

Electric Chain Hoist **Model CPV/F**

Capacity 125kgs - 2000kgs

OPERATING, MAINTENANCE, SPARE PARTS AND WIRING DIAGRAMS



Yale[®]
Industrial Products



Yale® Electric Chain Hoist - CPV/F

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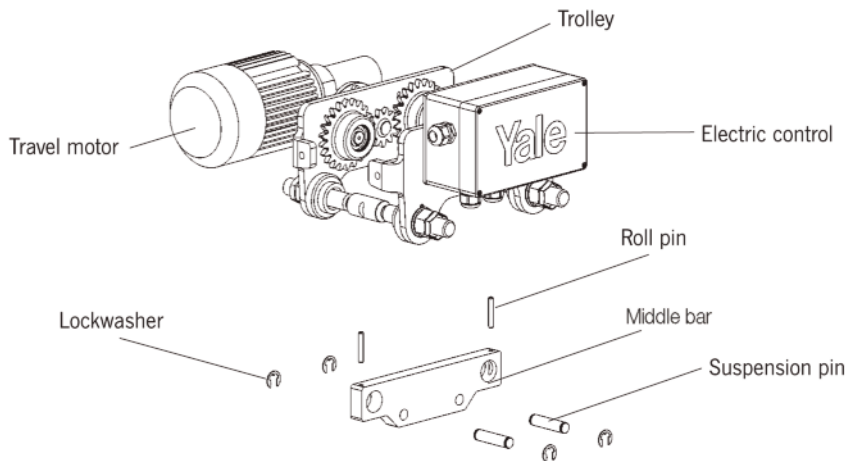
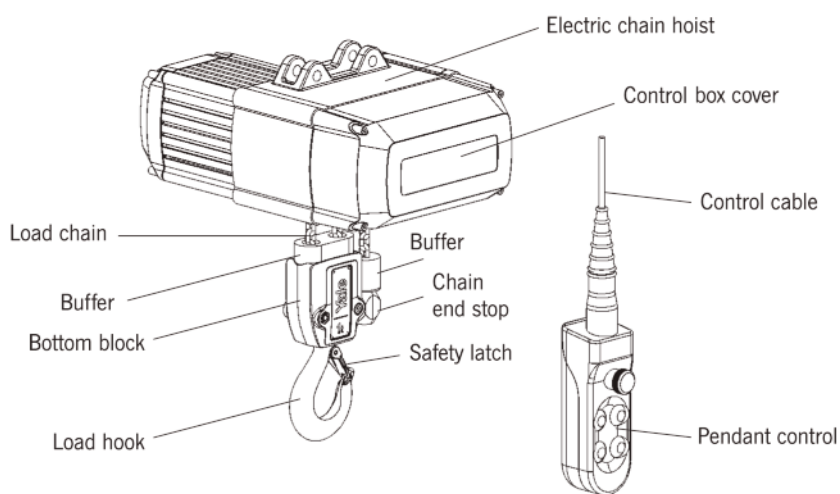


Fig. 1



Technical data electric chain hoist							Technical data electric trolley				
Model	Capacity kgs	Number of chain falls	Motor rating ED %	Motor kW	*Lifting speed(s) m/min	FEM group	Beam widths mm	Curve radius min. m	**Travel speed(s) m.min	Motor kW	Motor rating ED %
CPV 2-8 CPV/F 2-8	250	1	50 17 / 33	0.37 0.09 / 0.37	8 2 / 8	1 Am	58 - 180 or 180 - 300	0.9	18 4.5 / 18	0.18 0.06 / 0.18	40 20 / 40
CPV 5-4 CPV/F 5-4	500	2	50 17 / 33	0.37 0.09 / 0.37	4 1 / 4	1 Am	98 - 180 or 180 - 300	0.9	18 4.5 / 18	0.18 0.06 / 0.18	40 20 / 40
CPV 5-8 CPV/F 5-8	500	1	50 17 / 33	0.75 0.18 / 0.75	8 2 / 8	1 Am	98 - 180 or 180 - 300	0.9	18 4.5 / 18	0.18 0.06 / 0.18	40 20 / 40
CPV 10-4 CPV/F 10-4	1000	2	50 17 / 33	0.75 0.18 / 0.75	4 1 / 4	1 Am	98 - 180 or 180 - 300	0.9	18 4.5 / 18	0.18 0.06 / 0.18	40 20 / 40
CPV 10-8 CPV/F 10-8	1000	1	50 17 / 33	1.5 0.37 / 1.5	8 2 / 8	1 Am	98 - 180 or 180 - 300	1.15	18 4.5 / 18	0.18 0.06 / 0.18	40 20 / 40
CPV 20-4 CPV/F 20-4	2000	2	50 17 / 33	1.5 0.37 / 1.5	4 1 / 4	1 Am	98 - 180 or 180 - 300	1.15	18 4.5 / 18	0.18 0.06 / 0.18	40 20 / 40

*Changing the gear ratio results in different lifting speeds. **Optionally available with 11m/min.



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1. GENERAL INFORMATION

Attention: All users must read these operating instructions carefully prior to the initial operation. These instructions are intended to acquaint the user with the hoist / trolley and enable them to use it to the full extent of its intended capabilities.

The operating instructions contain important information on how to operate the hoist / trolley in a safe, correct and economic way. Acting in accordance with these instructions helps to avoid dangers, reduce repair costs and downtime and to increase the reliability and lifetime of the hoist / trolley.

Anyone involved in doing any of the following work with the hoist / trolley must read the operating instructions and act accordingly:

- Operation, including preparation, trouble shooting and cleaning.
- Maintenance, inspection, repair.
- Transport.

Apart from the operating instructions and the Health & Safety Regulations, which are valid for the respective country and area where the hoist / trolley is to be used, the commonly accepted regulations for safe and professional operation must be adhered to.

The user is responsible for the proper and professional instruction of the operating personnel.

Every unit leaving the factory is furnished with a test certificate that shows the serial number of the hoist / trolley. This certificate has to be filed together with the inspection manual to form a service file which should be maintained throughout the life of the hoist.

1.1 DECIBEL LEVELS

The continuous sound level at the place of work is equal to >73dB. The measurements were taken at a distance of 1 m from the hoist at 9 positions in accordance with DIN 45635, precision class 2.

2. CORRECT OPERATION

Maximum capacity:

The Yale electric chain hoist series CPV/F has been designed to lift and lower loads up to the rated capacity. The lifting capacity indicated on the hoist / trolley is the maximum safe working load which must not be exceeded.



Fig. 2

Danger zones:

- Do not lift or transport loads while personnel are in the danger zone.
- Do not allow personnel to pass under a suspended load (Fig. 2).
- After lifting or tensioning, a load must not be left unattended for a long period of time.
- Start moving the load only after it has been attached correctly and all personnel are clear of the danger zone.

Attaching the hoist / trolley:

The operator must ensure that the hoist / trolley is attached in a manner that does not expose himself or other personnel to danger by the hoist, trolley, chain(s) or the load.



Temperature range

The units can be operated in ambient temperatures between -10°C and + 40°C. Consult Yale in the case of extreme working conditions.

Note: At ambient temperatures below 0°C check the brake is not frozen.

Theoretical service life

The electric chain hoist is classified to group 1 Am according to FEM 9.511. Basic principles for the calculation of the theoretical remaining service life are given in BGV D8. When the theoretical remaining service life has been reached, the electric chain hoist should be subjected to a general overhaul (also refer to para. 8 maintenance).

Regulations

The Accident Prevention Act and / or Safety Regulations of the respective country for using manual and electric hoists must be strictly adhered to.

Maintenance / repair

In order to ensure correct operation, not only the operating instructions, but also the conditions for inspection and maintenance must be complied with. If defects are found stop using the hoist / trolley immediately.

Attention: Before starting work on electrical components switch OFF the main current switch and secure it against unintentionally being switched back on.

3. INCORRECT OPERATION

- Do not exceed the rated capacity of the hoist / trolley.
- Do not lift or transport tight or jammed loads.
- Excessive inching operation by short and frequent actuation of the control buttons should be avoided.
- Do not use the hoist / trolley for the transportation of people (Fig. 3).
- Welding on hook and load chain is strictly forbidden. The load chain must never be used as a ground connection during welding (Fig. 4).
- Side pull, i.e. lateral load on either housing or bottom

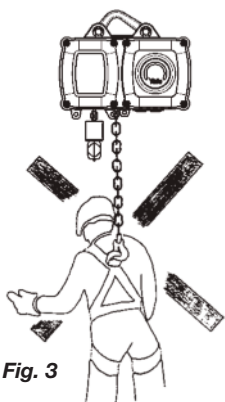


Fig. 3

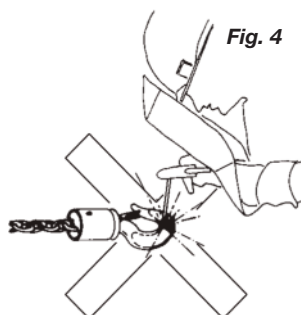


Fig. 4

block (Fig. 5) is not permitted.

Lift only when the load chain forms a straight line between suspension bracket and hook.

- The load chain must not be used for lashing purposes (slings) (Fig. 6).

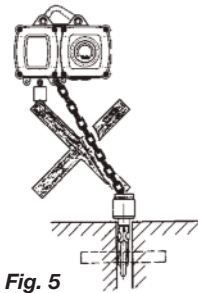


Fig. 5



Fig. 6

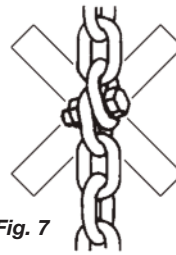


Fig. 7



Fig. 8

- Do not knot or shorten the load chain by using bolts, screws, screwdrivers or other devices (Fig. 7). Do not repair chains installed in the hoist.
- Do not remove the safety latch from the load hook (Fig. 8).
- Do not use the chain end stop as an operational limit device (see Fig. 1 - chain end stop).
- Do not throw the hoist or trolley down. Always place it with care on the ground.
- The unit must not be operated in potentially explosive atmospheres.
- The longitudinal angle of the runway beam must not exceed 3%.
- The adjustment of the trolley width must not be extended in order to e. g. obtain a greater radius curvature.
- Turning of loads under normal operating conditions is not allowed, as the bottom blocks of the hoists are not designed for this purpose. If turning of loads is required as standard, the bottom blocks have to be provided with swivel hooks supported by axial bearings. In case of queries, consult the manufacturer.

4. ASSEMBLY

4.1 INSPECTION BEFORE ASSEMBLY

- Check for transport damage. Check for completeness.
- Check that the capacity indication on hoist and bottom block match.

4.2 ELECTRIC CHAIN HOIST WITH SUSPENSION BRACKET (Standard version)

The standard version of the Yale electric chain hoist is provided with a suspension bracket. The bracket is connected with the housing of the chain hoist by means of two pins. Make sure that the load hook – irrespective of the reeving – is always positioned vertically under the suspension bracket.

On single fall units, the suspension bracket is installed with the long bracket side to the right, on dual fall units with the long bracket side to the left (see Fig. 11).

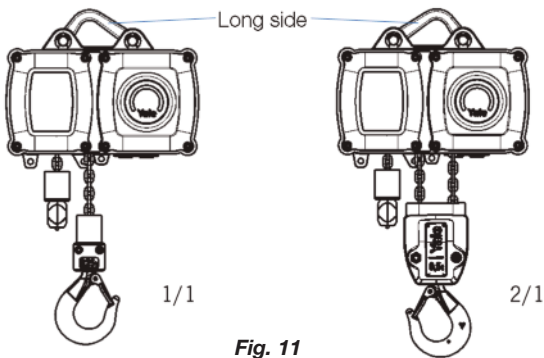


Fig. 11

Attention: Do not forget to fit the lock washers after installation of the suspension bracket.

The load bearing structure must be calculated to safely accept all operational forces.

4.3 ELECTRIC CHAIN HOIST WITH TROLLEY

The trolleys are supplied pre-assembled for beam width A or B (see table below). This is indicated on the name-plate. Before installation ensure that the trolley width is correct for the intended carrying beam.

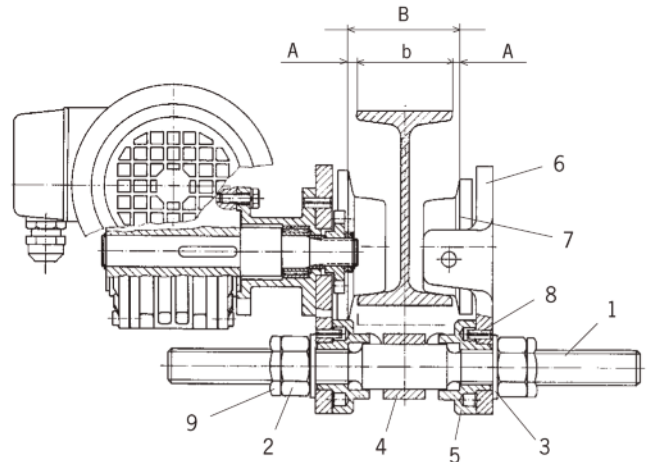
Beam range	Flange range mm		Flange thickness mm maximum
	minimum	maximum	
A	98	180	27
B	180	300	27

Tab. 1

Assembly of the trolley (see Fig. 12)

1. Unscrew the locking nuts (item 9) and hex. nuts (item 2) from the crossbars (item 1) and remove both side plates (item 6) from the trolley.
2. Measure flange width of the beam (Fig. 11-measurement "b").
3. Adjust measurement "B" between the shoulders of the round nuts (item 5) on the threaded crossbars (item 1). Ensure that the 4 bores in the round nuts face towards the outside. Adjust the measurement "B" to equal measurement "b" plus 4mm. Measurement "A" must be 2 mm on either side and the suspension traverse (item 4) must be centred between the round nuts.
4. Replace one side plate (item 6), ensuring that the roll pins (item 10) engage into one of the bores in the round nuts (item 8). To achieve this, it may be necessary to rotate the round nuts slightly.
5. Replace the washers (item 3) and tighten the hex. nuts (item 2). Screw on the locknuts (item 9) fingertight and tighten a further 1/4 to 1/2 turn. **Attention:** The locknuts must always be fitted.

6. Loosely replace the second side plate (item 6) on the cross bars (item 1). The washers (item 3), hex. nuts (item 2) and locknuts (item 9) can be fitted loosely.
7. Raise the complete pre-assembled trolley to the carrying beam.



No. Description

- | | |
|--------------------|------------------|
| 1. Crossbar | 6. Side plate |
| 2. Hex. nut | 7. Trolley wheel |
| 3. Washer | 8. Roll pin |
| 4. Centre traverse | 9. Locknut |
| 5. Round nut | |

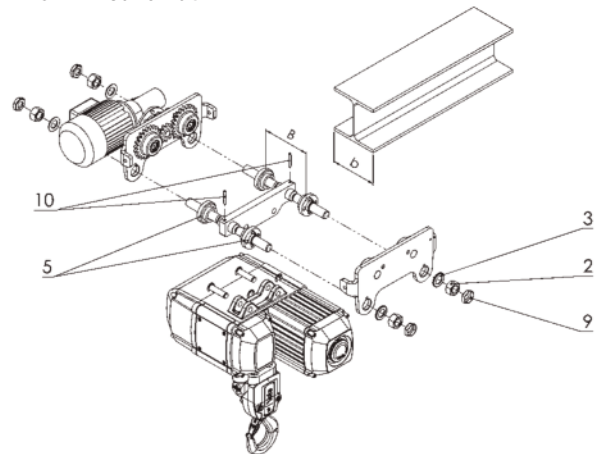
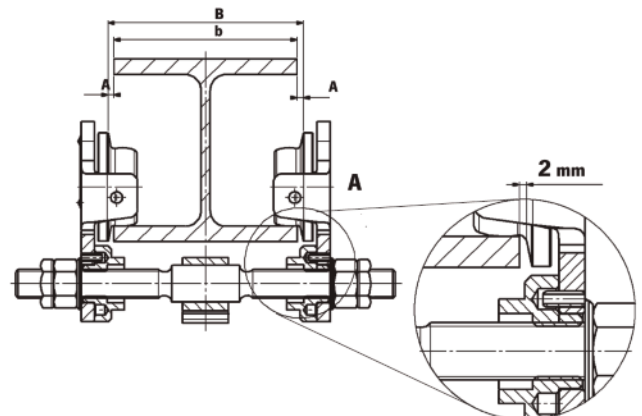


Fig. 12





Yale® Electric Chain Hoist - CPV/F

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8. Engage the second side plate (item 6) ensuring that roll pins (item 10) engage into one of the bores in the round nuts (item 8). To achieve this, it may be necessary to rotate the round nuts slightly.

9. Tighten the hex. nuts (item 2) on the second side plate. Tighten locknuts (item 9) finger tight and then, a further 1/4 to 1/2 turn.

Attention: The locknuts must always be fitted.

10. By traversing the trolley, check the following:

- A clearance of 2mm is maintained on each side between the trolley wheel flanges and the beam outer edge.
- The suspension traverse is centred below the beam.
- All 4 locknuts (item 9) are fitted.

11. Model CPV/F-VTG only:

To fit the hand chain, position the slot on the outer edge of the hand chain wheel below the chain guide. Place any one link of the endless hand chain vertically into the slot and turn the hand chain wheel until the link has passed the chain guides on both sides. Please note that geared trolleys are moved by operating the hand chain.

Attention: Do not twist the hand chain when fitting.

Shortening or extending the hand chain. (Model CPV/F with hand chain drive only)

The length of the hand chain should be adjusted so that the distance to the floor is 500 - 1000mm.

1. Identify the split link in the hand chain and open by bending to the side. This allows the adjacent link to be removed.
2. Shorten or extend the hand chain as required.
Note: The number of removed or added chain links must always be even.
3. Close the open connecting link by bending back to the centre.

4.4 ELECTRICAL CONNECTION

Attention!

Work at electrical installations may be carried out only by qualified electrical engineers. The local regulations have to be strictly observed, e.g. EN 60204-32 / VDE 0113.

Preparation

- Before beginning work on electrical components, the mains current switch must be switched OFF and secured against unintentionally being switched back on.
- Before connecting the chain hoist, ensure that the electrical data on the nameplate match the local specifications.
- The mains supply cable must be an insulated cable with 4 flexible leads. The ground (earth) lead must be longer than the live leads. For wire cross-section and fusing of the various models, see tables on page 7. Cable ends have to be provided with end sleeves.
- The length of the pendant control cable is determined by working conditions. Attach the tension relief wire so that the pendant control cable hangs free of the load.
- Wiring and terminal connecting diagrams are included with the hoist and shown on the inside of the control cover.

Mains supply connection

1. The mains supply cable must be connected to the electric chain hoist before it is connected to the mains supply.
2. On chain hoists with an electric trolley (CPV/F-VTE), the three phases of the mains supply are to be connected to the terminal strip within the control box on the trolley. The ground/earth wire is then to be connected to a special protective terminal inside the control box of the hoist.
3. On chain hoists without electric trolley, the mains supply cable is connected to the circuit board, located behind the housing cover (Fig. 1). The U-type cable shoe of the ground/earth wire must be screwed to the core lamination (do not forget the serrated washer).
4. After removing the terminal box cover, connect the wiring as shown on the wiring diagram attached.
5. After replacing the terminal box cover, connect the other end of the supply cable to the disengaged mains switch and power supply system respectively.
6. Check the motor's direction of rotation.
The wiring diagram included has been drawn for a normal, clockwise rotating installation. Should the user's mains supply not fulfil these requirements, e.g. the hoist lowers when lift is selected (or visa versa), switch the unit OFF immediately and exchange two of the three phase connections in the terminal box.

Under no circumstances may the wiring in the pendant control be changed to compensate incorrect phase connections.



Motor data CPV 230/400V - 3Ph - 50Hz

Model	P kW	n 1/min	ED %	Kind of connection	I _n A	Efficiency of motor	Number of starts c/h	Protection degree	Motor class	Fuse (slow) A
CPV 2-8 CPV 5-4	0.37	2890	50	Y / delta	1.38/0.8	84%	300	IP55	S3	6
CPV 5-8 CPV 10-4	0.75	2890	50	Y / delta	2.8/1.6	85%	300	IP55	S3	10
CPV 10-8 CPV 20-4	1.5	2860	50	Y / delta	5.5/3.2	85%	300	IP55	S3	16

Motor data CPV/F 400V - 3Ph - 50Hz

Model	P kW	n 1/min	ED %	Kind of connection	I _n A	Efficiency of motor	Number of starts c/h	Protection degree	Motor class	Fuse (slow) A
CPV/F 2-8 CPV/F 5-4	0.09/0.37	640/2850	17/33	Y / Y	0.55/1.0	59%/78%	200/100	IP55	S3	6
CPV/F 5-8 CPV/F 10-4	0.18/0.75	620/2800	17/33	Y / Y	0.95/2.0	65%/82%	200/100	IP55	S3	10
CPV/F 10-8 CPV/F 20-4	0.37/1.5	640/2850	17/33	Y / Y	1.60/3.3	64%/89%	200/100	IP55	S3	16

Motor data CPV 460V - 3Ph - 60Hz

Model	P kW	n 1/min	ED %	Kind of connection	I _n A	Efficiency of motor	Number of starts c/h	Protection degree	Motor class	Fuse (slow) A
CPV 2-8 CPV 5-4	0.44	3480	50	Y	0.8	85%	300	IP55	S3	6
CPV 5-8 CPV 10-4	0.9	3480	50	Y	1.6	86%	300	IP55	S3	10
CPV 10-8 CPV 20-4	1.8	3450	50	Y	3.2	86%	300	IP55	S3	16

Motor data CPV/F 460V - 3Ph - 50Hz

Model	P kW	n 1/min	ED %	Kind of connection	I _n A	Efficiency of motor	Number of starts c/h	Protection degree	Motor class	Fuse (slow) A
CPV/F 2-8 CPV/F 5-4	0.11/0.44	770/3420	17/33	Y / Y	0.55/1.0	59%/78%	200/100	IP55	S3	6
CPV/F 5-8 CPV/F 10-4	0.25/0.90	740/3360	17/33	Y / Y	0.95/2.0	65%/82%	200/100	IP55	S3	10
CPV/F 10-8 CPV/F 20-4	0.44/1.8	780/3380	17/33	Y / Y	1.60/3.3	64%/89%	200/100	IP55	S3	16



5. FUNCTIONAL CHECK AFTER ASSEMBLY

Prior to initial operation of the hoist, grease the trolley pinions (manual, geared and electric trolleys) and lubricate the load chain when it is not under load (see page 8).

Before the hoist is put into regular service, the following additional inspections must be made:

- Are all screwed connections on hoist and trolley tight and are all locking devices in place and secure?
- Are the end stops on the trolley runway in place and secure?
- Is the chain drive correctly reeved?
- Is the chain end drive correctly reeved?
- Is the chain end stop correctly fitted to the loose end of the load chain (see Fig. 1 - chain end stop)?
- Have all units, equipped with two or more chain falls, been inspected before initial operation for twisted or kinked chains? (The chains of 2-fall hoists may become twisted if the bottom block is rolled over.)
- Has the function of the limit switch been checked? This should be done by running the buffers of the chain end stop bottom block against the limit switch underneath the housing. The lifting/lowering operation must be stopped if the limit does not function.
- Has the brake function when lifting/lowering been checked?
- Have the beam end stops been positioned correctly and securely? Traverse the trolley (if available) the complete length of the trolley runway ensuring that the 2-4mm lateral clearance between the trolley wheel flange and the beam outer edge is maintained at all times.
- Has the chain collector been correctly fitted and does the chain enter and exit the collector freely? Ensure that the chain does not pile up in the centre of the collector.

6. COMMISSIONING

Inspection before initial operation

Each hoist / trolley must be inspected prior to initial operation by a competent person. The inspection is visual and functional. Inspections must ensure that the hoist is safe and has not been damaged by incorrect transport, storage or installation.

Inspections should be made by a representative of the manufacturer or the supplier although the user can assign its own suitably trained personnel. Inspections are instigated by the user and controlled via the Lifting Operations & Lifting Equipment Regulations (L.O.L.E.R.).

Inspection by a crane expert

If the hoist is used as a crane, it has to be inspected and approved by a crane expert before initial operation. This inspection has to be registered in the crane inspection book. The inspection by the crane expert has to be instigated by the user and controlled via L.O.L.E.R.

7. OPERATION

Installation, service, operation

Users delegated to install, service or independently operate the hoist must have had suitable training and be competent. Users are to be specifically nominated by the company and must be familiar with all relevant safety regulations.

Inspection before starting work

Before starting work, inspect the hoist, trolley, chains and all load bearing components every time for visual defects. Furthermore, test the brake and make sure that the load and hoist / trolley are correctly attached by carrying out a short work cycle of lifting, lowering and travelling in both directions. Selection and calculation of the proper suspension point and beam construction are the responsibility of the user.

Installation of load chain

Inspect the chain for sufficient lubrication and visually check for external defects, deformations, superficial cracks, wear or signs of corrosion.

Chain lubrication (see 8.2)

It is the responsibility of the user or the installer to ensure that the load chain is correctly and adequately lubricated before commencing operation.

Inspection of chain end stop

The chain end stop must be connected to the free (idle) chain strand (see Fig. 1 - chain end stop).

Inspection of chain reeving

All units with two or more chain falls should be inspected prior to initial operation for twisted or kinked chains. The chains of 2 fall hoists may be twisted if the bottom block is rolled over (Fig. 9). The load chain has to be installed according to illustration (Fig. 14). Ensure that the welds on the chain links face away from the load sheave.

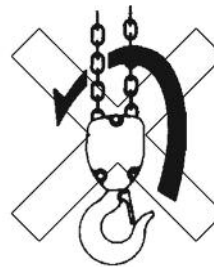


Fig. 9

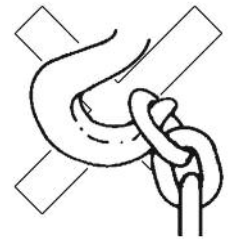


Fig. 10

Inspecting the load hook

Check the load hook for deformations, cracks, damages, abrasion and signs of corrosion.

Inspect the traverse (for trolleys)

Inspect the traverse for correct assembly and visually check for external defects, deformations, superficial cracks, wear or signs of corrosion. Especially, make sure that the roll pins are properly fitted to the centre traverse (Fig. 12).

Check adjustment of trolley width

On chain hoists with trolley (CPV/F-VTP/G/E) check that the clearance between the trolley wheel flange and the beam outer edge is equal on both sides and within the tolerances given (see page 5, Fig. 12).

Enlarging the clearances, e.g. to enable the trolley to negotiate tighter curves, is strictly forbidden.

Traversing the trolley

Plain trolleys:

Push the hoist or attached load.

Attention: Never pull on the pendant control cable. Suspended loads may only be pushed.

Gear trolleys:

By operating the trolley hand chain.

Electric trolleys:

By operating the ► resp. ◀ button. For trolleys with two speeds: The first stage of button depression activates the slow speed. Further depression activates the fast speed. Use the slow speed for short periods only. Consider the braking distance of the trolley. Do not use the beam end stops as operational limit devices.



Attaching the load

Attach the load to the hoist using only approved and certified slings or lashing devices. Never use the load chain as sling chain. The load must always be seated in the saddle of the hook. Never attach the load to the tip of the hook (Fig. 10). Do not remove the safety catch from the load hook.

Lifting / lowering the load

The load is lifted by depressing the ▲ -button, it is lowered by depressing the ▼ -button. For hoists with two speeds: The first stage of button depression activates the slow speed, further depression activates the faster speed. In order to raise the load, always use the lowest available lifting speed. The chain must be loaded at this speed and may not lie slack on the floor. Use the slow speed for short periods only. Do not use the chain ends stop as operational limit device (see Fig. 1).

Emergency stop

All movement can be immediately halted by depressing the red, mushroom shaped button on the pendant control.

Attention: Operating the red emergency button does NOT automatically disconnect the mains supply to the hoist or trolley. To release the emergency stop, rotate the button in an anti-clockwise direction.

End limit switch

This hoist is provided with an end limit switch for the lowest and highest hook position as standard. This limit switch is a safety device and may not be used as operational limiting device.

8. SERVICE

- Service and inspections may only be carried out by a competent person.
- The inspection must determine that all safety devices are present and fully operational and covers the condition of the hoist, lifting gear, accessories and supporting constructions.
- The Yale electric chain hoist CPV/F conform to FEM group 1Am, in accordance with FEM 9.511. This results in a theoretical service lifetime of 800 resp. 400 operating hours under full load. This is equivalent to 10 years under normal operating conditions. After this period the hoist requires a general overhaul. Further information is contained in BGV D6 rep. FEM 9.755.
Attention: Maintenance work requires subsequent function testing with nominal load.

8.1 DAILY CHECKS

1. Visually check the pendant control switch and cable for damage.
2. Function test of brake.
3. Function test of end limit switch.
4. Electric chain hoists with trolley:
 - Check that the trolley runway is free from obstructions.
 - Check that the end stops on the trolley runway are fitted and secure.

INSPECTION AND MAINTENANCE	Initial checks			Periodical checks		
	during commissioning hours	after 50 operating hours	after 200 operating hours	daily hours	after 200 operating hours	annually
Lubricate load chain.	•	•	•		•	
Pendant control and support wire.	•	•		•		
Check oil level.	•	•			•	
Function test of brake.	•			•		
Function test of end limit switch.	•			•		
Function test of overload device.	•					•
Electrical installation and power supply.	•					•
Check for wear in chain drive.		•	•		•	
Inspect chain bolts for cracks.		•				•
Inspect susp. bracket and load hook for cracks/deformation.		•				•
Check screwed connections for tightness.		•				•
Inspect trolley components for cracks/deformation.		•				•
Oil change.			•			•
Inspect motor and transmission of hoist.						•
Inspect motor and transmission of trolley.						•
Adjustment of overload device.						•
Adjustment of brake.						•
Lubricate geared trolley drive.						•

8.2 REGULAR INSPECTIONS, SERVICE AND TESTING

According to prevailing national / international occupational safety and health regulations, hoisting equipment must be inspected at least annually by a competent person. Adverse working conditions may dictate shorter inspection periods. The commissioning and inspection details can be noted on the test certificate delivered with the hoist or on page 14 of this manual.

Repairs may only be carried out by specialist workshops that use original Yale spare parts.

The inspection must determine that all safety devices are present and fully operational and cover the condition of the hoist, lifting gear, accessories and supporting constructions. If required by the Occupational Health and Safety Organisation, the results of the adequate inspections and competent performance of repairs have to be substantiated. If the electric hoist (with capacity of 1 tonne and up) is installed in a carriage, or if the load is moved in one or several directions, the installation is considered as a crane and inspect accordingly.

Attention: Inspections must be - as far as possible - be carried out in an unloaded condition and the hoist / trolley power supply must be disconnected.

8.2 REGULAR INSPECTIONS, SERVICE AND TESTING

The load chains are case-hardened and carry the designations 4 x 12.2 DAT, 5 x 15.1 DAT and 7.1 x 20.5 DAT.

The CPV/F electric hoists are specially designed to use this type of chain. For this reason, only chains that have been approved by the manufacturer may be used in these hoists.

Lubricating the load chain

The load chain is to be lubricated before initial operation and every month, however, latest after 50 operating hours. *Adverse working conditions such as, excessive dust or continued heavy duty can dictate shorter periods between lubrication.*

- Before the chain is lubricated it must be cleaned. Flame cleaning is forbidden. Use only cleansing methods and agents that do not corrode the chain material. Avoid cleansing methods that can lead to hydrogen brittleness, eg. spraying or dipping chain in caustic solvents. Also avoid surface treatments that can hide cracks and flaws or other surface damage.
- The chain must be lubricated in a no-load condition so that lubricant can enter between the links, eg. by dipping in oil.
- Motor oil of the viscosity 100, e.g. Shell Tonna T68 can be used to lubricate the chain. For very dusty applications use a dry lubricant.

Inspecting the load chain for wear

Load chains must be inspected every 3 months or the latest after 200 operating hours. *Adverse working conditions such as, excessive dust or continued heavy duty can dictate shorter periods between lubrication.*

Visually inspect the chain over its full length for damage, deformation, cracks, flaws, elongation, wear or corrosive pitting. Link chains must be replaced when the nominal thickness "d" on any part of the chain has been reduced by more than 10% or when the pitch "t" is elongated by more than 5% or over 11 pitches (11 x t) by 2%. Nominal dimensions and wear limits are shown in the following table 2.

Chains that do not fulfil all requirements must be replaced immediately.

12.2 DAT / B = 5 x 15.1 DAT / C = 7.1 x 20.5 DAT							
Inspection	Dimension	Nominal value mm			Wear limit mm		
		A	B	C	A	B	C
Length over 11 pitches	11 x t	134.2	166.1	225.5	134.8	167.3	226.9
Length of 1 pitch	t	12.2	15.1	20.5	12.4	15.4	20.9
Diameter	d	4	5	7.1	-	-	-
Mean thickness	$\frac{d_1 + d_2}{2}$	4	5	7.1	3.6	4.5	6.4

Tab. 2

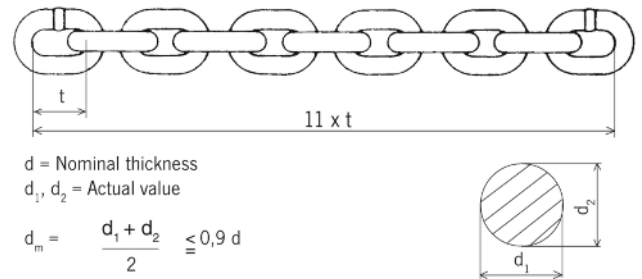


Fig. 13

Replacing the load chain

• 1-fall design

1. Disassemble the bottom block.
Unscrew both screws and separate the housing halves.
 2. Remove the chain end stop.
Remove the 2 screws. The chain is now free.
 3. Fitting the new chain.
Cut the second to last link open on the loose end of the load chain to form a "C". Remove the last link and connect the new chain. The new chain must be fitted so that the welds on the standing links face towards the chain guide and away from the load sheave. Operate the hoist in the lowering direction to feed the chain through the hoist.
 4. Fitting lower block and chain end stop.
Slide the end buffers over the loose ends of the load chain and refit bottom block and chain end stop. The chain end stop must be fitted so that at least 1 link remains free (see Fig. 1).
- Attention:** Install new hex. nuts with clamping part.
5. Before initial operation lubricate the unloaded chain and test all hoist functions under no-load condition.

• 2-fall design

1. Remove the chain anchor bolt.
The chain anchor bolt is situated on the underside of the hoist body. First unscrew the four screws of the chain anchor. Then tap out the anchor bolt with a drift.
- Attention:** Do not damage anchor bolt or bore.
2. Pull the load chain through the bottom block and remove the chain end stop.



3. Fitting the new chain.

Cut the second to last link open on the loose end of the load chain to form a "C". Remove the last link and connect the new chain. The new chain must be fitted so that the welds on the standing links face towards the chain guide in the housing. Operate the hoist in the lowering direction to feed the chain through the hoist.

4. Replace chain end stop.

Slide the buffer pad over the loose end of the load chain and refit the chain end stop ensuring that at least 1 link remains free (see Fig. 1).

Attention: The chain must not be twisted.

Now insert the chain anchor bolt through the side bore. Move the last chain link back and forth while entering the chain anchor bolt to ensure that the chain is not trapped or damaged by the anchor bolt.

Finally attach the chain anchor with the housing again.

Fastening torque for the locking screws:

M6 = 10Nm / M8 = 25Nm

Functional fixed after 60 minutes. Curing time at room temperature is 24hrs.

Attention: Screws should be used only once.

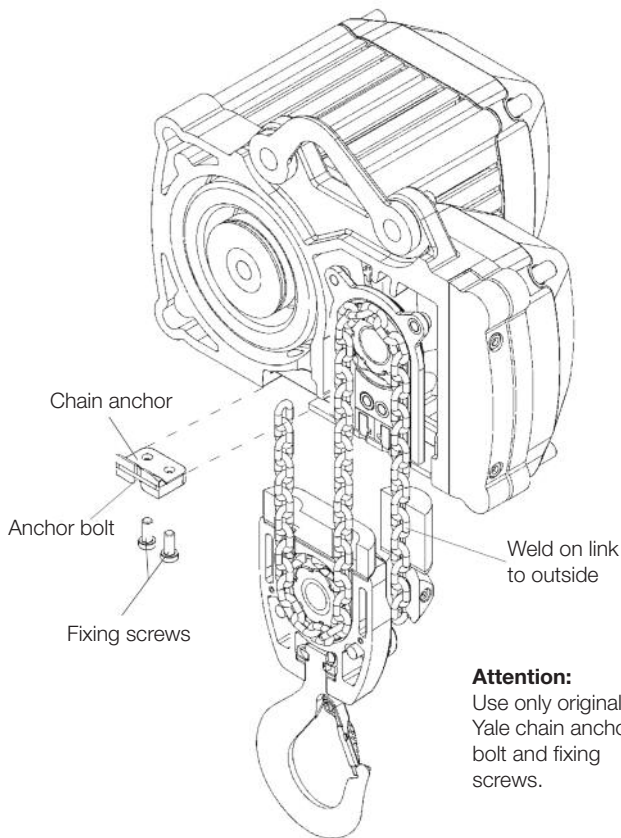


Fig. 14

Attention:
Use only original Yale chain anchor bolt and fixing screws.

6. Assemble the bottom block.

Check the idler sheave for damage. Position the load chain over the idler sheave ensuring that the welds on the standing links are facing away. Now, position the idler sheave bolt with roll pin in the housing half. The roll pin must correspond to the size of the groove. Then, push the idler sheave onto the carrying bolt. The needle bearings should be greased beforehand. Prior to replacing and screwing the second housing half, make sure that the buffer pad is situated correctly in its groove.

7. Functional test.

All units with two or more chain falls must be inspected before every operation for twisted or kinked chains. Chains on 2-fall units may become twisted if the bottom block is rolled over. If a strand is twisted, disconnect it from the hoist and re-thread it correctly. In some cases, it may be necessary to remove the last link.

8. Before initial operation, lubricate the unloaded chain and test all hoist functions under a no-load condition.

8.4 MAINTENANCE LOAD HOOK

Inspect the hooks for deformation, damage, surface cracks, wear and signs of corrosion as required but at least annually. Adverse working conditions may dictate shorter periods. Hooks that do not fulfill all requirements must be replaced immediately. Welding on hooks to compensate for wear or damage is not permissible.

Hooks must not be replaced when the mouth of the hook has opened more than 10% (Fig. 15) or the nominal value of other dimensions has decreased by 5% due to wear. Nominal dimensions and wear limits are shown in the following table. Replace damaged or missing safety catch.

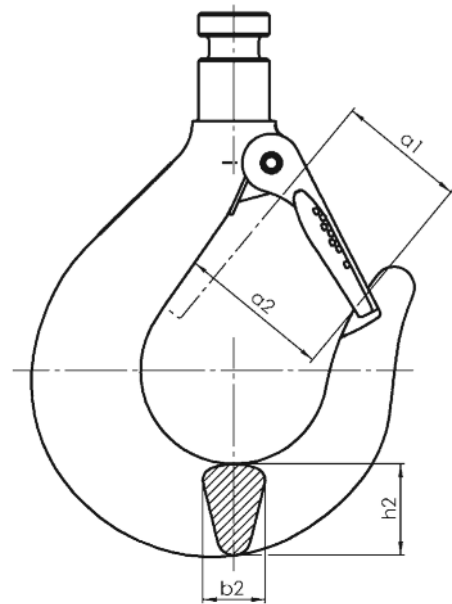


Fig. 15

Inspection	Dim.	CPV 2-8 CPV 5-4/5-8		CPV 10-4 CPV 10-8		CPV 20-4	
		Nominal value mm	Min. value mm	Nominal value mm	Min. value mm	Nominal value mm	Min. value mm
Hook saddle	b ₂	15.0	14.2	21.0	19.9	26.0	24.7
Hook saddle	h ₂	22.1	21.0	29.6	25.2	37.1	35.2
Hook opening	a ₂	38.0	41.8	44.0	48.4	47.6	52.4
Hook opening	a ₁	29.0	31.9	35.8	39.4	40.0	44.0

Tab. 3

8.5 MAINTENANCE TROLLEYS

In particular check the following parts:

- Side plate: For cracks or deformation in particular around the areas of screwed connections.
- Trolley wheels: Visually check for cracks and wear on trolley wheel flanges. Grease the transmission.
- Crossbars: In particular around threaded areas for cracks.
- Fasteners: Check nuts, screws & locking devices for tightness.

8.6 MAINTENANCE OF OVERLOAD PROTECTION DEVICE

Overload protection device

The unit is equipped with an overload protection device as standard. This device is factory set to 135% +/-10% of the rated capacity and prevents overloading of the hoist during lifting of loads. Adjustment and testing of the overload device may only be carried out by authorised competent persons.

The force-limit factor according EN 14492-2:2006 amounts $\phi_{DAL} = 1.35$. The maximum force occurring when the rated capacity limiter operates will be calculated as:

$$F_{LIM} = (\phi_{DAL} \times m_{RC} + m_H - m_{RC}) \times g$$

$$\phi_{DAL} = 1.35$$

m_{RC} = Rated capacity of the hoist (kg)

m_H = Hoist load (kg)

Hoist load m_H : Load which includes all the masses of an equal load to the rated capacity of the hoist, the hoist medium and the fixed load lifting attachments, e.g. hooks, grabs, magnets, lifting beams, vacuum lifters.

g = Acceleration due to gravity (9.81) m/s²

Adjustment of overload device (Fig. 16.1)

Attention: The adjustment of the overload device may only be done by authorised, competent personnel.

Attention: During this job, the hoist remains operable which can result in danger of injury by rotating parts.

- Loosen the four socket screws (1) of the fan guard (2).
- Take off fan guard (2) and remove snap ring (3), fan (4) and key (5).
- Loosen the adjusting nut (6) with a pin type face wrench acc. to DIN 3116 in anti-clockwise direction until blocked.
- Turn the adjusting nut in a clockwise direction, until the test load is raised.

Attention: The max. operating time of the overload device is 60 seconds. Thereafter, the unit has to cool down to room temperature (minimum of 20 minutes).

- Reassemble in opposite sequence.

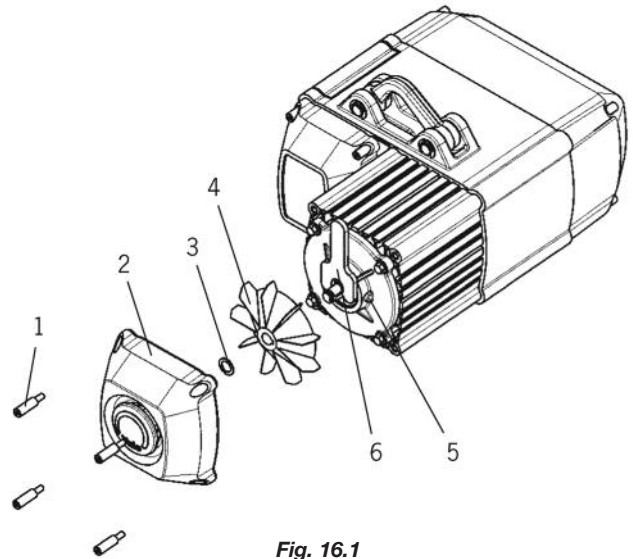


Fig. 16.1

8.7 MAINTENANCE OF GEARBOX

The gearbox is practically maintenance-free. Service is therefore reduced to changing the oil.

Oil change (Fig. 16.2)

The gearbox oil should be changed after every 10 years, however, latest after 800 operating hours (oil volume see table 4). **Attention:** During oil change the electric power supply must be shut off.

Disassemble the gear cover (item 2) by removing the cylinder screws (item 1). Place the hoist horizontally and turn so that the oil can drain from the fill hole into a suitable container (approx. 30 mins). Replenish the gearbox oil. We recommend a mineral oil viscosity class ISO-VG 320, e.g. FINA GIRAN L 320. Finally, re-adjust the device with new gasket.

Model	Oil volume
CPV/F 2-8, 5-4, 5-8, 10-4	0.3 litre
CPV/F 10-8, 20-4	0.3 litre

Tab. 4

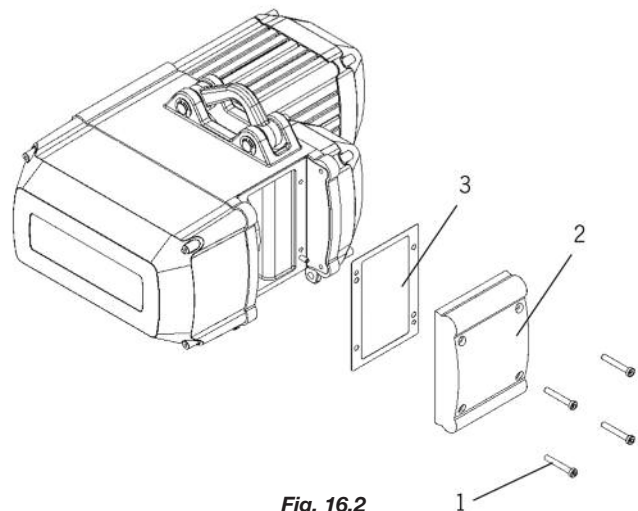


Fig. 16.2

8.8 MAINTENANCE OF MOTOR

Motor

Under normal conditions the motor is practically maintenance-free.

Spring activated disc brake

Service to the motor brake is reduced to checking and adjustment of the nominal brake air gap. The disc brake air gap should be between 0.15 and 0.6mm (see Tab. 5). This guarantees short reaction time and low noise emission. When the wear of the brake lining comes down to the point where the maximum possible air gap has finally been reached, the brake lining has to be replaced.

Attention: Do not allow the brake friction pads to come into contact with lubricant or similar contaminants.

The table below shows the dimensions of the brake air gap that have to be maintained:

Model	Air gap + 0.1 SLu mm		Motor brake type
	nominal	max.	
CPV/F 2-8, 5-4	0.15	0.3	BFK457 - 05
CPV/F 5-8, 10-4	0.2	0.4	BFK457 - 06
CPV/F 10-8, 20-4	0.2	0.6	BFK457 - 08

Tab. 5

Attention: When checking the air gap, the motor must be switched off and the hoist must be unloaded.

- Measure air gap SLu between armature disc and magnet part with feeler gauge.
- Compare measured air gap value with max. admissible air gap SLu (see Tab. 5).
- If necessary, replace rotor with brake lining.

Replacement of brake rotor with friction lining (Fig. 17):

- Loosen the three countersunk socket screws (item 3), lift-off flange (item 2) and replace rotor with friction lining (item 1).
- Reassemble in opposite sequence.
- Finally, check the brake function with nominal load in lifting and lowering operation.

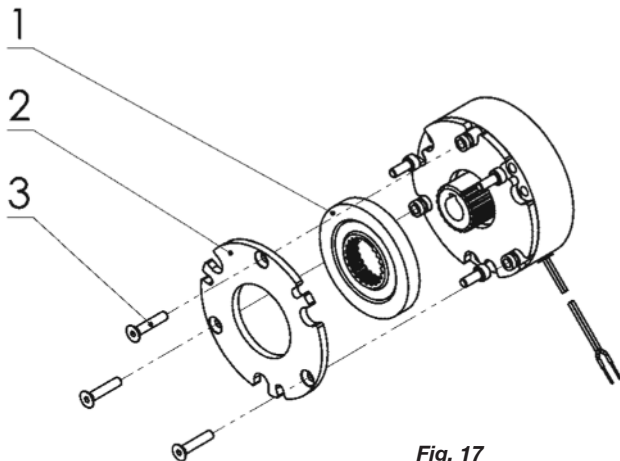


Fig. 17

Build-up of motor brake (Fig. 18):

Attention: The unit must be de-energised!

- Disassemble the control cover (item 2) by loosening the four cylinder screws (item 1).
- Remove the transformer (item 3) by unscrewing the four crosshead screws.
- Loosen the four socket screws (item 4) of the brake and pull-off the brake (item 5). Disconnect the control cable from the circuit board if necessary.
- After replacement of the motor brake, make sure that the function is tested with nominal load.

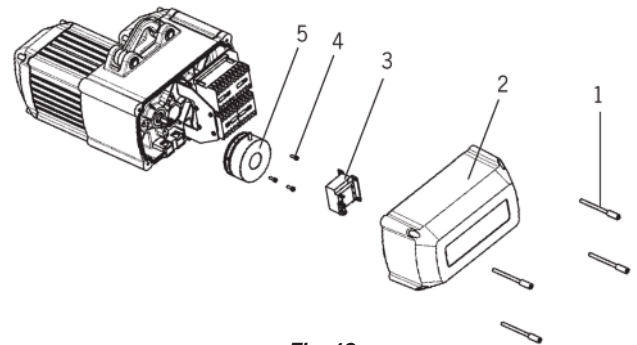


Fig. 18

8.9 ELECTRIC CHAIN HOIST IN GENERAL

In particular, check the following parts:

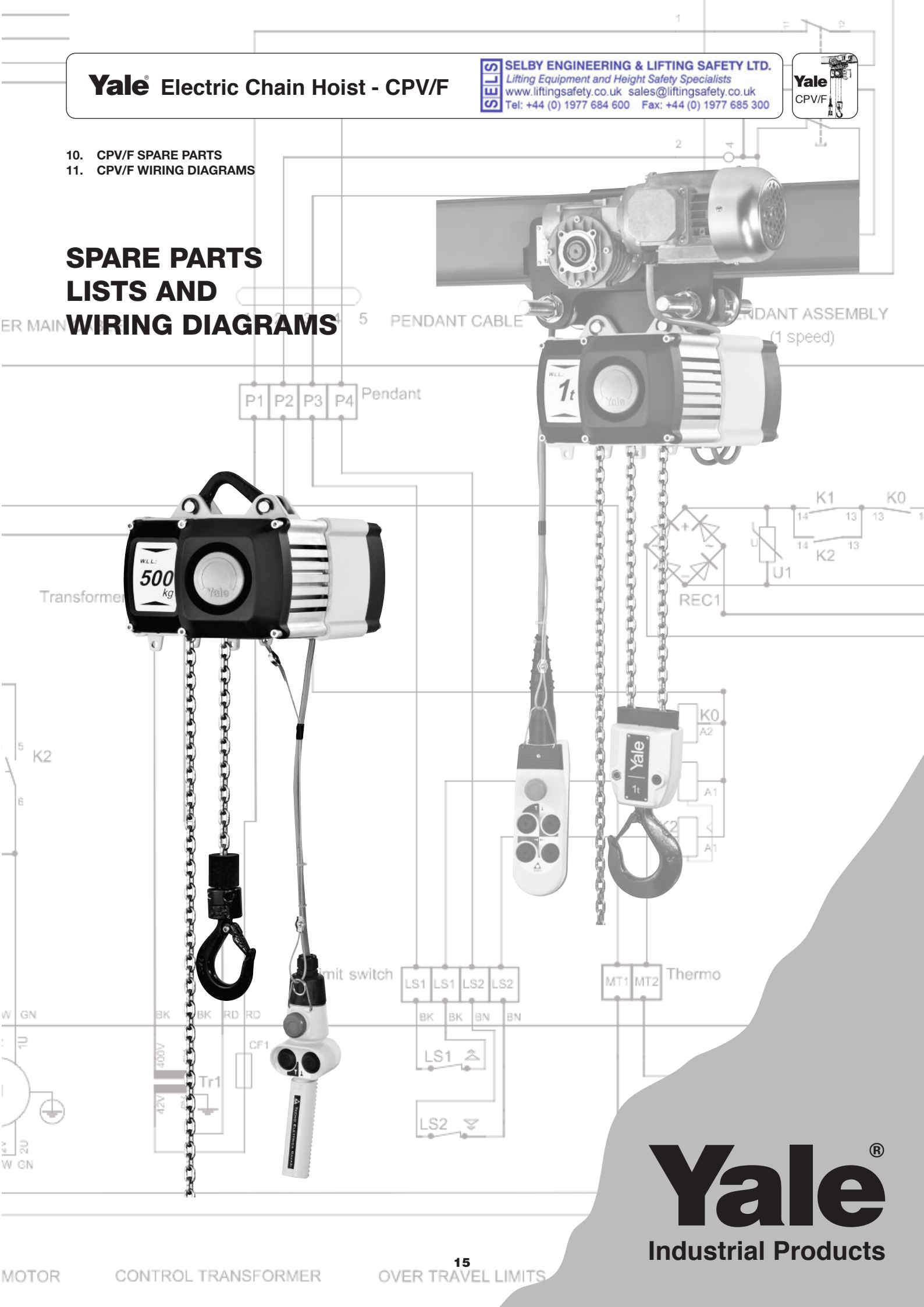
- Threaded connections in general.
Check all nuts, screws and locking devices for tightness.
- Chain container - material type.
Ensure the chain container is securely fastened. Check for tears or wear in the fabric.

Connection between hoist and suspension bracket resp. trolley. Check for cracks or wear. Ensure all safety devices are in place and secure.



- 10. CPV/F SPARE PARTS
- 11. CPV/F WIRING DIAGRAMS

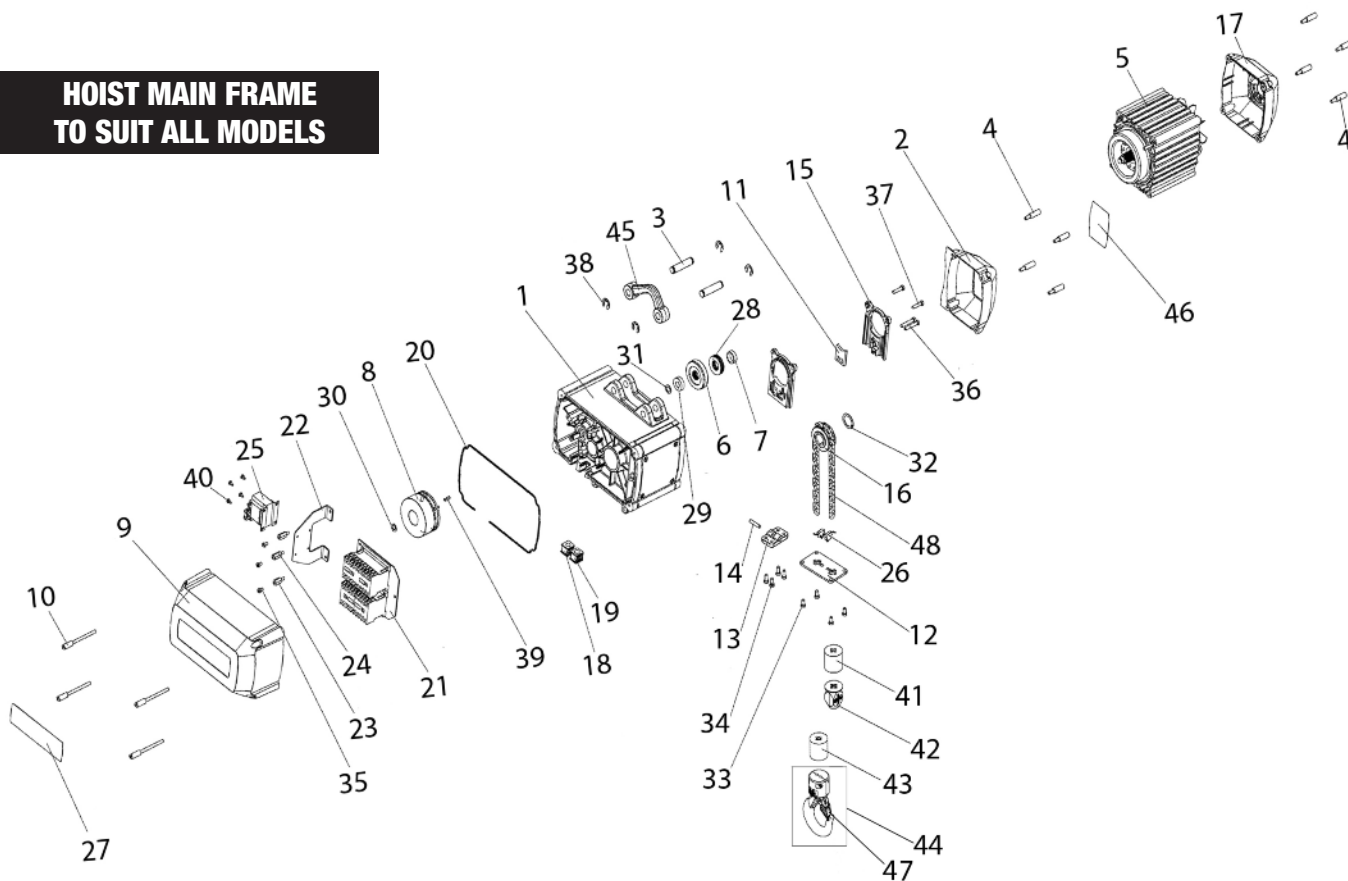
**SPARE PARTS
 LISTS AND
 WIRING DIAGRAMS**



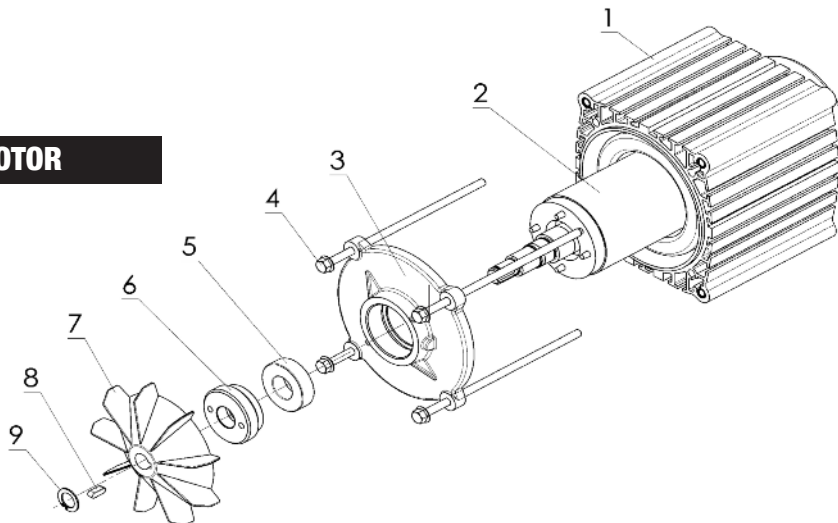


Yale® Electric Chain Hoist - CPV/F (SPARE PARTS)

HOIST MAIN FRAME TO SUIT ALL MODELS



CPV/F MOTOR



MOTOR - Model: CPV/F 2-8/5-4/5-8/10-4

Item	Article no.	Description	Qty.
1	00670052	Stator assembly	1
2	00670119	Rotor assembly	1
3	00670067	End plate	1
4	09101694	Screw motor	4
5	09151014	Bearing	1
6	00670122	Set screw	1
7	00670080	Fan	1
8	09131075	Flat key	1
9	09129033	Retaining ring	1

MOTOR - Model: CPV/F 10-8/20-4

Item	Article no.	Description	Qty.
1	00670139	Stator assembly	1
2	00670144	Rotor assembly	1
3	00670143	End plate	1
4	00670434	Screw motor	4
5	09151018	Bearing	1
6	00670147	Set screw	1
7	00670153	Fan	1
8	09131056	Flat key	1
9	09129016	Retaining ring	1

Yale® Electric Chain Hoist - CPV/F (SPARE PARTS)



HOIST MAIN FRAME

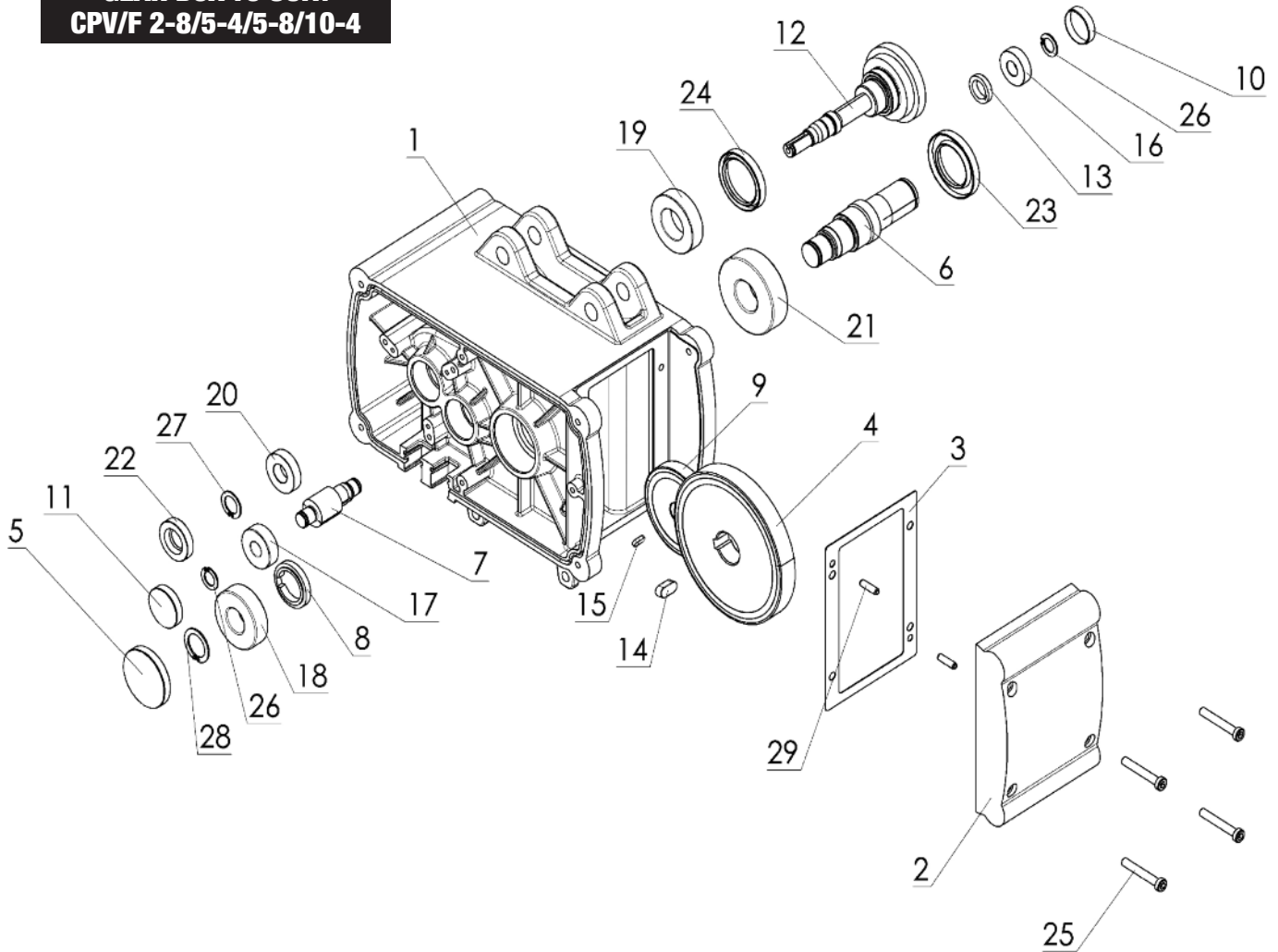
Item	Description	Qty.	CPV/F 2-8 Article no.	CPV/F 5-4 Article no.	CPV/F 5-8 Article no.	CPV/F 10-4 Article no.	CPV/F 10-8 Article no.	CPV/F 20-4 Article no.
1	Gear box assembly	1	0670085	0670085	0670085	0670085	0670252	0670252
2	Cover load sheave	1	0670056	0670056	0670056	0670056	0670170	0670170
3	Suspension pin	2	0670061	0670061	0670061	0670061	0670185	0670185
4	Cover screw fan	8	0670062	0670062	0670062	0670062	0670186	0670186
5	Motor assembly (1 Sp.)	1	0670347	0670347	0670348	0670348	0670349	0670349
5	Motor assembly (2 Sp.)	1	0670089	0670089	0670074	0670074	0670138	0670138
6	Clutch plate assembly	1	0670075	0670075	0670075	0670075	0670148	0670148
7	Spacer sleeve	1	0670126	0670126	0670126	0670126	0670152	0670152
8	Brake assembly	1	0670304	0670304	0670192	0670192	0670068	0670068
8a	Adapter flange brake	1	0670303	0670303	-	-	0670319	0670319
8b	Spacer brake	1	0670305	0670305	-	-	-	-
8c	Screw	3	9102256	9102256	-	-	9102146	9102146
9	Cover control	1	0670057	0670057	0670057	0670057	0670171	0670171
10	Cover screw control	4	0670078	0670078	0670078	0670078	0670187	0670187
11	Stripper	1	0670189	0670189	0670079	0670079	0670191	0670191
12	Chain entry plate	1	0670188	0670188	0670072	0670072	0670174	0670174
13	Chain latch	1	-	0670193	-	0670111	-	0670172
13a	Cover plate chain latch	1	0670394	-	0670394	-	0670395	-
14	Chain bolt	1	-	0670270	-	0670269	-	0670271
15	Chain guide	2	0670182	0670182	0670110	0670110	0670100	0670100
16	Load sheave	1	0670183	0670183	0670109	0670109	0670190	0670190
17	Fan cover assembly	1	0670055	0670055	0670055	0670055	0670243	0670243
18	Cable sleeve (KT 9)	1	0670087	0670087	0670087	0670087	0670087	0670087
19	Cable sleeve (KT 11)	1	0670213	0670213	0670213	0670213	0670213	0670213
20	Gear box gasket**	mtr	0670077	0670077	0670077	0670077	0670077	0670077
21	Control board (1 Sp.)	1	0670346	0670346	0670346	0670346	0670346	0670346
21	Control board (2 Sp.)	1	0670060	0670060	0670060	0670060	0670060	0670060
22	Mounting plate	1	0670236	0670236	0670236	0670236	0670238	0670238
23	Spacer	2	0670177	0670177	0670177	0670177	0670177	0670177
24	Spacer	1	0670214	0670214	0670214	0670214	0670214	0670214
25	Transformer	1	0719737	0719737	0719737	0719737	0719737	0719737
26	Microswitch	2	0670073	0670073	0670073	0670073	0670073	0670073
27	Name plate (1 Speed)	1	0670350	0670350	0670351	0670351	0670352	0670352
27	Name plate (2 Speed)	1	0670324	0670324	0670221	0670221	0670267	0670267
28	Cup spring	5	9120056	9120056	9120056	9120056	9120055	9120055
29	Bearing	1	9150032	9150032	9150032	9150032	9151139	9151139
30	Retaining ring	1	9129042	9129042	9129042	9129042	9129033	9129033
31	Retaining ring	1	9129038	9129038	9129038	9129038	9129023	9129023
32	Retaining ring	1	9129001	9129001	9129001	9129001	9129043	9129043
33	Screw	4	9102280	9102280	9102280	9102280	9102297	9102297
34	Screw chain latch	4	-	9101706	-	9101706	-	9101707
34a	Screw cover plate latch	4	9102265	-	9102265	-	9102260	-
35	Screw	3	9102287	9102287	9102287	9102287	9102287	9102287
36	Screw	2	9102292	9102292	9102292	9102292	9102301	9102301
37	Screw	2	9102293	9102293	9102293	9102293	9102306	9102306
38	Lock washer	4	9123038	9123038	9123038	9123038	9123027	9123027
39	Fitting key	1	9131084	9134084	9131084	9131084	9131069	9131069
40	Self cutting screw	4	9108054	9108054	9108054	9108054	9108054	9108054
41	Bumper chain end stop	1	0670137	0670137	0670134	0670134	0670251	0670251
42	Chain end stop assy.	1	0670239	0670239	0670240	0670240	0670241	0670241
43	Bumper bottom block	1	0670137	0670226	0670134	0670231	0670251	0670263
44	Bottom block assy.	1	0670135	0670209	0670133	0670194	0670256	0670260
45	Lug	1	0670048	0670048	0670048	0670048	0670184	0670184
45a	Top hook	1	0670425	0670425	0670425	0670425	0670470	0670470
46	Capacity plate	1	0670321	0670235	0670235	0670320	0670268	0670325
47	Safety latch kit	1	0400450	0400450	0400450	0400451	0400451	0400647
48	Load chain	mtr	7989710	7989710	7986239	7986239	7993403	7993403

** Length CPV/F 2-8/5-4/5-8/10-4 = 700mm, Length CPV/F 10-8/20-4 = 920mm



Yale® Electric Chain Hoist - CPV/F (SPARE PARTS)

**GEAR BOX TO SUIT:
 CPV/F 2-8/5-4/5-8/10-4**



GEAR BOX - Model: CPV/F 2-8/5-4/5-8/10-4

Item	Article no.	Description	Qty.
1	00670353	Gear housing	1
2	00670082	Counterweight	1
3	00670117	Seal gear cover	1
4	00670115	Gear	1
5	00670086	Bearing cover	1
6	00670106	Drive pinion	1
7	00670114	Pinion shaft	1
8	00670067	Spacer	1
9	00670113	Gear Z2	1
10	00670069	Bearing cover	1
11	00670084	Bearing cover	1
12	00670102	Drive pinion assembly	1
13	00670071	Spacer	1
14	09131041	Fitting key	1
15	09131033	Fitting key	1

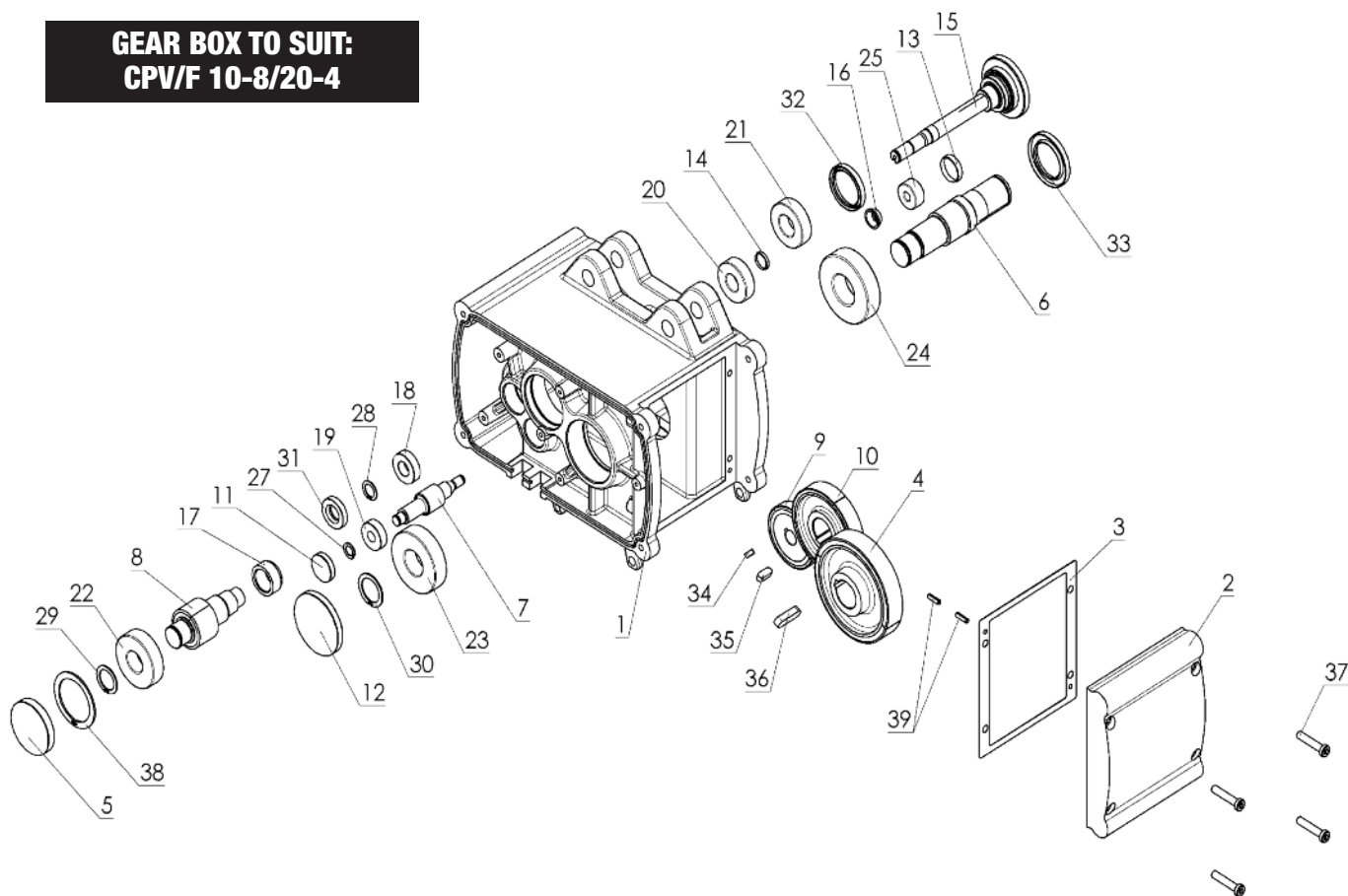
GEAR BOX - Model: CPV/F 2-8/5-4/5-8/10-4

Item	Article no.	Description	Qty.
16	09150032	Bearing	1
17	09150022	Bearing	1
18	09150011	Bearing	1
19	09150009	Bearing	1
20	09150038	Bearing	1
21	09151135	Bearing	1
22	09172114	Oil seal	1
23	09172115	Oil seal	1
24	09172019	Oil seal	1
25	09102291	Screw	4
26	09129038	Retaining ring	2
27	09129023	Retaining ring	1
28	09129025	Retaining ring	1
29	09134027	Spring pin	2

Yale® Electric Chain Hoist - CPV/F (SPARE PARTS)



GEAR BOX TO SUIT: CPV/F 10-8/20-4



GEAR BOX - Model: CPV/F 10-8/20-4

Item	Article no.	Description	Qty.
1	00670354	Gear housing	1
2	00670173	Counterweight	1
3	00670355	Seal gear cover	1
4	00670159	Gear	1
5	00670162	Bearing cover	1
6	00670158	Drive pinion	1
7	00670155	Pinion shaft	1
8	00670157	Pinion shaft	1
9	00670154	Gear	1
10	00670156	Gear	1
11	00670084	Bearing cover	1
12	00670163	Bearing cover	1
13	00670306	Bearing cover	1
14	00670318	Bearing cover	1
15	00670097	Drive pinion assembly	1
16	00670160	Spacer	1
17	00670317	Spacer	1
18	09150043	Bearing	1
19	09150022	Bearing	1
20	09150011	Bearing	1

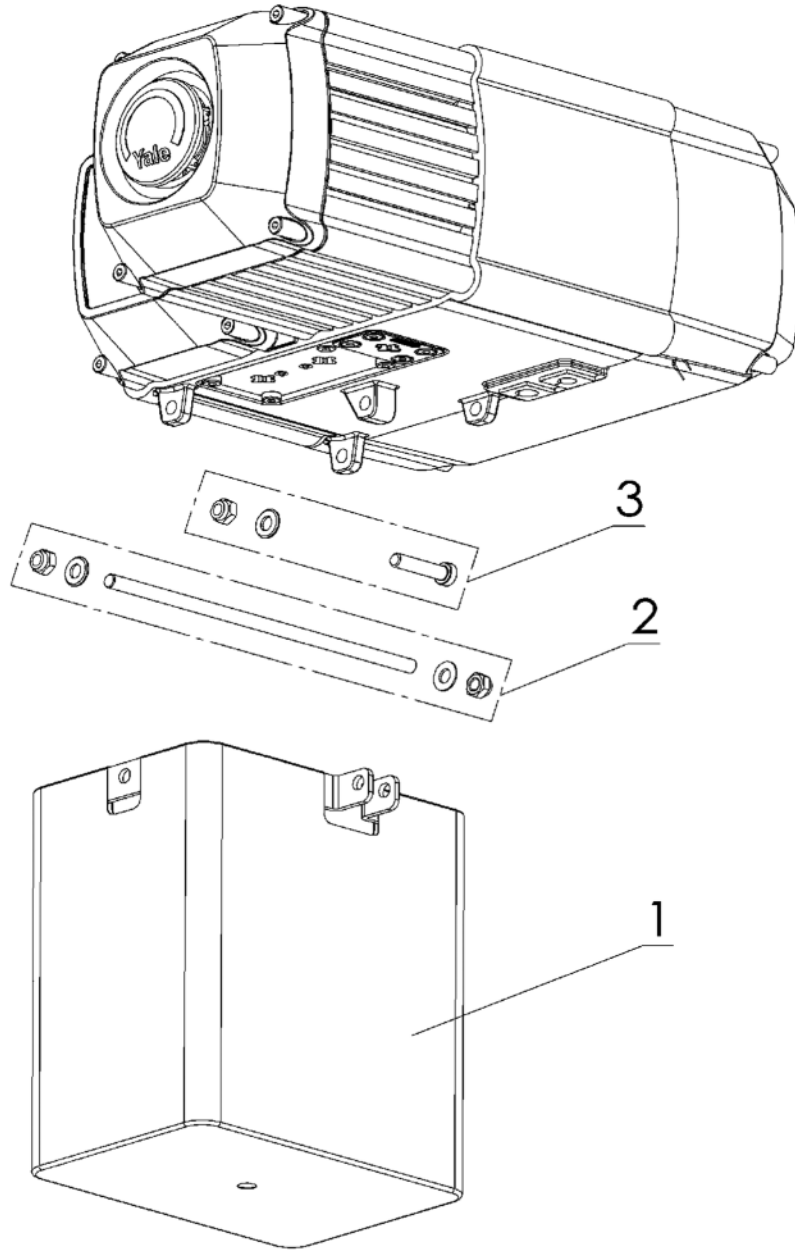
GEAR BOX - Model: CPV/F 10-8/20-4

Item	Article no.	Description	Qty.
21	09150001	Bearing	1
22	09150002	Bearing	1
23	09150005	Bearing	1
24	09151053	Bearing	1
25	09150056	Bearing	4
26	09129042	Retaining ring	2
27	09129038	Retaining ring	1
28	09129008	Retaining ring	1
29	09129001	Retaining ring	2
30	09129002	Retaining ring	1
31	09172117	Oil seal	1
32	09172053	Oil seal	1
33	09172118	Oil seal	1
34	09131089	Fitting key	4
35	09131053	Fitting key	4
36	09131090	Fitting key	2
37	09102298	Screw	1
38	09130001	Retaining ring	1
39	09134027	Spring pin	2



Yale® Electric Chain Hoist - CPV/F (SPARE PARTS)

CHAIN CONTAINERS TO SUIT ALL MODELS



CHAIN CONTAINERS - CPV/F 2-8/5-4/5-8/10-4

Item	Article no.	Description	Qty.
1	06900003	Chain container, assy. Size 1	1
1	06900004	Chain container, assy. Size 2	1
1	06900005	Chain container, assy. Size 3	1
2	00670429	Fixing kit (part 1). Size 1	1
2	00670430	Fixing kit (part 1). Size 1	1
3	00670431	Fixing kit (part 2). All sizes.	1

CHAIN CONTAINERS - CPV/F 10-8/20-4

Item	Article no.	Description	Qty.
1	06900006	Chain container, assy. Size 1	1
1	06900007	Chain container, assy. Size 2	1
2	00670432	Fixing kit (part 1).	1
3	00670433	Fixing kit (part 2).	1

Yale® Electric Chain Hoist - CPV/F (WIRING DIAGRAMS)



11.1 CPV 400V 3Ph 50Hz - (SINGLE SPEED HOIST, TOP HOOK SUSPENSION)

- CPV 400V 3Ph 50Hz
- SINGLE SPEED HOIST
- TOP HOOK SUSPENSION

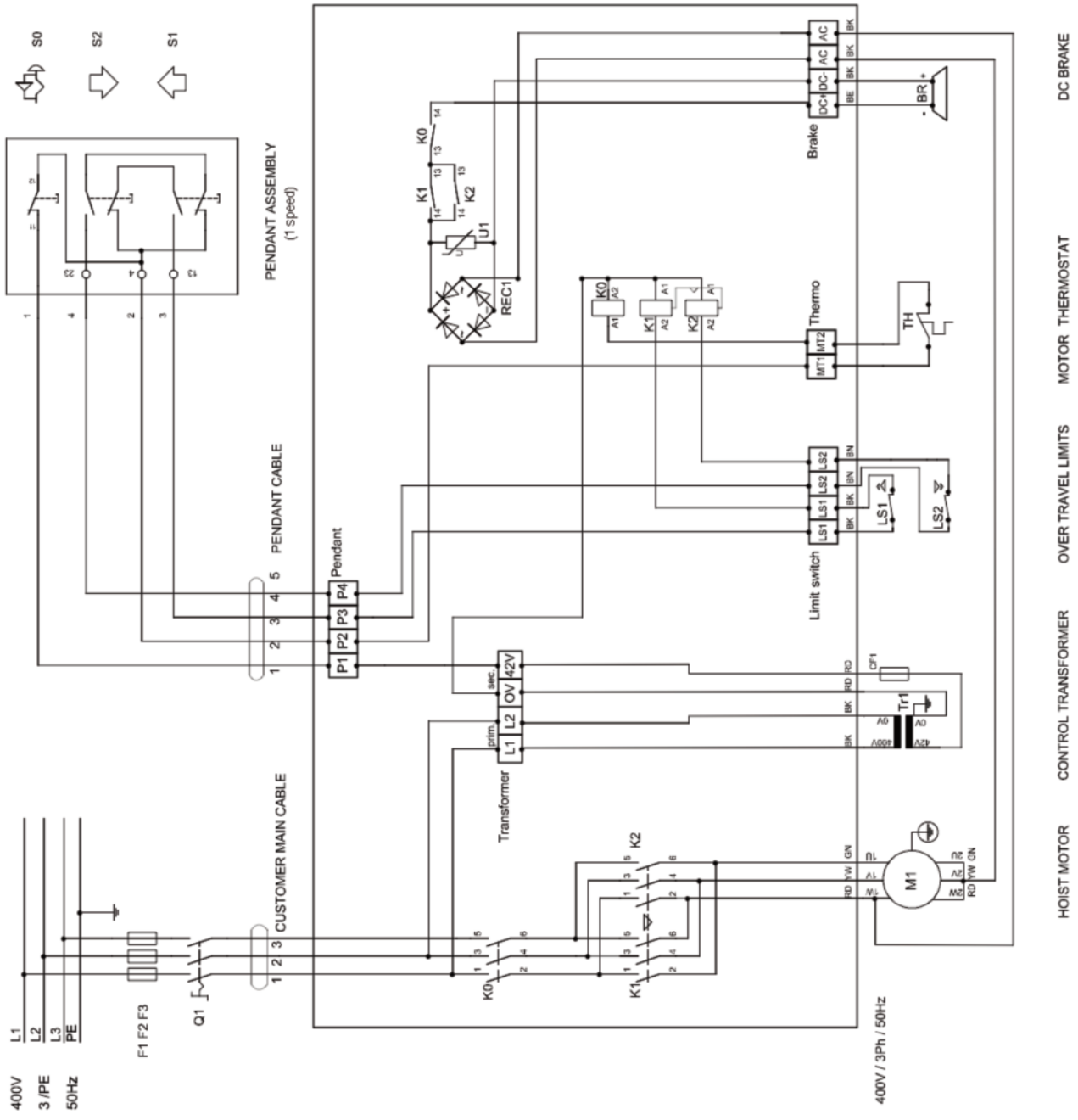
GN	GREEN
RD	RED
YW	YELLOW
BLK	BLACK
BRN	BROWN
BLU	BLUE

PCB Complete
 Part No. 00670346
 Printed Circuit Board

EQUIPMENT KEY

Q1	MAIN SWITCH
F1, F2, F3	CUSTOMERS SUPPLY FUSES
CF1	CONTROL FUSE
K0	MASTER CONTROL RELAY
K1	RAISE CONTACTOR
K2	LOWER CONTACTOR
LS1	MECHANICALLY INTERLOCKED WITH K1
LS2	MECHANICALLY INTERLOCKED WITH K2
M1	HOIST MOTOR
TH	HOIST MOTOR THERMOSTAT
BR	DC BRAKE
S0	EMERGENCY STOP
S1	RAISE PUSHBUTTON
S2	LOWER PUSHBUTTON
REC1	BRAKE RECTIFIER
T11	CONTROL TRANSFORMER
U1	HOIST BRAKE VARISTOR

Yale Industrial Products	
Title: CPV Wiring Diagram	Rev:
Model: CPV - 400V - 3Ph - 50Hz - 1G	
Drawing Number: 00670329	
Date: 26.02.2008	Sheet: 1 / 1





Yale® Electric Chain Hoist - CPV/F (WIRING DIAGRAMS)

11.2 CPV/F 400V 3Ph 50Hz - (DUAL SPEED HOIST, TOP HOOK SUSPENSION)

- CPV/F 400V 3Ph 50Hz
- DUAL SPEED HOIST
- TOP HOOK SUSPENSION

GN	GREEN
BD	RED
YD	YELLOW
RY	BLACK
BK	BROWN
BN	BROWN
BE	BLUE

PCB Complete
 Part No. 00670060
 Printed Circuit Board

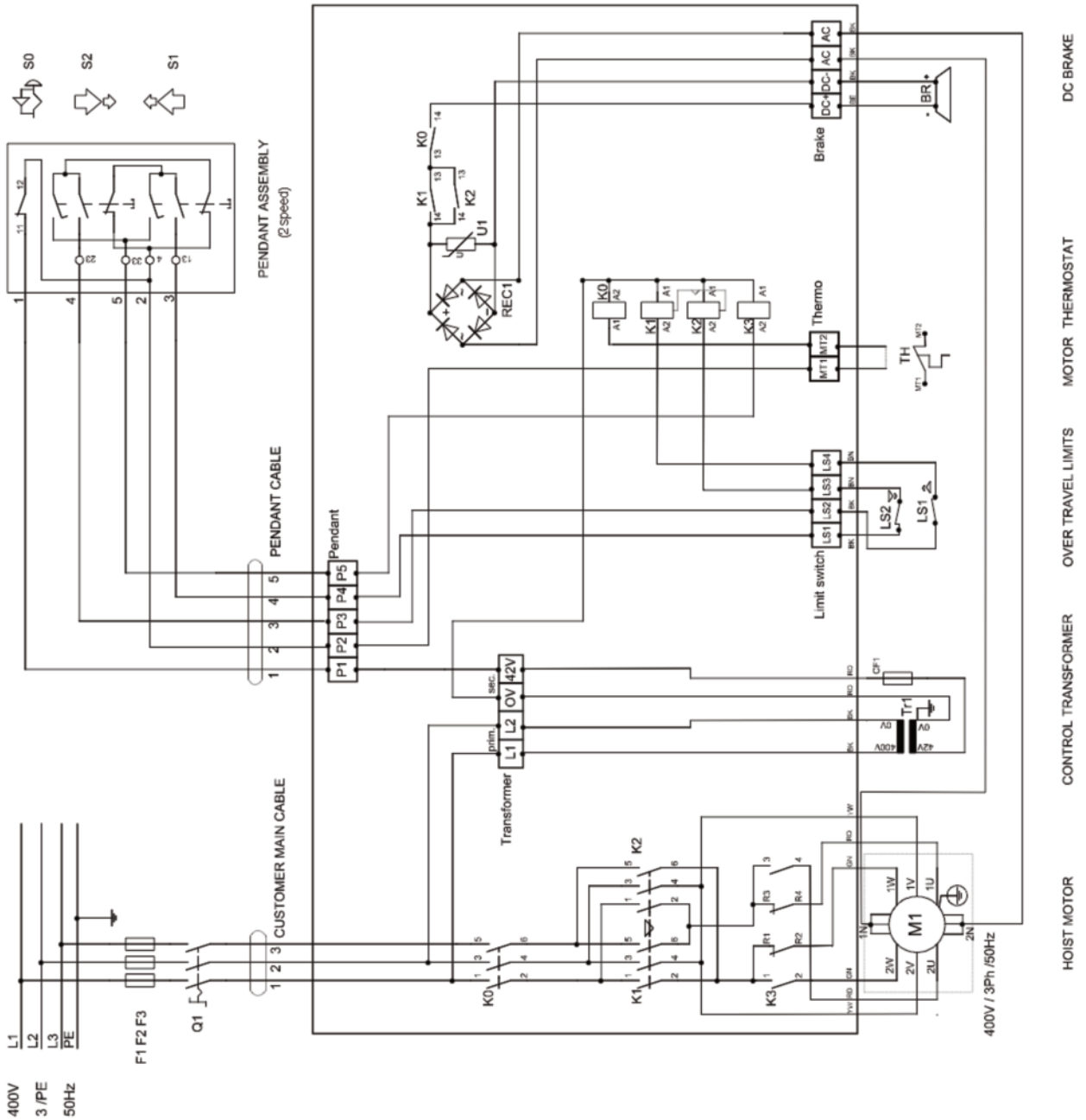
EQUIPMENT KEY

Q1	MAIN SWITCH
F1, F2, F3	CUSTOMERS SUPPLY FUSES
CF1	CONTROL FUSE
K0	MASTER CONTROL RELAY
K1	RAISE CONTACTOR
K2	MECHANICALLY INTERLOCKED WITH K1
K3	MECHANICALLY INTERLOCKED WITH K1
LS1	FAST SPEED CONTACTOR
LS2	RAISE-OVERTRAVEL SWITCH
LS3	LOWER-OVERTRAVEL SWITCH
M1	HOIST MOTOR
TH	HOIST MOTOR THERMOSTAT
BR	DC BRAKE
SO	EMERGENCY STOP
S1	RAISE PUSHBUTTON
S2	LOWER PUSHBUTTON
REC1	BRAKE RECTIFIER
Tr1	CONTROL TRANSFORMER
U1	HOIST BRAKE VARISTOR

Yale Industrial Products

Title: CPV Wiring Diagram
 Model: CPV/F : 400V - 3Ph - 50Hz : 2G
 Drawing Number: 00670330
 Date: 10.04.2008

Rev: Sheet 1 / 1

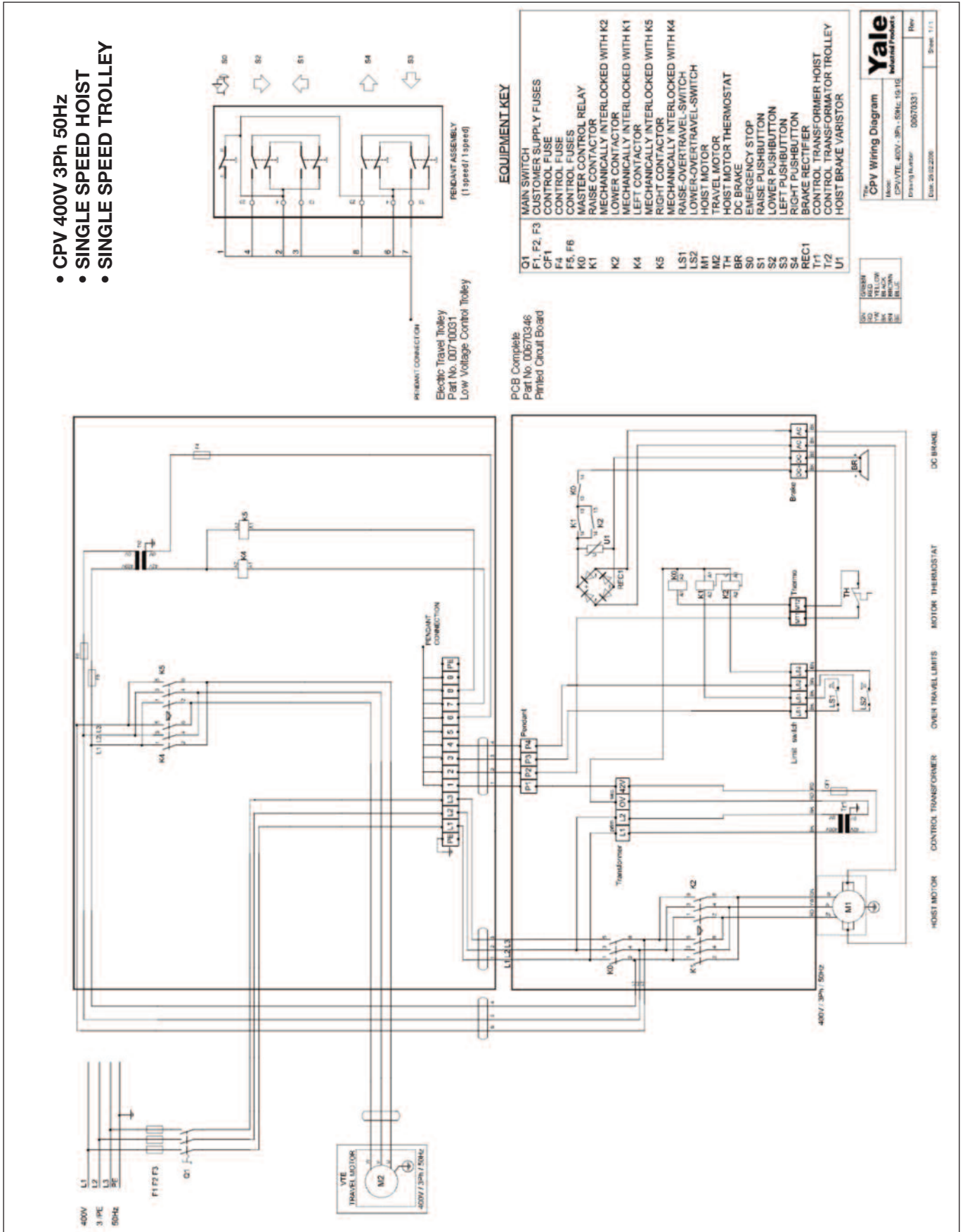


Yale® Electric Chain Hoist - CPV/F (WIRING DIAGRAMS)



11.3 CPV 400V 3Ph 50Hz - (SINGLE SPEED HOIST / SINGLE SPEED TROLLEY)

- CPV 400V 3Ph 50Hz
- SINGLE SPEED HOIST
- SINGLE SPEED TROLLEY



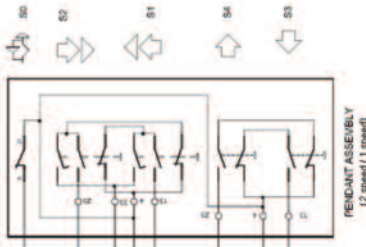
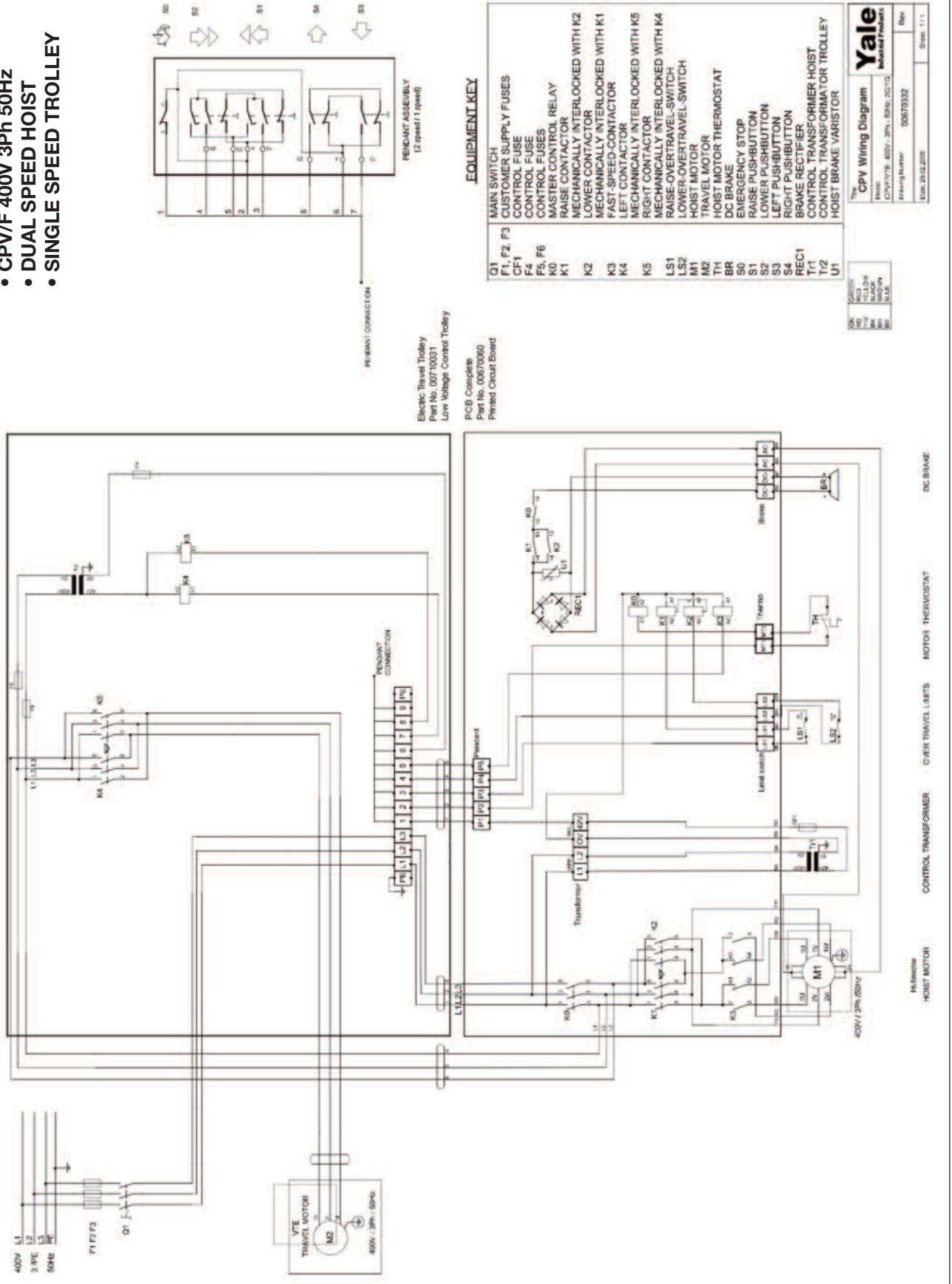
The CPV Wiring Diagram
 Model: CPV/VTE, 400V, 3Ph, 50Hz, 10.10
 Drawing Number: 00070331
 Date: 24.02.2006
 Sheet: 1/11



Yale® Electric Chain Hoist - CPV/F (WIRING DIAGRAMS)

11.4 CPV/F 400V 3Ph 50Hz - (DUAL SPEED HOIST / SINGLE SPEED TROLLEY)

- CPV/F 400V 3Ph 50Hz
- DUAL SPEED HOIST
- SINGLE SPEED TROLLEY



EQUIPMENT KEY

O1	MAIN SWITCH
F1, F2, F3	CUSTOMER SUPPLY FUSES
CF1	CONTROL FUSE
F4	CONTROL FUSE
F5, F6	MASTER CONTROL RELAY
K0	RAISE CONTACTOR
K1	MECHANICALLY INTERLOCKED WITH K2
K2	LOWER CONTACTOR
K3	MECHANICALLY INTERLOCKED WITH K1
K4	FAST SPEED CONTACTOR
K5	LEFT CONTACTOR
K6	MECHANICALLY INTERLOCKED WITH K5
K7	RIGHT CONTACTOR
K8	MECHANICALLY INTERLOCKED WITH K4
LS1	RAISE OVERTRAVEL SWITCH
LS2	LOWER OVERTRAVEL SWITCH
M1	HOIST MOTOR
M2	TROLLEY MOTOR
TH	HOIST MOTOR THERMOSTAT
BR	DC BRAKE
S0	EMERGENCY STOP
S1	RAISE PUSHBUTTON
S2	LOWER PUSHBUTTON
S3	LEFT PUSHBUTTON
S4	RIGHT PUSHBUTTON
REC1	BRAKE RECIEFER
T1	CONTROL TRANSFORMER HOIST
T2	CONTROL TRANSFORMER TROLLEY
U1	HOIST BRAKE VARISTOR

The CPV Wiring Diagram
 Model: CPV/F/TE - 400V - 3Ph - 50Hz - 2011G
 Drawing Number: 00070333
 Date: 25.12.2005
 Sheet: 1 of 1

Yale
 Industrial Products

Color Key:
 GRN: GREEN
 YLW: YELLOW
 BLK: BLACK
 RED: RED
 WHT: WHITE

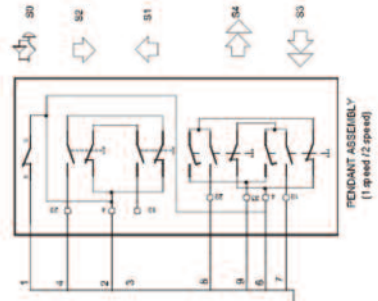
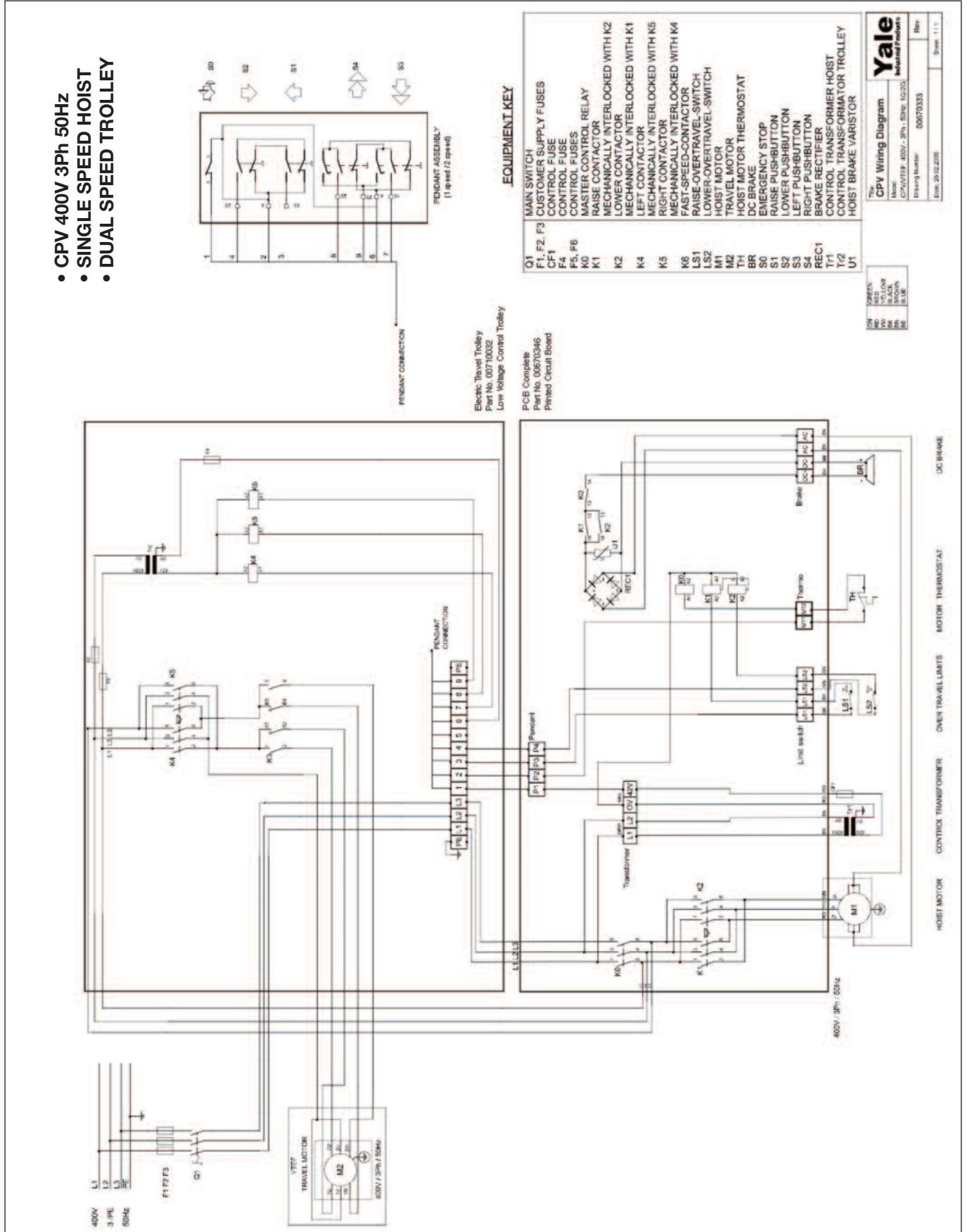
Electric Travel Trolley
 Part No. 00710031
 Low Voltage Control Trolley
 PCB Complete
 Part No. 00670060
 Printed Circuit Board

Yale® Electric Chain Hoist - CPV/F (WIRING DIAGRAMS)



11.5 CPV 400V 3Ph 50Hz - (SINGLE SPEED HOIST / DUAL SPEED TROLLEY)

- CPV 400V 3Ph 50Hz
- SINGLE SPEED HOIST
- DUAL SPEED TROLLEY



EQUIPMENT KEY

Q1	MAIN SWITCH
F1, F2, F3	CUSTOMER SUPPLY FUSES
CF1	CONTROL FUSE
F4	CONTROL FUSE
F5, F6	CONTROL FUSES
K0	RAISE CONTACTOR
K1	MECHANICALLY INTERLOCKED WITH K2
K2	LOWER CONTACTOR
K4	MECHANICALLY INTERLOCKED WITH K1
K5	LEFT CONTACTOR
K6	RIGHT CONTACTOR
K5	MECHANICALLY INTERLOCKED WITH K6
K6	MECHANICALLY INTERLOCKED WITH K5
LS1	FAST-SPEED-CONTACTOR
LS2	RAISE-OVERTRAVEL-SWITCH
M1	LOWER-OVERTRAVEL-SWITCH
M2	HOIST MOTOR
TR	TRAVEL MOTOR THERMOSTAT
BR	DC BRAKE
S0	EMERGENCY STOP
S1	RAISE PUSHBUTTON
S2	LOWER PUSHBUTTON
S3	LEFT PUSHBUTTON
S4	RIGHT PUSHBUTTON
REC1	BRAKE RECTIFIER
T1	CONTROL TRANSFORMER HOIST
T2	CONTROL TRANSFORMER TROLLEY
U1	HOIST BRAKE VARISTOR

The CPV Wiring Diagram
 Model: CPV/TFE - 400V - 3Ph - 50Hz - 15/20
 Drawing Number: 00070333
 Date: _____
 Rev: _____
 Sheet: 1 / 1

Yale
 Industrial Products

GREEN
 YELLOW
 BLACK
 RED
 BLUE

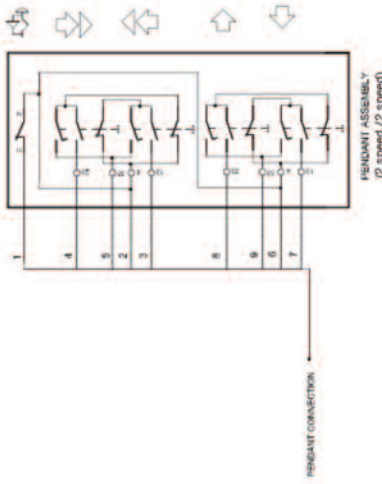
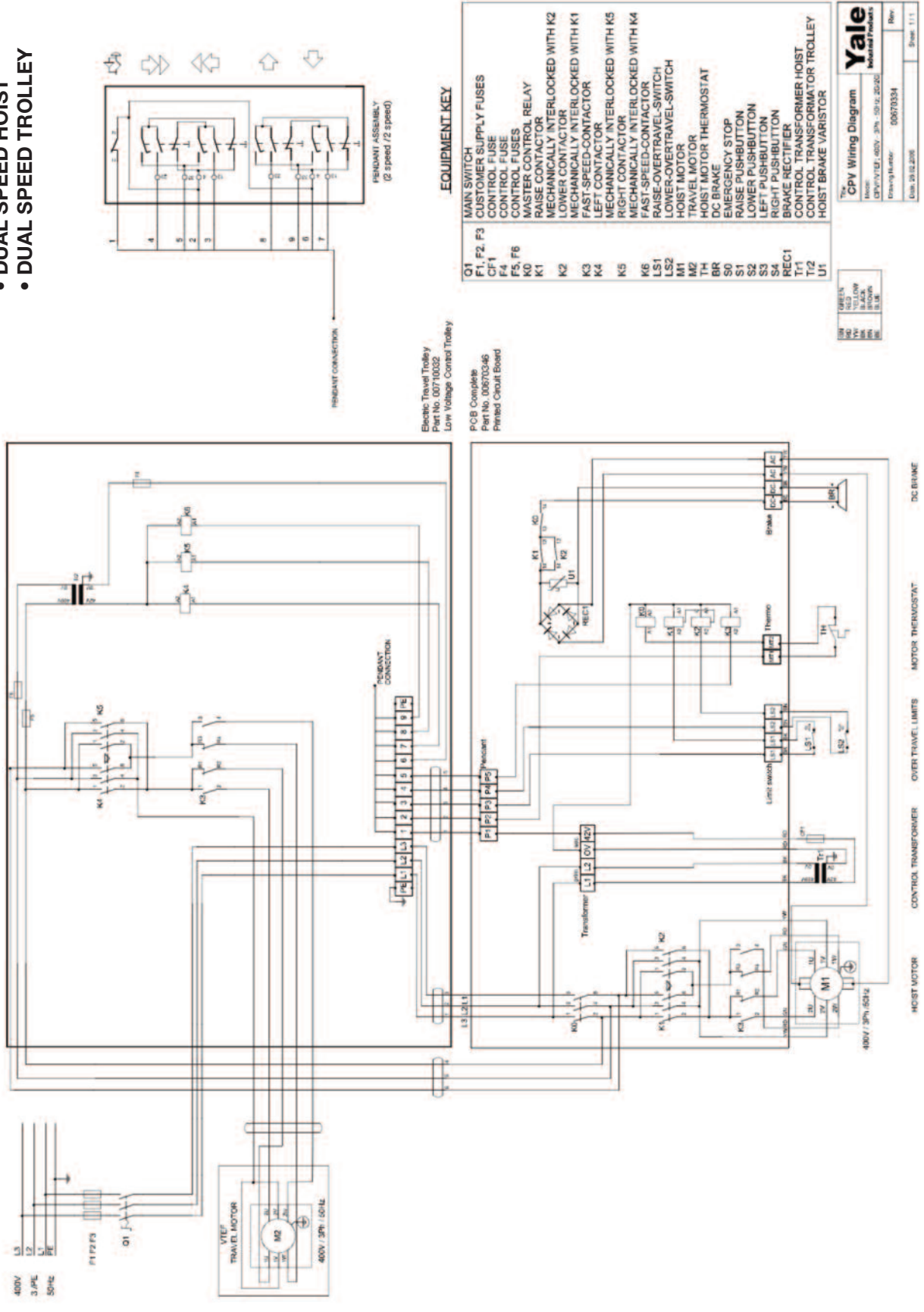
Pendant Connection
 Electric Travel Trolley
 Part No. 00710032
 Low Voltage Control Trolley
 PCB Complete
 Part No. 00670346
 Printed Circuit Board



Yale® Electric Chain Hoist - CPV/F (WIRING DIAGRAMS)

11.6 CPV/F 400V 3Ph 50Hz - (DUAL SPEED HOIST / DUAL SPEED TROLLEY)

- CPV/F 400V 3Ph 50Hz
- DUAL SPEED HOIST
- DUAL SPEED TROLLEY



EQUIPMENT KEY

Q1	MAIN SWITCH
F1, F2, F3	CUSTOMER SUPPLY FUSES
C1	CONTROL FUSE
F4	CONTROL FUSE
F5, F6	FUSES
K0	RAISE CONTROL RELAY
K1	MECHANICALLY INTERLOCKED WITH K2
K2	LOWER CONTACTOR
K3	MECHANICALLY INTERLOCKED WITH K1
K4	FAST SPEED-CONTACTOR
K5	MECHANICALLY INTERLOCKED WITH K5
K6	MECHANICALLY INTERLOCKED WITH K4
LS1	FAST SPEED-CONTACTOR
LS2	RAISE-OVERTRAVEL-SWITCH
M1	HOIST MOTOR
M2	TRAVEL MOTOR
TH	HOIST MOTOR THERMOSTAT
BR	DC BRAKE
S0	EMERGENCY STOP
S1	RAISE PUSHBUTTON
S2	LOWER PUSHBUTTON
S3	LEFT PUSHBUTTON
S4	RIGHT PUSHBUTTON
REC1	BRAKE RECTIFIER
T1	CONTROL TRANSFORMER HOIST
T2	CONTROL TRANSFORMER TROLLEY
U1	HOIST BRAKE VARISTOR

Yale
 CPV Wiring Diagram
 Model: CPV/F/400V_3Ph_50Hz_20240
 Drawing Number: 00670334
 Date: 29.02.2008
 Sheet: 1 / 1

Electric Travel Trolley
 Part No. 00710032
 Low Voltage Control Trolley

PCB Complete
 Part No. 00670346
 Printed Circuit Board


RED	THERMIST
BLK	BLACK
WHT	WHITE
YEL	YELLOW
GRN	GREEN
BLU	BLUE



EC DECLARATION OF CONFORMITY

Hereby, we declare that the construction and commercialised execution of the below Lifting Equipment complies with the essential health and safety requirements of the EC Machinery Directive. The validity of this declaration will cease in case of any modification not being agreed with us previously.

Furthermore, validity of this declaration will cease in case that the machine will not be operated correctly and in accordance to the operating instructions and/or not be inspected regularly.

Relevant EC Directives:	EC Machinery Directives 2006/42/EC, 98/37/EC, Low Voltage Directive 2006/95/EC
Machinery Directive transposed standards:	ISO 12100-1:2003 ISO 12100-2:2003 EN 349:1993/A1 2008 EN 818-1:1996/A1:2008 EN 818-7:2002/A1:2008 EN 14492-2:2006 EN 60204-32:1998
Low Voltage Directive transposed standards in particular:	EN 60204-1:2006 Safety of Machinery - Electrical Equipment of Machines - Part 1 : General requirements.
Quality Assurance:	EN ISO 9001:2000
Name and address of manufacturer:	Yale Industrial Products A trading division of Columbus McKinnon Corporation Limited Knutsford Way Sealand Industrial Estate Chester CH1 4NZ
Signature:	
Identification of the signer:	Nigel Hancocks - Quality Assurance Manager
Date:	08.01.2010

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**Lifting Equipment
Engineers Association**

