

Air Winches

The Ingersoll Rand line of air winches combines the best ideas and innovations resulting from over 200 years of experience in solving the most challenging lifting, pulling and positioning applications in the world's toughest industries.

Our air winches are manufactured in either Douai, France (gear type motor winches) or Kent, Washington, USA (piston type motor winches).

Enjoy the wide selection offered by these two lines and choose the model that best fits your application.



Liftstar® & Pullstar® Series Air Winches

0.15 - 10 t Load Capacity

Designed to work in difficult environments, these winches feature a low maintenance, highly reliable gear motor with high torque output that translates into smooth starts and stops. Their rugged and compact design makes them ready to take on your most challenging applications.

- **LIFTSTAR® (LS)** models are designed for lifting applications with a 5:1 design factor at rated capacity.
- **PULLSTAR® (PS)** models are designed for pulling applications with a 3.5:1 design factor. They come standard with a drum disengaging clutch for free spooling unloaded wire rope.

Reliable gear motor

- Its unique design with only two moving parts makes it ideal for severe applications in hot, cold, dusty, dirty, explosive and wet conditions.
- Less sensitive than other motors to long storage period or long period with no use.
- Virtually maintenance free and reduced downtimes.

Rugged construction

- Originally designed for the mining industry, the LS and PS winches are very robust and durable.
- Cast iron and steel construction.

Meets worldwide standards

- European standards FEM 9.511 and FEM 1001 for lifting.
- U.S. standard ASME/ANSI B30.7.
- Duty rating FEM 1Bm / ISO M3.

Features

- Light weight and compact design. Easy to carry.
- Robust steel construction.
- Automatic self-adjusting disc brake.
- Reliable gear type air motor in composite material.
- High efficiency planetary gear box.
- Flameproof by nature.
- Low noise level, quiet operation.
- Variable speed and precise positioning through direct control lever with "lift & shift" system with automatic return to neutral position or through progressive remote pendant.
- Declutchable drum on Pullstar® haulage versions for free spooling.
- Individually load tested before shipment – Delivered with manufacturer's test certificate.



CE marked models are compliant with the latest European machinery directive No 2006/42/EC and the European standard for power driven winches EN 14492-1. These models include as standard the following safety features: Drum guard — Emergency stop with main air shut-off valve as per EN 418. — Overload protection (LS models only) — Upper / lower limit switches (LS models only) — CE declaration of conformity.



Liftstar® and Pullstar® winches are, by design, particularly suitable for use in potentially explosive atmospheres, unlike electric winches. They are classified as standard as equipment category 2 for applications in zone 1 and 2 (as per ATEX 94/9/CE directive for surface industry). ATEX marking: **Ex II 2 GD c IIB 135°C X**. For the mining industry they can be fitted with an optional package to comply with requirements of equipment category M2 (consult us).

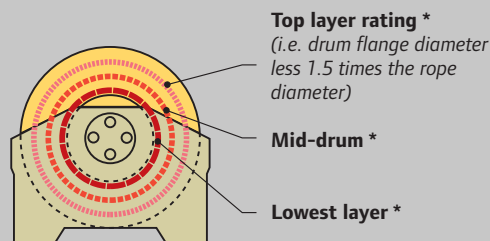
Liftstar® & Pullstar® Series Air Winches

0.15 - 10 t Load Capacity

LIFTSTAR® Lifting Series

LIFTSTAR® winches are designed with a 5:1 minimum safety factor at rated capacity.

- LIFTSTAR® winch always lifts its rated capacity at any layers of rope.
- LIFTSTAR® winch is designed so that the line speed remains constant on all layers when lifting its nominal load.
- The drums are generously dimensioned to obtain a minimum drum to rope diameter of 18:1 to avoid excessive bending of the wire rope thus increasing its life time.
- The rope storage capacities correspond to the maximum length of rope which can theoretically be stored onto the drum (calculated with wire rope tightly wound at full drum).
- The rated "working" rope capacity leaves a free space of 1.5 times the nominal rope diameter from the top of the drum flanges (as per the European standard EN 14192-1). This helps preventing the wire rope from running off the drum flanges during operation.

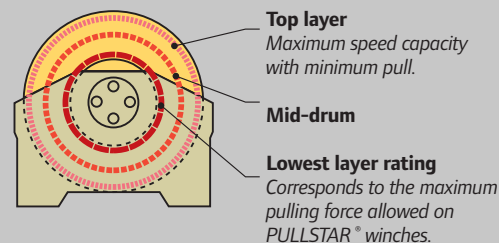


** On LIFTSTAR® winches the lifting speed with rated load is constant at all layers.*

PULLSTAR® Pulling Series

PULLSTAR® winches are designed with a 3.5:1 minimum safety factor at rated capacity.

- The rated capacity of the PULLSTAR® winches is calculated at the lowest rope layer on the drum. It corresponds to the maximum pulling force allowed. Refer to detailed curves on page 8 to get corresponding pulls / speeds at different layers.
- Pulling winches are intended for use on horizontal surfaces with no or insubstantial inclination.
- PULLSTAR® are fitted as standard with a free spooling clutch for rapid manual rope unwinding. The manual clutch is secured against unintended operation.



LS2-600R-L-CE



PS2400R-L-E



PS10000R-L

Liftstar® & Pullstar® Series Air Winches

0.15 - 10 t Load Capacity

LIFTSTAR® Lifting Air Winches

Reliable and safe, this modern range of winches is designed for harsh environments. They can be equipped with many options for effective adaptation to your application (see pages 9 and 10 for details).

See dimensions on page 11.

Liftstar®
Pullstar®



LS2-600R-L-CE

LS1500RGC-L-CE

LS5000RGC-L-CE

Specifications at 6.3 bar dynamic pressure (when winch is running) — Working pressure range 5 to 7 bar.
As per European standard EN 14492-1 – Group of mechanism as per FEM 1Bm / ISO M3.

| Model number | Rated capacity at TOP LAYER (kg) | LIFTING SPEED AT RATED LOAD | | Rated number of layers ⁽¹⁾ | Air consumption with rated load (m ³ /min) | Sound level as per EN 14492-1 dB(A) | Net weight (kg) |
|---|----------------------------------|-----------------------------|------------------------------|---------------------------------------|---|-------------------------------------|-----------------|
| | | at top rope layer (m/min) | at lowest rope layer (m/min) | | | | |
| LS Portable Series – Lifting Ratings at 5:1 Design Factor | | | | | | | |
| LS2-300R | 3 00 | 40 | 40 | 7 | 4 | 92 | 42 |
| LS2-300RGC | 3 00 | 40 | 40 | 7 | 4 | 92 | 49 |
| LS2-600R | 6 00 | 20 | 20 | 5 | 4 | 92 | 42 |
| LS2-600RGC | 6 00 | 20 | 20 | 5 | 4 | 92 | 49 |
| LS-1500R | 1 500 | 7 | 7 | 3 | 5 | 88 | 67 |
| LS-1500RGC | 1 500 | 7 | 7 | 3 | 5 | 85 | 79 |
| LS Heavy Series – Lifting Ratings at 5:1 Design Factor | | | | | | | |
| LS2000R | 2 000 | 20 | 20 | 5 | 10 | 95 | 230 |
| LS2000RGC | 2 000 | 20 | 20 | 4 | 10 | 95 | 283 |
| LS5000R | 5 000 | 10 | 10 | 6 | 10 | 87 | 645 |
| LS5000RGC | 5 000 | 10 | 10 | 6 | 10 | 87 | 760 |

(1) Measured with recommended rope diameter (see table below).

Rope capacity with recommended rope diameter

For storage capacities with other rope diameters, use our "drum storage calculator" at the following web address:
<http://www.ingersollrandproducts.com/lifting/winches/drum.htm>

| Model number | Minimum rope breaking force (kN) | Recommended rope diameter (mm) | Cumulated working rope capacities in meters ⁽²⁾ with RECOMMENDED ROPE DIAMETER | | | | | | | Max. rope storage capacity (m) |
|---|----------------------------------|--------------------------------|---|---------|---------|---------|---------|---------|---------|--------------------------------|
| | | | Layer 1 | Layer 2 | Layer 3 | Layer 4 | Layer 5 | Layer 6 | Layer 7 | |
| LS Portable Series – Lifting Ratings at 5:1 Design Factor | | | | | | | | | | |
| LS2-300R | 15 | 5 | 12 | 26 | 41 | 57 | 74 | 92 | 110 | 150 |
| LS2-300RGC | 15 | 5 | 26 | 54 | 85 | 117 | 152 | 188 | 226 | 307 |
| LS2-600R | 30 | 6.5 | 9 | 20 | 32 | 45 | 58 | — | — | 89 |
| LS2-600RGC | 30 | 6.5 | 19 | 42 | 66 | 93 | 121 | — | — | 183 |
| LS-1500R | 75 | 10 | 8 | 19 | 30 | — | — | — | — | 57 |
| LS-1500RGC | 75 | 10 | 18 | 40 | 65 | — | — | — | — | 120 |
| LS Heavy Series – Lifting Ratings at 5:1 Design Factor | | | | | | | | | | |
| LS2000R | 100 | 13 | 17 | 36 | 57 | 79 | 103 | — | — | 156 |
| LS2000RGC | 100 | 13 | 31 | 65 | 102 | 142 | — | — | — | 230 |
| LS5000R | 250 | 19 | 21 | 44 | 69 | 96 | 125 | 156 | — | 224 |
| LS5000RGC | 250 | 19 | 44 | 92 | 145 | 202 | 263 | 329 | — | 473 |

(2) As per EN 14492-1, the working rope capacity leaves a free space of at least 1.5 times the nominal rope diameter from the top of the drum flanges.

Liftstar® & Pullstar® Series Air Winches

0.15 - 10 t Load Capacity

PULLSTAR® Pulling Air Winches

Intended for use on horizontal surfaces with no or insubstantial inclination, the PULLSTAR® winches are fitted as standard with a free spooling clutch for rapid manual rope unwinding.

See dimensions on page 11.



PS2-1000R-PH5M-E

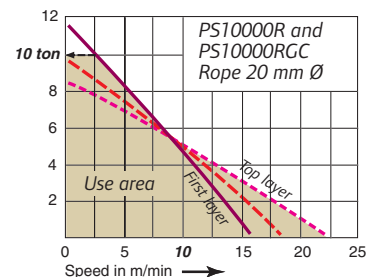
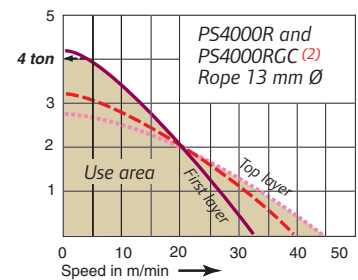
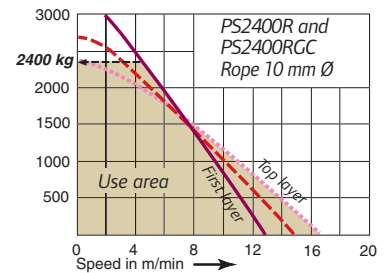
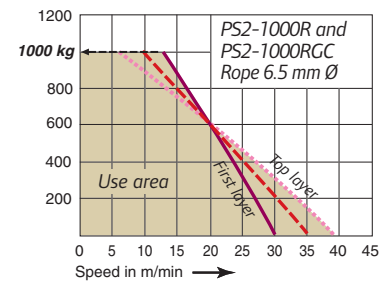
PS2400RGC-L-E

Specifications at 6.3 bar dynamic pressure – Working pressure range 5 to 7 bar.
As per European standard EN 14492-1 – Group of mechanism as per FEM 1Bm / ISO M3.

| Model number | Pulling force: Lowest / top layer (kg) | Rated number of layers (1) | Air consumption with rated load (m ³ /min) | Sound level as per EN 14492-1 dB(A) | Net weight (kg) |
|--|--|-------------------------------|---|---|--------------------|
| PS Portable Series – Pulling Ratings at 3.5:1 Design Factor | | | | | |
| PS2-1000R | 1 000 / 800 | 5 | 4 | 92 | 41 |
| PS2-1000RGC | 1 000 / 800 | 5 | 4 | 92 | 47 |
| PS2400R | 2 400 / 2 000 | 3 | 5 | 88 | 62 |
| PS2400RGC | 2 400 / 2 000 | 3 | 5 | 85 | 76 |
| PS Heavy Series – Pulling Ratings at 3.5:1 Design Factor | | | | | |
| PS4000R | 4 000 / 2 500 | 5 | 12 | 95 | 225 |
| PS4000RGC | 3 600 / 2 500 (2) | 4 | 12 | 95 | 278 |
| PS10000R | 10 000 / 8 000 | 6 | 12 | 87 | 640 |
| PS10000RGC | 10 000 / 8 000 | 6 | 12 | 87 | 755 |

(1) Measured with recommended rope diameter (see table below).

(2) For PS4000RGC, line pulls are reduced by 10% and line speeds are increased by 10%.



Rope capacity with recommended rope diameter

For storage capacities with other rope diameters, use our "drum storage calculator" at the following web address:

<http://www.ingersollrandproducts.com/lifting/winches/drum.htm>

| Model number | Minimum rope breaking force (kN) | Recommended rope diameter (mm) | Cumulated working rope capacities in meters ⁽³⁾ with RECOMMENDED ROPE DIAMETER | | | | | | Max. rope storage capacity (m) |
|---|----------------------------------|--------------------------------|---|---------|---------|---------|---------|---------|--------------------------------|
| | | | Layer 1 | Layer 2 | Layer 3 | Layer 4 | Layer 5 | Layer 6 | |
| PS Portable Series – Pulling Ratings at 3.5:1 Design Factor | | | | | | | | | |
| PS2-1000R | 35 | 6.5 | 9 | 20 | 32 | 45 | 58 | — | 89 |
| PS2-1000RGC | 35 | 6.5 | 19 | 42 | 66 | 93 | 121 | — | 183 |
| PS2400R | 84 | 10 | 8 | 19 | 30 | — | — | — | 57 |
| PS2400RGC | 84 | 10 | 18 | 40 | 65 | — | — | — | 120 |
| PS Heavy Series – Pulling Ratings at 3.5:1 Design Factor | | | | | | | | | |
| PS4000R | 140 | 13 | 17 | 36 | 57 | 79 | 103 | — | 156 |
| PS4000RGC | 140 | 13 | 31 | 65 | 102 | 142 | — | — | 230 |
| PS10000R | 350 | 19 | 21 | 44 | 69 | 96 | 125 | 156 | 224 |
| PS10000RGC | 350 | 19 | 44 | 92 | 145 | 202 | 263 | 329 | 473 |

(3) As per EN 14492-1, the working rope capacity leaves a free space of at least 1.5 times the nominal rope diameter from the top of the drum flanges.

Liftstar® & Pullstar® Series Air Winches 0.15 - 10 t Load Capacity

Main options for both Portable and Heavy Series



Drum guard on PS2400R



Limit switches on LS5000R



Limit switches on LS600R



LS5000R with emergency stop



LS2000R with overload protection

PHS control on PS2-1000R ⇄



Drum guard

Prevents the operator from inadvertent contact with winch moving parts – Delivered as standard on all CE compliant versions.

Top and bottom limit switches

Automatically stops the winch when the travel exceeds the pre-determined working distance. Enclosed mechanism is environmentally protected. Needs to be adjusted on site as per customer configuration/application – Delivered as standard on Liftstar® lifting Series in CE compliant version.

Emergency stop

Allows the operator to quickly and safely stop the winch in case of an emergency situation. Pressing the e-stop button closes a shut-off valve which stops the main air from entering into the motor, brake is applied automatically – Delivered as standard on all CE compliant versions.

Pneumatic overload protection

Automatically stops the winch in case of overload exceeding 125 – 130% of safe working load and brake is automatically activated – Delivered as standard on Liftstar® winches in CE compliant version.

Remote Control

The LS and PS Series can be remote controlled by PHS progressive remote pilot pendent up to 20 meters. This pendent is available in both alloy and cast iron versions and can include an emergency stop.

Main options for Heavy Series only



Rope press roller assembly

Presses the wire rope onto the drum to improve winding, especially at no load conditions. Composite rollers ride on galvanised steel guides for maximum wear and corrosion resistance.

Grooved drum

Ensures better rope spooling than plain drum. Allows a greater rope fleet angle up to 2°.

Drum auto brake with skid frame or drum auto brake plus disc brake with skid frame

A drum auto brake is available instead of the internal disc brake or as a second brake. (comes with a skid frame). The auto drum brake works independently from the internal disc brake for extra safety.

⇄ Drum brake with skid frame on LS2000R



Spooling device on LS5000R

Automatic spooling device

Automatically guides back and forth the rope across the drum to ensure proper rope spooling when rope fleet angle exceeds 2°. Avoids dangerous rope built-up situations.

Liftstar® & Pullstar® Series Air Winches

0.15 - 10 t Load Capacity

LIFTSTAR® and PULLSTAR® Series Ordering Menu

To order your winch, specify complete model number code as shown below:

- **LIFTSTAR® lifting winches in CE version** are fitted as standard with: drum guard — pneumatic overload protection device — emergency stop valve (main air shut-off) — rotary limit switches (top and bottom).
- **PULLSTAR® pulling winches in CE version** are fitted as standard with drum guard and emergency stop valve (main air shut-off).

LIFTSTAR® and PULLSTAR® Portable Series:

| Series and capacity | ATEX compliance | Drum | Control type | Control length | Options |
|---|---|---|---|---|--|
| LS2-300R LIFTSTAR® 300 kg LS2-600R LIFTSTAR® 600 kg LS1500R LIFTSTAR® 1 500 kg <hr/> PS2-1000R PULLSTAR® 1 000 kg PS2400R PULLSTAR® 2 400 kg | No letter = As standard - ATEX compliance for group II, surface industry M = ATEX compliance package for group I, mining industry (on request) - only for LS1500R and PS2400R | No letter = Standard GC Long drum | L Lever control PH Alloy precision PHS pendent PHR Cast iron precision PHS pendent | XM Control length in metres e.g. 5M <i>(only when with pendent control)</i> | CM Low temperature design (-20°C DNV). Includes 3.1 material traceability certificates. G Drum guard for non-CE models. H High temp. motor (60° to 85°C). J Airline accessories (1) M 3.1 material traceability certificates as per EN 10204 on main load bearing parts. P Marine paint finish. QZ Offshore paint including sandblasting. W1 ABS witness test. W2 DNV witness test. W3 LRS witness test. W4 Client witness of load test. <hr/> Compliance with the European machinery directive -CE LIFTSTAR® (LS) lifting models. -E For PULLSTAR® (PS) pulling models. |

LIFTSTAR® and PULLSTAR® Heavy Series:

| Series and capacity | ATEX compliance | Drum | Control type | Control length | Options |
|--|---|---|---|---|--|
| LS2000R LIFTSTAR® 2 000 kg LS5000R LIFTSTAR® 5 000 kg <hr/> PS4000R PULLSTAR® 4 000 kg PS10000R PULLSTAR® 10 000 kg | No letter = As std. - ATEX compliance for group II - surface industry M = ATEX compliance package for group I - mining industry (on request). | No letter = Standard GC Long drum | L Lever control PH Alloy precision PHS pendent PHR Cast iron precision PHS pendent | XM Control length in metres e.g. 5M <i>(only when with pendent control)</i> | CM Low temperature design (-20°C DNV). Includes 3.1 material traceability certificates. FF Skid frame + auto drum + disc brakes FK Drum auto brake and skid (no disc) G Drum guard for non-CE models. H High temp. motor (60° to 85°C) J Airline accessories (1) K Skid frame L Automatic spooling device M 3.1 material traceability certificates as per EN 10204 on main load bearing parts P Marine paint finish QZ Offshore paint including sandblasting R Press roller W1 ABS witness test W2 DNV witness test W3 LRS witness test W4 Client witness of load test 16 Drum grooving (number = rope diameter in mm) <hr/> Compliance with the European machinery directive -CE For LIFTSTAR® (LS) lifting models. -E For PULLSTAR® (PS) pulling models. |

(1) Add 1 for filter, 2 for lubricator, 3 for regulator (e.g. **J12**). For protection during shipment and due to the wide range of installation variables, the airline accessories are shipped loose for client installation.

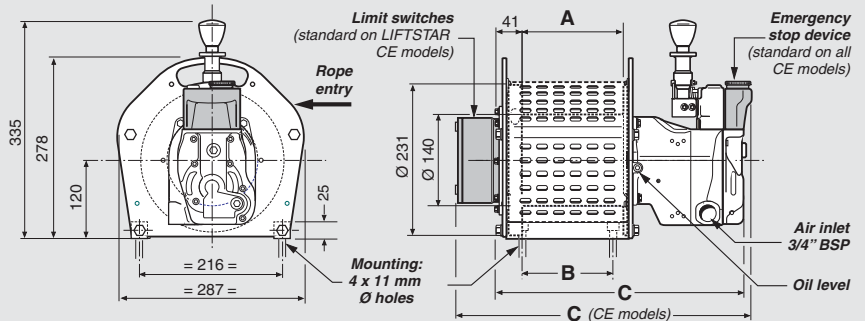
Ingersoll Rand strongly recommends using drum guards with all winches to prevent inadvertent contact with winch moving parts.

Liftstar® & Pullstar® Series Air Winches

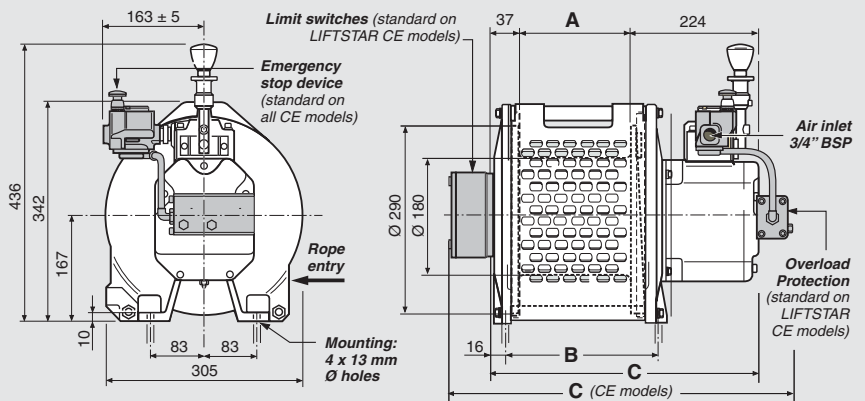
0.15 - 10t Load Capacity

LIFTSTAR® and PULLSTAR® Series – Dimensions in mm

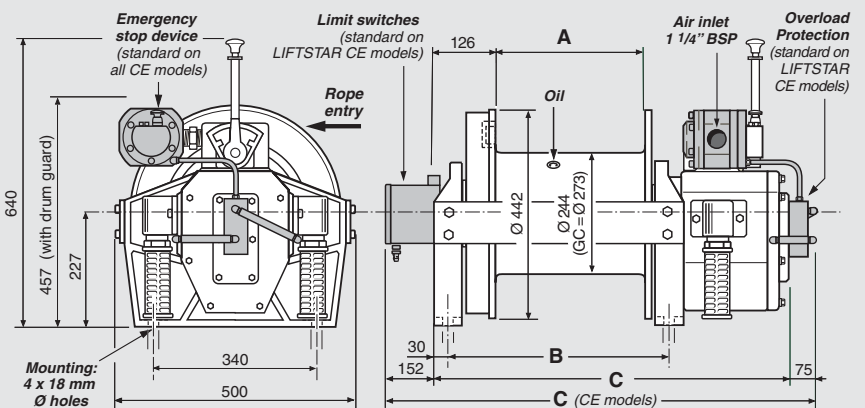
| Model no. | A | B | C |
|------------------------------|-----|-----|-----|
| CE Models | | | |
| LS2-300R-CE, LS2-600R-CE | 155 | 140 | 461 |
| LS2-300RGC-CE, LS2-600RGC-CE | 311 | 296 | 617 |
| PS2-1000R-E | 155 | 140 | 427 |
| PS2-1000RGC-E | 311 | 296 | 583 |
| Non CE Models | | | |
| LS2-300R, LS2-600R | 155 | 140 | 369 |
| LS2-300RGC, LS2-600RGC | 311 | 296 | 516 |
| PS2-1000R | 155 | 140 | 392 |
| PS2-1000RGC | 311 | 296 | 548 |



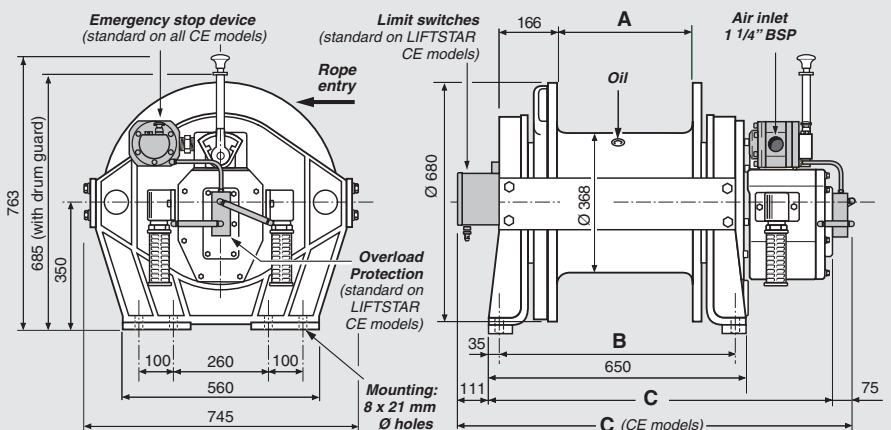
| Model no. | A | B | C |
|----------------------|-----|-----|-----|
| CE Models | | | |
| LS1500R-CE | 180 | 248 | 563 |
| LS1500RGC-CE | 360 | 428 | 743 |
| PS2400R-E | 180 | 248 | 495 |
| PS2400RGC-E | 360 | 428 | 675 |
| Non CE Models | | | |
| LS1500R | 180 | 248 | 441 |
| LS1500RGC | 360 | 428 | 621 |
| PS2400R | 180 | 248 | 509 |
| PS2400RGC | 360 | 428 | 689 |



| Model no. | A | B | C |
|----------------------|-----|-----|------|
| CE Models | | | |
| LS2000R-CE | 302 | 449 | 952 |
| LS2000RGC-CE | 485 | 634 | 1137 |
| PS4000R-E | 302 | 449 | 794 |
| PS4000RGC-E | 485 | 634 | 979 |
| Non CE Models | | | |
| LS2000R | 302 | 449 | 719 |
| LS2000RGC | 485 | 634 | 904 |
| PS4000R | 302 | 449 | 719 |
| PS4000RGC | 485 | 634 | 904 |



| Model no. | A | B | C |
|----------------------|-----|-----|------|
| CE Models | | | |
| LS5000R-CE | 355 | 580 | 1090 |
| LS5000RGC-CE | 728 | 953 | 1463 |
| PS10000R-E | 355 | 580 | 979 |
| PS10000RGC-E | 728 | 953 | 1352 |
| Non CE Models | | | |
| LS5000R | 355 | 580 | 904 |
| LS5000RGC | 728 | 953 | 1277 |
| PS10000R | 355 | 580 | 904 |
| PS10000RGC | 728 | 953 | 1277 |



Dimensions are subject to change without notice. Please contact Client Services for certified prints.

Liftstar® & Pullstar® Series Air Winches

0.15 - 10 t Load Capacity

LS2-150RLP Dedicated ManRider™

The LS2-150RLP pneumatic ManRiding winch is specially designed for safe and reliable personnel lifting operations by means of a safety harness on offshore rigs and platforms in a heavy duty and critical offshore working environment. It is designed to meet the latest NPD and European machinery directives and is type approved by DNV. It is delivered with the CE mark and an EC declaration of conformity.



LS2-150RLP-L-E

Features:

- Design factor 10:1 on main load bearing parts.
- Gear type air motor – high starting torque – good spotting capability.
- High efficiency planetary gear box, totally enclosed within the drum.
- Internal automatic multi-disc brake, fully enclosed, plus external automatic drum band brake. The band brake is manufactured from stainless steel for superior corrosion protection. In case of power failure, both the band brake and the disc brake will automatically apply.
- Overload protection, acting at 130% of SWL with automatic activation of brakes.
- Emergency stop device acting directly on the main air supply.
- Slack wire detector – automatically stops the winch from paying out in case of slack wire - designed for vertical rope entry. Roller in composite material.
- Top and Bottom limit switches – stops the winch when the travel exceeds the pre-determined working distance.
- Assisting spooling device – presses the wire rope onto the drum to improve winding, specially at no load condition.
- Rugged stainless steel drum guard – meets stringent European standard EN953.
- Helical grooved drum – allows greater fleet angle up to 2° – designed for 10 mm wire rope.
- Variable speed control with "press and shift" lever. Prevents accidental throttle movements.
- Pre-equipped emergency device – allows both lifting and lowering of the winch in case of main power failure. Connects to a nitrogen bottle (nitrogen bottle as an option).
- FRL package mounted directly on the operator side of the winch.
- Marine paint for corrosion protection.
- Design temperature = -20°C.
- Suitable for zone 1 and 2 as per ATEX directive 94/9/EC – FEM Classification 4m.

Specifications at 6.3 bar dynamic pressure (when winch is running) – As per DNV regulations

| Model number | Rated capacity at top layer (kg) | LIFTING SPEED AT RATED LOAD | | Rated number of layers | Air consumption with rated load (m ³ /min) | Sound level as per EN 14492-1 dB(A) | Weight without rope (kg) | ATEX marking Ex II 2 CD c IIB 135°C X |
|--|----------------------------------|-----------------------------|------------------------------|------------------------|---|-------------------------------------|--------------------------|---------------------------------------|
| | | at top rope layer (m/min) | at lowest rope layer (m/min) | | | | | |
| Lifting Ratings at 10:1 Design Factor | | | | | | | | |
| LS2-150RLP | 150 | 30 | 30 | 2 | 2.5 | 89 | 210 | ✓ |

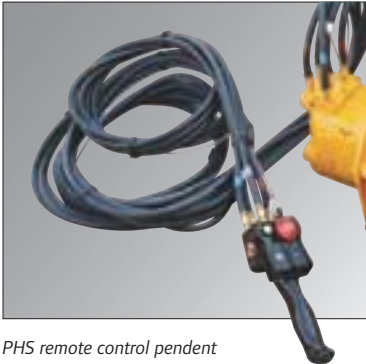
Rope capacity in meters

For personnel lifting winches, the working rope capacity corresponds to the max. storage capacity less 2.5 layers (i.e. less 25 mm for 10 mm dia. rope)

| Model number | Minimum rope breaking force (kN) | Recommended rope diameter (mm) | Cumulated working rope capacities in meters with RECOMMENDED ROPE DIAMETER | | Maximum rope storage capacity (m) | Number of layers |
|--------------|----------------------------------|--------------------------------|--|---------|-----------------------------------|------------------|
| | | | Layer 1 | Layer 2 | | |
| LS2-150RLP | 15 | 10 | 24 | 54 | 154 | 5 |

Liftstar® & Pullstar® Series Air Winches

0.15 - 10 t Load Capacity



PHS remote control pendant

Remote control option

The LS2-150RLP can be remote controlled by progressive pilot pendant up to 20 m. This pendant is available in both alloy and cast iron and includes the emergency stop.



Automatic spooling device

Automatic spooling device option

It automatically guides back and forth the rope across the drum to ensure proper rope spooling when rope fleet angle exceeds 2°.

Liftstar®
Pullstar®

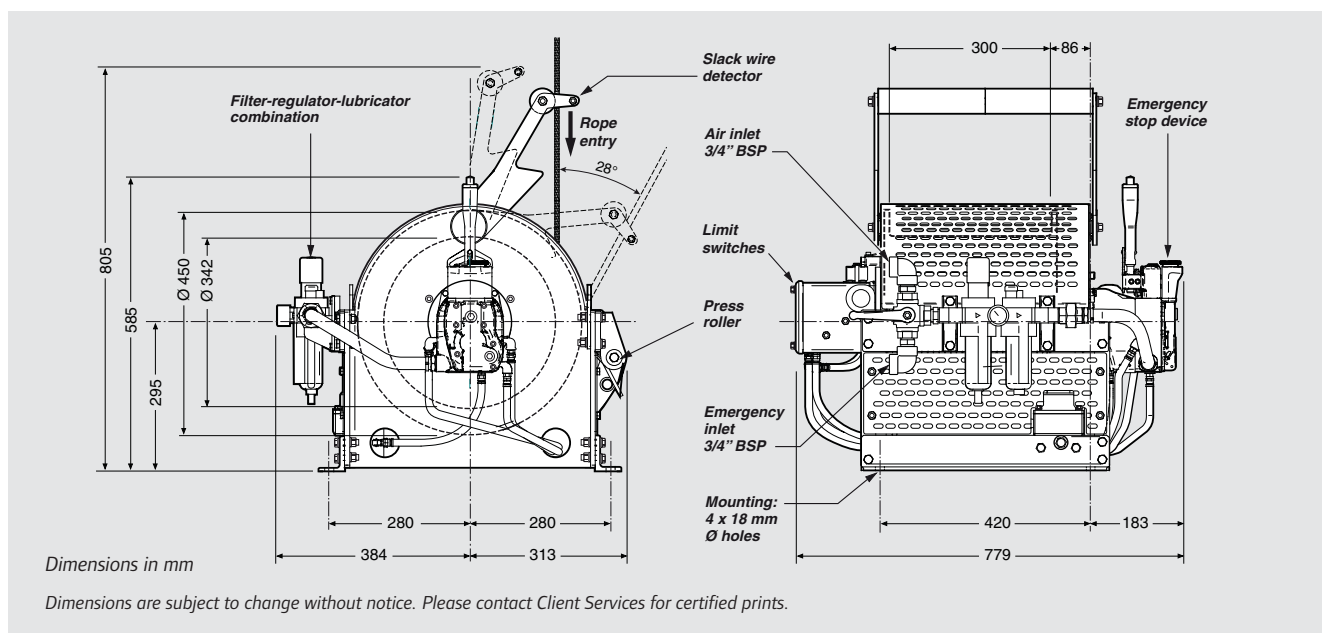
Ordering menu

To order your winch, specify complete model number code as shown below:

| Series | | Control type | Control length | Options | | CE conformity |
|----------------------------------|--|---|---|--|-----------|--|
| LS2-150RLP | | L | XM | M | QZ | E |
| LIFTSTAR® 150 kg Manrider™ | | L Lever control PH Alloy precision PHS pendant PHR Cast iron precision PHS pendant | XM Control length in metres e.g. 5M (only when with pendant control – Max. length 20 m) | L Automatic spooling device M Material traceability certificate as per EN 10204 3.1 on main load bearing parts. N5 (1) DNV certification (Built under DNV survey). QZ Offshore paint including sandblasting. R Nitrogen bottle (200 bar/10 litres) with regulator (2). W1 ABS witness test. W2 DNV witness test. W3 LRS witness test. W4 Client witness of load test. | | -E Compliance with the European machinery directive |

(1) Includes option codes "M" and "W2". The DNV certification includes final inspection with performance / load testing, DNV "product certificate" attesting the compliance of the unit as per the DNV type approval requirements, review of the fabrication documentation and supply of 3.1 Material traceability certificates.

(2) Allows a 50 meter lowering distance or a 25 m lifting distance.



FA Infinity™ Series Air Winches

0.15 - 10 t Load Capacity

Setting the standards in winch technology with time savings, and enhanced safety, Ingersoll Rand FA Infinity™ air winches are known throughout the world for their rugged dependability and quality in the harsh environments.

Featuring heavy duty piston motors, internal gear boxes and fabricated steel frames, FA Infinity™ winches can be made in a variety of configurations to suit particular applications.

Features

Rugged and compact design

- 5:1 design factor at rated load.
- Minimum 18:1 drum diameter to wire rope diameter ratio reduces wire rope wear.
- Compact gearbox-in-drum design.
- Group of mechanism as per FEM: 5m.
- Standard design temperature range is 0°C through 60°C.
- "Lift to shift" winch mounted lever throttle.
- Lifting lugs designed for lifting weight of winch plus full drum of wire rope.

Powerful radial piston air motor

- Positive starting torque.
- Variable speed control. Precision spotting control at slow speeds.
- Superior reliability in harsh environments.
- Internal splash lubrication.

Multiple brake configurations

- Manual drum brake standard (FA10i auto disc is standard).
- Optional auto drum brake and /or auto disc available.
- Enclosed automatic oil bath "wet" disc brake is fully sealed against salt spray, dirt or moisture and provides trouble-free operation over thousands of lifting cycles.

Note: Ingersoll Rand recommends automatic brakes when winches are used for lifting.

Meets worldwide standards

- European standards FEM 5M for lifting.
- U.S. standard ANSI / ASME B30.7
- Duty rating FEM 1Bm / ISO M3.
- Most models either carry or have pending Design Approval by Det Norske Veritas (DNV) and/or the American Bureau of Shipping (ABS).



FA5i-24AK1J1235L-CE



FA Infinity™ C.E. marked models are compliant with the latest European machinery directive No 2006/42/EC and the European standard for power driven winches EN 14492-1. These models include as standard the following safety features: Drum guard — Overload protection — Emergency stop with main air shut-off valve as per EN 418 — Upper / lower limit switches — Automatic brake — Regulator — Exhaust muffler — CE declaration of conformity.



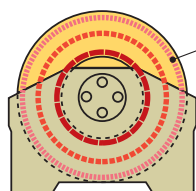
FA Infinity™ winches are, by design, particularly suitable for use in potentially explosive atmospheres, unlike electric winches. They are classified as standard as equipment category 2 for applications in zone 1 and 2 (as per ATEX 94/9/CE directive for surface industry). ATEX marking: **Ex II 2 GD c IIB 135°C X**.

FA Infinity™ Series Air Winches

0.15 - 10 t Load Capacity

Utility Air Winches

Designed for offshore and harsh industrial environments the robust FA Infinity™ utility winches are available with several drum widths and can be equipped with many options for effective adaptation to your application (see pages 20 to 23 for details).



Top layer rating *
(i.e. drum flange diameter less 1.5 times the rope diameter)

* FA Infinity™ winches will always lift the rated load at any layer of wire rope)

FA7i-24AK1G



FA Infinity™

Specifications at 6.3 bar dynamic pressure (when winch is running) — Working pressure range 5 to 7 bar.
As per European standard EN 14492-1 — Group of mechanism as per FEM 5M

| Model number | Rated capacity at TOP LAYER (kg) | LIFTING SPEED AT RATED LOAD at top rope layer (m/min) at lowest rope layer (m/min) | | Stall pull (kg) | RATED DRUM CAPACITY/ Rope diameter (1) | Air consumption with rated load (m3/min) | Sound level as per EN 14492-1 dB(A) | Net weight (2) (kg) |
|---|----------------------------------|--|----|-----------------|---|--|-------------------------------------|---------------------|
| FA Infinity™ Utility Air Winches / Standard Flange — Lifting Ratings at 5:1 Design Factor | | | | | | | | |
| FA2i-12... | 2 000 | 16 | 17 | 4 150 | 143 m / Ø 13 mm | 8 | 87 | 346 |
| FA2i-16... | | | | | 193 m / Ø 13 mm | | | 359 |
| FA2i-20... | | | | | 248 m / Ø 13 mm | | | 372 |
| FA2i-24... | | | | | 298 m / Ø 13 mm | | | 386 |
| FA2.5i-8... | 2270 | 40 | 39 | 4 670 | 64 m / Ø 16 mm | 20 | 97 | 432 |
| FA2.5i-12... | | | | | 99 m / Ø 16 mm | | | 442 |
| FA2.5i-16... | | | | | 134 m / Ø 16 mm | | | 455 |
| FA2.5i-20... | | | | | 168 m / Ø 16 mm | | | 468 |
| FA2.5i-24... | | | | | 203 m / Ø 16 mm | | | 481 |
| FA5i-16... | | | | | 188m / Ø 19mm | | | 797 |
| FA5i-20... | | | | | 237 m / Ø 19mm | | | 823 |
| FA5i-24... | | | | | 287 m / Ø 19mm | | | 849 |
| FA5i-30... | 5 000 | 16 | 16 | 10 725 | 361 m / Ø 19mm | 20 | 97 | 888 |
| FA5i-36... | | | | | 435 m / Ø 19mm | | | 927 |
| FA7i-20... | | | | | 221 m / Ø 22mm | | | 963 |
| FA7i-24... | | | | | 268 m / Ø 22mm | | | 1000 |
| FA7i-30... | 7 000 | 12 | 11 | 16 305 | 337 m / Ø 22mm | 21 | 97 | 1057 |
| FA7i-36... | | | | | 407 m / Ø 22mm | | | 1113 |
| FA7i-42... | | | | | 477 m / Ø 22mm | | | 1170 |
| FA10i-24... | | | | | 317 m / Ø 28mm | | | 1451 |
| FA10i-30... | 10 000 | 7 | 11 | 17 525 | 400 m / Ø 28mm | 23 | 101 | 1523 |
| FA10i-36... | | | | | 484 m / Ø 28mm | | | 1594 |
| FA10i-40... | | | | | 539 m / Ø 28mm | | | 1641 |
| FA Infinity™ Utility Air Winches / Tall Flange — Lifting Ratings at 5:1 Design Factor | | | | | | | | |
| FA5Ti-16... | 3 820 | 21 | 17 | 10 725 | 460 m / Ø 19mm | 20 | 97 | 925 |
| FA5Ti-20... | | | | | 580 m / Ø 19mm | | | 950 |
| FA5Ti-24... | | | | | 701 m / Ø 19mm | | | 977 |
| FA5Ti-30... | | | | | 882 m / Ø 19mm | | | 1016 |
| FA5Ti-36... | | | | | 1063 m / Ø 19mm | | | 1054 |
| FA7Ti-20... | | | | | 427 m / Ø 22mm | | | 1022 |
| FA7Ti-24... | | | | | 517 m / Ø 22mm | | | 1059 |
| FA7Ti-30... | | | | | 651 m / Ø 22mm | | | 1116 |
| FA7Ti-36... | 5 720 | 15 | 12 | 16 305 | 785 m / Ø 22mm | 21 | 97 | 1172 |
| FA7Ti-42... | | | | | 919 m / Ø 22mm | | | 1229 |

(1) Recommended rope diameter – Number of layers and maximum storage rope capacities on following page.

(2) For models with automatic disc brake and lever control.

FA Infinity™ Series Air Winches

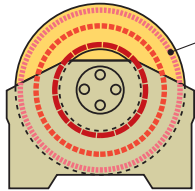
0.15 - 10 t Load Capacity

Utility Air Winches

Rope capacity with recommended rope diameter

For storage capacities with other rope diameters, use our "drum storage calculator" at the following web address:

<http://www.ingersollrandproducts.com/lifting/winches/drum.htm>



Top layer rating *

(i.e. drum flange diameter less 1.5 times the rope diameter)

The **working rope capacity** leaves a free space of at least 1.5 times the nominal rope diameter from the top of the drum flanges (EN 14492-1 standard)

| Model number | Minimum rope breaking force (kN) | Recommended rope diameter (mm) | Cumulated working rope capacities in meters ⁽¹⁾ with RECOMMENDED ROPE DIAMETER | | | | | | | | | | | | Max. rope storage capacity (m) |
|--|----------------------------------|--------------------------------|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|--------------------------------|
| | | | Layer 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| FA Infinity™ Utility Air Winches / Standard Flanges — Lifting Ratings at 5:1 Design Factor | | | | | | | | | | | | | | | |
| FA2i-12... | 10 000 | 13 | 19 | 40 | 64 | 88 | 115 | 143 | — | — | — | — | — | — | 204 |
| FA2i-16... | | | 26 | 55 | 86 | 119 | 155 | 193 | — | — | — | — | — | — | 276 |
| FA2i-20... | | | 33 | 70 | 110 | 153 | 199 | 248 | — | — | — | — | — | — | 354 |
| FA2i-24... | | | 40 | 85 | 133 | 184 | 239 | 298 | — | — | — | — | — | — | 426 |
| FA2.5i-8... | 11350 | 16 | 10 | 22 | 35 | 49 | 64 | — | — | — | — | — | — | — | 80 |
| FA2.5i-12... | | | 16 | 34 | 54 | 75 | 99 | — | — | — | — | — | — | — | 124 |
| FA2.5i-16... | | | 22 | 46 | 73 | 102 | 134 | — | — | — | — | — | — | — | 167 |
| FA2.5i-20... | | | 27 | 58 | 92 | 129 | 168 | — | — | — | — | — | — | — | 211 |
| FA2.5i-24... | | | 33 | 70 | 111 | 156 | 203 | — | — | — | — | — | — | — | 255 |
| FA5i-16... | 25 000 | 19 | 25 | 53 | 83 | 116 | 151 | 188 | — | — | — | — | — | — | 269 |
| FA5i-20... | | | 32 | 67 | 105 | 146 | 190 | 237 | — | — | — | — | — | — | 340 |
| FA5i-24... | | | 39 | 81 | 127 | 177 | 230 | 287 | — | — | — | — | — | — | 411 |
| FA5i-30... | | | 49 | 102 | 160 | 223 | 290 | 361 | — | — | — | — | — | — | 517 |
| FA5i-36... | | | 59 | 123 | 193 | 268 | 349 | 435 | — | — | — | — | — | — | 623 |
| FA7i-20... | 35 000 | 22 | 29 | 62 | 97 | 136 | 177 | 221 | — | — | — | — | — | — | 319 |
| FA7i-24... | | | 35 | 75 | 118 | 164 | 214 | 268 | — | — | — | — | — | — | 385 |
| FA7i-30... | | | 45 | 94 | 149 | 207 | 270 | 337 | — | — | — | — | — | — | 485 |
| FA7i-36... | | | 54 | 114 | 179 | 250 | 326 | 407 | — | — | — | — | — | — | 585 |
| FA7i-42... | | | 63 | 134 | 210 | 293 | 381 | 477 | — | — | — | — | — | — | 685 |
| FA10i-24... | 50 000 | 28 | 34 | 73 | 115 | 160 | 209 | 261 | 317 | — | — | — | — | — | 376 |
| FA10i-30... | | | 44 | 92 | 145 | 202 | 264 | 330 | 400 | — | — | — | — | — | 475 |
| FA10i-36... | | | 53 | 111 | 175 | 244 | 319 | 399 | 484 | — | — | — | — | — | 574 |
| FA10i-40... | | | 59 | 124 | 195 | 273 | 356 | 444 | 539 | — | — | — | — | — | 640 |
| FA Infinity™ Utility Air Winches / Tall Flanges — Lifting Ratings at 5:1 Design Factor | | | | | | | | | | | | | | | |
| FA5Ti-16... | 19 100 | 19 | 25 | 53 | 83 | 116 | 151 | 188 | 227 | 269 | 313 | 360 | 408 | 460 | 569 |
| FA5Ti-20... | | | 32 | 67 | 105 | 146 | 190 | 237 | 287 | 340 | 396 | 454 | 516 | 580 | 718 |
| FA5Ti-24... | | | 39 | 81 | 127 | 177 | 230 | 287 | 347 | 411 | 478 | 549 | 623 | 701 | 867 |
| FA5Ti-30... | | | 49 | 102 | 160 | 223 | 290 | 361 | 437 | 517 | 601 | 690 | 784 | 882 | 1091 |
| FA5Ti-36... | | | 59 | 123 | 193 | 268 | 349 | 435 | 526 | 623 | 725 | 832 | 945 | 1063 | 1315 |
| FA7Ti-20... | 28 600 | 22 | 29 | 62 | 97 | 136 | 177 | 221 | 269 | 319 | 371 | 427 | — | — | 548 |
| FA7Ti-24... | | | 35 | 75 | 118 | 164 | 214 | 268 | 325 | 385 | 449 | 517 | — | — | 662 |
| FA7Ti-30... | | | 45 | 94 | 149 | 207 | 270 | 337 | 409 | 485 | 566 | 651 | — | — | 834 |
| FA7Ti-36... | | | 54 | 114 | 179 | 250 | 326 | 407 | 493 | 585 | 683 | 785 | — | — | 1006 |
| FA7Ti-42... | | | 63 | 134 | 210 | 293 | 381 | 477 | 578 | 685 | 799 | 919 | — | — | 1178 |

(1) As per EN 14492-1

See dimensions on pages 26 and 27.

FA Infinity™ Series Air Winches

0.15 - 10 t Load Capacity

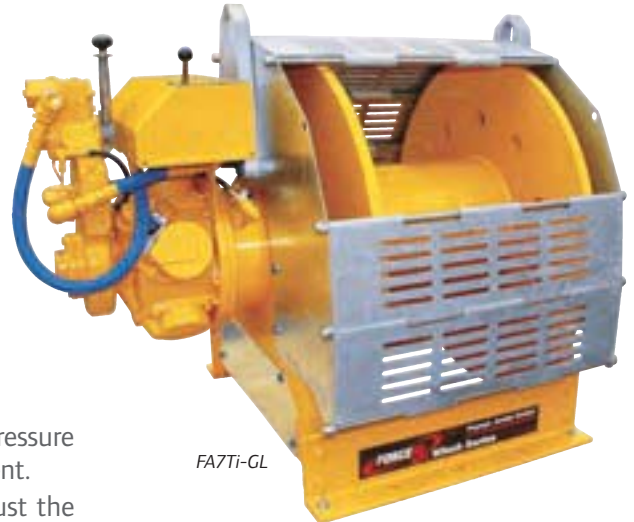
Guideline and Podline Air Winches

As offshore oil drilling heads into deeper waters, Ingersoll Rand Guideline and Podline winches are prepared to follow. These specially configured versions of the FA7Ti tall flange air winch feature:

- Top layer ratings insure "lift at any layer" capability.
- 1067 mm drum flange height and length for maximum wire rope capacity. Other drum flange lengths are available.
- Marine 812 ("P" option) corrosion resistant marine finish paint.
- Locking dog, easy to operate, trouble free and maintenance friendly.
- Winch mounted throttle for precise load control.
- Internal oil bath, automatic disc brake, protected from the elements.

Specific to the FA7TiGL Guideline winch:

- A lower gear ratio and switching valve arrangement with pressure regulator preset for unmanned lowering of sub-sea equipment.
- In guideline mode, a pressure regulator can be set to adjust the tension.
- Simply flipping a lever switches the winch from utility to guideline mode. In this mode, the winch can be overhauled at speeds up to 28 m/min.



FA7Ti-GL

FA Infinity™



Guideline mode control



Locking dog

See dimensions on page 27.

Specifications at 6.3 bar dynamic pressure (when winch is running) — Working pressure range 5 to 7 bar.

As per European standard EN 14492-1 — Group of mechanism as per FEM 5M

| Model number | Rated capacity at TOP LAYER (kg) | LIFTING SPEED AT RATED LOAD at top rope layer (m/min) | at lowest rope layer (m/min) | Stall pull (kg) | RATED DRUM CAPACITY/ Rope diameter ⁽¹⁾ | Air consumption with rated load (m³/min) | Sound level as per EN 14492-1 dB(A) | Net weight (kg) |
|--------------------------------------|----------------------------------|---|------------------------------|-----------------|---|--|-------------------------------------|-----------------|
| Lifting Ratings at 5:1 Design Factor | | | | | | | | |
| FA7Ti-GL42... | 1540 | 46 | 48 | 4170 | 4556 m / Ø 13 mm | 21 | 97 | 1352 |
| FA7Ti-PL42... | 4620 | 18 | 12 | 16300 | 2934 m / Ø 16 mm | 21 | 97 | 1293 |

(1) With recommended rope diameter. See below for drum capacities with other rope diameters.

Rope capacity with recommended rope diameters

| Model number | Minimum rope breaking force (kN) | Recommended rope diameter (mm) | Cumulated working rope capacities in meters (2) with RECOMMENDED ROPE DIAMETER | | | | | | | | Max. rope storage capacity (m) |
|--------------------------------------|----------------------------------|--------------------------------|---|-----|-----|-----|-----|-----|----------|-----------------------|--------------------------------|
| | | | Layer 1 | 2 | 3 | 4 | 5 | 6 | Mid drum | Max. working capacity | |
| Lifting Ratings at 5:1 Design Factor | | | | | | | | | | | |
| FA7Ti-GL42... | 7 700 | 13 | 106 | 219 | 339 | 464 | 596 | 735 | 1878 | 4556 (25th layer) | 4820 |
| | | 16 | 87 | 180 | 280 | 386 | 498 | 616 | 1153 | 2934 (20th layer) | 3147 |
| | | 20 | 70 | 146 | 229 | 317 | 413 | 514 | 735 | 1707 (15th layer) | 2041 |
| | | 22 | 63 | 134 | 210 | 293 | 381 | 477 | 578 | 1462 (14th layer) | 1613 |
| FA7Ti-PL42... | 23 100 | 13 | 106 | 219 | 339 | 464 | 596 | 735 | 1878 | 4556 (25th layer) | 4820 |
| | | 16 | 87 | 180 | 280 | 386 | 498 | 616 | 1153 | 2934 (20th layer) | 3147 |
| | | 20 | 70 | 146 | 229 | 317 | 413 | 514 | 735 | 1707 (15th layer) | 2041 |
| | | 22 | 63 | 134 | 210 | 293 | 381 | 477 | 578 | 1462 (14th layer) | 1613 |

(2) As per EN 14492-1, the working rope capacity leaves a free space of at least 1.5 times the nominal rope diameter from the top of the drum flanges.

FA Infinity™ Series Air Winches

0.15 - 10 t Load Capacity

Dual Rated Offshore ManRider™ Air Winches

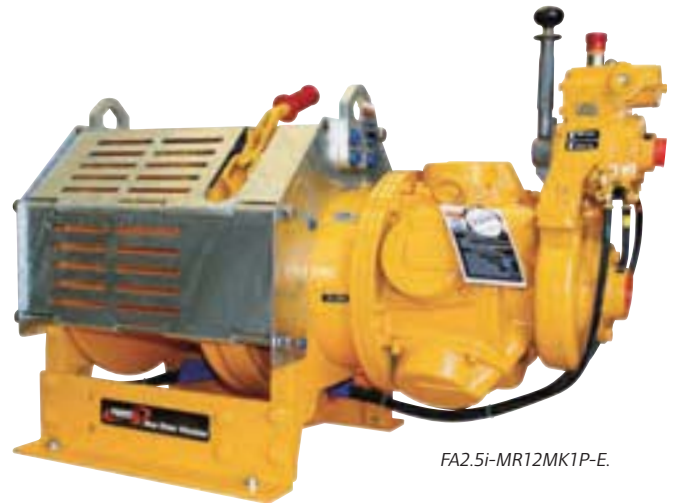
Ingersoll Rand's offering of dedicated and dual purpose (utility & personnel lifting) ManRider™ winches are known worldwide as the standard for meeting the toughest personnel lifting requirements in the industry. Most of these rugged, oilfield tough winches either carry or have pending design approval by Det Norske Veritas (DNV) and/or the American Bureau of Shipping (ABS). Fully type approved models to meet DNV - OS-E101 and ABS - CDS are available upon request. Infinity™ winches also meet UK HSE and PSA regulations for personnel lifting applications.

Meeting world standards

Certified to those standards. Drilling rigs and platforms are used all over the world and come under numerous and diverse regulations. Ingersoll Rand builds to regional and global specifications and our winches can be certified by Det Norske Veritas (DNV), and the American Bureau of Shipping (ABS).

Type approval

A comprehensive design review by a third party addresses intended service, applications, ratings, design calculations, load bearing components, product specifications, and service restrictions or limitations. Plant surveys verify quality control procedures. A Type Approval certificate is then issued for specific units.



FA2.5i-MR12MK1P-E.



Specifications for manriding applications at 6.3 bar dynamic pressure — Working pressure range 5 to 7 bar.
As per DNV regulations — Group of mechanism as per FEM 5M

| Model number | Rated capacity at TOP LAYER (kg) | LIFTING SPEED AT RATED LOAD at top rope layer (m/min) | at lowest rope layer (m/min) | Stall pull (kg) | RATED DRUM CAPACITY/ Rope diameter (1) | Air consumption with rated load (m ³ /min) | Sound level as per EN 14492-1 dB(A) | Net weight (kg) |
|---|----------------------------------|---|------------------------------|-----------------|--|---|-------------------------------------|-----------------|
| Lifting Ratings at 8:1 Design Factor | | | | | | | | |
| FA2i-MR12MK... | 1445 | 23 | 21 | 4150 | 118 m / Ø 13 mm | 8 | 87 | 375 |
| FA2i-MR24MK... | | | | | 242 m / Ø 13 mm | | | 420 |
| FA2.5i-MR12MK... | 1445 | 53 | 44 | 4670 | 118 m / Ø 13 mm | 20 | 97 | 529 |
| FA2.5i-MR24MK... | | | | | 242 m / Ø 13 mm | | | 574 |
| FA5i-MR16MK... | 3120 | 23 | 19 | 10720 | 151 m / Ø 19 mm | 20 | 97 | 845 |
| FA5i-MR24MK... | | | | | 230 m / Ø 19 mm | | | 907 |

(1) With recommended rope diameter.

Rope capacity with recommended rope diameter / Manriding applications

For storage capacities with other rope diameters, use our "drum storage calculator" at the following web address:
<http://www.ingersollrandproducts.com/lifting/winches/drum.htm>

| Model number | Minimum rope breaking force (kN) | Recommended rope diameter (mm) | Cumulated working rope capacities in meters (2) with RECOMMENDED ROPE DIAMETER | | | | | Max. rope storage capacity (m) | Corresponding number of layers |
|------------------|----------------------------------|--------------------------------|--|----|-----|-----|-----|--------------------------------|--------------------------------|
| | | | Layer 1 | 2 | 3 | 4 | 5 | | |
| FA2i-MR12MK... | 11 560 | 13 | 20 | 42 | 65 | 91 | 118 | 210 | 8 |
| FA2i-MR24MK... | | | 41 | 86 | 135 | 187 | 242 | 430 | 8 |
| FA2.5i-MR12MK... | 11560 | 13 | 20 | 42 | 65 | 91 | 118 | 210 | 8 |
| FA2.5i-MR24MK... | | | 41 | 86 | 135 | 187 | 242 | 430 | 8 |
| FA5i-MR16MK... | 24 960 | 19 | 25 | 53 | 83 | 116 | 151 | 269 | 8 |
| FA5i-MR24MK... | | | 39 | 81 | 127 | 177 | 230 | 411 | 8 |

(2) As per D.N.V.

FA Infinity™ Series Air Winches

0.15 - 10 t Load Capacity



Specifications for utility applications at 6.3 bar dynamic pressure — Working pressure range 5 to 7 bar.
As per European standard EN 14492-1 – Group of mechanism as per FEM 5M

| Model number | Rated capacity at TOP LAYER (kg) | LIFTING SPEED AT RATED LOAD at top rope layer (m/min) | at lowest rope layer (m/min) | Stall pull (kg) | RATED DRUM CAPACITY/ Rope diameter (3) | Air consumption with rated load (m3/min) | Sound level as per EN 14492-1 dB(A) | Net weight (kg) |
|---|----------------------------------|---|------------------------------|-----------------|--|--|-------------------------------------|-----------------|
| Lifting Ratings at 5:1 Design Factor | | | | | | | | |
| FA2i-MR12MK... | 2000 | 16 | 17 | 4150 | 147 m / Ø 13 mm | 8 | 87 | 375 |
| FA2i-MR24MK... | | | | | 301 m / Ø 13 mm | | | 420 |
| FA2.5i-MR12MK... | 2270 | 40 | 39 | 4670 | 147 m / Ø 13 mm | 20 | 97 | 529 |
| FA2.5i-MR24MK... | | | | | 301 m / Ø 13 mm | | | 574 |
| FA5i-MR16MK... | 5000 | 16 | 16 | 10720 | 188 m / Ø 19 mm | 20 | 97 | 845 |
| FA5i-MR24MK... | | | | | 287 m / Ø 19 mm | | | 907 |

(3) With recommended rope diameter.

Rope capacity with recommended rope diameter / Utility applications

For storage capacities with other rope diameters, use our "drum storage calculator" at the following web address:

<http://www.ingersollrandproducts.com/lifting/winches/drum.htm>

| Model number | Minimum rope breaking force (kN) | Recommended rope diameter (mm) | Cumulated working rope capacities in meters (4) with RECOMMENDED ROPE DIAMETER | | | | | | Max. rope storage capacity (m) | Corresponding number of layers |
|------------------|----------------------------------|--------------------------------|--|----|-----|-----|-----|-----|--------------------------------|--------------------------------|
| | | | Layer 1 | 2 | 3 | 4 | 5 | 6 | | |
| FA2i-MR12MK... | 10 000 | 13 | 20 | 42 | 65 | 91 | 118 | 147 | 210 | 8 |
| FA2i-MR24MK... | | | 41 | 86 | 135 | 187 | 242 | 301 | 430 | 8 |
| FA2.5i-MR12MK... | 11350 | 13 | 20 | 42 | 65 | 91 | 118 | 147 | 210 | 8 |
| FA2.5i-MR24MK... | | | 41 | 86 | 135 | 187 | 242 | 301 | 430 | 8 |
| FA5i-MR16MK... | 25 000 | 19 | 25 | 53 | 83 | 116 | 151 | 188 | 269 | 8 |
| FA5i-MR24MK... | | | 39 | 81 | 127 | 177 | 230 | 287 | 411 | 8 |

(4) As per EN 14492-1.

See dimensions on page 28.



TIP:

What features make a winch a ManRider™ ?

- Minimum design factors of 8:1
- Dual brakes
- Drum guards
- Design preview certs and data books upon request (when requested at time of order)

And, depending on where in the world it will be used

- CE certifications
- Overload devices
- Slack wire detectors
- Limit switches
- Emergency shut-offs
- Emergency lowering devices
- Spooling devices



FA Infinity™ Series Air Winches

0.15 - 10 t Load Capacity

FA Infinity™ Series - Main Options



Automatic drum brake



Drum guard (A option)



Limit switches (option S)



Overload protection with emergency stop



Exhaust mufflers (option J5)

CE package options

The above options are included as standard equipment in all CE marked winches. They are also available as separate options on non-CE winches. The automatic brake is a compulsory equipment for all CE models but it can be an automatic disc brake or an automatic band brake. Please select the automatic brake option from the brake section (see ordering menu) and add to the CE package option.

- **Drum guard:** prevents the operator from inadvertent contact with winch moving parts.
- **Top and bottom limit switches:** automatically stops the winch when the travel exceeds the pre-determined working distance. The mechanism is environmentally protected. Needs to be adjusted on site as per customer configuration/application.
- **Pneumatic overload protection with emergency stop:** the overload protection automatically stops the winch in case of overload exceeding 125 – 130% of safe working load and brake is automatically activated. The emergency stop allows the operator to quickly stop the winch in case of an emergency situation. Pressing the e-stop button closes a shut-off valve which stops the main air from entering into the motor, brake is applied automatically.
- **Exhaust mufflers (for motor and control):** they consistently reduce the noise level without measurable loss of power. Easy to clean or replace.

Other options available



Remote control



Drum locking pin

Remote pilot pendent throttle

The FA Infinity™ Series can be remote controlled by PHS progressive remote pilot pendent up to 20 meters. This pendent includes an emergency stop on the CE version.

Drum locking dog (option L)

Allows to secure the drum for applications that require to maintain loads for long periods.

Airline accessories (options J1, J2 and J3)

A good air quality is a key factor for the longevity and the proper functioning of your equipment. These airline accessories, such as filter, regulator and lubricator are specially adapted to our FA Infinity™ winch for optimal performance.

Rope press roller assembly (option V)

The press roller minimizes tangles and "birdnesting" of the wire rope and increases its life.



Airline accessories



Rope press roller

FA Infinity™ Series Air Winches

0.15 - 10 t Load Capacity

Other options available (continued)



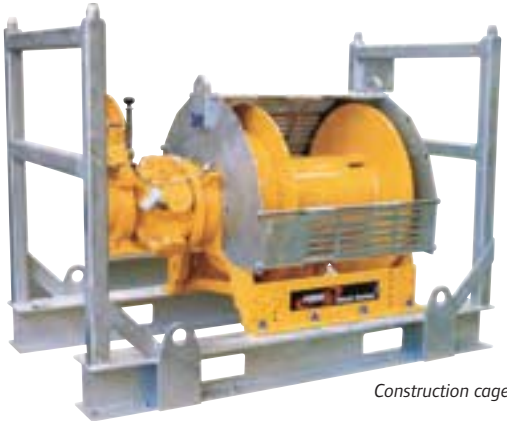
Grooved drum

Grooved drum

Ensures better rope spooling than plain drum. Allows a greater rope fleet angle up to 2°.

Construction cage (option E)

Makes using, storing and protecting winches easier than ever. Custom designs for any winch welcome.



Construction cage



Adjustable Accu-Spool™ system (option Q)

See description on following page.

Electric-over-air pendent control system (control option 5XX)

Pendent Control



E-Stop
Dial-in
speed control
Control
buttons



Optional pendent
for secondary local control

speed control, the control buttons are depressed and the dial-in knob provides proportional control. The joystick lever control provides traditional winch style variable speed in a hand held or wall mounted control box.

Standard features

- Portable, easy to hold control pendent.
- NEMA 4 control box and pendent.
- Holding down the control button and turning the Dial-In control provides variable speed.
- Automatic return-to-centre when joystick is released.
- Emergency stop button on control enclosure.
- Unlimited control length.
- Requires pilot control valve chest for field retrofit.
- Adaptable to most winch models and Hercu-Link hoists.

Joystick lever type control



Variable
speed lever

E-stop

This updated remote control allows unlimited distance between the operator and winch or hoist without the excessive pressure drops, quick exhaust valves and resultant delays found in air control lines. On pendent controls, dialing-in an electrical setting determines the speed. Push buttons provide pay-in or pay-out. For variable

FA Infinity™ Series Air Winches

0.15 - 10 t Load Capacity

Accu-Spool™ adjustable level wind (option Q)



Accu-Spool™ on CE winch



2 hp radial piston drive motor. Fully enclosed oil bath gear box



Pressure sensing guide rollers



Precision cut rack & pinion drive assembly

Features and benefits

Accu-Spool™ replaces the need for conventional level winding systems. It is available as optional equipment for Ingersoll Rand FA Infinity™ winch Series (except for FA150KGi manriding model).

The pressure activated sensor drive is self adjusting, eliminating the wear and timing issues inherent in diamond screw designs.

This system compensates for fleet angles between 1.5° to 26°.

- Heavy duty radial piston drive motor.
- Fully enclosed oil bath gearbox.
- Precision cut rack and pinion drive assembly.
- Field adjustable to accommodate a variety of wire rope take-off angles.
- Configures for both overwound and underwound wire rope take-off.
- Accepts a range of wire rope sizes without any adjustments to system.
- Manual override of controls for no-load spooling. Accu-Spool™ comes with an independent remote pilot pendent control, allowing the drive head to be moved when the winch is not operating.
- Promotes uniform and even spooling of wire rope.
- Reduces bird nesting and associated problems such crushing and abrasion.

How to order:

Begin with the base model driver and pricing of the FA Infinity™ Series winch you have selected.

Add the model driver option code: "Q" to the your winch model (see ordering menu on following page for complete winch model driver guide).

Note:

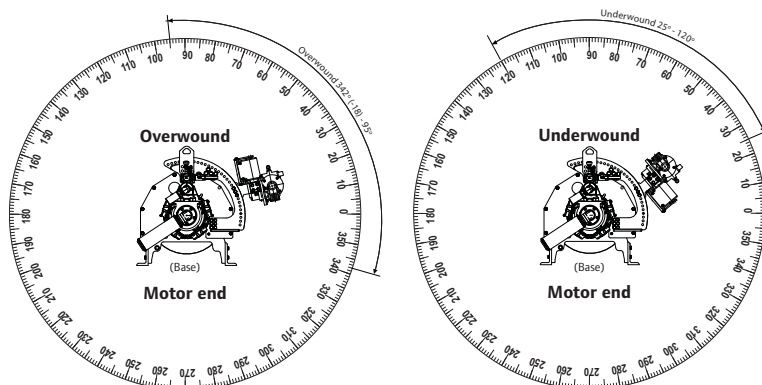
If the desired wire rope take-off angle is provided at time of an order the adjustable Accu-Spool™ will be preset for this angle prior to shipment. Otherwise the setting will be at the discretion of the factory.

To prevent inadvertent contact with moving parts only automatic brakes are available on adjustable Accu-Spool™ level winds.

Not all standard FA Infinity™ Series winch options are compatible with the Accu-Spool™ level wind due to mechanical or regulatory issues.

Option **not** compatible with the Accu-Spool™ system:

- Tall flange drums (FA5T and FA7T).
- Manual drum brakes (M brake option).



Adjustable Accu-Spool™ wire rope take-off range

FA Infinity™ Series Air Winches

0.15 - 10 t Load Capacity

FA Infinity™ Series - Ordering Menu

To order your winch, specify complete model number code as shown below:

FA Infinity™ Series winches in CE version are fitted as standard with:

- Drum guard
- Pneumatic overload protection device with emergency stop valve (main air shut-off).
- Rotary limit switches (top and bottom).
- Automatic brake (to be selected between automatic disc brake and automatic drum brake, or both).
- Exhaust mufflers (for control and motor).

| FA Infinity™ Series capacity | | Drum length | Drum brake | Disc brake | Control | Options |
|--------------------------------------|-----------------------|---|----------------------------|-----------------------------|--|--|
| Utility winches | | See below available drum lengths per model | A Auto drum brake | K Auto disc brake | 1 Throttle lever | 7 Drum grooving (specify rope size in sixteenths of an inch, e.g. 7 = 7/16"). |
| FA2i | 2000 kg capacity | 8 8 inches (203 mm) | M Manual drum brake | X No auto disc brake | 2XX Remote full flow lever throttle | B Extended warranty. |
| FA2.5i | 2270 kg capacity | 12 12 inches (305 mm) | | | 3XX Remote pilot pendent throttle | C1M3 -20° C ABS. |
| FA5i | 5000 kg capacity | 16 16 inches (406 mm) | X No drum brake | | 4XX Remote pilot lever throttle | C2M3 -20° C DNV. |
| FA7i | 7000 kg capacity | 20 20 inches (508 mm) | | | 5XX Electric over air control | E Construction cage. |
| FA10i | 10 000 kg capacity | 24 24 inches (610 mm) | | | (XX = Specify hose length in feet) | G Drum guard. |
| Utility winches / tall flange | | 30 30 inches (750 mm) | | | | J Airline accessories (1). |
| FA5Ti | 3820 kg capacity, | 36 36 inches (914 mm) | | | | L Drum locking pin (not available for dual rating winches). |
| FA7Ti | 5720 kg capacity | 40 40 inches (1016 mm) | | | | M1 Material traceability - Per DIN 50049/EN10204 Para 2.2 "Typicals" (2). |
| Dual rated winches | | 42 42 inches (1050 mm) | A Auto drum brake | K Auto disc brake | | M2 Material traceability - Per DIN 50049/EN10204 Para 3.1 actual per product as purchased (2). |
| FA2i-MR | 1445/2000 kg capacity | 12 12 inches (305 mm) | M Manual drum brake | | | M3 Material traceability - Per DIN 50049/EN10204 Para 3.1 actual per product as delivered in final condition (2). |
| FA2.5i-MR | 1445/2270 kg capacity | 16 16 inches (406 mm) | | | | N4 Manufactured under ABS survey. |
| FA5i-MR | 3120/5000 kg capacity | 24 24 inches (610 mm) | | | | N5 Manufactured under DNV survey. |
| Guideline / podline winches | | | X No drum brake | K Auto disc brake | 1 Throttle lever | P Marine 812 finish paint. |
| FA7Ti-GL | 1540 kg capacity | 42 42 inches (1050 mm) | | | | P1 Marine 812-X paint system. |
| FA7Ti-PL | 4620 kg capacity | | | | | P2 Marine 812-X paint system, isocyanate free. |

Standard drum lengths available in inches

| Model no. | Drum length in inches | | | | | | | | |
|------------------|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| | 8" | 12" | 16" | 20" | 24" | 30" | 36" | 40" | 42" |
| FA2i | | ✓ | ✓ | ✓ | ✓ | | | | |
| FA2.5i | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| FA5i | | | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| FA7i | | | | ✓ | ✓ | ✓ | ✓ | | ✓ |
| FA10i | | | | | ✓ | ✓ | ✓ | ✓ | |
| FA5Ti | | | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| FA7Ti | | | | ✓ | ✓ | ✓ | ✓ | | ✓ |
| FA2i-MR | | ✓ | | | ✓ | | | | |
| FA2.5i-MR | | ✓ | | | ✓ | | | | |
| FA5i-MR | | | ✓ | | ✓ | | | | |
| FA7Ti-GL | | | | | | | | | ✓ |
| FA7Ti-PL | | | | | | | | | ✓ |

(1) **Airline accessories:** add 1 for filter, 2 for lubricator, 3 for regulator, 4 for strainer, 5 for muffler and 6 for liquidator, e.g. J123. For protection during shipment and due to the wide range of installation variables, the airline accessories are shipped loose for client installation.

(2) **M1, M2 and M3 options:**

M1 – Material traceability certificates according to EN 10204 (Ex DIN 50049) 2.2 on load bearing parts. This conformity document affirms (by the manufacturer) that parts are in compliance with the requirements of the order based on non-specific inspection and testing (i.e., results are typical material properties for these parts).

M2 – Material traceability certificates according to EN 10204 (Ex DIN 50049) 3.1 on load bearing parts. These documents affirm (by a department independent of the manufacturing department) that the actual parts used in the product are in compliance with the order based on specific inspection and testing (i.e., results are actual material properties for those parts).

M3 – Material traceability certificates according to EN 10204 (Ex DIN 50049) 3.1 on load bearing parts. These documents affirm (by a department independent of the manufacturing department) that the actual parts used in the product are in compliance with the order based on specific inspection and testing (i.e., results are actual material properties for those parts in a finished, as delivered condition).

-CE Compliance with the European machinery directive.

FA Infinity™ Series Air Winches

0.15 - 10 t Load Capacity

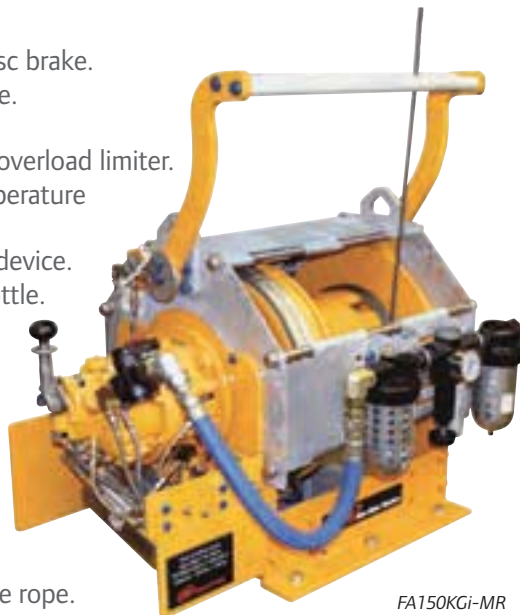
FA150KGi-MR Dedicated ManRider™

FA150KGi ManRider™ winches have been designed to meet the requirements of the oil exploration industry, particularly those specifications of the Norwegian Petroleum Directorate and DNV. Most models either carry or have pending design approval by Det Norske Veritas (DNV) and/or the American Bureau of Shipping (ABS). Fully type approved units available by ordering "N4" (ABS) or "N5" (DNV) options.

Note: It remains the user's responsibility to determine the suitability of this product for any particular use and to check for compliance with applicable regulations.

Features

- Piston type air motor
- Automatic internal disc brake.
- Automatic drum brake.
- Slack rope detector.
- Emergency stop and overload limiter.
- Standard design temperature is -20°C.
- Emergency lowering device.
- Lift to shift lever throttle.
- Rotary limit switch.
- Drum guard.
- Press roller.
- Filter, regulator, lubricator air preparation package.
- Muffler.
- 10:1 design factor.
- 18:1 D/d ratio on wire rope.
- CE compliance.
- Marine 812 finish paint "P" standard.



FA150KGi-MR
with emergency
lowering system option



FA150KGi-MR
with pedestal option



See dimensions on page 28.

Specifications at 6.3 bar dynamic pressure (when winch is running) – As per DNV regulations

| Model number | Rated capacity at top layer (kg) | LIFTING SPEED AT RATED LOAD | | Rated number of layers | Air consumption with rated load (m ³ /min) | Sound level as per EN 14492-1 dB(A) | Weight without rope (kg) | ATEX marking Ex II 2 GD c IIB 135°C X |
|--------------|----------------------------------|-----------------------------|------------------------------|------------------------|---|-------------------------------------|--------------------------|---------------------------------------|
| | | at top rope layer (m/min) | at lowest rope layer (m/min) | | | | | |
| FA150KGi-MR | 150 | 29 | 25 | 8 | 14 | 89 | 340 | ✓ |

Lifting Ratings at 10:1 Design Factor

Rope capacity in meters

For personnel lifting winches, the working rope capacity corresponds to max. storage capacity less 2.5 layers (i.e. less 25 mm with 10 mm dia. rope)

| Model number | Minimum rope breaking force (kN) | Recommended rope diameter (mm) | Cumulated working rope capacities in meters with RECOMMENDED ROPE DIAMETER | | | | | | | | Maximum rope storage capacity (m) |
|--------------|----------------------------------|--------------------------------|--|---------|---------|---------|---------|---------|---------|---------|-----------------------------------|
| | | | Layer 1 | Layer 2 | Layer 3 | Layer 4 | Layer 5 | Layer 6 | Layer 7 | Layer 8 | |
| FA150KGi-MR | 15 | 10 | 26 | 54 | 84 | 115 | 148 | 183 | 220 | 259 | 385 |

For storage capacities with other rope diameters, use our "drum storage calculator" at the following web address:
<http://www.ingersollrandproducts.com/lifting/winches/drum.htm>

FA Infinity™ Series Air Winches

0.15 - 10 t Load Capacity

FA150KGi-MR main options



Stainless steel hose package



Manual rope guide



Emergency lowering system



Pedestal base

Type approved models available

Certified to DNV-OS-E101 drilling plant or ABS certification of Drilling Systems.

Marine paint systems

The FA150KGi-MR is delivered as standard with a marine 812 finish paint. Two additional finishing levels are available as an option; marine 812-X paint system and marine 812-X paint system / isocyanate free (detailed list of components and treatments available on request).

Stainless steel hoses

Stainless steel braid reinforced hoses and stainless steel fittings.

Manual rope guide

Manual rope guide mounted on drum guard is available for better rope winding at no load operation.

Emergency lowering system

Per regulatory requirements every FA150KGi-MR winch is equipped with an emergency lowering device (ELD) to allow an (end user supplied) auxiliary air supply to be attached to the winch to facilitate emergency lowering in the event the main air supply is lost. Option "R" is a complete emergency lowering system which includes tank that serves as the air source during emergency lowering. No end user provided lower the load and the accumulator is charged during normal winch operation.

Pedestal base

It allows to raise the winch to working height. Galvanised steel.

Ordering menu

To order your winch, specify complete model number code as shown below:

| FA150KGi | | M R | 1 2 | A | 1 | B H R P 1 | | - C E |
|----------------------------|-------------|--------------|------------------------|-----------------|---|-----------|--|-------|
| Series / capacity | Type | Drum length | Brakes | Control | Options | | CE conformity | |
| FA Series, 150 kg capacity | MR ManRider | 12 12 inches | A Automatic drum brake | 1 Lever control | 7 Drum grooving: specify rope size in sixteenths, e.g., 7 = 7/16". | | -CE Compliance with the European machinery directive | |
| | | | | | A Drum guard with manual rope guide. | | | |
| | | | | | B Winch pedestal base. | | | |
| | | | | | C1M3 -20° C - ABS. | | | |
| | | | | | C2M3 -20° C - DNV. | | | |
| | | | | | H Stainless steel hose package for limit switch. | | | |
| | | | | | K Stowage valve kit installed on winch. | | | |
| | | | | | M1 Material traceability per DIN 50049/EN10204 Para 2.2 "typicals". | | | |
| | | | | | M2 Material traceability per DIN 50049/EN10204 Para 3.1 actual. per product as purchased. | | | |
| | | | | | M3 Material traceability per DIN 50049/EN10204 Para 3.1 actuals. per product as delivered in final condition. | | | |
| | | | | | N4 Manufactured under ABS survey. | | | |
| | | | | | N5 Manufactured under DNV survey. | | | |
| | | | | | P1 Marine 812-X paint system. | | | |
| | | | | | P2 Marine 812-X paint system - isocyanate free. | | | |
| | | | | | R Emergency lowering system (2 litre bottle). | | | |
| | | | | | W1 ABS witness test. | | | |
| | | | | | W2 DNV witness test. | | | |
| | | | | | W3 LRS witness test. | | | |
| | | | | | W4 Client witness of load test. | | | |

M1 – Material traceability certificates according to EN 10204 (Ex DIN 50049) 2.2 on load bearing parts. This conformity document affirms (by the manufacturer) that parts are in compliance with the requirements of the order based on non-specific inspection and testing (i.e., results are typical material properties for these parts).

M2 – Material traceability certificates according to EN 10204 (Ex DIN 50049) 3.1 on load bearing parts. These documents affirm (by a department independent of the manufacturing department) that the actual parts used in the product are in compliance with the order based on specific inspection and testing (i.e., results are actual material properties for those parts).

M3 – Material traceability certificates according to EN 10204 (Ex DIN 50049) 3.1 on load bearing parts. These documents affirm (by a department independent of the manufacturing department) that the actual parts used in the product are in compliance with the order based on specific inspection and testing (i.e., results are actual material properties for those parts in a finished, as delivered condition).

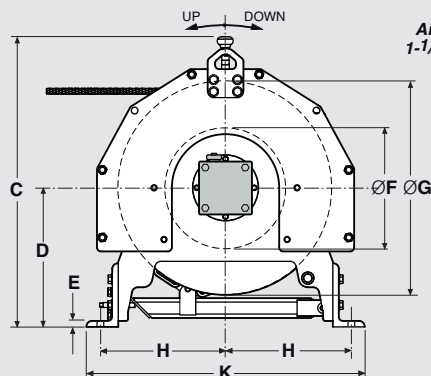
FA Infinity™ Series Air Winches

0.15 - 10 t Load Capacity

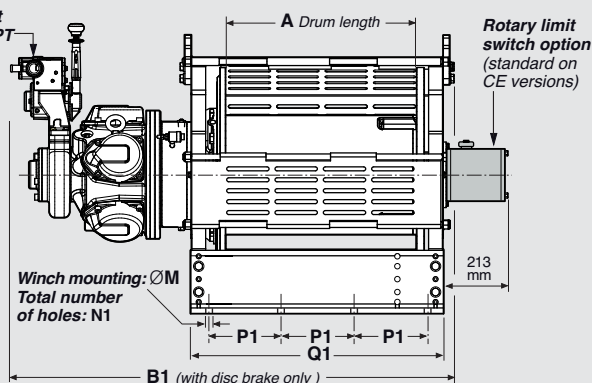
FA2i to FA10i Utility Air Winches (standard flanges)

FA2i to FA10i with disc brake only

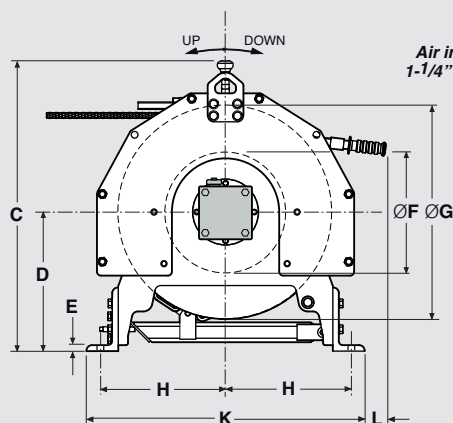
Dimensions are subject to change without notice. Please contact Client Services for certified prints.



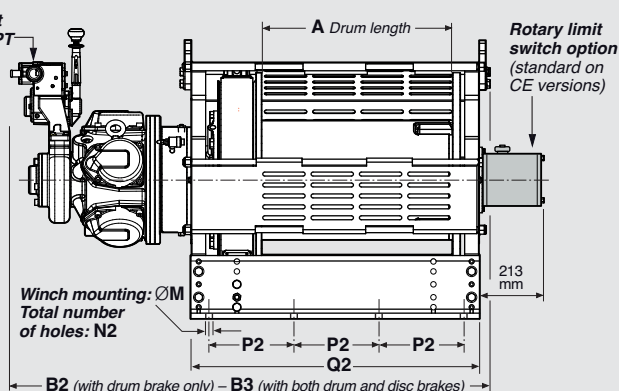
Air inlet
1-1/4" NPT



FA2i to FA10i with drum brake or with both drum brake and disc brake



Air inlet
1-1/4" NPT



Dimensions in mm

| Model no. | A | B1 | B2 | B3 | C | D | E | F | G | H | K | L | M | N1 | N2 | P1 | P2 | Q1 | Q2 |
|--------------|------|------|------|------|------|-----|----|-----|-----|-----|------|-----|----|----|----|-----|-----|------|------|
| FA2i-12... | 305 | 968 | 945 | 1036 | 722 | 356 | 13 | 273 | 483 | 254 | 610 | 125 | 18 | 6 | 6 | 191 | 229 | 511 | 579 |
| FA2i-16... | 406 | 1069 | 1046 | 1138 | 722 | 356 | 13 | 273 | 483 | 254 | 610 | 125 | 18 | 8 | 8 | 159 | 191 | 612 | 681 |
| FA2i-20... | 508 | 1171 | 1148 | 1240 | 722 | 356 | 13 | 273 | 483 | 254 | 610 | 125 | 18 | 8 | 8 | 197 | 229 | 714 | 782 |
| FA2i-24... | 610 | 1273 | 1250 | 1341 | 722 | 356 | 13 | 273 | 483 | 254 | 610 | 125 | 18 | 8 | 8 | 229 | 254 | 816 | 884 |
| FA2.5i-8... | 203 | 996 | 986 | 1062 | 839 | 356 | 13 | 273 | 483 | 254 | 610 | 125 | 18 | 6 | 6 | 152 | 178 | 409 | 478 |
| FA2.5i-12... | 305 | 1097 | 1087 | 1163 | 839 | 356 | 13 | 273 | 483 | 254 | 610 | 125 | 18 | 6 | 6 | 203 | 229 | 511 | 579 |
| FA2.5i-16... | 406 | 1199 | 1189 | 1265 | 839 | 356 | 13 | 273 | 483 | 254 | 610 | 125 | 18 | 8 | 8 | 178 | 191 | 612 | 681 |
| FA2.5i-20... | 508 | 1300 | 1290 | 1367 | 839 | 356 | 13 | 273 | 483 | 254 | 610 | 125 | 18 | 8 | 8 | 203 | 229 | 714 | 782 |
| FA2.5i-24... | 610 | 1402 | 1392 | 1468 | 839 | 356 | 13 | 273 | 483 | 254 | 610 | 125 | 18 | 8 | 8 | 229 | 254 | 816 | 884 |
| FA5i-16... | 406 | 1204 | 1234 | 1311 | 928 | 445 | 19 | 381 | 686 | 397 | 889 | 66 | 21 | 6 | 6 | 159 | 229 | 605 | 720 |
| FA5i-20... | 508 | 1306 | 1336 | 1412 | 928 | 445 | 19 | 381 | 686 | 397 | 889 | 66 | 21 | 8 | 8 | 216 | 254 | 707 | 821 |
| FA5i-24... | 610 | 1407 | 1438 | 1514 | 928 | 445 | 19 | 381 | 686 | 397 | 889 | 66 | 21 | 8 | 8 | 229 | 267 | 809 | 923 |
| FA5i-30... | 762 | 1560 | 1590 | 1666 | 928 | 445 | 19 | 381 | 686 | 397 | 889 | 66 | 21 | 8 | 10 | 305 | 254 | 961 | 1075 |
| FA5i-36... | 914 | 1712 | 1742 | 1819 | 928 | 445 | 19 | 381 | 686 | 397 | 889 | 66 | 21 | 8 | 10 | 356 | 279 | 1114 | 1228 |
| FA7i-20... | 508 | 1356 | 1367 | 1443 | 1084 | 508 | 19 | 406 | 762 | 435 | 965 | 71 | 24 | 8 | 10 | 229 | 203 | 778 | 868 |
| FA7i-24... | 610 | 1458 | 1468 | 1544 | 1084 | 508 | 19 | 406 | 762 | 435 | 965 | 71 | 24 | 10 | 10 | 203 | 229 | 880 | 970 |
| FA7i-30... | 762 | 1610 | 1621 | 1697 | 1084 | 508 | 19 | 406 | 762 | 435 | 965 | 71 | 24 | 10 | 10 | 241 | 254 | 1032 | 1122 |
| FA7i-36... | 914 | 1763 | 1773 | 1849 | 1084 | 508 | 19 | 406 | 762 | 435 | 965 | 71 | 24 | 12 | 10 | 216 | 279 | 1184 | 1275 |
| FA7i-42... | 1067 | 1915 | 1925 | 2002 | 1084 | 508 | 19 | 406 | 762 | 435 | 965 | 71 | 24 | 12 | 12 | 254 | 254 | 1337 | 1427 |
| FA10i-24... | 610 | 1519 | 1615 | 1621 | 1213 | 533 | 15 | 508 | 965 | 537 | 1179 | 31 | 24 | 12 | 12 | 152 | 152 | 952 | 1054 |
| FA10i-30... | 762 | 1671 | 1768 | 1773 | 1213 | 533 | 15 | 508 | 965 | 537 | 1179 | 31 | 24 | 12 | 12 | 203 | 203 | 1105 | 1207 |
| FA10i-36... | 914 | 1824 | 1920 | 1925 | 1213 | 533 | 15 | 508 | 965 | 537 | 1179 | 31 | 24 | 12 | 12 | 203 | 203 | 1257 | 1359 |
| FA10i-40... | 1067 | 1920 | 2022 | 2027 | 1213 | 533 | 15 | 508 | 965 | 537 | 1179 | 31 | 24 | 12 | 12 | 203 | 203 | 1359 | 1461 |

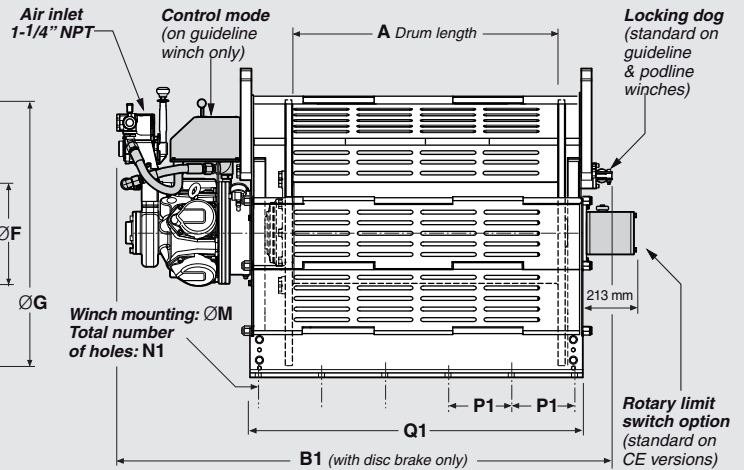
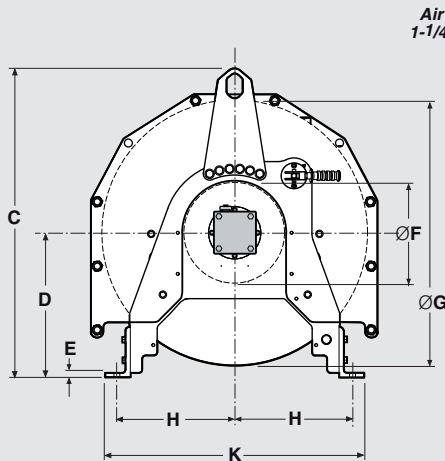
FA Infinity™ Series Air Winches

0.15 - 10 t Load Capacity

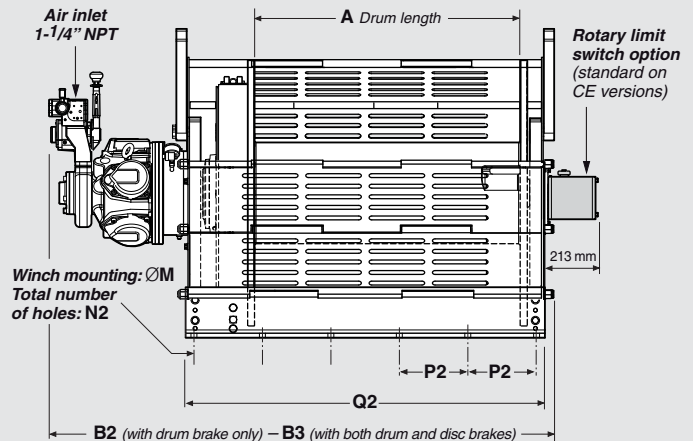
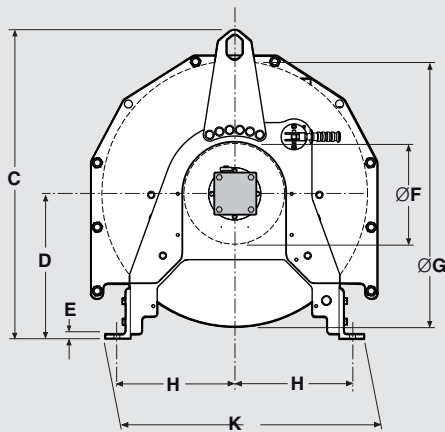
FA5Ti, FA10Ti Utility Air Winches (tall flanges) and Guideline / Podline Winches

FA5Ti and FA7Ti with disc brake only

FA7Ti-GL and FA7Ti-PL



FA5Ti and FA7Ti with drum brake or with both drum brake and disc brake



Dimensions are subject to change without notice. Please contact Client Services for certified prints.

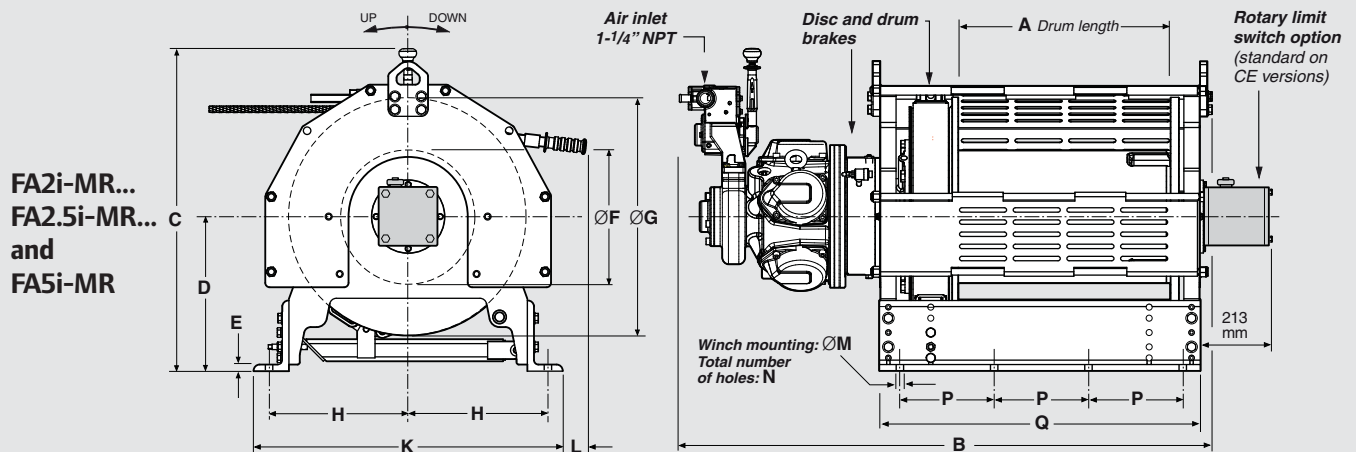
Dimensions in mm

| Model number | A | B1 | B2 | B3 | C | D | E | F | G | H | K | M | N1 | N2 | P1 | P2 | Q1 | Q2 |
|---------------|------|------|------|------|------|-----|----|-----|------|-----|------|----|----|----|-----|-----|------|------|
| FA5Ti-16... | 406 | 1204 | 1234 | 1311 | 1086 | 508 | 19 | 381 | 889 | 435 | 965 | 21 | 6 | 6 | 159 | 229 | 605 | 720 |
| FA5Ti-20... | 508 | 1306 | 1336 | 1412 | 1086 | 508 | 19 | 381 | 889 | 435 | 965 | 21 | 8 | 8 | 216 | 254 | 707 | 821 |
| FA5Ti-24... | 610 | 1407 | 1438 | 1514 | 1086 | 508 | 19 | 381 | 889 | 435 | 965 | 21 | 8 | 8 | 229 | 267 | 809 | 923 |
| FA5Ti-30... | 762 | 1560 | 1590 | 1666 | 1086 | 508 | 19 | 381 | 889 | 435 | 965 | 21 | 8 | 10 | 305 | 254 | 961 | 1075 |
| FA5Ti-36... | 914 | 1712 | 1742 | 1819 | 1086 | 508 | 19 | 381 | 889 | 435 | 965 | 21 | 8 | 10 | 356 | 279 | 1114 | 1228 |
| FA7Ti-20... | 508 | 1356 | 1367 | 1443 | 1084 | 508 | 19 | 406 | 914 | 435 | 965 | 24 | 8 | 10 | 229 | 203 | 778 | 868 |
| FA7Ti-24... | 610 | 1458 | 1468 | 1544 | 1084 | 508 | 19 | 406 | 914 | 435 | 965 | 24 | 10 | 10 | 203 | 229 | 880 | 970 |
| FA7Ti-30... | 762 | 1610 | 1621 | 1697 | 1084 | 508 | 19 | 406 | 914 | 435 | 965 | 24 | 10 | 10 | 241 | 254 | 1032 | 1122 |
| FA7Ti-36... | 914 | 1763 | 1773 | 1849 | 1084 | 508 | 19 | 406 | 914 | 435 | 965 | 24 | 12 | 10 | 216 | 279 | 1184 | 1275 |
| FA7Ti-42... | 1067 | 1915 | 1925 | 2002 | 1084 | 508 | 19 | 406 | 914 | 435 | 965 | 24 | 12 | 12 | 254 | 254 | 1337 | 1427 |
| FA7Ti-GL42... | 1067 | 1984 | — | — | 1240 | 581 | 19 | 406 | 1067 | 473 | 1041 | 24 | 12 | — | 254 | — | 1337 | — |
| FA7Ti-PL42... | 1067 | 1984 | — | — | 1240 | 581 | 19 | 406 | 1067 | 473 | 1041 | 24 | 12 | — | 254 | — | 1337 | — |

FA Infinity™ Series Air Winches

0.15 - 10 t Load Capacity

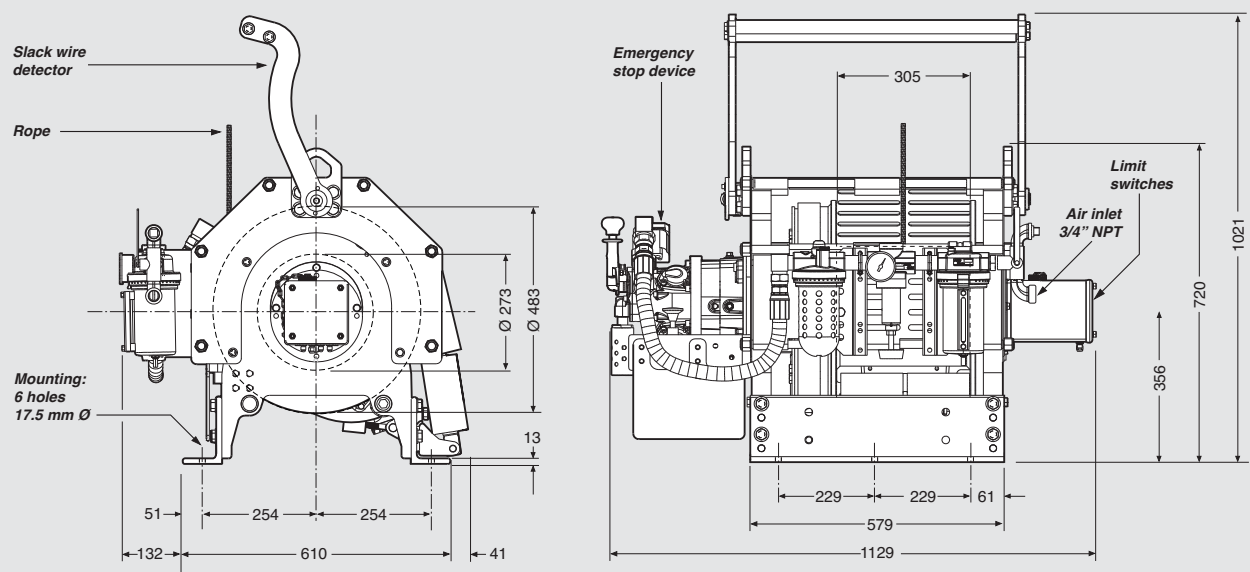
Dual Rated Offshore ManRider™ Air Winches



Dimensions in mm

| Model number | A | B | C | D | E | F | G | H | K | L | M | N | P | Q |
|------------------|-----|------|-----|-----|----|-----|-----|-----|-----|-----|----|---|-----|-----|
| FA2i-MR12MK... | 305 | 1036 | 723 | 356 | 13 | 273 | 483 | 254 | 610 | 125 | 18 | 6 | 191 | 579 |
| FA2i-MR24MK... | 610 | 1341 | 723 | 356 | 13 | 273 | 483 | 254 | 610 | 125 | 18 | 8 | 229 | 884 |
| FA2.5i-MR12MK... | 305 | 1168 | 839 | 356 | 13 | 273 | 483 | 254 | 610 | 125 | 18 | 6 | 191 | 579 |
| FA2.5i-MR24MK... | 610 | 1473 | 839 | 356 | 13 | 273 | 483 | 254 | 610 | 125 | 18 | 8 | 229 | 884 |
| FA5i-MR16MK... | 406 | 1311 | 928 | 444 | 19 | 381 | 686 | 397 | 889 | 68 | 21 | 6 | 191 | 719 |
| FA5i-MR24MK... | 610 | 1514 | 928 | 444 | 19 | 381 | 686 | 397 | 889 | 68 | 21 | 8 | 197 | 922 |

FA150KGi-MR Dedicated ManRider™



Dimensions are subject to change without notice. Please contact Client Services for certified prints.

Airline Accessories for Air Winches

Additional Information on Filters, Regulators and Lubricators

Ingersoll Rand ARO-Flo Series

These filters, regulators, lubricators and FRL combinations are designed to keep your air supply in top condition, as well as enable your winch to operate at its peak performance.

Features

- Robust cast aluminium body.
- High-flow filter element with 5-micron filtration.
- Automatic drain.
- Reinforced metal bowls with sight glass.

FRL combinations 3/8" to 1":

- Regulated pressure 0-9.7 bar, max. inlet pressure 17 bar. Flush mount gauge and T-shape wall mount brackets included.

Separated filter, regulator and lubricator 1 1/4" and 1 1/2":

- Regulated pressure 0-8.5 bar, max. inlet pressure 20.7 bar. Gauge and connection nipples to be ordered separately.

NOTE: our dedicated ManRider™ air winches are fitted with an air treatment equipment mounted as standard on the product and do not require, as a result, the equipment described hereafter.



C383E1-811
3/4" combined FRL



C384F1-811
1" combined FRL



F355G1-411
1 1/4" filter



104502 gauge



R375G1-100
1 1/4" regulator



L365G1-110
1 1/4" lubricator



ARO-Flo Series equipment is exempt from the EU Directives 2002/95/EC (CE compliance), and 94/9/EC (ATEX 95). ARO-Flo Series is Silicon free and meets 2002/95/EC (RoHS compliance).

| Winch model | Winch air inlet size | FRL size | FRL combination part no. | Filter part no. | Regulator part no. | Gauge part no. | Lubricator part no. | Nipple part no. (1) |
|---|----------------------|------------|--------------------------|-----------------|--------------------|----------------|---------------------|---------------------|
| For Liftstar®, Pullstar® and FA Infinity™ Series | | | | | | | | |
| LS2-300R... | 3/4" BSP | 3/4" BSP | C383E1-811 | — | — | — | — | — |
| LS2-600R... | | 3/4" BSP | C383E1-811 | | | | | |
| LS-1500R... | 1" BSP | 1" BSP | C384F1-811 | F355G1-411 | R375G1-100 | 104502 | L365G1-110 | 38751038 |
| LS2000R... | 1 1/4" BSP | 1 1/4" BSP | — | | | | | |
| LS5000R... | | 1 1/4" BSP | — | | | | | |
| PS2-1000R... | 3/4" BSP | 3/4" BSP | C383E1-811 | — | — | — | — | — |
| PS2400R... | 1" BSP | 1" BSP | C384F1-811 | | | | | |
| PS4000R... | 1 1/4" BSP | 1 1/4" BSP | — | F355G1-411 | R375G1-100 | 104502 | L365G1-110 | 38751038 |
| PS10000R... | | 1 1/4" BSP | — | | | | | |
| FA2... | 1 1/4" NPT | 1 1/4" NPT | — | F35571-411 | R37571-100 | 104502 | L36571-110 | 38751038 |
| FA2.5... | 1 1/4" NPT | 1 1/2" NPT | — | F35581-411 | R37581-100 | 104502 | L36581-110 | NA |
| FA5... | | | | | | | | |
| FA7... | | | | | | | | |
| FA10... | | | | | | | | |

(1) Two nipples have to be ordered to assemble the filter / regulator / lubricator module.