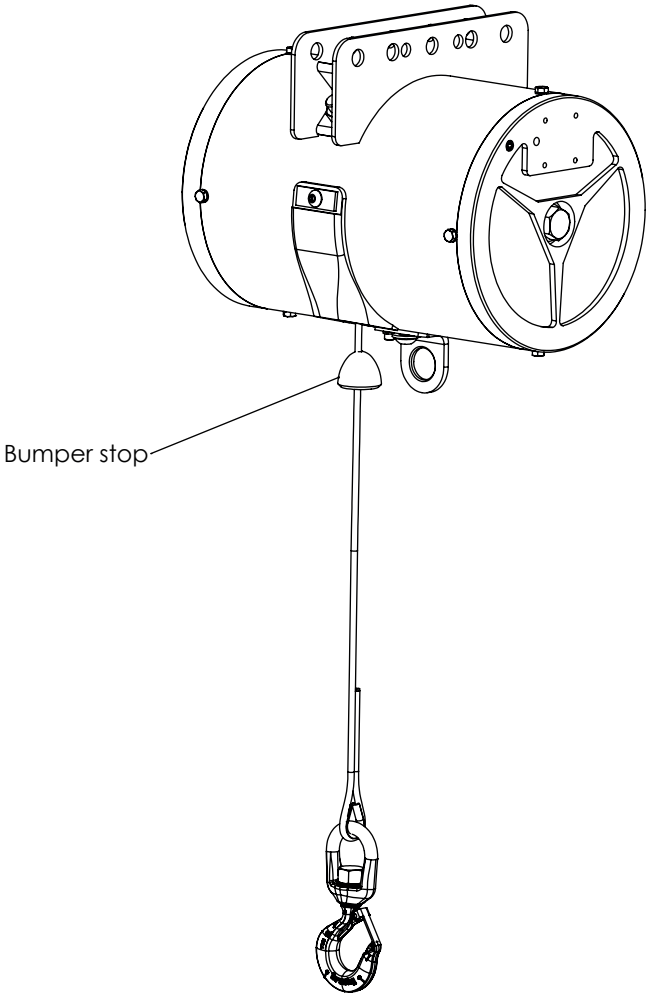
NOTICE: Wire rope must be wrapped by hand twice around reel for proper operation.

3. Wrap wire rope around reel one more time, as described in step 2. Wire rope should be centered in opening of housing.



Installing Bumper Stop

1. To install bumper stop, the control handle must be installed.
2. Tum on air to balancer and slowly wind as much wire rope as possible into balancer.
3. Slide bumper stop on to wire rope up to balancer.
4. install hook as shown.



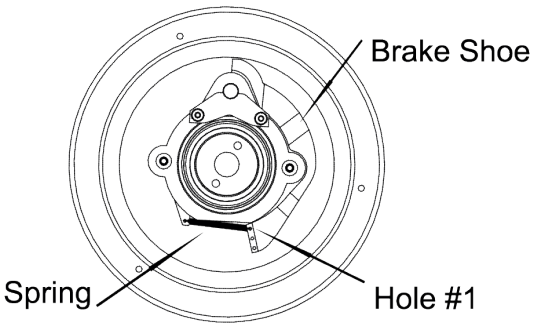
CENTRIFUGAL BRAKE ADJUSTMENT AND RESETTING

WARNING: Balancers are equlpped with a centrifugal brake, that is designed to stop uncontrolled upward travel of wire rope in the event of a sudden release or loss of load, and limit excessive upward acceleration of empty hook. Brake MUST NOT be used as a travel limiting stop or up stop. Failure to follow these instructions will result in damage to brake and the balancer. Continuous use of brake wlll cause Internal damage to balancer and could result in damaging balancer beyond repair.

Centrifugal Brake Reset Procedure

UD Controls

1. Ensure vertical path of load is clear.
2. Press down lever and release air in balancer until load begins to lower.
3. Resume operation.
4. If brake engages when a load is attached or it interfere s with standard operation, brake must be adjusted. Refer to “Centrifugal-Brake Adjustment Procedure” section for further instructions.



WARNING: Be sure air supply is off and wire rope has slack.

Adjusting Procedure

1. Remove balancer from overhead suspension.
2. Place balancer on a clean, dry work bench.
3. Remove control from balancer.
4. Stand balancer on front cap (control end).
5. Loosen hex bolt in center of rear cap.
6. Remove bolts around the diameter of housing.
7. Remove center bolt from rear cap.
8. Remove rear cap centrifugal Brake assembly.

NOTICE: Note position of bearing spacer hetween rear cap and hall screw.

9. Place rear cap on work bench so that rods are pointing up.
10. With needle nose pliers remove end of spring on brake shoe and place in desired hole. The farther from the center of balancer spring is set, the less sensitive it will become.

Assembly

1. Place balancer on its side so wire rope guide is facing you.
2. With your fingers rotate reel so it moves toward rear cap. Wire rope will retract.
3. Hold end cover and align rod with holes in reel.

NOTICE: Be sure bearing spacer is in place between hall screw and brake assemhly.

4. Slide rods and rear cap assembly into holes in reel until holes in housing and anti-rotation notches on ball screw line up with pins in rear cap.
5. Install bolts on rear cap outside diameter.
6. Install rear cap center bolt and torque to 90-100 ft./lb. (12.45-13.83 kg/m).
7. Install controls and perform operational adjustments as necessary.

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