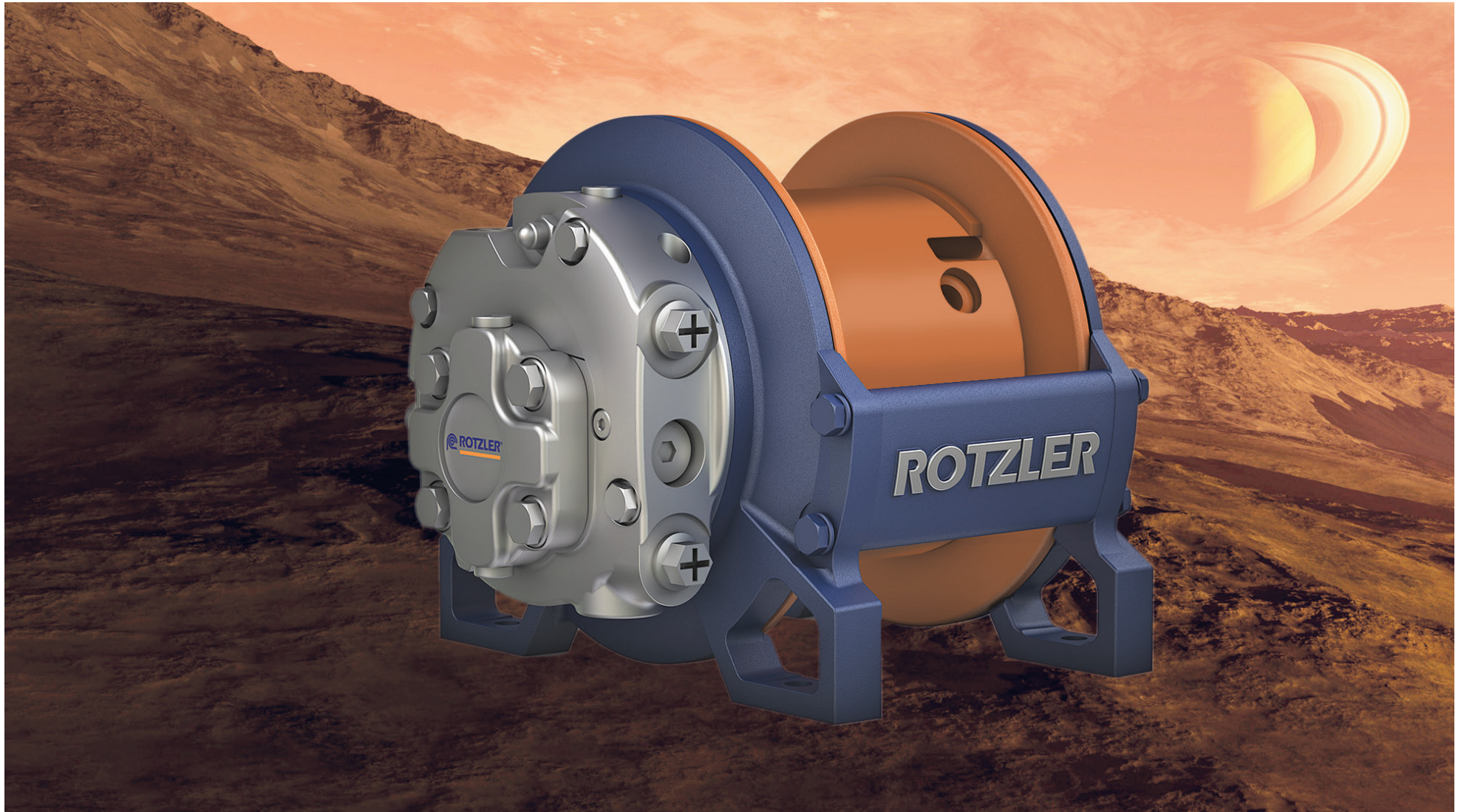


# ROTZLER TITAN TI 5

max. hoisting force 12300 lbf



## Hydraulic hoisting winch technical product information - AMERICAS

# ROTZLER TITAN TI 5

max. hoisting force 12300 lbf



## 1. Basic Winch

### 1.1 Basic winch dimensions

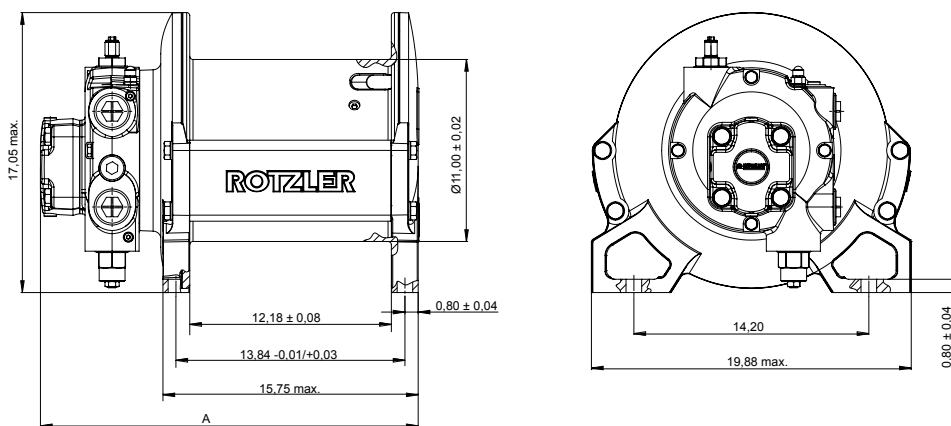


Fig.1 dimensions of basic winch [inch]

### 1.2 Basic winch technical data

data based on basic winch without options

motor type	GM085	GM107	PM049	
motor displacement [cm³]	85	107	49	
required max. pressure ΔP at motor [PSI]	2900	2300	4300	
max. return flow pressure [PSI]	200	200	200	
max. back pressure [PSI]	75	75	75	
max. case drain pressure [PSI]	200	200	25	
max. oil flow [GPM]	60	75	34	
weight approx. [lb]	410	411	399	
dimension A max. [inch]	22,52	23,03	20,28	
data per rope layer	1st	2nd	3rd	4th
max. hoisting force [lbf]	12300	11100	10100	9300
max. rope speed [ft/min]	152	167	183	198
max. accumulated rope storage [ft], rope Ø 5/8"	56	117	184	256

a case drain line is recommended when return line back pressure exceeds 300 PSI.

Tab.1 technical data of basic winch [data can vary according to options]

# ROTZLER TITAN TI 5

max. hoisting force 12300 lbf



## 2. Interfaces

### 2.1 Mechanical interface

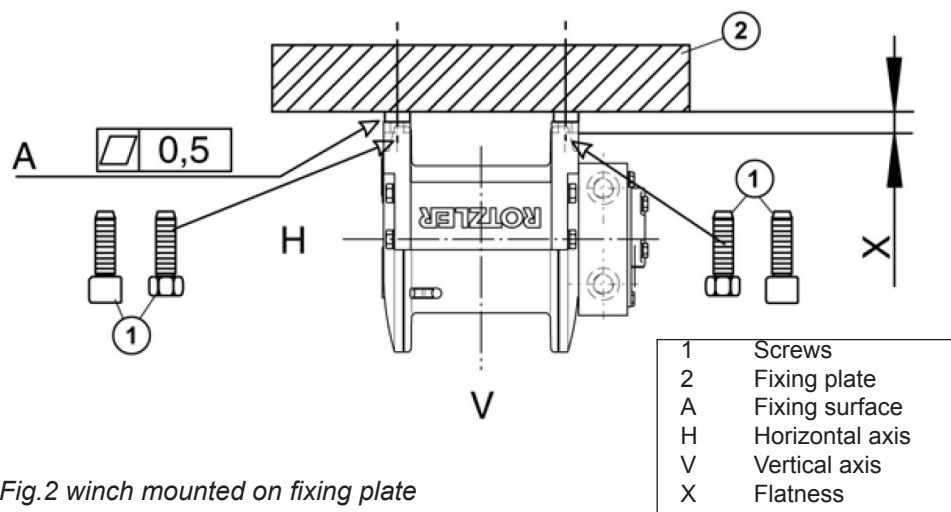


Fig.2 winch mounted on fixing plate

mounting fasteners	quantity	size	quality	tightening torque	measure X
standard fasteners	4	M22	8.8	337 lbf/ft	0,8 inch
stainless steel fasteners	4	M22	A4-80	439 lbf/ft	0,8 inch

Tab.2 technical data of recommended fasteners

### 2.2 Hydraulic interface

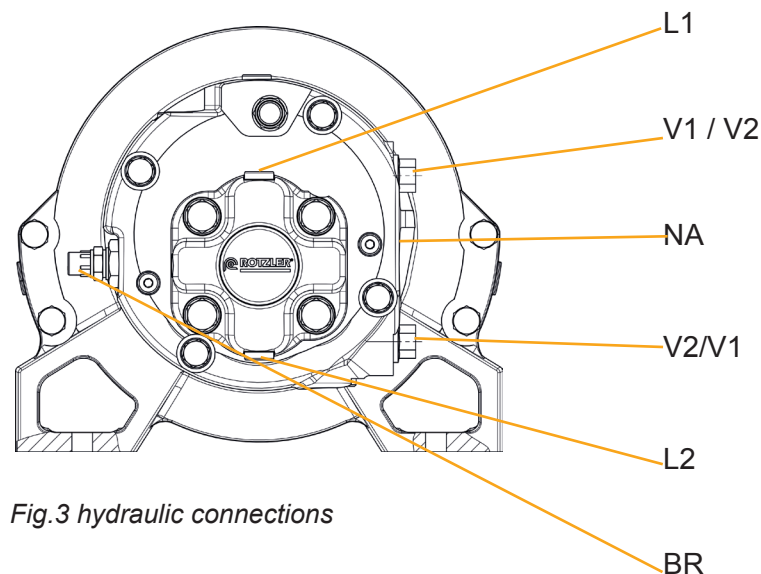


Fig.3 hydraulic connections

- V1 return oil connection for direction „ROPE IN“  
V2 pressure oil connection for direction „ROPE IN“  
L1 / L2 case drain connection  
NA external brake release port  
BR counter balance valve\*

\* Integrated in the motor as a standard, the counterbalance valve offers an alternative lowering brake function designed to suit specific applications and hydraulic systems. The winch also features a failsafe operation of the spring applied, static disc brake.

- Optimized lowering speed in 'low flow' hydraulic systems.
- Optimized lowering performance in high pressure mobile hydraulic systems.

connection ports for motor					
	V1	V2	L1	L2	BR
GM085	G1 1/2	G1 1/2	G1/4	G1/4	G1/4
GM107	G1 1/2	G1 1/2	G1/4	G1/4	G1/4
PM049	G1	G1	G1/2	G1/2	G1/8

Tab.3 hydraulic connection port sizes

## 2.2 Hydraulic interface

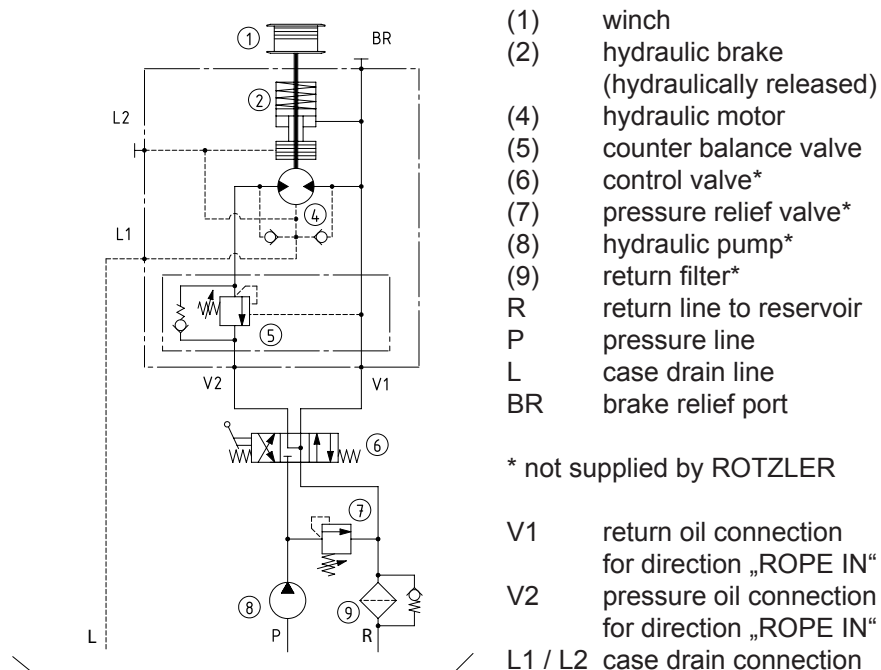


Fig.4 hydraulic diagram

## 2.3 Electric interface

### 2.3.1 rope end switch:

Technical data: max. voltage 250 V / max. permanent current 10 A.

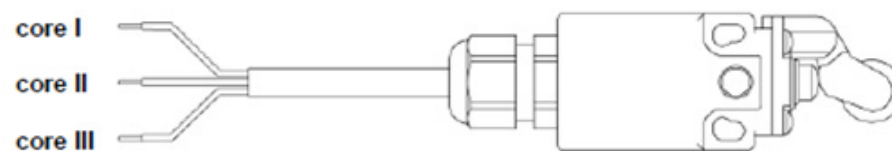


Fig.5 rope end sensor connection

# ROTZLER TITAN TI 5

max. hoisting force 12300 lbf



## 3. Options

### 3.1 Pressure roller

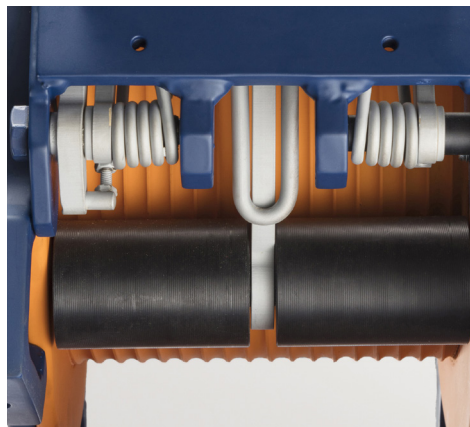


Fig.6 pressure roller, view from bottom

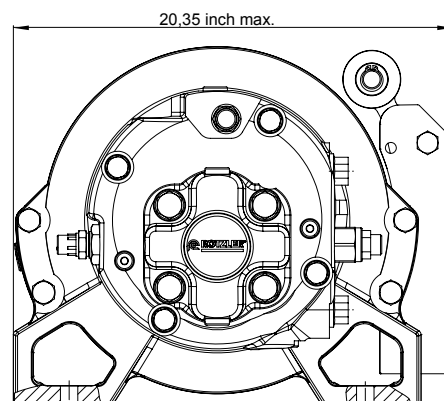


Fig.7 dimension with pressure roller

differing data from basic winch data based on smooth drum	gear motor GM085	gear motor GM107	piston motor PM049
weight pressure roller [lb]	approx. 8,8		

Tab. 4 data with pressure roller

#### Pressure roller:

The pressure roller supports proper spooling of the rope on the drum. It is mechanically fastened to the winch strut. Its position is always on the opposite site to the rope inlet.

- increased the life time of the rope
- reduced down time of the winch
- higher operation time

#### Customer benefits:

The pressure roller improves the correct spooling of the rope. It reduces the slack and assists layering of the rope.

### 3.2 rope end switch

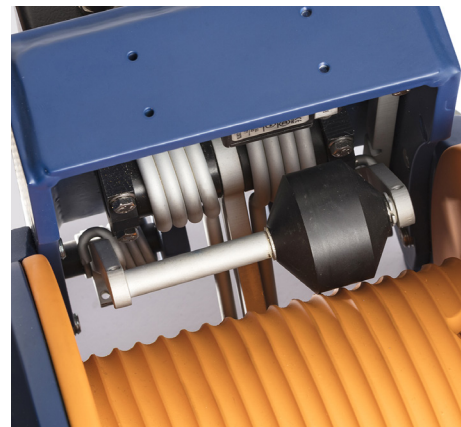


Fig.8 pressure roller incl. rope end switch, view from the top

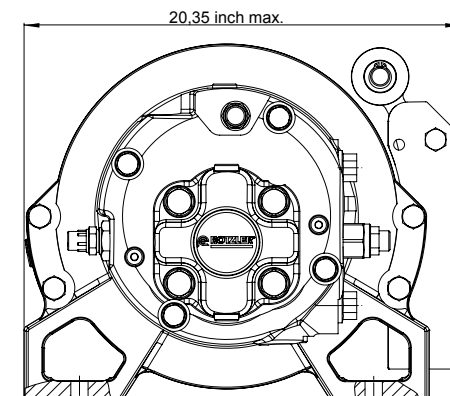


Fig.9 dimensions with pressure roller and rope end switch

differing data from basic winch data based on smooth drum	gear motor GM085	gear motor GM107	piston motor PM049
weight pressure roller incl. rope end switch [lb]	approx. 12,1		

Tab. 5 data with pressure roller and rope end switch

#### Rope end switch:

The rope end switch is mechanically attached to pressure roller housing. The optional rope end switch is only available in combination with the pressure roller.

The threshold signal „rope end“ is emitted by an electric switch.

#### Customer benefits:

Awareness and control of rope end at either:

- 3 rope windings or
- 5 rope windings

It reduces overstressing the rope link between rope end and rope drum (rope pocket/rope wedge) and prevents rope winding in wrong direction caused by reeled off rope.

## 3.3 External brake release

The external brake release option allows releasing the brake and lowering the load with an auxiliary hydraulic supply. In case of failure of the main hydraulic system, it allows to lower a suspended load safely.

### Customer benefits:

In an emergency situation operator can easily unload the crane to secure the system and to prevent bigger damages.

### External brake release interface:

The external brake release valve is mechanical screwed in the hydraulic motor housing. The shuttle valve is directly impinged by the manual external 4/2 way control valve.

connection ports	
NA	1/4"

Tab.6 hydraulic connection port sizes with external brake release

differing data from basic winch data based on smooth drum	gear motor GM085	gear motor GM107	piston motor PM049
weight shuttle valve plus external brake release [lb]	approx. 1,1		

Tab. 7 data with optional external brake release

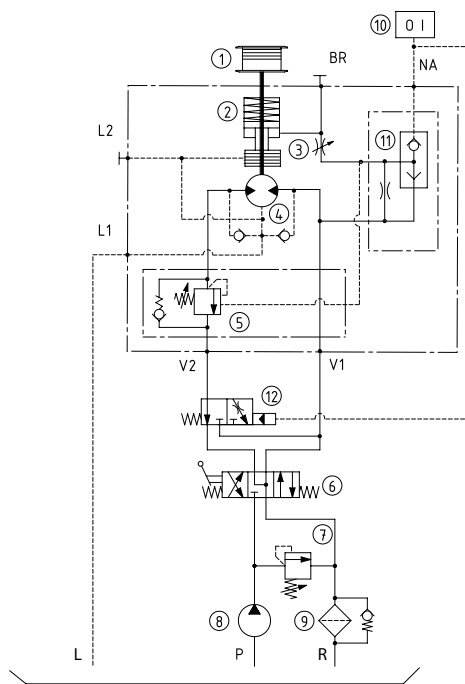


Fig. 10 hydraulic diagram for external brake release

- (1) winch
- (2) hydraulic brake (hydraulically released)
- (3) throttle valve (brake test) - optional
- (4) hydraulic motor
- (5) counter balance valve
- (6) control valve\*
- (7) pressure relief valve\*
- (8) hydraulic pump\*
- (9) return filter\*
- (10) auxiliary hydraulic system\*
- (11) shuttle valve - optional (if external brake release is used)
- R return line to reservoir
- P pressure line
- L case drain line
- NA external brake release port
- OI external brake release kit\* (10+11 option)
- BR brake relief port

\* not supplied by ROTZLER

- V1 return oil connection for direction „ROPE IN“
- V2 pressure oil connection for direction „ROPE IN“
- L1 / L2 case drain connection
- NA external brake release port

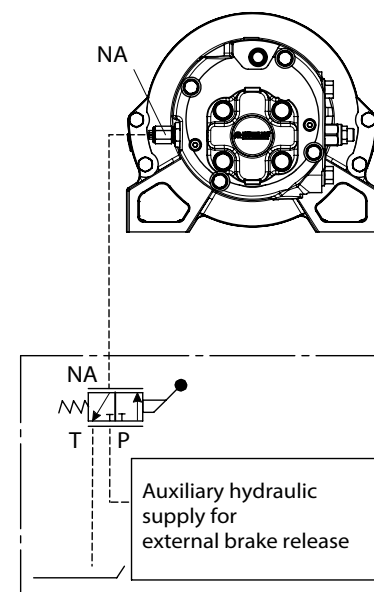


Fig. 11 auxiliary hydraulic supply for external brake release

## 3.4 Throttle Valve

The connection between winch motor and brake can be closed via the throttle valve. With this option, the winch is prepared for a brake test. By applying pressure to motor the functionality of the brake can be assessed.

This is allowing a winch brake test according API 2C specification. This test can only be performed by qualified persons.

For the hydraulic diagram please refer to fig. 10.

## 3.5 Ropes

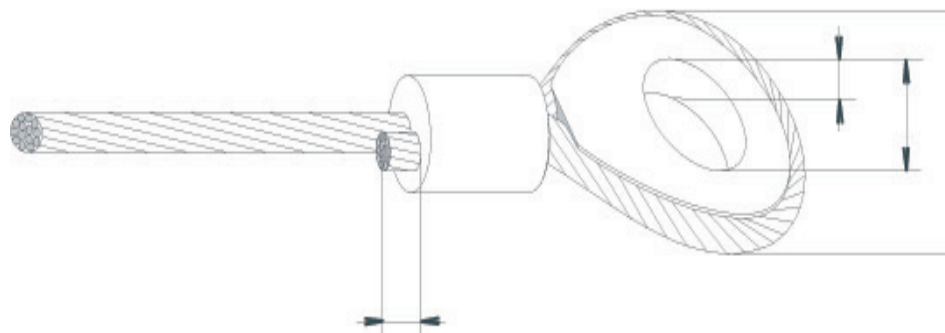


Fig. 12 drawing of rope

standard rope	
diameter [inch]	5/8
length [ft]	250
weight [lb]	216
class of rope strength	2160
min. breaking strength [lbf]	55975
stranding factor	0,80
A [inch] +0,0059 / - 0,0393	1,57
B [inch]	3,74
C [inch]	1,06
D max. [inch]	0,32

Tab. 8 data of standard rope

## Winches compliant for API 2C

The ROTZLER TITAN hoisting winches are suitable for cranes according the API 2C specification (American Petroleum Institute) when the following options are selected:

- pressure roller and rope end switch, activated with 5 wraps
- stainless steel fasteners
- external brake release
- throttle valve

If all those options are selected, we can equip the winch with a type plate indicating „winch suitable for API 2C certified cranes“.

## Why should customer use a rope from ROTZLER?

Rotzler's standard ropes are selected for their tensile strength and winding properties. Safe winch operation is guaranteed over a long life span.

## Customer benefits:

Rotzler ropes can be easily ordered for each winch model and meet the highest safety standard for marine, loading and service cranes.

## Rope interface:

Rotzler ropes are connected to the winch by a rope lock. Adding a rope end switch to the winch ensures that a minimum 3 or 5 wraps are always present.

# ROTZLER TITAN TI 5

max. hoisting force 12300 lbf



## 4 TITAN order code

3.	TI.	01.	0.	00.	GM085.	1.	0.	00.	00.	00.	DIG	
												Version of Code
												3.
												Construction
												TI. = TITAN
												Type
												05. = TITAN 12.300 lbf
												Drum width
												0. = 12,2 inch
												Grooves
												00. = No grooves
												Motor displacement
												GM085. = 85cc gear motor
												GM107. = 107cc gear motor
												PM049. = 49 cc piston motor
												Rotation direction and general layout
												For position of rotation direction/general layout see details on the right
												Motor layout
												For position of motor ports see details on the right
												Pressure roller and rope end switch
												00. = No pressure roller, no rope end switch
												10. = Pressure roller, no rope end switch
												13. = Pressure roller, rope end switch activated with 3 rope wraps
												15. = Pressure roller, rope end switch activated with 5 rope wraps
												MCD type
												00. = No MCD
												Paint finish
												00. = Primer
												01. = White
												02. = Black
												03. = White + extra coat
												04. = Black + extra coat
												Rope
												00. = No rope
												12. = Rope, 5/8 inch, 250 ft
												Digital Code (DIG)
												0. .... 7

DIG – Parameters		
1	0	Standard fasteners
	1	Stainless fasteners
2	0	Without external brake release
	1	With external brake release
4	0	Without throttle valve
	1	With throttle valve

DIG – Code							
0	1	2	3	4	5	6	7
000	100	010	110	001	101	011	111

Rotation direction (rope in) / general layout			
1.	counter clock-wise, rope underwound		
2.	counter clock-wise, rope overwound		
3.	clockwise, rope underwound		
4.	clockwise, rope overwound		

Motor layout			
motor port left side	motor port on top	motor port right side	motor port on bottom
0.	1.	2.	3.
■ motor ports		▲ case drain ports	

### Suitability of TITAN for API2C certified devices

Suitability for API given, when winch is equipped with rope end switch activated with 5 wraps, stainless steel fasteners, external brake release and throttle valve.  
Type plate incl. API suitability statement available.

# ROTZLER TITAN TI 5

max. hoisting force 12300 lbf



## 5 The ROTZLER GROUP International contacts



ROTZLER Canada Inc.  
Unit 122, 7350 - 72 Street  
Delta, B.C. V4G 1H9 Canada  
Tel: +1 604 940 7134  
[rotzler.canada@rotzler.com](mailto:rotzler.canada@rotzler.com)



ROTZLER USA Inc.  
1475 Ave S. Suite 301  
Grand Prairie, Texas 75050, USA  
Tel: +1 604 940 7134  
[rotzler.canada@rotzler.com](mailto:rotzler.canada@rotzler.com)



ROTZLER HOLDING GmbH + Co. KG  
ROTZLER Deutschland GmbH + Co. KG  
Robert-Bosch-Str. 4  
79585 Steinen, Germany  
Tel: +49 7627 701 0  
[rotzler.germany@rotzler.com](mailto:rotzler.germany@rotzler.com)



ROTZLER India Pvt. Ltd.  
Plot no4, 5th Main  
3re Phase Peenya Industrial Area  
Bangalore - 560058, India  
Tel: +91 80 40963642  
[info@rotzler.com](mailto:info@rotzler.com)



ROTZLER Korea Ltd.  
1-110 Changwon Knowledge Ind. Center  
316, Ungnam-ro, Seongsan-gu  
Changwon, Gyeongnam 642290  
South Korea  
Tel: +82 55 282 5067  
[rotzler.korea@rotzler.com](mailto:rotzler.korea@rotzler.com)