

## Designs and configurations

### Designed to improve

Our CAD (computer-aided design) system is operated by a fully-trained expert. Our AutoCad program gives the specifications on capacities and strengths, thus enabling the design of systems customised for your needs. We are also able to strengthen existing structures and connectors for specific applications. These may be added to suit capacity requirements. We are an ISO 9001 accredited manufacturing/assembly company.

Note: Modular structures are unsuitable for the storage of poisonous or flammable materials.



- Workstation
- Line Side Flow Racks
- Interim Store
- Cart (Towable)
- Trolley (Manual Push)
- Conveyor
- Enclosure Areas
- Retail
- Recreational
- Components
- Assemblies
- Accessories

We suggest the following basic design guidelines:

- Use full lengths of tubing for strength, rather than jointed pieces.
- For higher rigidity apply the parallel (G8) fitting to the sister tube.
- A short length of tube with two of the (G7) swivel tee fittings will diagonally brace a 90 tube and fitting combination.
- Reduce sag by bisecting a horizontal span of tube with an offset (G6) fitting.
- Create a hinge for a door or gate by partially tightening the socket cap screw with a Nylock type of nut. This helps prevent binding.
- Always ensure that tubes are properly torqued and fully inserted in fittings for structural integrity.

### The ultimate in modular design technology

Our web-based Enza design solution reaches distributors and clients all over the world - their time, their place, their pace.

The benefits of the program includes:

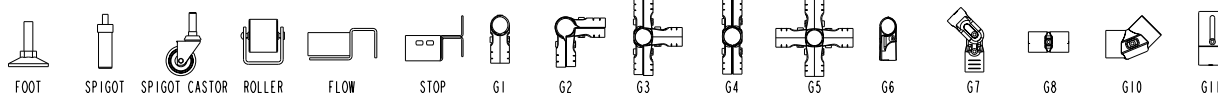
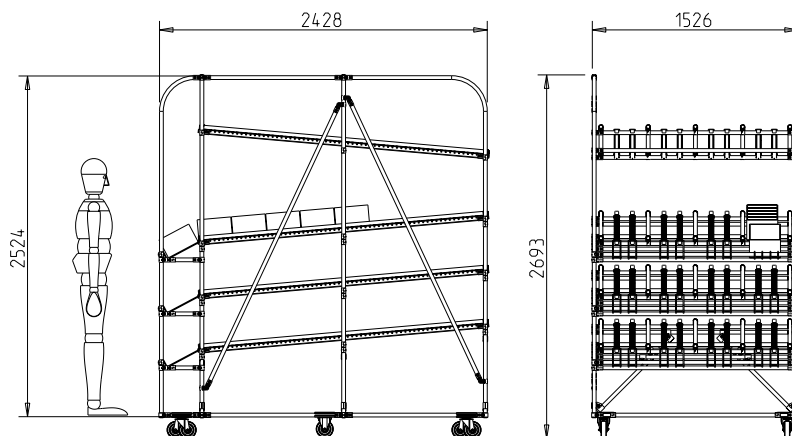
- An exact bill of materials for costing
- A scale drawing for presentation and approval purposes
- Designs in 2-D and 3-D
- Multiple standard design templates that can be used for ideas and concepts.
- Automated designs - this allows a distributor to load certain specifications that are then converted into a redesign by the system and presented immediately

Enza offers up-to-date design systems ensuring our customers needs are met efficiently, cost-effectively and to exact specifications.

ITEM	DESCRIPTION	QTY
1	AB_BRACING	4
2	AB_G1	70
3	AB_G10	12
4	AB_G2	4
5	AB_G3	4
6	AB_G4	8
7	AB_G6	40
8	AB_PIPE_28MM_240	10
9	AB_PIPE_28MM_525	2
10	AB_PIPE_28MM_600	2
11	AB_PIPE_28MM_775	2
12	AB_PIPE_28MM_990	10
13	AB_PIPE_28MM_1440	31
14	AB_PIPE_28MM_2150	20
15	AB_PIPE_28MM_2540	4
16	AB_PIPE_28MM_BENT_69_1	2
17	AB_PIPE_28MM_BENT_69_2	2
18	BINI	6
19	EZI_CASTOR2	4
20	EZI_CASTOR4	2
21	EZI_ROLLER_2080	32
22	HANGER1	24

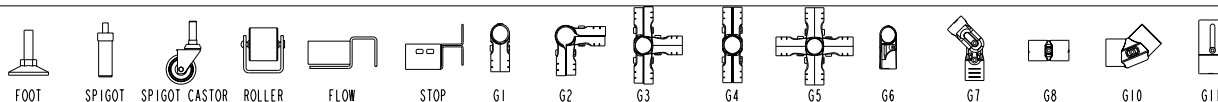
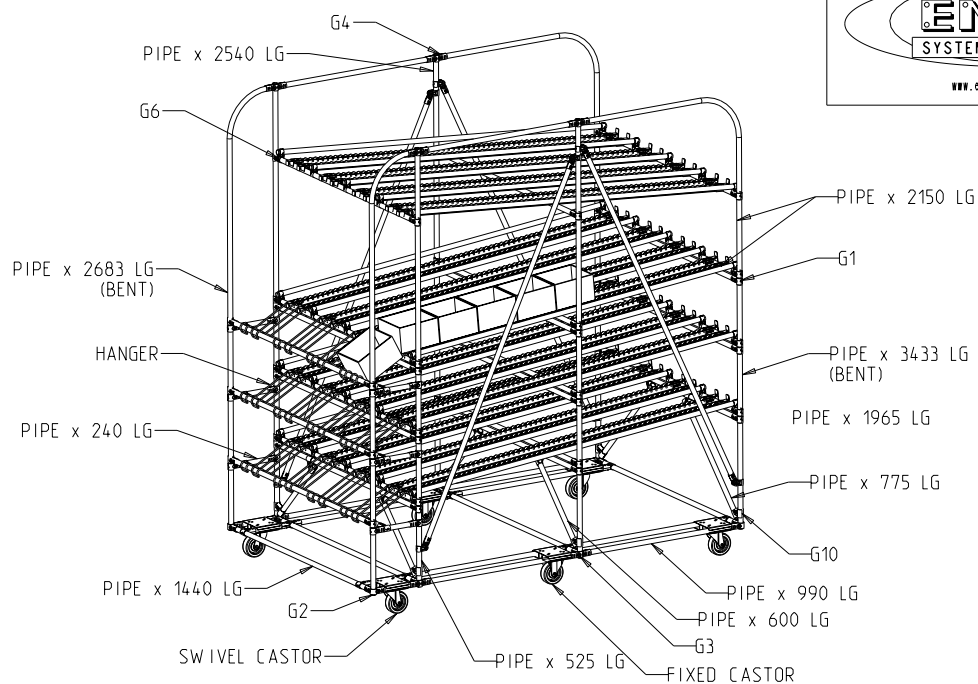
## CROSS BRACE LINE SIDE RACK

AB\_25



## CROSS BRACE LINE SIDE RACK

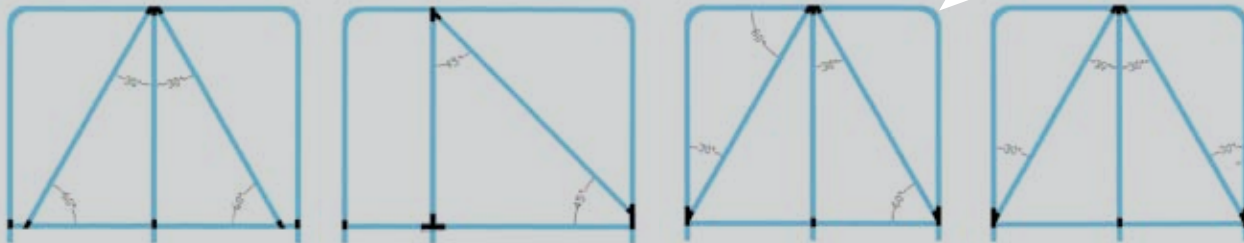
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# Design

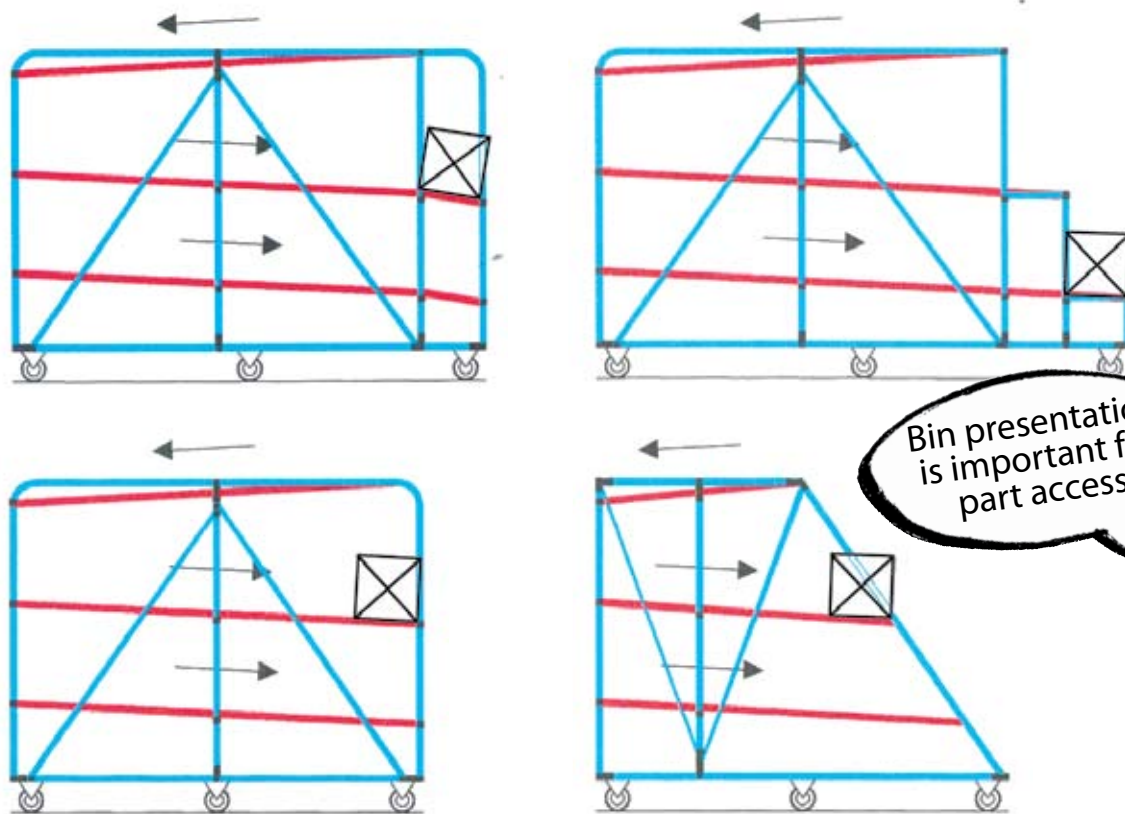
## Concepts and Functionality guide

### Carton flow frame concepts - diagonal supports

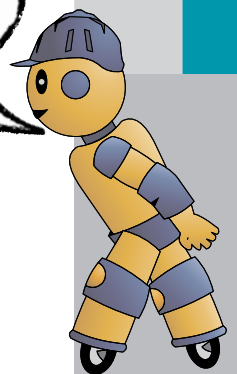


Bent option offers better rigidity in frame.

### Carton flow frame concepts - bin presentation



Bin presentation is important for part access



### Panel attachment concepts



A



B



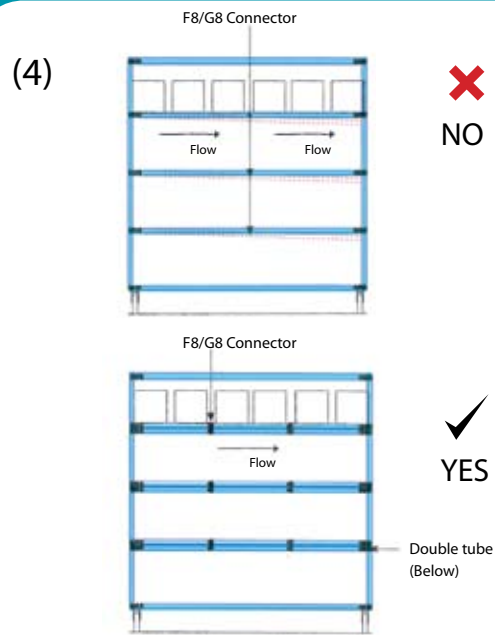
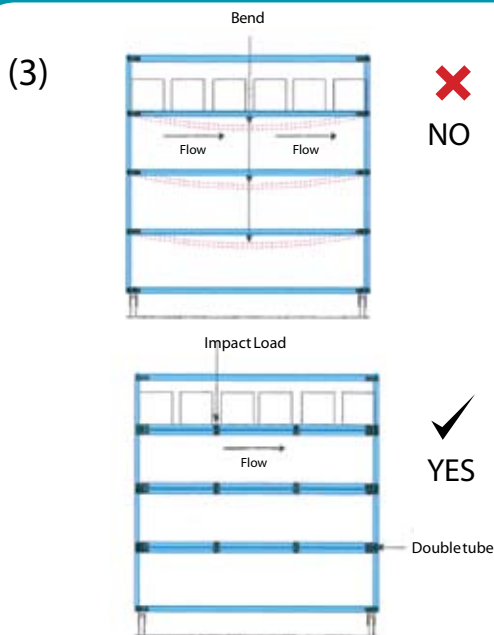
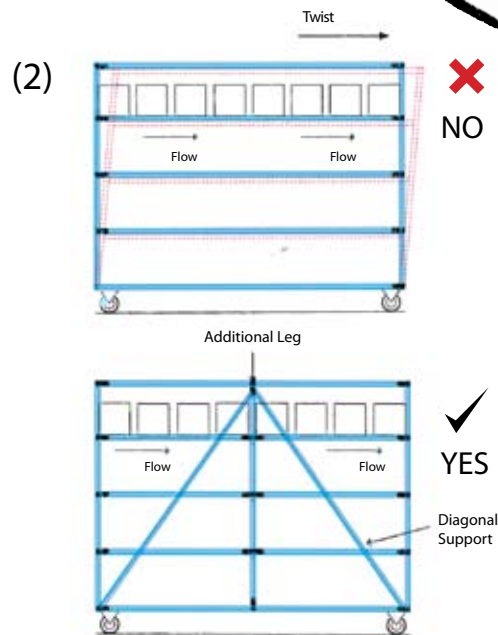
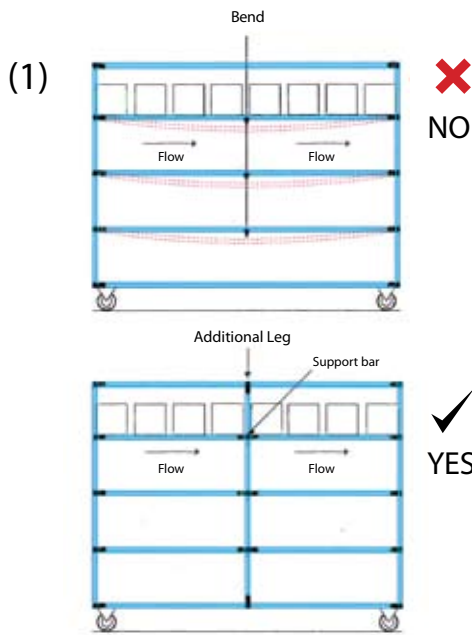
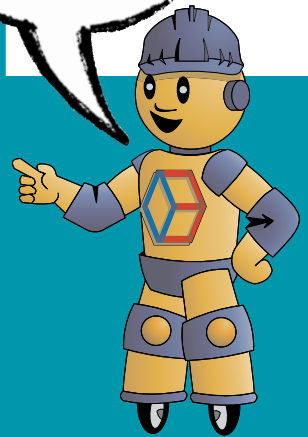
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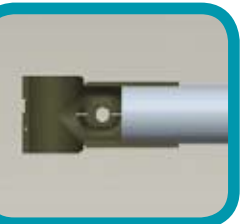
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## Do's & Dont's for the best use of your design

Good tips for good functionality



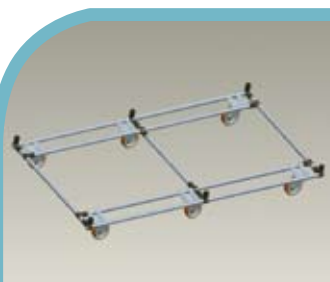
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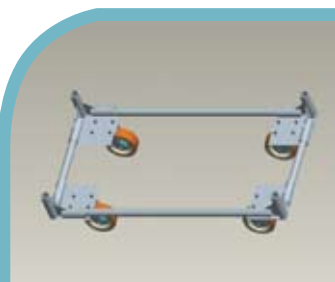
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NB: Make sure tube is firmly secured into the connectors

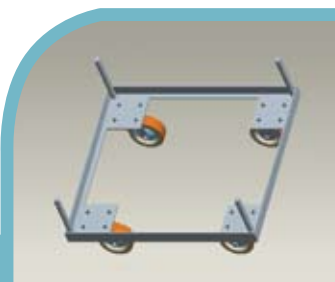
## Base concepts



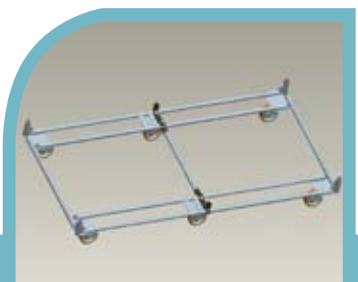
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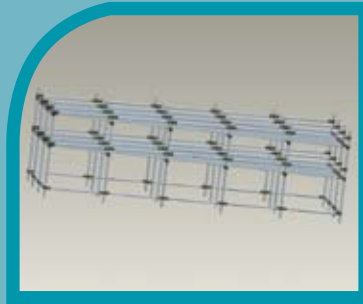
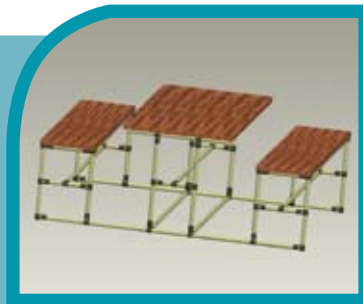
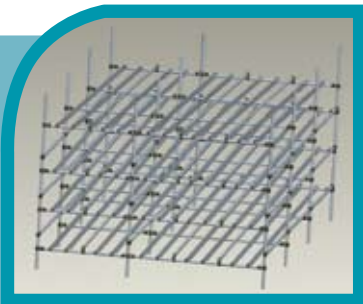
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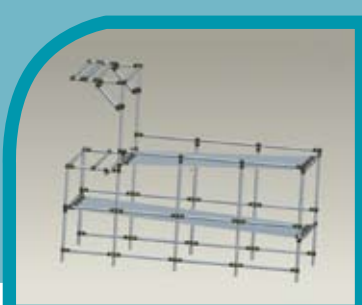
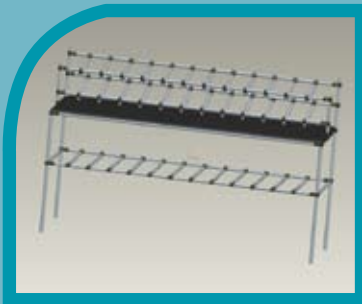
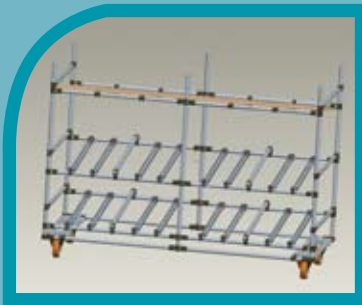


C



D





## Delivery and Supply options

### Piece parts - Sub-assembly - Standard Kit form - On-site assembly

The client can e-mail, call or fax requirements to our offices or a distributor and request support in the following methods:

## 4 methods of supply

1



#### Piece parts - Bulk orders

- Enza can supply in bulk lots depending on what the client requires.
- The products being accessories, connectors or roller tracks.
- These components are packed into secure wooden crates for industrial handling.

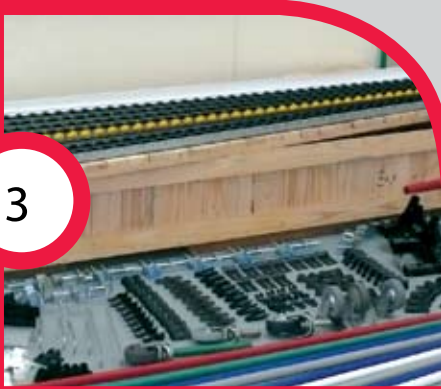
2



#### Sub assembly

- Enza can part-assemble the structure and freight to the client.
- There can be full lengths of tubing for the client to customise the final product to suit their needs.
- This will allow the standard assembly to arrive on-site ready for customising.

3



#### Standard Kit form

- Standard Kit form orders are available to build up the prototypes or samples needed.
- Enza can ship these A, B or C kits, customising the lot to ensure that no unnecessary parts are purchased.
- In addition, Enza trained staff can support in the final customising at the client's premises.

4



#### On-site assembly

- The client may have modular products in stock or have purchased additional components for assembly on-site.
- This would require the Enza staff to work with the client's staff and assist with necessary prototype or development work to get the best design possible.
- Enza staff are well trained, and will be effective in providing the correct design for the customer's needs.

# RULA Employee Assessment Worksheet

Complete this worksheet following the step-by-step procedure below. Keep a copy in the employee's personnel folder for future reference.

### A. Arm & Wrist Analysis

**Step 1: Locate Upper Arm Position**

**Step 1a: Adjust...**  
If shoulder is raised: +1;  
If upper arm is abducted: +1;  
If arm is supported on person is leaning: -1

**Step 2: Locate Lower Arm Position**

**Step 2a: Adjust...**  
If arm is working across midline of the body: +1;  
If arm out to side of body: +1

**Step 3: Locate Wrist Position**

**Step 3a: Adjust...**  
If wrist is bent from the midline: +1

**Step 4: Wrist Twist**  
If wrist is twisted in mid-range = 1;  
If twist at or near end of range = 2

**Step 5: Look-up Posture Score in Table A**

Use values from steps 1, 2, 3 & 4 to locate Posture Score in table A

**Step 6: Add Muscle Use Score**

If posture mainly static (i.e. held for longer than 1 minute) or;  
If action repeatedly occurs 4 times per minute or more: +1

**Step 7: Add Force/load Score**

If load less than 2 kg (intermittent): +0;  
If 2 kg to 10 kg (intermittent): +1;  
If 2 kg to 10 kg (static or repeated): +2;  
If more than 10 kg load or repeated or shocks: +3

**Step 8: Find Row in Table C**

The completed score from the Arm/Wrist analysis is used to find the row on Table C

### B. Neck, Trunk & Leg Analysis

**Step 9: Locate Neck Position**

**Step 9a: Adjust...**  
If neck is twisted: +1; If neck is side-bending: +1

**Step 10: Locate Trunk Position**

**Step 10a: Adjust...**  
If trunk is twisted: +1; If trunk is side-bending: +1

**Step 11: Legs**

If legs & feet supported and balanced: +1;  
If not: +2

**Table B**

Trunk Posture Score	
Neck	Legs
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
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95	95
96	96
97	97
98	98
99	99
100	100

**Step 12: Look-up Posture Score in Table B**

Use values from steps 9, 10 & 11 to locate Posture Score in Table B

**Step 13: Add Muscle Use Score**

If posture mainly static or;  
If action 4 minutes or more: +1

**Step 14: Add Force/load Score**

If load less than 2 kg (intermittent): +0;  
If 2 kg to 10 kg (static or repeated): +1;  
If more than 10 kg load or repeated or shocks: +3

**Step 15: Find Column in Table C**

The completed score from the Neck/Trunk & Leg analysis is used to find the column on Chart C

**Final Score**

FINAL SCORE: 1 or 2 = Acceptable; 3 or 4 investigate further; 5 or 6 investigate further and change soon; 7 investigate and change immediately

**RULA** = (stands for **R**apid **U**pper **L**imb **A**ssessment )

RULA assessment sheet (adapted by Prof Alan Hedge, PhD, CPE, Cornell University)

© Professor Alan Hedge, Cornell University, Nov. 2000



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