CRAFTEX
CX-SERIES

MODEL CX605 DRO
MAGNETIC SCALE DIGITAL DISPLAY SYSTEM FOR MILLING MACHINE

After opening the box see below parts:

Parts showing

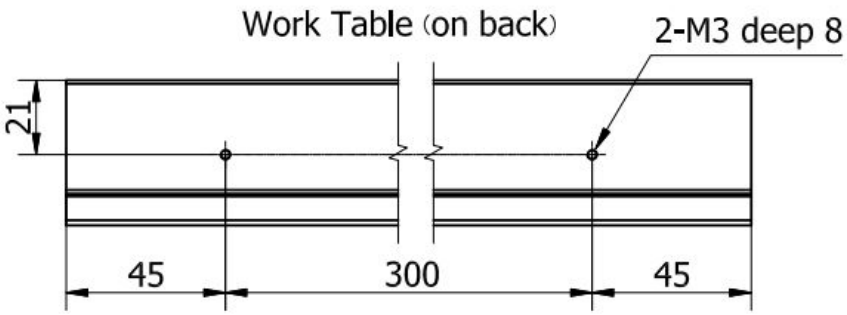
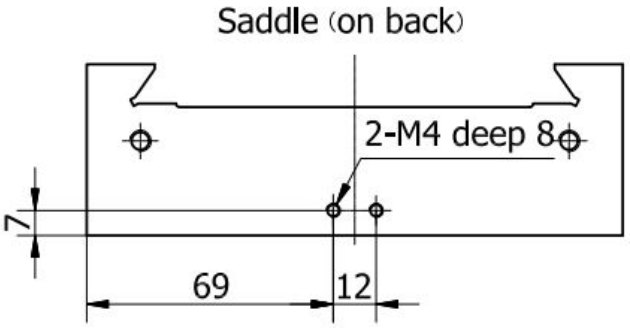
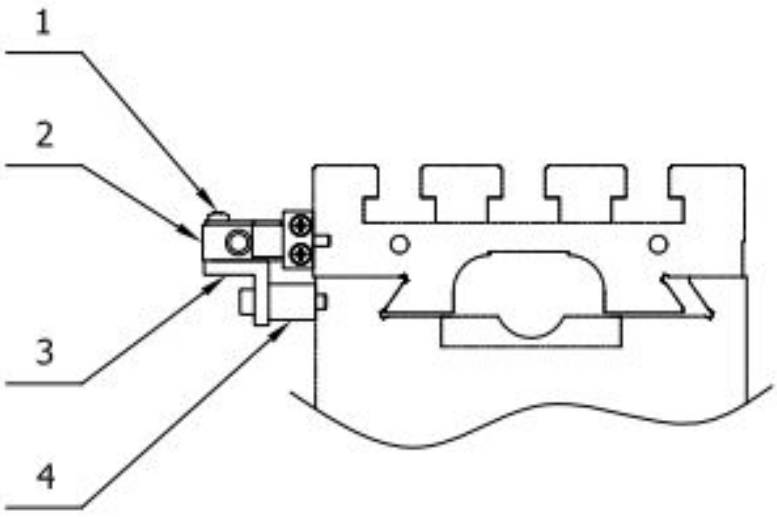
Parts list

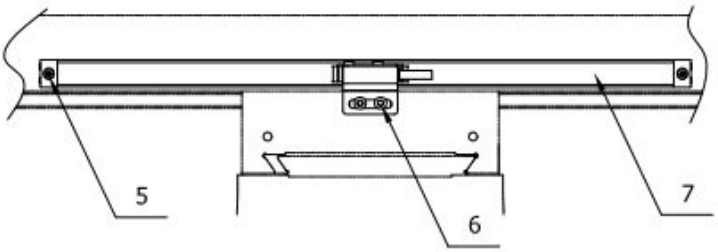
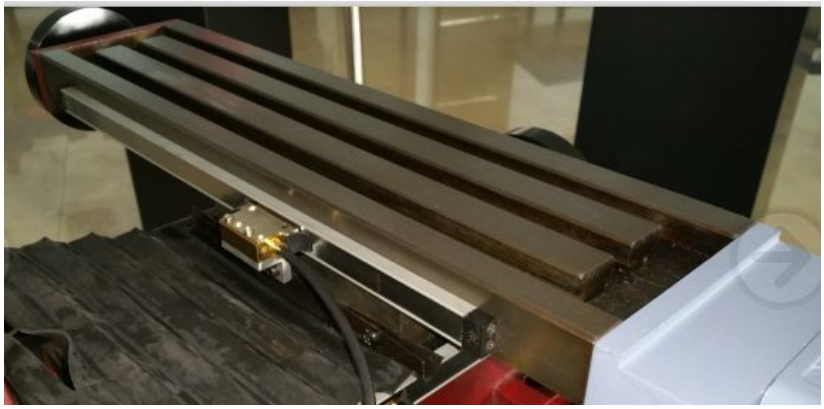
1. DT20 digital display unit
2. Mounting bracket with magnet (use for mounting the DT20 DRO on mill)
3. Power adapter 5V
4. MR500 Reader with chip scraper---3 sets
5. MS20 magnetic scale with frame use for X axis
6. MS20 magnetic scale with frame use for Z axis
7. MS20 magnetic scale with frame use for Y axis
8. Read support --- 3 pcs
9. Cushion block of reader on X-axis and Z-axis
10. Bracket for mounting MS20 on Y-axis
11. Screws
12. Screws for assembly DT20
13. Nuts
14. Plate to install DT20

Machine of mounting screw holes

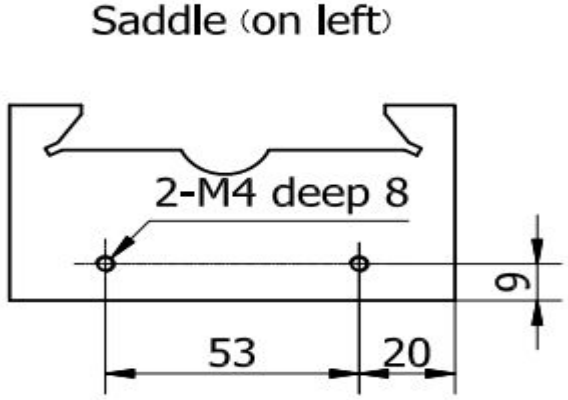
Before use the magnetic scale digital display system, the first step is make some mounting screw holes. Use on the mill machine need make X Y Z 3-axis, include reader support screw mounting, magnetic scale with frame mounting screw holes.generally speaking you need make total 12 mounting screw holes by yourself.

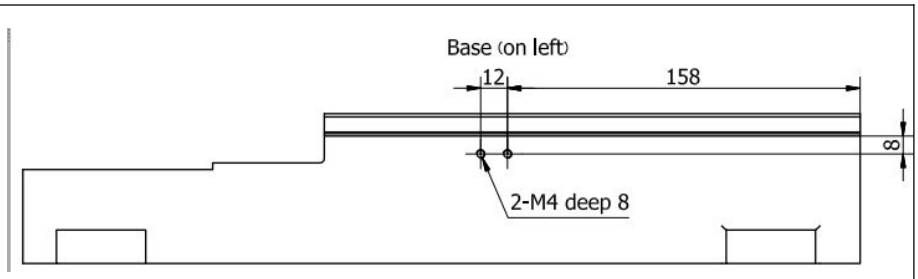
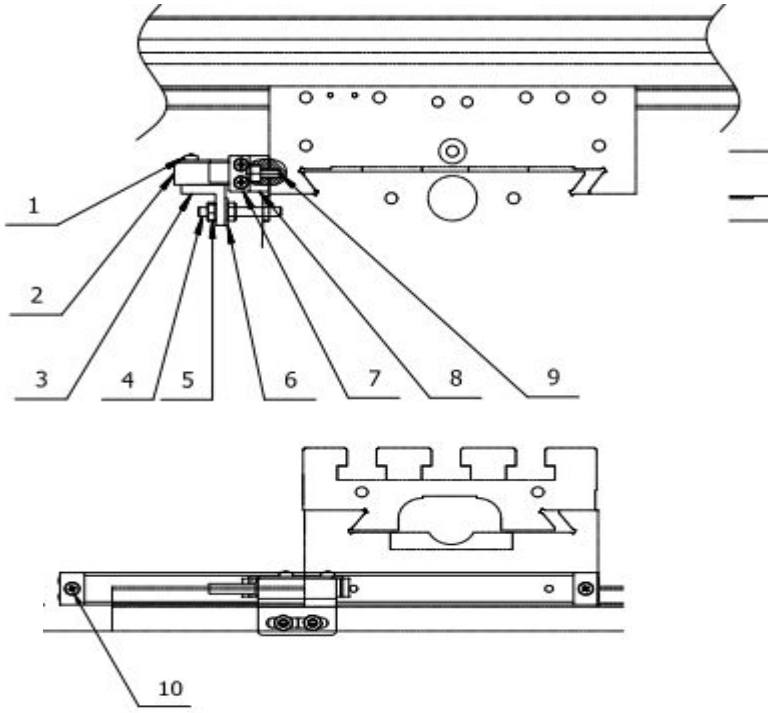
X-axis holes and assembly sketch

1. Make 2-M3 screw holes depth 8 mm, according to the size position show in drawing. 2. These holes use for mounting the MS20 magnetic scale with frame.	
1. Make 2-M4 screw holes depth 8 mm, according to the size position show in drawing. 2. These holes use for mounting the reader with support.	
Assembly sketch	

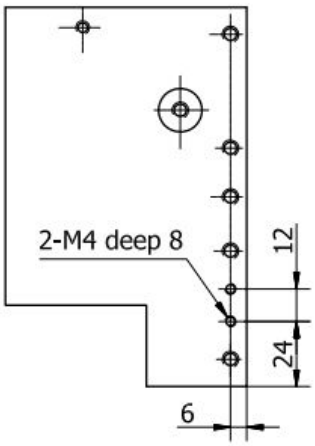
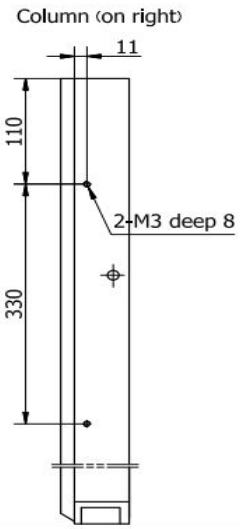
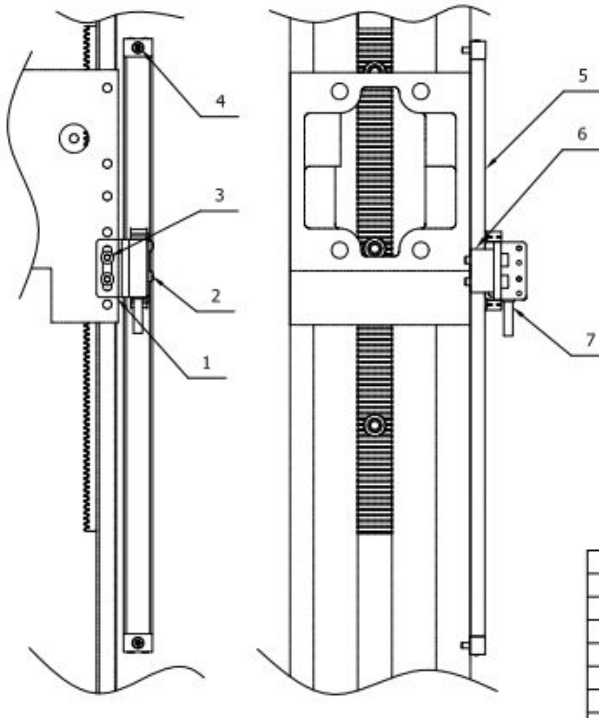
	
Picture showing	
Parts list	1. M3*14 cross recessed pan head screw -----2 pcs 2. MR500 reader with chip scraper ----------1 sets 3. X21004 reader fix support ----------1 pce 4. X21005 cushion block of reader ----------1 pce 5. M3*10 cross recessed pan head screw ----2 pcs 6. M4*20 hexagon socket head cap screws--2 pcs 7. X2100A00 X-axis MS magnetic scale with frame --1 set

Y-axis holes and assembly sketch

1. Make 2-M4 screw holes depth 8 mm, according to the size position show in drawing. 2. These holes use for mounting the MS20 magnetic scale with frame.	

1. Make 2-M4 screw holes depth 8 mm, according to the size position show in drawing. Left of the base. 2. These holes use for mounting the reader with support.	
Assembly sketch	
Picture showing	
Parts list	1. M3*14 cross recessed pan head screw -----2 pcs 2. MR500 reader with chip scraper ----------3 sets 3. X21004 reader fix support ----------1 pce 4. Double end studs M4*28 ----------2 pcs 5. Hexagon nut M4----------4 pcs 6. Washer 4 ----------2 pcs 7. X2100200 Y-axis MS magnetic scale with frame --1 set 8. X21006 support of Y-axis MS20 ----------1 pce 9. M4*8 hexagon socket head cap screws------2 pcs 10. M3*10 cross recessed pan head screw ----2 pcs

Z-axis holes and assembly sketch

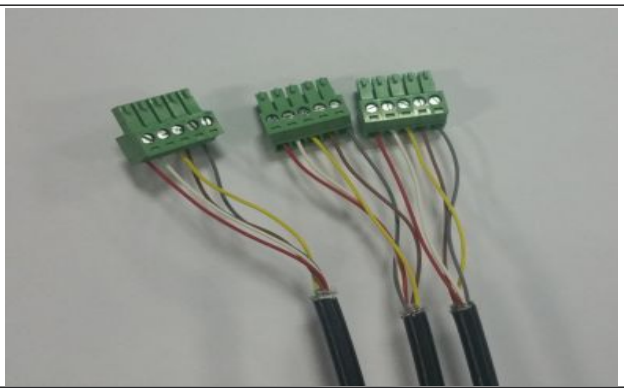
1. Make 2-M4 screw holes depth 8 mm, according to the size position show in drawing. 2. These holes use for mounting the MS20 magnetic scale with frame.	Right of the spindle box seat 
1. Make 2-M3 screw holes depth 8 mm, according to the size position show in drawing. Left of the base. 2. These holes use for mounting the reader with support.	Right of the column 
Assembly sketch	

Picture showing	
Parts list	1. X21004 reader fix support ----------1 pce 2. M3*14 cross recessed pan head screw -------2 pcs 3. M4*20 hexagon socket head cap screws------2 pcs 4. M3*10 cross recessed pan head screw -------2 pcs 5. X2100300 Z-axis MS magnetic scale with frame --1 set 6. X21005 cushion block of reader ----------1 pce 7. MR500 reader with chip scraper ----------3 sets

DT20 Digital display unit assembly steps

Parts list
1. DT20 digital display unit
2. Mounting bracket with magnet
3. Back cover
4. Power adapter 5V
5. Screws with washer--7 sets

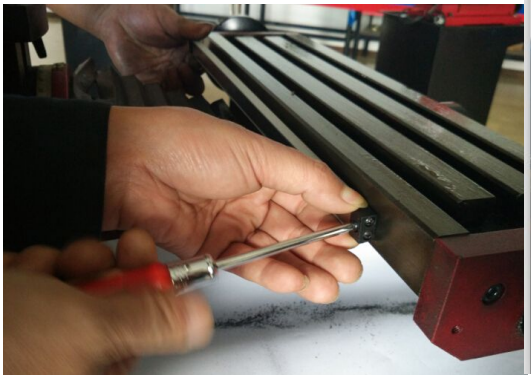
assembly steps

1. Use three screw with wash fix the mounting bracket with magnet on the back of the DT20 digital display. 2. The bracket with a magnet it can make the DT20 adsorption on suitable metal surface. It can fix to three direction left or right even below.	
Connect the MR500 reader to the DT20: 1. Pull off three line banks, from above and blow X-axis, Y-axis and Z-axis. 2. Make the three cables of the reader into the back cover holes as picture showing.	
Screw in the wire into the line banks. **Wire layout from left to right:** **Red--white--yellow---brown--gray** Notice: must be properly connected to the wire.	
Insert the wiring line bank of the XYZ three axis into the wiring row in the back of the DT20 digital display unit. From above and below X-axis, Y-axis, Z-axis. **Important specification:** When insert the line bank or pull out the line bank, must confirm the display is power off.	
Tie three wires together with a tie line then fix the small cover on the back of the DT20 digital display unit. The purpose of this is to the exposure of the wire is not safe, as the same time can prevent the wire loose.	

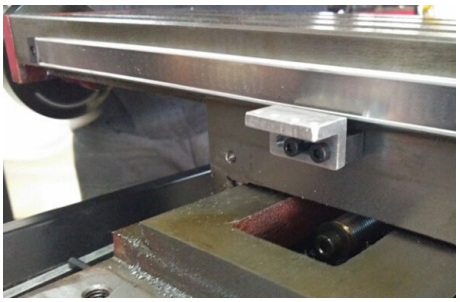
X Axis scale mounting instructions

1. Clean the back side of the saddle and the back of the worktable where the X axis scales is to be fitted.
2. Use two M3*10 cross recessed pan head screw to fix the MS20 magnetic scale with frame on back of the worktable, but in first no tighten it because you need use a dialgage to check of the MS20, the runout of parallelism≤0.05mm on the up side of the MS20 unit. After adjust the parallelism you can fix the screw to tighten the MS20.

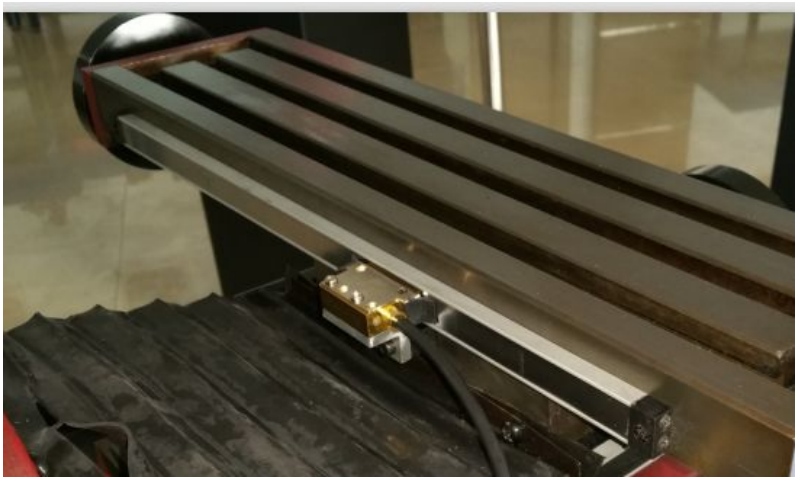
See below picture



3. Use two M4*20 hexagon socket head cap screws to fix the cushion block and the reader support behind the saddle, also need test the parallelism on top of the reader support then fix the screw.



4. Find the X-axis reader with chip scraper fix on the reader support, adjust the reader touch the face of the MS20 unit ≤0.50mm.



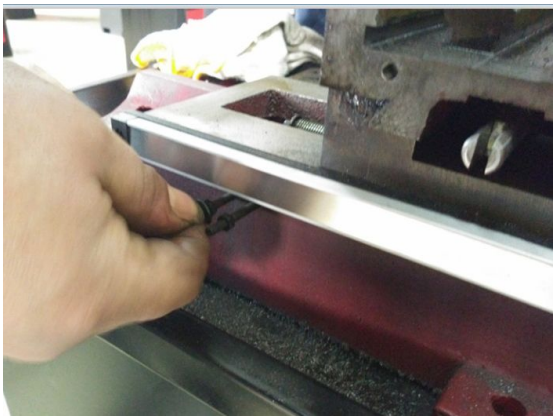
Y-Axis scale mounting instructions

1. Clean the back side of the saddle and the back of the worktable where the X axis scales is to be fitted.
2. Use two M4*8 hexagon socket head cap screws to fix the long bracket on the left of the saddle, then use two M3*10 cross recessed pan head screw fix the Y-axis MS20 magnetic scale with frame on the long bracket, but in first no tighten it because you need use a dialgage to check of the MS20, the runout of parallelism≤0.05mm on the up side of the MS20 unit. After adjust the parallelism you can fix the screw to tighten the MS20.

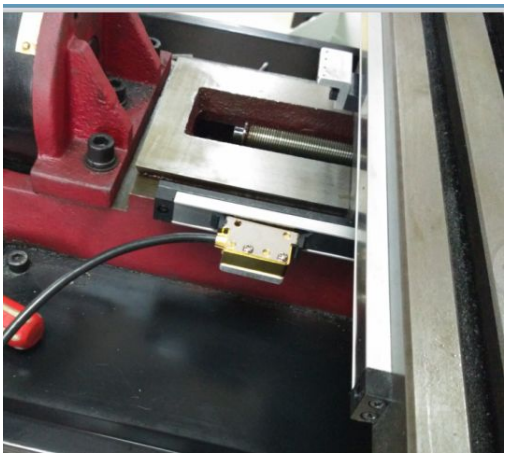
The steps see below picture:



3. Use two double end studs M4*28 screw on the left of the base, then put two M4 nut on the screw and put two M4 washer as below picture showing. Then put the reader support on the screw use another two M4 nut fix it, you also need adjust the face parallelism.



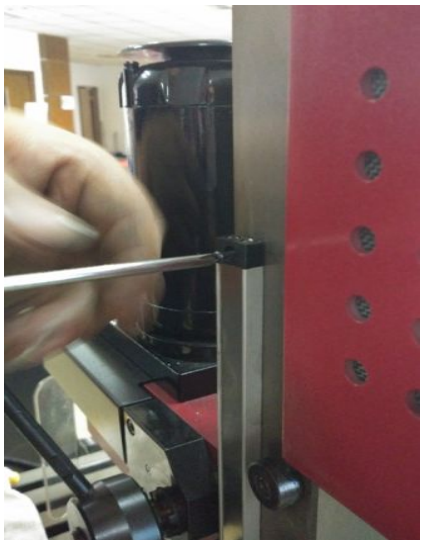

4. Find the Y-axis reader with chip scraper fix on the reader support, adjust the reader touch the face of the MS20 unit ≤0.50mm.



Z-Axis scale mounting instructions

1. Clean the back side of the saddle and the back of the worktable where the X axis scales is to be fitted.
2. Use two M3*10 cross recessed pan head screw fix the Y-axis MS20 magnetic scale with frame on the right of the column, first no tighten it because you need use a dialgage to check of the MS20, the verticality ≤0.10mm on the side of the MS20 unit. After adjust the verticatity you can fix the screw to tighten the MS20.

The steps see below picture:



3. Use two M4*20 hexagon socket head cap screws to fix the cushion block and the reader support on the right of the spindle box seat, also need test the verticatity top of the reader support then fix the screw.

Find the Z-axis reader with chip scraper fix on the reader support, adjust the reader touch the face of the MS20 unit ≤0.50mm.

Display installation location

We prepare a tin bracket you can loosen the wire pull off of the electric control box a little, then insert the tin bracket on top of the electric control box, and tighten the wire pull off.
At last you can put the DT20 digital display unit on the tin bracket, you can easy read the three axis number through the display.
Also i you choose another position to put the DT20 digital display unit, ok it is no problem you can do it by yourself.

----------**The end**----------

WARRANTY

CRAFTEX 3 YEARS LIMITED WARRANTY

Craftex warrants every product to be free from defects in materials and agrees to correct such defects where applicable. This warranty covers **three years** for parts and 90 days for labour (unless specified otherwise), to the original purchaser from the date of purchase but does not apply to malfunctions arising directly or indirectly from misuse, abuse, improper installation or assembly, negligence, accidents, repairs or alterations or lack of maintenance.

Proof of purchase is necessary.

All warranty claims are subject to inspection of such products or part thereof and Craftex reserves the right to inspect any returned item before a refund or replacement may be issued.

This warranty shall not apply to consumable products such as blades, bits, belts, cutters, chisels, punches etceteras.

Craftex shall in no event be liable for injuries, accidental or otherwise, death to persons or damage to property or for incidental contingent, special or consequential damages arising from the use of our products.

RETURNS, REPAIRS AND REPLACEMENTS

To return, repair, or replace a Craftex product, you must visit the appropriate Busy Bee Tools showroom or call 1-800-461-BUSY. Craftex is a brand of equipment that is exclusive to Busy Bee Tools.

For replacement parts directly from Busy Bee Tools, for this machine, please call 1-800-461-BUSY (2879), and have your credit card and part number handy.

- All returned merchandise will be subject to a minimum charge of 15% for re-stocking and handling with the following qualifications.
- Returns must be pre-authorized by us in writing.
- We do not accept *collect* shipments.
- Items returned for warranty purposes must be insured and shipped pre-paid to the nearest warehouse
- Returns must be accompanied with a copy of your original invoice as proof of purchase. Returns must be in an un-used condition and shipped in their original packaging a letter explaining your reason for the return. Incurred shipping and handling charges are not refundable.
- Busy Bee will repair or replace the item at our discretion and subject to our inspection.
- Repaired or replaced items will be returned to you pre-paid by our choice of carriers.
- Busy Bee reserves the right to refuse reimbursement or repairs or replacement if a third party without our prior authorization has carried out repairs to the item.
- Repairs made by Busy Bee are warranted for 30 days on parts and labour.
- Any unforeseen repair charges will be reported to you for acceptance prior to making the repairs.
- The Busy Bee Parts & Service Departments are fully equipped to do repairs on all products purchased from us with the exception of some products that require the return to their authorized repair depots. A Busy Bee representative will provide you with the necessary information to have this done.
- For faster service it is advisable to contact the nearest Busy Bee location for parts availability prior to bringing your product in for repair.