

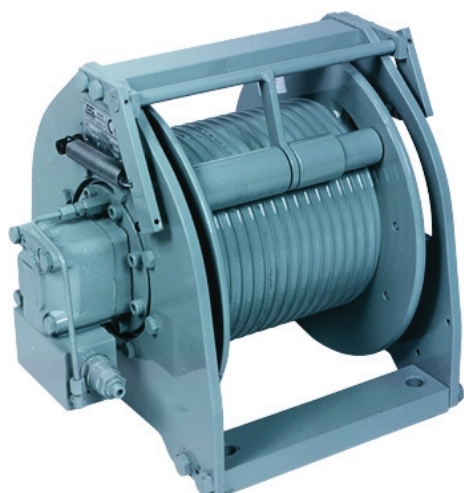
# TN



HYDRAULIC AND ELECTRIC WINCHES

## Cargo Lifting Winches

*Also with Marine Surface treatment*



- **Grooved Drums**
- **Wire ropes, Pulley Block and hooks**
- **Stainless Steel Press-cable rollers**
- **Empty Drum hydraulic By-pass**
- **Load limit systems**
- **Cable spooling / Level winding mechanisms**
- **ATEX suitable**
- **Various Motor / gearbox combinations**
- **Multiple Drum sizes available**
- **Stainless Steel piping**
- **Class Approvals**

*Super compact hydraulic lifting winches designed to satisfy the needs of high performance within the smallest possible volume. Safe Working Load from 500 kg to 5700 kg. A size to suit every request.*

Winch range	Winch model	Line pull 1st Layer kg	Drum Diameter mm	Cable Diameter mm	Drum capacity m	Line Speed m/min	Oil flow l/min	Working Pressure bar
TN	04	500	146	5	63	42	25	175
TN	05	600	146	6	42	52	30	180
TN	07	800	167	7	74	38	30	165
TN	09	1000	167	8	50	38	40	175
TN	14	1500	202	9	59	43	50	190
TN	18	2000	202	10	53	34	50	200
TN	22	2500	243	12	54	29	50	205
TN	28	3600	244	13	81	28	75	185
TN	30	3400	296	14	72	47	100	205
TN	32	4500	296	15	86	37	120	195
TN	40	4700	322	16	120	36	100	220
TN	50	5200	322	16	120	28	100	210
TN	51	5700	343	18	127	27	100	205

*Nominal values. Precise proposals on request*

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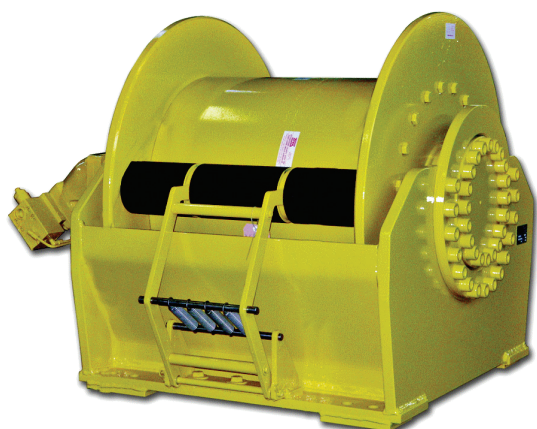
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# WO/WP



HYDRAULIC AND ELECTRIC WINCHES

## All Purpose Lifting Winches



- Fail-safe Hydraulic Drum brakes
- Grooved Drums
- Wire ropes, Pulley Blocks and hooks
- Stainless Steel Press-cable rollers
- Empty Drum hydraulic By-pass
- Marine Surface treatment
- Load limit systems
- ATEX suitable
- Various Motor / gearbox combinations
- Multiple Drum sizes available
- Stainless Steel piping
- Class Approvals
- Cable spooling / Level winding mechanisms

*This winch series covers a Safe Working Load from 4500 kg to over 21000 kg on the 1st layer. Various motor and control solutions including Axial piston, Radial Piston (WP) or Orbital (WO). Large range of 1500 different combinations of drum sizes, gear transmission and motor balanced solutions made and tested. TMA surface treatment and predispositions for marine applications are available throughout the series.*

Winch range	Winch model	Line pull 1st Layer kg	Drum Diameter mm	Cable Diameter mm	Drum capacity m	Line Speed m/min	Oil flow l/min	Working Pressure bar
WP	1	4500	298	15	83	38	100	270
WP	2	5500	322	16	99	55	120	290
WP	3	6500	366	18	104	37	120	275
WP	4	8500	405	20	108	43	180	285
WP	5	9500	418	22	118	40	180	275
WP	6	12000	455	24	121	36	220	280
WP	7	15000	505	25	148	36	250	285
WP	8	18000	555	30	110	28	250	280
WP	9	24000	608	36	123	27	360	280

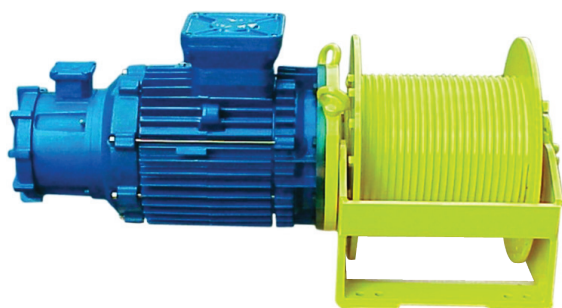
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# Electric Lifting Winches



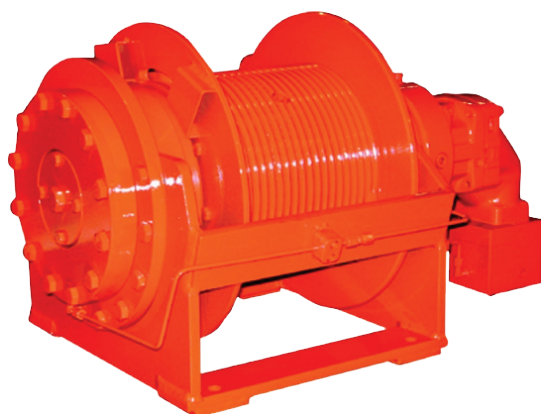
- Grooved Drums
- Wire ropes, Pulley Blocks and hooks
- Stainless Steel Press-cable rollers
- Empty Drum sensor
- Marine Surface treatment
- Load limit systems
- ATEX suitable
- Various Motor / gearbox combinations
- Multiple Drum sizes available
- Class Approvals
- Cable spooling / Level winding mechanisms

Generally self braking motors are used, with optional manual brake release study if required. Ventilated motors are used in conjunction with inverter controls. Marine motor protections as well as our special surface coating and protections for marine applications are fully implemented throughout the series.

Winch range	Winch model	Line pull 1st Layer kg	Drum Diameter mm	Cable Diameter mm	Drum capacity m	Line Speed m/min	Power KW
WE	0,5	1500	218	10	50	10	3
WE	1	2300	322	12	130	10	4
WE	2	4000	322	14	145	10	7,5
WE	3	4800	366	16	150	10	9
WE	4	6000	405	18	120	10	11
WE	5	7000	418	19	170	11	15
WE	6	8000	455	20	185	12	18
WE	7	11000	505	24	160	10	22

Nominal values. Precise proposals on request

## Personnel Lifting Winches



- Fail-safe Hydraulic Drum brakes
- Grooved Drums
- Wire ropes, Pulley Blocks and hooks
- Stainless Steel Press-cable rollers
- Empty Drum hydraulic By-pass
- Marine Surface treatment
- Load limit systems
- ATEX suitable
- Various Motor / gearbox combinations
- Multiple Drum sizes available
- Stainless Steel piping
- Class Approvals
- Cable spooling / Level winding mechanisms

*This new range of winches with safety brake on the drum is specially designed to cover the needs of many Personnel Lifting applications. The extra fail-safe Internal disc drum brake will close and stop drum rotation on release of hydraulic pressure*

Winch range	Winch model	Line pull 1st Layer kg	Drum Diameter mm	Cable Diameter mm	Drum capacity m	Line Speed m/min	Oil flow l/min	Working Pressure bar
PL	1	2000	290	13	220	34	60	175
PL	2	3000	322	16	75	34	100	200
PL	3	4000	366	18	100	27	90	160
PL	4	5000	406	20	75	24	120	220
PL	5	6000	418	22	100	26	130	250
PL	6	7000	455	24	120	28	120	260
PL	7	8000	505	26	120	35	220	290

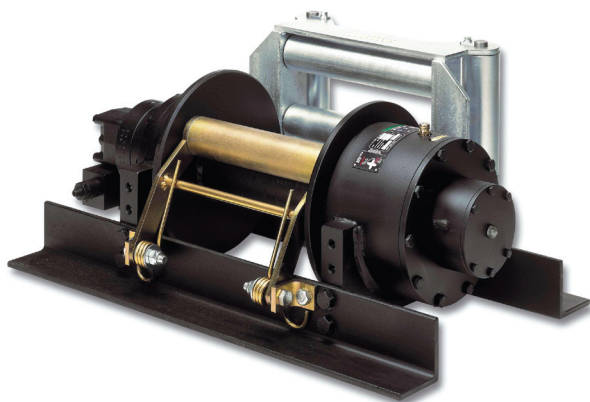
*Nominal values. Precise proposals on request*

# TMT



HYDRAULIC AND ELECTRIC WINCHES

## Hydraulic Pulling Winches



- Wire ropes, Pulley Blocks and hooks
- Press-cable rollers
- Fairlead rollers guides
- Various Motor / gearbox combinations
- Multiple Drum sizes available

*This series of pulling winches is based on an high efficiency planetary gear-box and a Load holding fail-safe input brake. Drums free-wheel with manual or pneumatic release. Press cable rollers, fairlead rollers are available for each size. Line pull from 1.5 up to 30 Ton.*

Winch range	Winch model	Line pull 1st Layer kg	Drum Diameter mm	Cable Diameter mm	Drum capacity m	Line Speed m/min	Oil flow l/min	Working Pressure bar
TMT	50	4500	298	15	83	38	100	270
TMT	75	7500	127	14	91	11	75	175
TMT	90	9500	127	16	64	8	75	170
TMT	150	15000	390	18	70	9	120	155
TMT	200	22500	420	22	50	5	80	195
TMT	250	25000	510	24	72	3	75	145
TMT	300	30000	510	26	50	2,5	75	145

*Nominal values. Precise proposals on request*

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# SAFETY EQUIPMENT

MOPS / AOPS System

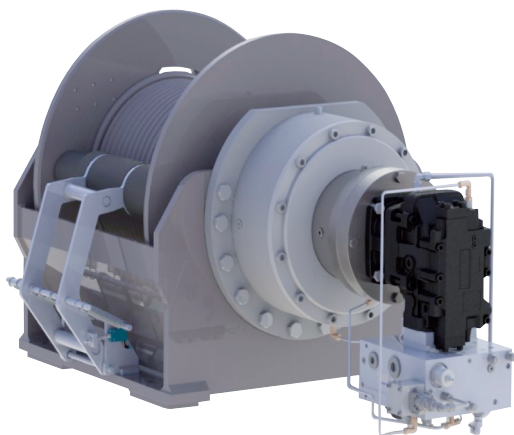
Constant Tension

Emergency Lowering

Mooring Control System



HYDRAULIC AND ELECTRIC WINCHES



- Customized solutions
- Modular block combinations
- Various motor valves combinations
- Class Approval
- Electrical or Hydraulic system activations
- Atex suitable
- Certificable by Classification Societies

	AOPS	MOPS	CT	EL
	AUTOMATIC OVERLOAD PROTECTION SYSTEM	MANUAL OVERLOAD PROTECTION SYSTEM	CONSTANT TENSION	EMERGENCY LOWERING
SHIPBOARD AND INDUSTRIAL WINCHES				X
OFFSHORE AND PERSONNEL LIFTING WINCHES	X	X	X	X
MOORING WINCHES			X	
DREDGING WINCHES			X	
FISHING TRAWLER WINCHES	X			

## VALVE SAFETY FUNCTIONS OF HYDRAULIC WINCHES

### OFFSHORE WINCHES AND PERSONNEL LIFTING WINCHES

**EL (Emergency Lowering)** for safe lowering of hanging load to a safe position in the event of power failure.

**MOPS (Manual Overload Protection System)** for the manual release of the wire rope/load in case of entanglement to the supply boat in order to avoid overload that could lead to crane structure collapse. It has to operate under all conditions, including failure in the main power supply, maintaining a retaining force in the hoisting system of approx. 10% to 25% of the SWL.

**AOPS (Automatic Overload Protection System)** for the automatic reduction of the rope tension in case of entanglement to the supply boat in order to avoid overload that could lead to crane structure collapse. It is required for operations in nautical zones with a short wave characteristic. Once activated, the crane has to start to release the rope maintaining a release force equal to the SWL.

**CT (Constant Tension)** to keep constant line pull in the hoisting wire rope during supply boat operations in order to avoid slack rope of the winch and to prevent impacts that could damage the ship. It has been designed with due consideration to the retaining force (usually 2 – 3 ton) and to the speed that depends on the sea state.

### SHIPBOARD WINCHES AND INDUSTRIAL WINCHES

**EL (Emergency Lowering)** for safe lowering of hanging load to a safe position in the event of power failure.

### MOORING WINCHES

**CT (Constant Tension)** to assure that vessel stays at the same position in regard to a fixed structure (i.e. pier in a harbour) keeping a constant line pull in the wire rope.

### DREDGING WINCHES

**CT (Constant Tension)** to make easier the dredge positioning by improving the maneuvering capability. The dredge is able to move forwards or backwards by setting the line pull of each winch by a remote control.

### WINCHES FOR FISHING TRAWLERS

**AOPS (Automatic Overload Protection System)** to avoid the boat capsizing or the crane structure collapse if the trawl snags on the sea floor. In case of overload, the winch starts to release the rope maintaining a release force equal to the SWL. Once activated in the overload situation, the load may be even lost in the sea.

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