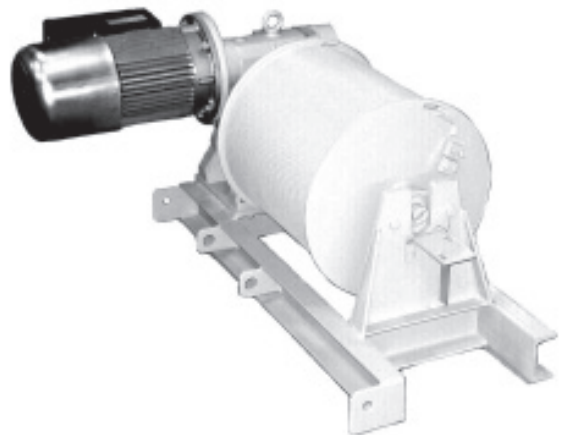




TEREX | COMEDIL

DVF 3 5 D1

Trolley Drive Unit




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Chapter 10


1

GENERAL INFORMATION

1.1 DIMENSIONS AND WEIGHTS


	DESCRIPTION	LENGTH	QUANTITY	WEIGHT
	<i>TROLLEY WINCH DVF 3 5 D1</i>	0.83 m (2' 9")	1	220kg (485 lbs) (without rope)
		WIDTH		
		1.14 m (3' 9")		
		HEIGHT		
		0.53 m (1' 9")		

1.2 PERFORMANCES

	DVF 3 5 D1	0 ⇨ 6 ⇨ 32 ⇨ 64 m/min	5 kW
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U.S. Customary units

	DVF 3 5 D1	0 ⇨ 20 ⇨ 105 ⇨ 210 ft/min	5 kW
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1.3 TECHNICAL SPECIFICATIONS

A variable-frequency trolley traversing winch controlled by a three-phase A.C. motor, which allows jerk-free accelerations and decelerations, thus ensuring a smooth load movement.

The inverter is fitted to the motor.

Motor

Feeding:	Three-phase A.C. 0-400 V 0-100 Hz
Model:	TI HFV 112M4230.400 -B5 E82MV402-4
Rated power:	4 kW (at 1400 rpm)
Cooling:	self-ventilated

Reduction gear

Model:	VF130 A56 P112 B5 B3
Nominal output torque:	960 Nm (704 lbs.ft) (at 1400 rpm)
Reduction:	1:56
Lubrication:	Oil bath

Drum

Groove bottom diameter:	398 mm (15.67 in.)
Flange diameter:	433 mm (17.05 in.)
Length:	473 mm (18.62 in.)
Rope lay:	Left hand helical
Spoiled rope capacity:	Rope section 1 = 140 m (459 ft); Rope section 2 = 74 m (243 ft)

Rope

Diameter:	7 mm
Minimum breaking strain:	38.5 kN (8654 lbs)
Spiral:	Right hand regular lay

Service brake

Model:	HFV V06, G6
Feeding:	24 V DC
Braking torque:	18 Nm (13 lbs.ft)

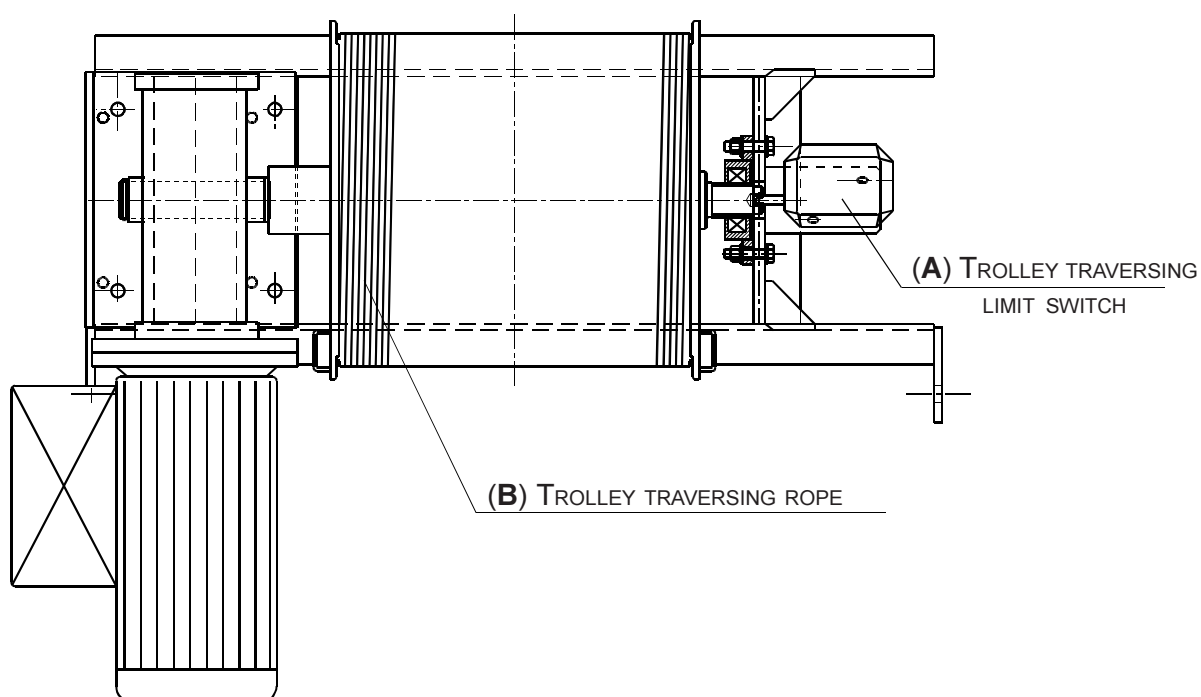
1.3.1 Limiting devices and ropes

The DVF 3 5 D1 trolley winch is provided with trolley traversing limit switch **(A)** (picture 1.3.1).

Trolley traversing rope **(B)** is usually supplied already coiled on the winch drum (picture 1.3.1).



For the operation, adjustment and maintenance of these components, refer to the main chapters of the crane operation manual.



Picture 1.3.1

1.4 BRAKE SETTING



A correct periodical maintenance ensures the good running of the brake in the long run.

1.4.1 Air gap registration

Verify, at regular intervals, that the air-gap falls within the values stated in table 1.4.1.

Excessive air-gap value, deriving from friction lining wear, would result in a decrease of the braking torque even down to zero, increase the brake noise level and even compromise the electric release of the brake itself.

Adjust the air-gap, also with fan cover in place, acting on self-locking nut (45) (picture 1.4.1) checking that the pitch values are:

- 1 mm (0.04 inches) for motor size 63
- 1.25 mm (0.05 inches) for motor size 71 and 80,
- 1.5 mm (0.06 inches) for motor size 90, 110 and 112
- 1.75 mm (0.07 inches) for motor size 132 and 160S

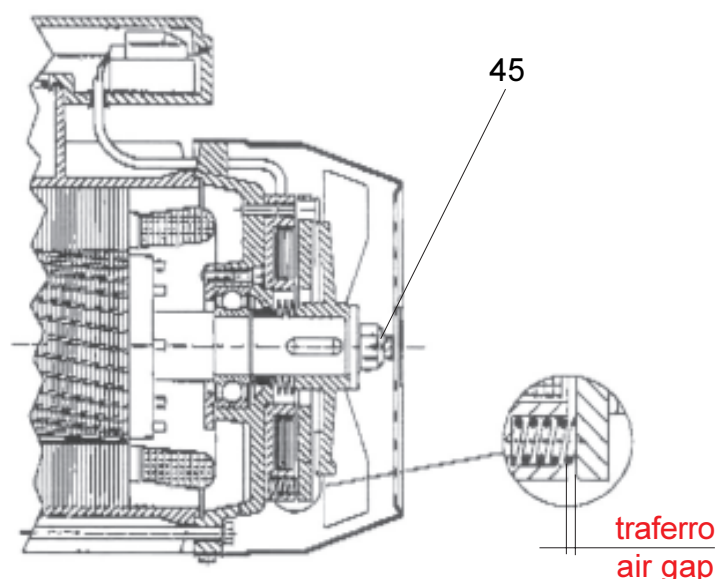


After several air-gap adjustments verify that the thickness of the friction surface is not lower than the minimum value stated in table 1.4.1; if necessary, replace the brake anchor.

Brake size	Motor size	Air-gap		Min. lining thickness	
		[mm]	[in.]	[mm]	[in.]
V 02	63	0.25 ÷ 0.45	0.01 ÷ 0.02	1	0.04
V03	71	0.25 ÷ 0.45	0.01 ÷ 0.02	1	0.04
V04	80	0.25 ÷ 0.5	0.01 ÷ 0.02	1	0.04
V05, G5	90	0.25 ÷ 0.5	0.01 ÷ 0.02	1	0.04
V06, G6	100, 112	0.3 ÷ 0.55	0.01 ÷ 0.02	1 - 4,5*	0.04 - 0.18*
V07, G7	132, 160S	0.35 ÷ 0.6	0.01 ÷ 0.02	1	0.04

(*) VALUE FOR VG6

Table 1.4.1



Picture 1.4.1

SPARE PARTS**Indice - Index - Sommaire - Inhaltsangabe**

PARTI DI RICAMBIO - SPARE PARTS - PIECES DE RECHANGE - ERSATZTEILE				
CODICE DI GRUPPO	DESCRIZIONE	DESCRIPTION	DESIGNATION	BEZEICHNUNG
242466040	Argano carrello DVF 3 5 D1	Trolley winch		
345071010	Riduttore VF130 A	Reduction gear		
841030007	Gruppo motore - freno TI HFV	Motor-brake unit		



**RICAMBI
SPARE PARTS
PIECES DE RECHANGE
ERSATZTEILE**

**Istruzioni per l'uso
Instructions for use
Mode d'emploi
Gebrauchsanleitung**

A	B	C	D	E	F	G
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POS.	CODICE	Q.TA'	DESCRIZIONE	DESCRIPTION	DESIGNATION	BEZEICHNUNG
243501010			TRASLAZIONE MOTRICE TAD 1RP 2M3	DRIVE TRAVELLING BOX		
1	346202001	1	Chiusura per scatola motrice	Cover		
2	840206005	2	Cusc. 22219 E TVPB (95 x 170 x 43)	Bearing		
3	346903040	1	Perno mot. 110 x 293	Motor pin		
4	347201010	1	Flangia attacco riduttore	Reduction gear		
5	845257001	1	Riduttore 1/51,7	Reduction gear		

Colonna A: posizione di riferimento su disegno d'insieme

Colonna B: codice particolare

Colonna C: quantità particolare

Colonna D: descrizione in lingua italiana

Colonna E - F - G: descrizione nelle varie lingue

Column A: part reference number on the assembly drawing

Column B: part code

Column C: part quantity

Column D: Italian designation

Column E - F - G: designations for the various languages

Colonne A: repère sur dessin d'ensemble

Colonne B: référence particulière

Colonne C: quantité particulière

Colonne D: description en italien

Colonne E - F - G: description dans les autres langues

Kolonne A: Referenznummer auf der Gesamtzeichnung

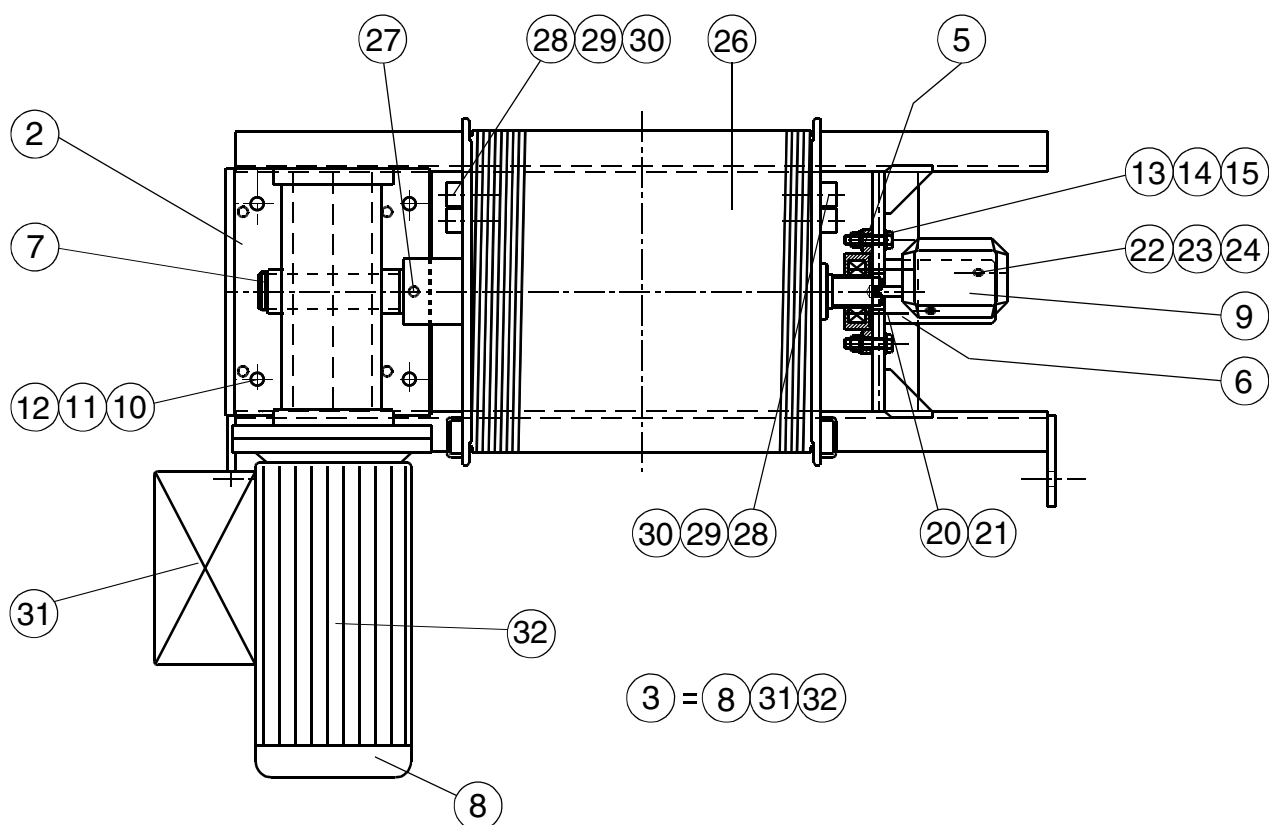
Kolonne B: Einzelheiten - Code

Kolonne C: Anzahl Einzelheiten

Kolonne D: Beschreibung in italienisch

Kolonne E - F - G: Beschreibung in verschiedenen Sprachen

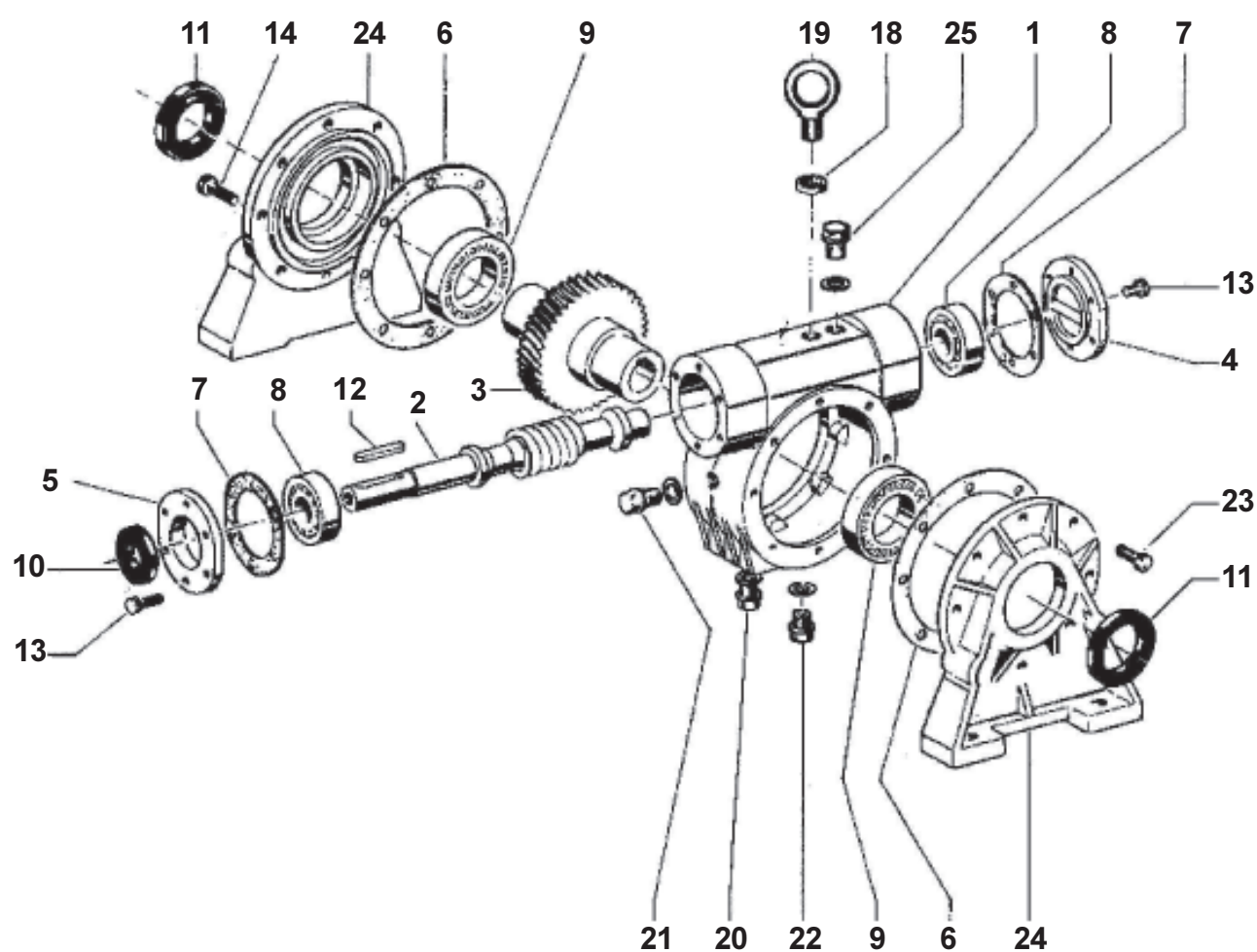
DVF 3 5 D1
ARGANO CARRELLO
TROLLEY WINCH





POS.	CODICE	Q.TA'	DESCRIZIONE	DESCRIPTION	DESIGNATION	BEZEICHNUNG
242466040		ARGANO CARRELLO DVF 3 5 D1		TROLLEY WINCH		
1						
2	345071010	1	RIDUTTORE VF130A	REDUCTION GEAR		
3	841030007	1	MOTORE COMPLETO M.FV TI HFV 112M4230.400-50 B5 E82MV402	MOTOR		
4						
5	840212001	1	SUPPORTO "Y" PER FLANGIA	SUPPORT		
6	326702018	1	SQUADRETTA PER FINECORSA	SUPPORT		
7		1	ALBERO LENTO	SHAFT		
8		1	BLOCCO FRENO	BRAKE UNIT		
9	832106002	1	FINECORSO 1:50/4	LIMIT SWITCH		
10	880133020	4	VITE TE 8,8 14 x 60 Z	SCREW		
11	881224014	4	DADO ALTO CL.10 M14 Z	TALL NUT		
12	881732006	8	RONDELLA PIANA 6,8 M14 Z	PLANE WASHER		
13	880133106	2	VITE TE 8,8 12 x 60 Z	SCREW		
14	881732005	4	RONDELLA PIANA 6,8 M12 Z	WASHER		
15	881224013	2	DADO ALTO CL.10 M12 Z	TALL NUT		
16						
17						
18						
19						
20	880133087	2	VITE TE 8,8 8 x 35 Z	SCREW		
21	881732003	2	RONDELLA PIANA 6,8 6592 M8 Z	PLANE WASHER		
22	880133078	2	VITE TE 8,8 5 x 35 Z	SCREW		
23	881732001	4	RONDELLA PIANA 6,8 M5 Z	PLANE WASHER		
24	881023001	2	DADO MEDIO CL.8 M5 Z	MEAN NUT		
25						
26	446003023	1	TAMBURO CA 398 473 435 F7	DRUM		
27	880433001	2	VITE ST 8,8 8 x 14 N	SCREW		
28	880133172	8	VITE TE 8,8 6 x 35 Z	SCREW		
29	881732002	8	RONDELLA PIANA 6,8 M6 Z	PLANE WASHER		
30	883346102	4	MORSETTO F6-F7	CLAMP		
31	831599002	1	COMPLESSIVO INVERTER- RESISTENZE	INVERTER- RESISTORS GROUP		
32	841020063	1	COMPLESSIVO MOTORE-FRENO SENZA INVERTER	MOTOR-BRAKE GROUP (NO INVERTER)		

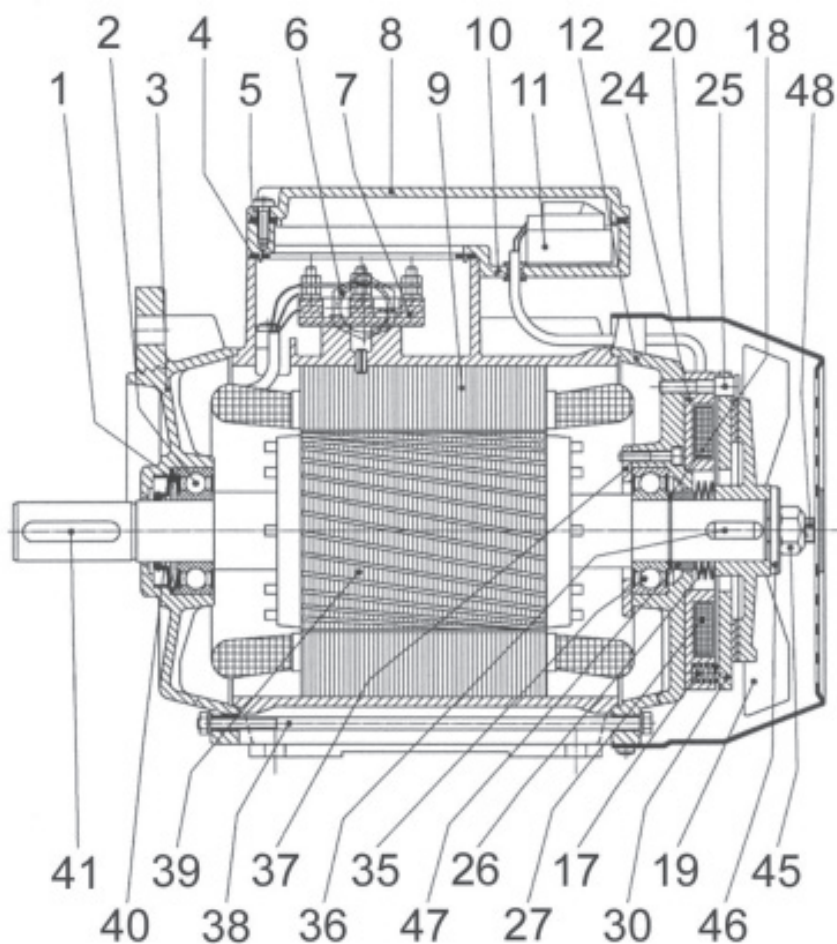
RIDUTTORE VF130A
REDUCTION GEAR





POS.	CODICE	Q.TA'	DESCRIZIONE	DESCRIPTION	DESIGNATION	BEZEICHNUNG
345071010			RIDUTTORE VF130A	REDUCTION GEAR		
1		1	CASSA	CASING		
2		1	VITE SENZA FINE	SCREW		
3		1	CORONA ELICOIDALE	CROWN		
4		1	CAPPELLOTTO DI CHIUSURA	CAP		
5		1	CAPPELLOTTO DI CHIUSURA PER ANELLO	CAP		
6		2	GUARNIZIONE CASSA	GASKET		
7		2	GUARNIZIONE CAPPELLOTTO	GASKET		
8		2	CUSCINETTO	BEARING		
9		2	CUSCINETTO	BEARING		
10		1	ANELLO DI TENUTA	O-RING		
11		2	ANELLO DI TENUTA	O-RING		
12		1	LINGUETTA	TONGUE JOINT		
13		12	VITE A TESTA ESAGONALE	SCREW		
14		8	VITE A TESTA ESAGONALE	SCREW		
15						
16						
17						
18		1	DISTANZIALE PER GOLFARE	SPACER		
19		1	GOLFARE M14	EYEBOLT		
20		1	TAPPO CHIUSURA M14	PLUG		
21		1	TAPPO DI LIVELLO	OIL WINDOW		
22		1	TAPPO DI SCARICO	DRAIN PLUG		
23		8	VITE A TESTA ESAGONALE	SCREW		
24		2	COPERCHIO CON PIEDI	COVER		
25		1	TAPPO DI CARICO E SFIATO	OIL FILLER/DRAIN PLUG		

MOTORE-FRENO
MOTOR-BRAKE





POS.	CODICE	Q.TA'	DESCRIZIONE	DESCRIPTION	DESIGNATION	BEZEICHNUNG
841020077			MOTORE B5 HFV	B5 HFV MOTOR		
1			Molla di precarico	Preload spring		
2			Cuscinetto lato comando	Drive end bearing		
3			Scudo lato comando	Drive end endshield		
4			Guarnizione scatola morsettiera	Terminal box gasket		
5			Guarnizione coperchio scatola morsettiera	Terminal box cover gasket		
6			Bocchettone pressacavo	Cable gland		
7			Morsettiera	Terminal block		
8			Coperchio scatola morsettiera	Terminal box cover		
9			Carcassa con pacco statore avvolto	Casing with stator windings		
10			Scatola portamorsettiera	Terminal box		
11			Raddrizzatore	Rectifier		
12			Scudo lato opposto comando	Non - drive end endshield		
17			Molla di frenatura	Braking spring		
18 (A)			Anello elastico di sicurezza	Safety circlip		
19			Ventola - disco di frenatura	Fan - brake disc		
20			Copriventola	Fan cover		
24			Elettromagnete	Electromagnet		
25			Vite di fissaggio	Fastening screw		
26			Molle a tazza di contrasto	Contrast spring		
27			Bobina toroidale	Toroid coil		
30			Ancora freno con guarnizione d'attrito	Brake anchor with friction surface		
35			Cuscinetto lato opposto comando	Non - drive end bearing		
36			Linguetta	Key		
37 (A)			Flangia di bloccaggio assiale albero motore	Flange for driving shaft axial fastening		
38			Tirante e dado esagonale	Puller and nut		
39			Rotore con albero	Rotor with shaft		
40 (A)			Anello di tenuta	Seal ring		
41			Linguetta	Key		
45			Dado autobloccante	Self - locking nut		
46			Rondella bisellata	Chamfered washer		
47			Distanziale	Spacer		
48			Vite senza testa con esagono incassato	Grub screw		
49	841100530	1	Freno completo	Brake		
50	841020078	1	Motore senza inverter	Motor without inverter		
51	831599005	1	Inverter	Inverter		
52	831899028	1	Modulo funzione I/O standard	I/O standard module		

(A) A richiesta / **On request**



3.3.1 Daily inspections

The operator, a qualified and trained person, is the appointed person to examine deficiencies and to determine whether they constitute a hazard.

When entering the crane slewing upper part, the first visual examination shall be performed and the general conditions of the trolley winch inspected for possible deficiencies.

3.3.2 Weekly inspections

Visually inspect the trolley winch for possible defects, make sure it works correctly and check the wear conditions of the brake pads.

3.3.3 Monthly inspections

- A) Check that the winch is in good condition;
- B) Check the brake discs for evident signs of wear and damage of their components; adjust the brake pads as necessary;
- C) Check the reduction gear for proper oil level and grease the bearing (Y-support for flange ⇒ para. 3.5);
- D) Using low pressure compressed air remove the dust from **inside** the electrical **boxes and panels**;
- E) Inspect the motor and cooling fan for obvious defects or damage;
- F) Inspect the gearmotor-to-frame and frame-to-crane structure for proper connection;
- G) Likewise, inspect the motor for obvious damage or short circuit, the electric wires for right connection or visible signs of damage.

3.3.4 Annual inspections

- A) Perform the non-destructive test on the winch brake discs;
- B) Inspect the bearing (Y-support for flange), clean it and check it for evident signs of damage;
- C) Replace any fastening equipment which is damaged;
- D) Treat corrosion on all components. Repaint as necessary.



ADVISE: At three-year intervals at the latest, even with the drive unit not in regular use, replace the oil in the reduction gear with that recommended at para 3.5 .



Important Advise

*Should extraordinary events happen, such as long periods of driving rain with lightening striking near the crane, protracted work in a corroding ambient or in particularly foul areas, etc. **MORE FREQUENTLY AND CAREFULLY INSPECT** the electrical equipment for evident signs of wear. In particular, check the cables running up the tower and possible leakages of water into the electrical boxes.*

3.4 SPECIAL MAINTENANCE

Special maintenance tasks shall be accomplished by skilled technicians who have been properly trained and have the experience to accomplish these tasks.



Specialists only shall be appointed to carry out the following operations:

- A) Repair of electronic components and calibration of electronic systems which operate the drive unit motion and mechanisms;
- B) Adjustment of the winch and the brake;
- C) Overhaul of the electric motor and the reduction gear;
- D) Overhaul of the winch and replacement of the bearing (Y-support for flange);
- E) Repair of the electric system;
- F) Non-destructive testing for structural damage;
- G) Repair and replacement of structural parts of the winch.

3.5 LUBRICATION AND OILS

PARTS TO BE SERVICED	LUBRICANT
Reduction gear	IP "TELIUM OIL VSF" SHELL "TIVELA OIL SC320" BP "ENERGOL SG-XP 220" ESSO "GLYCOLUBE RANGE 220"
Bearing ("Y"support)	SKF "LGEP 2"



Check the reduction gear for proper oil level after any repair performed inside the trolley winch.