



**MITSUBISHI**  
**FORKLIFT TRUCKS**



# SENSIA

**Reach Trucks AC Power**  
**1.4 ~ 2.5Tonnes**

- **Product Range & Introduction**
- **SENSiA – Evolution**
- **SENSiA – Impel Ergonomics**
- **SENSiA – Creating Distinction**
- **SENSiA – On The Move**
- **Q&A**



# SENSiA

## Product Range & Introduction



# SENSIA

- ✓ **S**ensitive and **S**ophisticated controls
- ✓ **E**rgonomic design features
- ✓ **N**iche capability



## What's New

- ✓ Available in 11 Models
- ✓ Capacity: 1.4 ~ 2.5T
- ✓ Inclusion of X model – High performance with heavy duty chassis
- ✓ RB20N2X: ↑13,000mm



\* Picture above is for illustration purpose only

## Mast Chart



1	RB14N2S, RB16N2S, RB16N2, RB16N2C			
Mast Type	h3 mm	h1 mm	h2 mm	h4 <sup>1)</sup> mm
Triplex	4800	2210	1560	5630
	5400	2410	1790	6230
	5700	2510	1860	6530
	5900	2577	1927	6730
	6300	2710	2060	7130
	7000	2943	2293	7830
	7500	3110	2460	8330

2	RB20N2H, RB25N2X			
Mast Type	h3 mm	h1 mm	h2 mm	h4 <sup>1)</sup> mm
Triplex	4800	2230	1580	5630
	5400	2430	1780	6230
	5700	2530	1880	6530
	5900	2597	1947	6730
	6300	2730	2080	7130
	7000	2963	2313	7830
	7500	3130	2480	8330
	8000	3297	2647	8830
	8500	3463	2813	9330
	9000	3785	3135	9830
	9500	3952	3302	10330
	10000	4118	3468	10830
	10500	4285	3635	11330
11000	4452	3802	11830	
11500	4618	3968	12330	

2	RB14N2HS, RB16N2HS, RB16N2HC			
Mast Type	h3 mm	h1 mm	h2 mm	h4 <sup>1)</sup> mm
Triplex	8000	3297	2647	8830
	8500	3436	2813	9330
	9000	3785	3135	9830
	9500	3952	3302	10330

2	RB16N2H			
Mast Type	h3 mm	h1 mm	h2 mm	h4 <sup>1)</sup> mm
Triplex	8000	3297	2732	8830
	8500	3463	2898	9330
	9000	3785	3220	9830
	9500	3952	3387	10330
	10000	4118	3553	10830
	10500	4285	3720	11330
	11000	4452	3887	11830
	11500	4618	4053	12330

2	RB20N2X			
Mast Type	h3 mm	h1 mm	h2 mm	h4 <sup>1)</sup> mm
Triplex	12000	4785	4135	12830
	12500	4952	4302	13330
	13000	5118	4468	13830

h1 = Lowered mast height  
 h2 = Free lift  
 h3 = Lift height  
 h4 = Raised mast height  
 Q = Lifting capacity, rated load  
 c = Load centre (distance)

**Note:**  
 1.) STD Trucks  
 2.) High Performance Trucks

\* Picture above is for illustration purpose only



# PRODUCT RANGE & INTRODUCTION



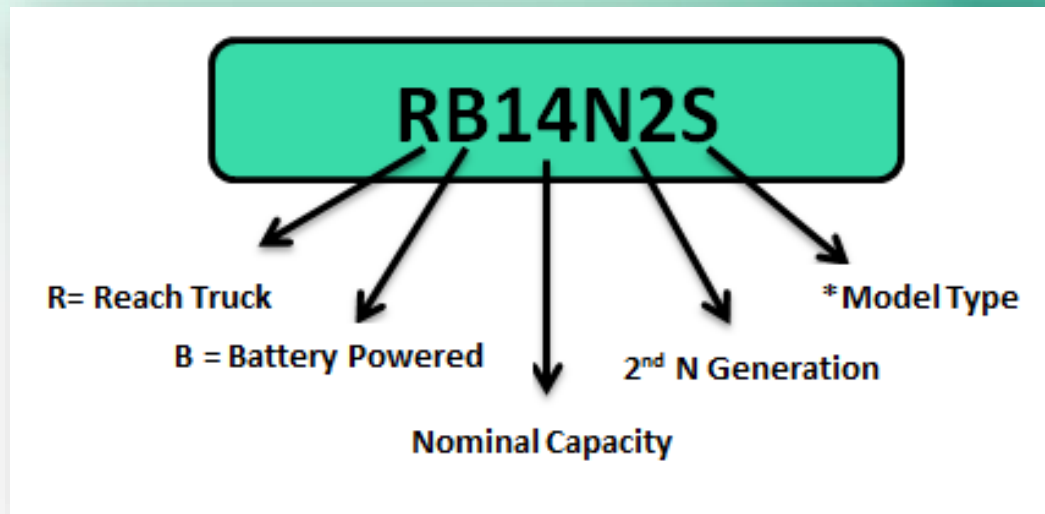
Models	Availability
RB14N2S	✓
RB14N2HS	✓
RB16N2S	✓
RB16N2HS	✓
RB16N2	✓
RB16N2H	✓
RB16N2C	✓
RB16N2HC	✓
RB20N2H	✓
RB20N2X	*Available By Late 2014
RB25N2X	✓

**Note:**  
Cold Cabin Option capable of operating  
- 35 degree Celsius is now available

\* Picture above is for illustration purpose only



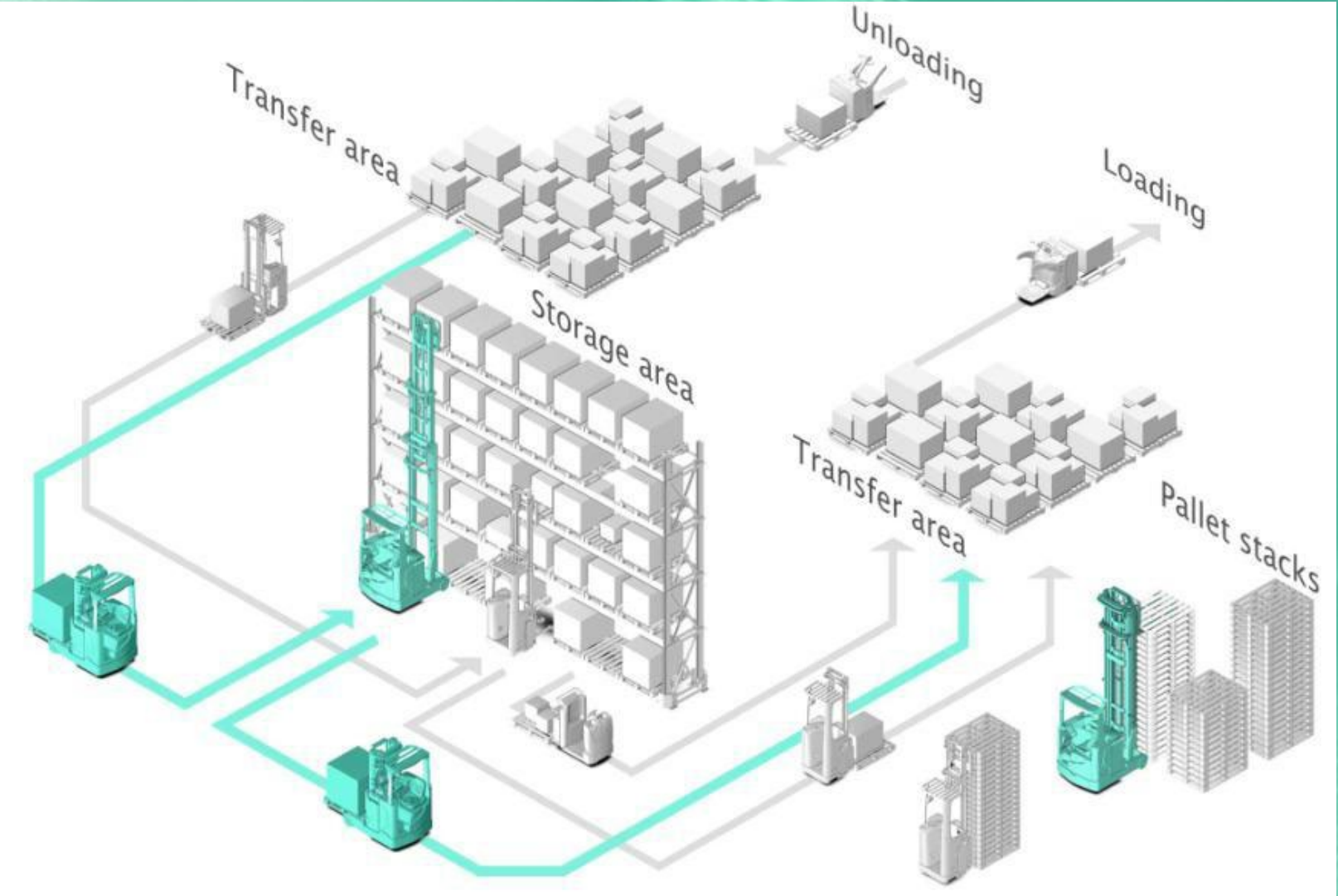
## Nomenclature



- **H** = High Performance
- **S** = Straddle (For Pallet Width 1,000mm)
- **C** = Compact Chassis (Drive in Racking)
- **X** = High Performance Models with Heavy Duty Chassis



## APPLICATIONS



## CUSTOMER SEGMENTS

**Developed Logistic centers**

**Terminal warehouses**

**Deep stacking warehouses**

**Developing Logistic centers**

**Cold storage warehouses**

**3<sup>rd</sup> party logistic centers**

**Shops and trade**

**Production plants**

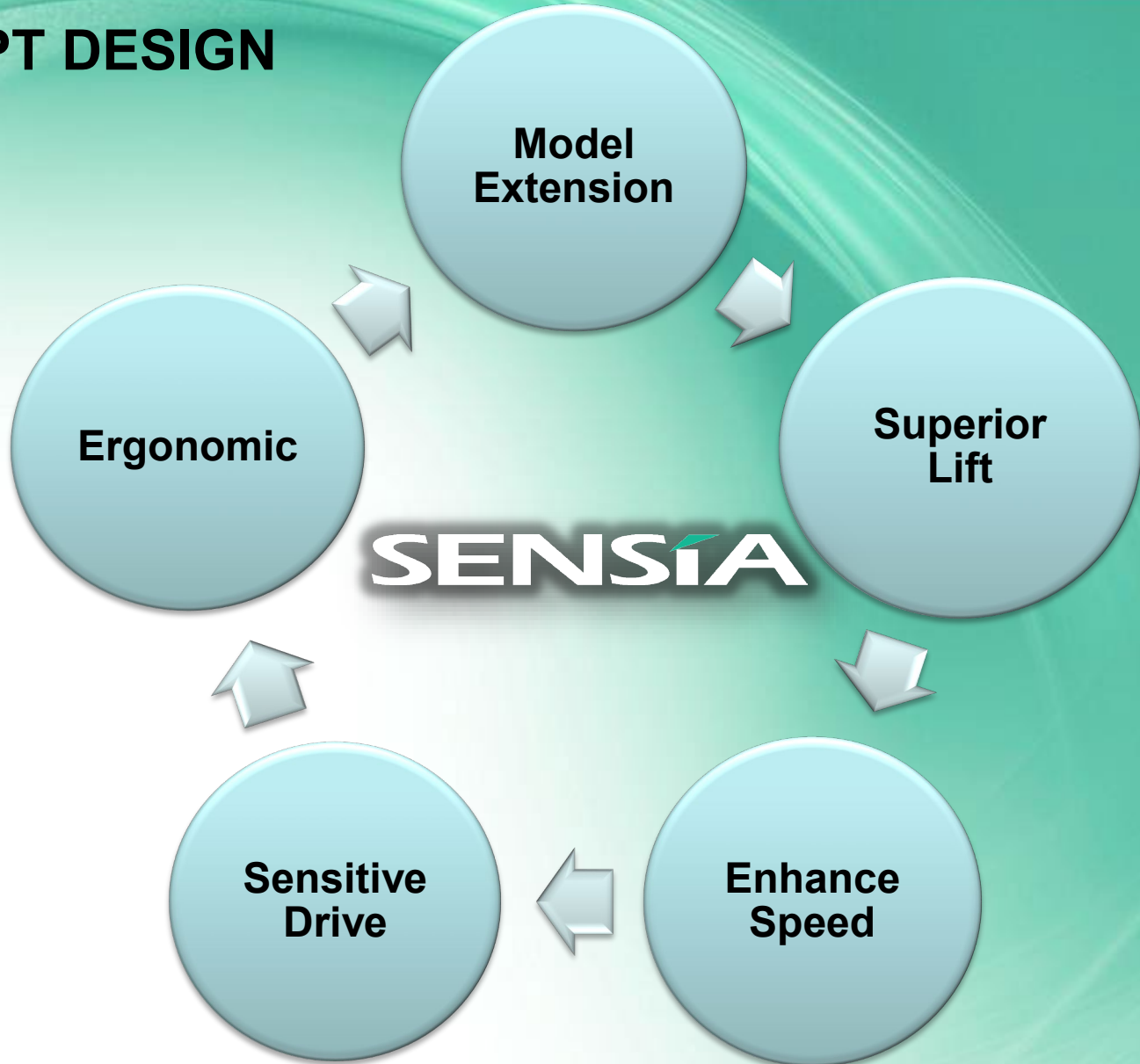
**Industry suppliers**



# SENSiA

## Evolution

## CONCEPT DESIGN



Characteristics		RBN Series	SENSiA
Model Design	-	RBN (S)(H)(HS)(C)	RBN2 (S)(H)(HS)(C)(X)
Number of Models	-	10	11
Load Capacity	-	1.4 / 1.6 / 2.0/ 2.5	1.4 / 1.6 / 2.0/ 2.5
Load Centre Distance	-	600	600
Dimensions			
Overall Length (mm)	l1 (mm)	2404 - 2640	2405 - 2640
Height of Mast Lowered	H1 (mm)	2210 - 4618	2210 - 5118
Free Lift	H2 (mm)	1560 - 3968	1560 - 4468
Lift	H3 (mm)	4800 - 11500	4800 - 13000
Height of Mast Extended	H4 (mm)	5630 - 12330	5630 - 13830
Height of overhead guard (Cabin)	H6 (mm)	2200	2200
Height of Seat/ Stand on Platform	H7 (mm)	1100	1030
Height of Support Arms	H8 (mm)	360	360
Ground Clearance, Wheelbase Center	M2 (mm)	75	75
Reach Travel (mm)	l4 (mm)	381 - 582	381 - 582
Overall Width	B1/B2 (mm)	1100 - 1440	1100 - 1440
Fork Spread, Min/Max	B5 (mm)	315 / 710	315 / 710
Width between reach legs	B4 (mm)	900 / 1070	900 / 1070
Performance & MISC			
Turning Radius (mm)	(mm)	1547 - 1749	1541 - 1749
Travel Speed, With/Without Load (Km/h)	(Km/h)	10 - 12 / 10 - 12	11 - 14 / 12 - 14
Lifting Speed, With/Without Load (m/s)	(m/s)	0.35 - 0.44 / 0.55 - 0.65	0.3 - 0.4 / 0.65 - 0.7
Lowering Speed, With/Withoutload (m/s)	(m/s)	0.55 / 0.5	0.55 / 0.5
Acceleration Time, With/Without Load	(s)	5.0 - 5.9 / 4.5 - 4.7	4.8 - 5.2 / 4.4 - 4.6
Maximum Climbing, with/Without Load (%)	(%)	8-10.0 / 15.0	10.0 / 15.0
Battery Voltage/ Rated Cap (V/Ah)	(V/Ah)	47 / 465 - *930	48 / 465 - *930
Drive Control Type	-	Stepless	Stepless
Service Brake	-	Electric	Electric
Noise Level	(dB(A))	67 - 71	66
Electric Motors			
Drive motor capacity	(kW)	7.5	7.5
Lift Motor Output at S3 15 % duty factor	(kW)	10.0 / 14.0	10.0 / 14.0

**Model Extension**  
- Addition of **"X"** Model

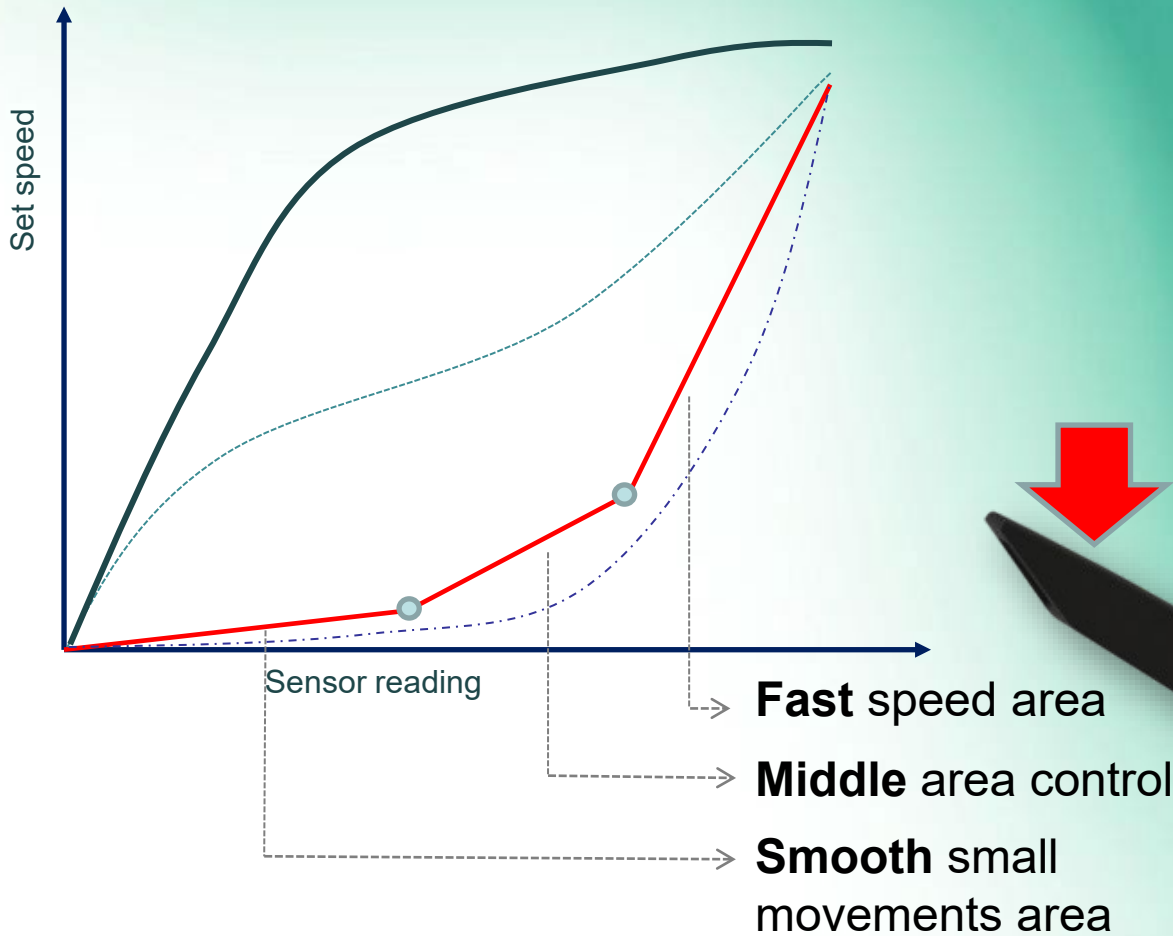
**Superior Lift**  
- Up to **13m** Lift Height

**Enhanced Speed**  
- Up to 14km/h



## SENSITIVE DRIVE SYSTEM

### Modulated 2 - Point Curve



### Set Speeds:

- Fast response to full speed
- Middle speed usage demand
- Low speed usage demand

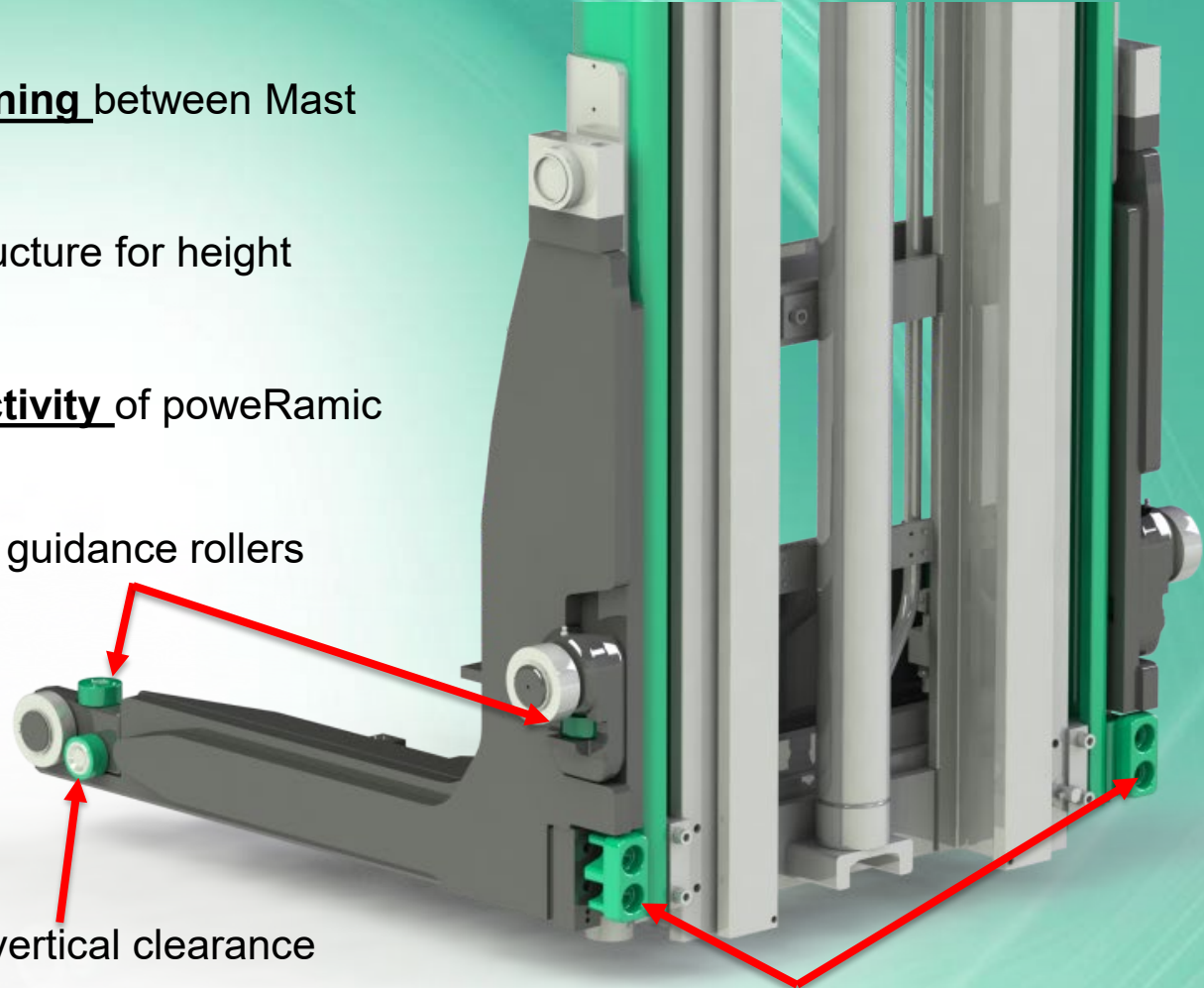
## MAST IMPROVEMENTS

- ✓ Improved **mast stability**  
(Refer to 1 + 2 + 3)
- ✓ **Electronic Cushioning** between Mast stages
- ✓ More support in structure for height **≥ 9metres**
- ✓ **Good heat conductivity** of poweRamic mast structure

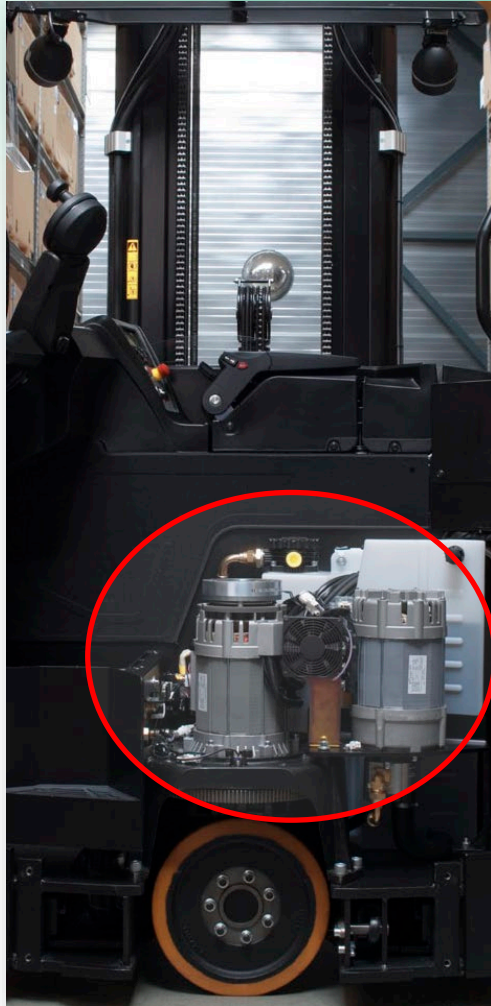
① Robust side guidance rollers

② Adjustable vertical clearance rollers

③ Mast profile support change



## INTERNAL COMPONENTS



**RBN Series**

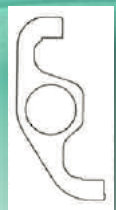


**SENSiA**

- **Improved AC technology** result in smoother drive and lift performance
- **Compact components** enables the overall seat height to reduce
- **Seat lift feature** offers easy accessibility of internal components for periodic maintenance purpose
- **Regenerative braking**



# SENSiA - EVOLUTION



powerRamic Mast

Traction Motor

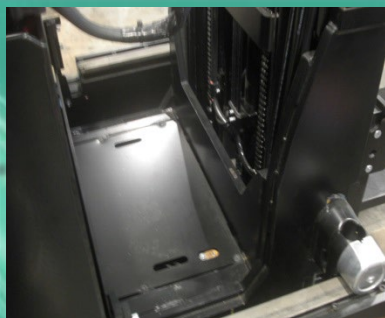
Steering Motor



Hydraulic Pump Motor



SENSiA



Compact Hydraulics Housing System



Step on Quick release (\*Optional)

# SENSiA - EVOLUTION



## FUTURISTIC EXTERIOR



**RBN Series**



**SENSiA**



# SENSiA - EVOLUTION



1



Improved overhead guard design with increased tapered angle for greater visibility

2



Improved arm rest design for greater comfort

3



Patented finger-tip design for more sensitive controls

\* Picture above is for illustration purpose only



# SENSiA - EVOLUTION



4



User-Friendly color digital display with integrated control buttons

5



Wider grab bars design for enhance grip support

\* Optional Arm shield guard

6



Enhanced pedals design for greater comfort

\* Picture above is for illustration purpose only

# SENSiA - EVOLUTION

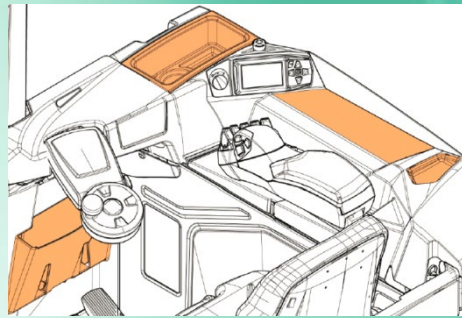


7



**Wider assist step design** for easy accessibility

8



**Enhanced storage spaces** for better storage capacity

(\*Note: Cup holder is not available for C model)

9



**Relocation of Ventilating port**

\* Picture above is for illustration purpose only



## Cold Cabin Option

- **Modern & Functional Design** offers 360 all round operator visibility
- **Innovative Clear View Roof design** improves upward visibility to the forks  
(Note: Heated roof is not available. Roof window wiper is available as an option)

### Important:

- Cabin option is not available for all compact models: RB16N2C & RB16N2HC
- Cold store modification (MODCS) is not included. Such option must be ordered separately.
- Available battery sizes for ordering: 620Ah /775Ah/ 930Ah

### Note:

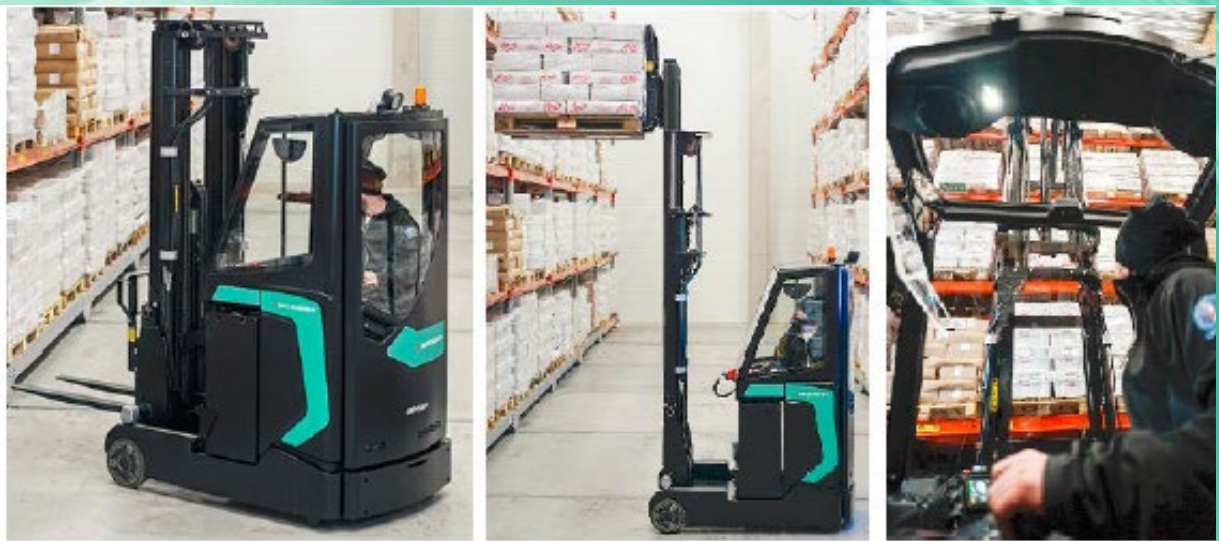
- 1.) The cabin option will result in an addition +60mm to the trucks overall length (I6), working aisle (AST) and turning radius (Wa).
- 2.) Height to top of the overhead guard (h6)2,200mm is the same as the standard machine without a cabin.



# SENSIA - EVOLUTION



## Cold Cabin Option



Features Highlights (Standard)	Optional Features
360° visibility	Warning light on top of cabin
Controlled-temperature heating system with air vents for floor and window level in cabin keeping out the cold up to -35°C	Intercom. A two-way intercom system enabling the operator to communicate without opening the cabin door
Electrically heated windows (excluding roof window) with on/off switch	Audio system
Emergency exit via the roof window (polycarbonate)	Reading lamp in cabin
Interior covered with plastic trim	Roof window wiper
Collision guard. A steel guard to the chassis frame for added door protection in the event of a collision	Accessory rack in cabin
Well-insulated = less heating required	Rear view mirror



# SENSiA

## Impel Ergonomics

## LOWER CHASSIS SEAT HEIGHT

**1030mm**



**1100mm**

## LOWER CHASSIS SEAT HEIGHT

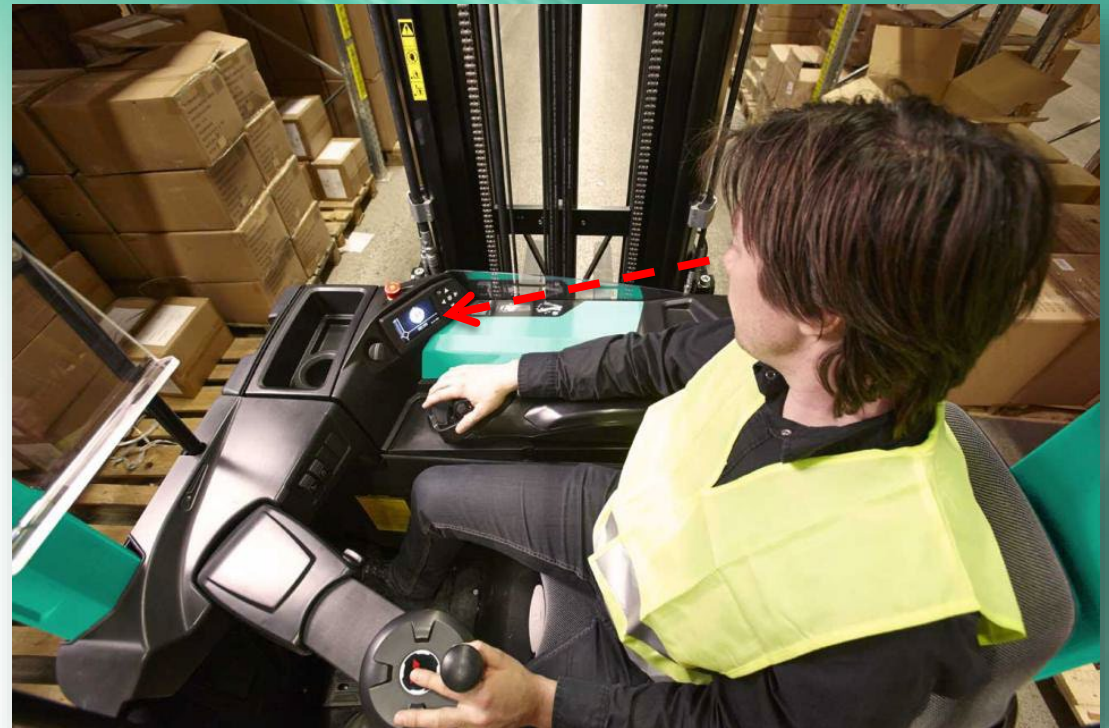


### Benefits:

- ✓ Overall seat height lowered by 70mm
- ✓ Ease of accessing in/out of the cabin
- ✓ Comfortable and versatile to suit all forms of physique



## SUPERIOR COMFORT



- ✓ More leg room
- ✓ Stress free eye contact on display
- ✓ Adjustable Grammer seats
- ✓ Fatigue free controlling effort



## SUPERIOR COMFORT



**Before**

- X Raised step Angle**
- X Narrow pedals**



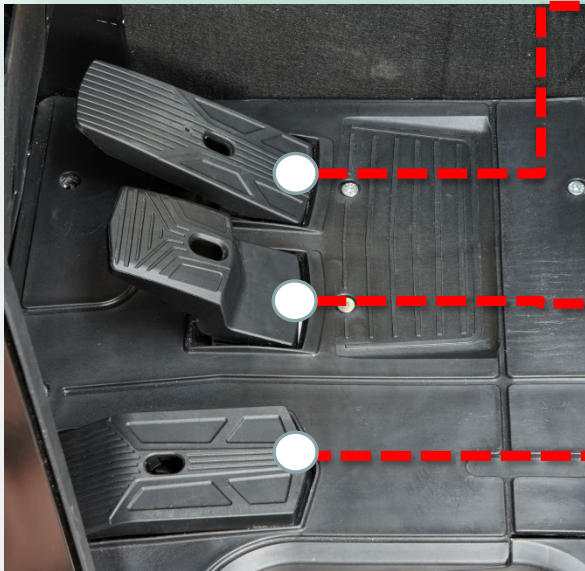
**After**

- ✓ Decreased step angle**
- ✓ Reduce fatigue on Foot**
- ✓ Passive Sway Control (New!)**
- ✓ Active Sway Control (Optional)**



**End  
Result**

## SUPERIOR COMFORT



**1 Accelerator Pedal**

- Accelerator Function
- Passive Regenerative Braking when released

**2 Brake Pedal**

- Stronger regenerative braking when depressed lightly

**3 Safety Pedal**

- To detect operator presence
- **Passive Sway Control** – Minimum chassis movement to counter mast sway (\*Standard)
- **Active Sway Control** to eliminate mast sway with zero chassis movement (\*Optional. Available by late 2014)



## SUPERIOR COMFORT

- ✓ Ergonomic armrest
- ✓ Ergonomic fingertip controls
- ✓ Distinct digital display
- ✓ Simplified buttons display
- ✓ Improved space utilisation
- ✓ Plug in Diagnosis at armrest

After



Before

- ✗ Armrest w/o contour
- ✗ Flat / Large Fingertip Controls
- ✗ Small LCD Display
- ✗ Cup holder located at the back
- ✗ Smaller press buttons



## AUTOMATED ASSIST FUNCTION

### F2 button (NEW!)

\*Activated simultaneously with fingertips



### ✓ Pre-height selector (\*Optional)

\*Easiest to use in the market



### ✓ Tilt centering (\*Optional)

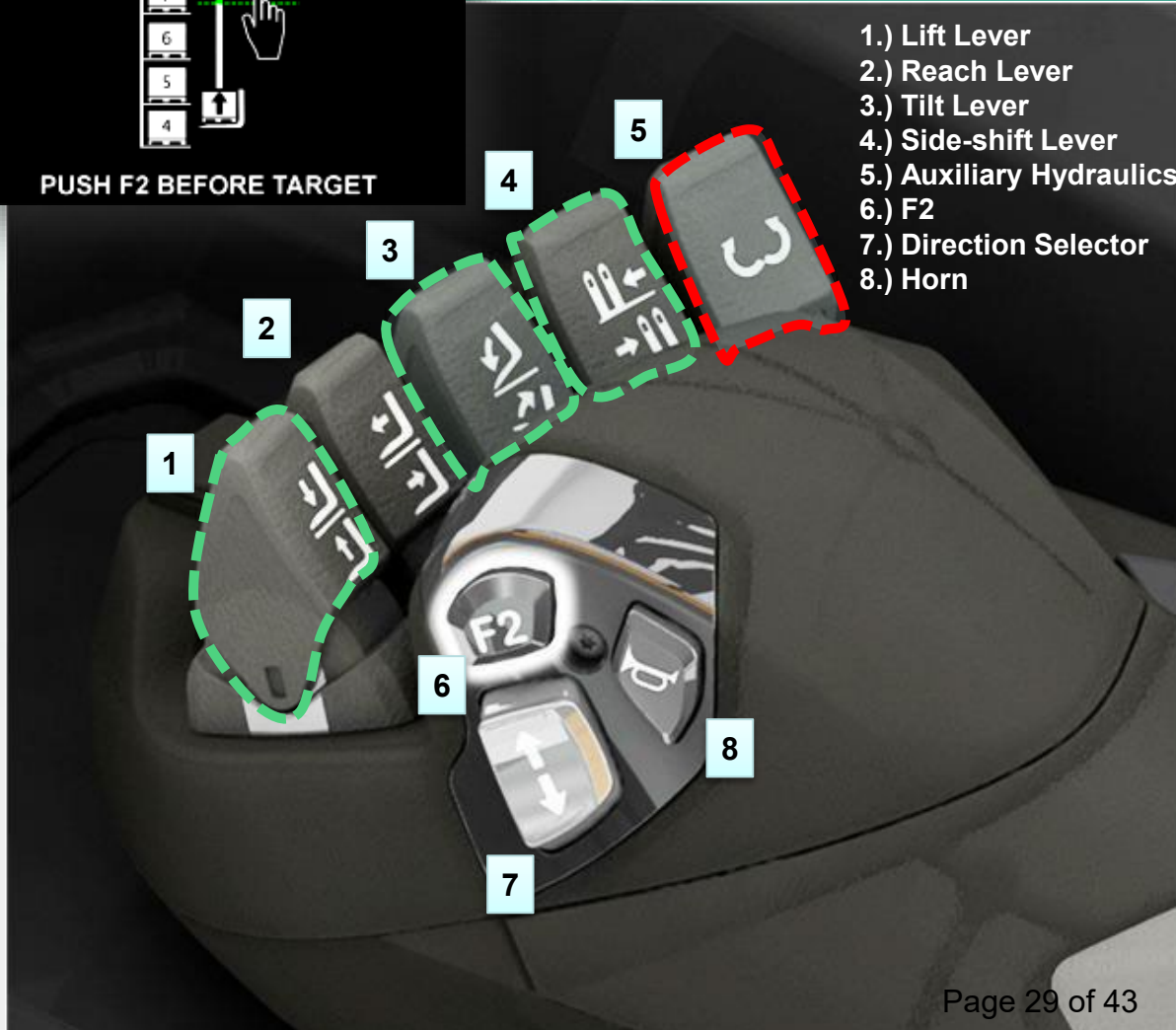


### ✓ Side shift centering (\*Optional)



### ✓ Clamp opening (\*Optional)

\*AUX/CSM functions



## VIVID DIGITAL DISPLAY

- ✓ Professional mode (Knob 135°)
- ✓ Eco mode (Knob 90°)
- ✓ Distinct symbols

\*Note: Truck operation modes can be modified according to customer needs by service engineer



# SENSiA

## Creating Distinction



# SENSIA – CREATING DISTINCTION



**MITSUBISHI  
SENSIA**



**LINDE  
R 1120 SERIES**



**CROWN  
ESR 5200 SERIES**



**VS**

**HYSTER  
R SERIES**



**JUNGHEINRICH  
ETM / ETV SERIES**



# SENSIA – CREATING DISTINCTION



## CHASSIS & MAST

**MITSUBISHI  
SENSIA**



**LINDE  
R 1120 SERIES**



**HYSTER  
R SERIES**



**JUNGHEINRICH  
ETM / ETV SERIES**



**CROWN  
ESR 5200 SERIES**



1 ✓ **11 Models**  
1.4 / 1.6 / 2.0 / 2.5T

2 ✓ **Seat Height**  
1030mm

3 ✓ **Ground Clearance**  
75 mm

X **9 Models**  
1.4 / 1.6 / 2.0T

✓ **Seat Height**  
910 – 1040 mm

✓ **Ground Clearance**  
75 mm

X **7 Models**  
1.4 / 1.6 / 2.0 / 2.5T

X **Seat Height**  
1082mm

✓ **Ground Clearance**  
66 / 76 mm

X **6 Models**  
1.4 / 1.6 / 1.8 / 2.0 / 2.5T

X **Seat Height**  
1057mm

X **Ground Clearance**  
80 / 95 mm

X **7 Models**  
1.4 / 1.6 / 2.0T

X **Seat Height**  
1125 / 1113mm

✓ **Ground Clearance**  
76 mm



# SENSIA – CREATING DISTINCTION



## CHASSIS & MAST

**MITSUBISHI SENSIA**

**LINDE R 1120 SERIES**

**HYSTER R SERIES**

**JUNGHEINRICH ETM / ETV SERIES**

**CROWN ESR 5200 SERIES**



4 ✓ Overall Width  
\*1100 – 1440mm

✓ Overall Width  
\*1140 – 1270mm

✓ Overall Width  
\*1125 – 1345mm

✓ Overall Width  
\*1120 – 1270mm

✓ Overall Width  
\*1120 – 1285mm

5 ✓ Turning Radius  
1541 - 1749mm

✓ Turning Radius  
1541 - 1749mm

✗ Turning Radius  
1671 - 1911mm

✗ Turning Radius  
1620 - 1865mm

✗ Turning Radius  
1638 - 1809mm

6 ✓ Max Lift Height  
13,000 mm

✗ Max Lift Height  
11,455 mm

✗ Max Lift Height  
12,500 mm

✓ Max Lift Height  
13,000 mm

✓ Max Lift Height  
13,000 mm



# SENSIA – CREATING DISTINCTION



## PERFORMANCE

**MITSUBISHI  
SENSIA**

**LINDE  
R 1120 SERIES**

**HYSTER  
R SERIES**

**JUNGHEINRICH  
ETM / ETV SERIES**

**CROWN  
ESR 5200 SERIES**



1 ✓ **Travel Speed**  
11- 14km/h

✓ **Travel Speed**  
14 / 14km/h

✓ **Travel Speed**  
14 / 14km/h

✓ **Travel Speed**  
14 / 14km/h

✓ **Travel Speed**  
10 - 14km/h

2 ✓ **Lift Speed**  
No Load: Max 0.4m/s  
Load: Max 0.7m/s

✓ **Lift Speed**  
No Load: Max 0.45m/s  
Load: Max 0.7m/s

✓ **Lift Speed**  
No Load: Max 0.42m/s  
Load: Max 0.68m/s

✓ **Lift Speed**  
No Load: Max 0.5m/s  
Load: Max 0.7m/s

✓ **Lift Speed**  
No Load: Max 0.41m/s  
Load: Max 0.69m/s

3 ✓ **Drive Motor Capacity**  
7.5kW

✗ **Drive Motor Capacity**  
6.5kW

✗ **Drive Motor Capacity**  
6.4kW

✗ **Drive Motor Capacity**  
6.90 – 7.0kW

✗ **Drive Motor Capacity**  
6.8kW

# SENSIA – CREATING DISTINCTION



## EASE OF ENTRY / EXIT

**MITSUBISHI  
SENSIA**

**LINDE  
R 1120 SERIES**

**HYSTER  
R SERIES**

**JUNGHEINRICH  
ETM / ETV SERIES**

**CROWN  
ESR 5200 SERIES**



- ✓ Competitively low seat height
- ✓ Assist Steps
- ✓ Wide Steps
- ✓ 2 X Large Grab Bars

- ✓ Competitively low seat height
- ✗ No Assist Steps
- ✗ N/A
- ✓ 2 X Large Grab Bars

- ✗ Moderately high seat height
- ✓ Assist Steps
- ✓ Wide Steps
- ✗ 1 X Small Grab Bars

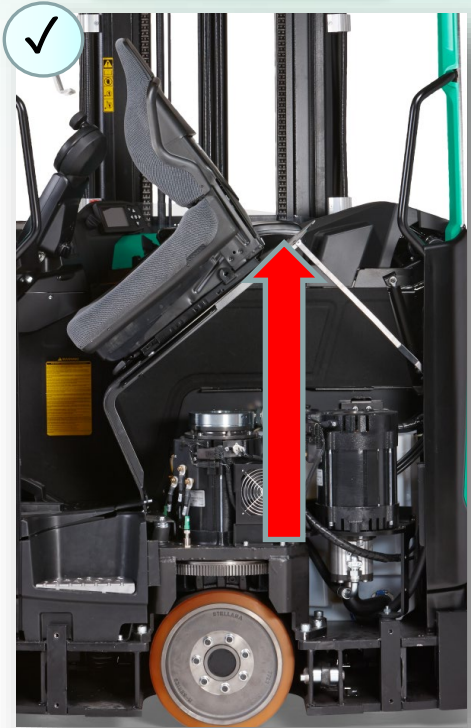
- ✓ Moderately low seat height
- ✓ Assist Steps
- ✗ Narrow Steps
- ✓ 2 X Large Grab Bars

- ✗ Highest seat height
- ✓ Assist Steps
- ✗ Narrow Steps
- ✗ 1 X Large Grab Bars



## EASE OF MAINTAINANCE

**MITSUBISHI  
SENSiA**



**LINDE  
R 1120 SERIES**



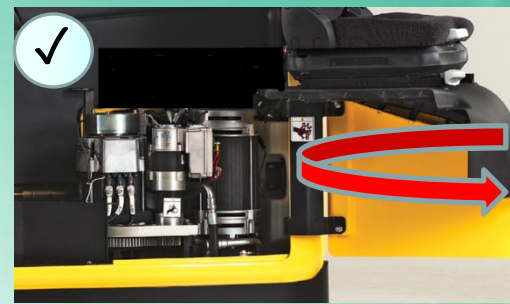
**CROWN  
ESR 5200 SERIES**



**JUNGHEINRICH  
ETM / ETV SERIES**



**HYSTER  
R SERIES**



- Have to remove the entire seat



## EASE OF CONTROL

### MITSUBISHI SENSIA



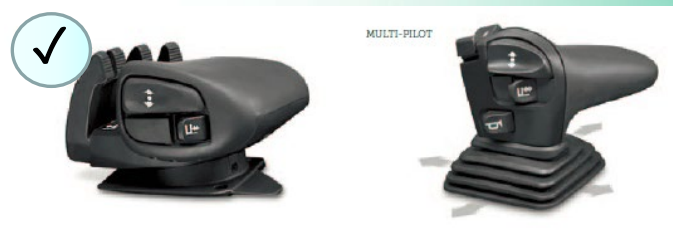
- Distinctive Controls
- Well positioned control buttons

### LINDE R 1120 SERIES

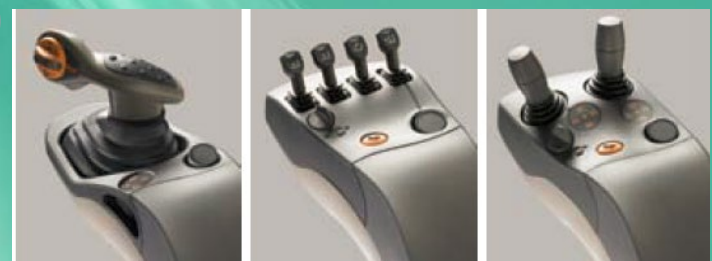


- Complicated directional controls

### JUNGHEINRICH ETM / ETV SERIES



### CROWN ESR 5200 SERIES



### HYSTER R SERIES



- Emergency Switch is too close to armrest
- Joystick version is too compact for ease of handling

## EASE OF CONTROL

**MITSUBISHI  
SENSiA**



- Clear, Vivid Display
- Easy to read symbols
- Bigger control buttons
- Keyless start switch
- 2 drive modes

**LINDE  
R 1120 SERIES**



- Small LCD display
- Complicated warning symbols

**CROWN  
ESR 5200 SERIES**



- Small LCD display
- Static truck information

**HYSTER  
R SERIES**

**JUNGHEINRICH  
ETM / ETV SERIES**



- Small LCD display
- Basic warning symbols display





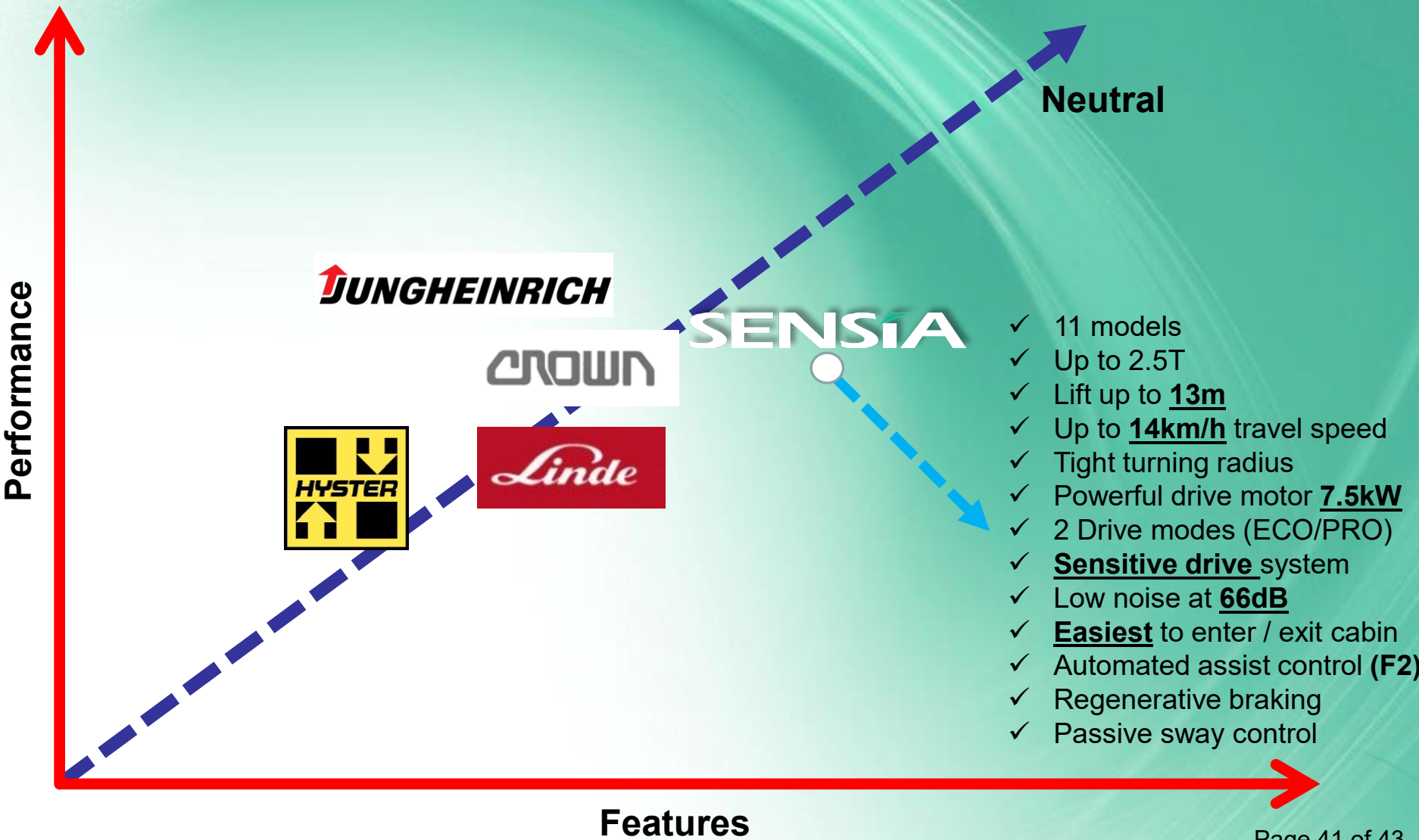
# SENSIA – CREATING DISTINCTION

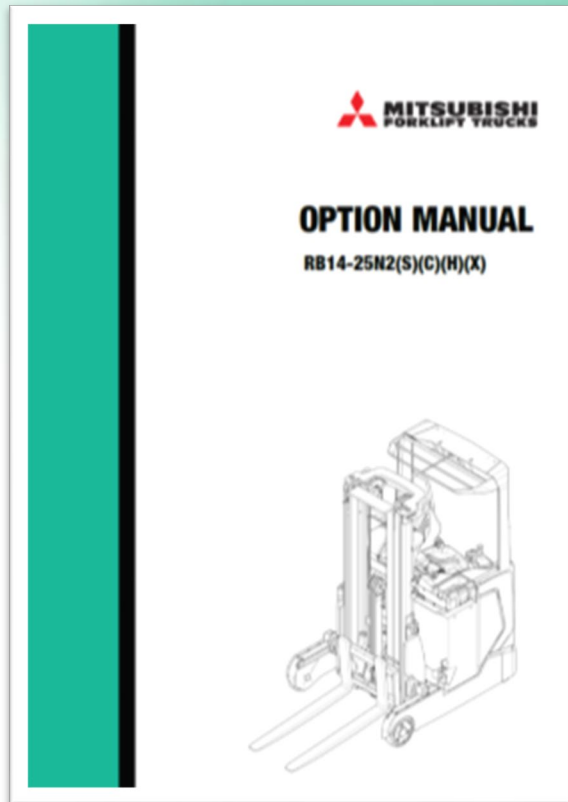


Characteristics		MIT	Linde	Hyster	Jungeheinrich	Crown
Manufacturer Model Design	-	RBN2 (S)(H)(HS)(C)(X)	R (HD)(N), series 1120	R (HD)(N)	ETV/ETM	ESR 5200
Number of Models	-	11	9	7	6	7
Load Capacity	-	1.4 / 1.6 / 2.0 / 2.5	1.4 / 1.6 / 2.0	1.4/1.6/2.0/2.5	1.4 / 1.6 / 1.8 / 2.0 / 2.5	1.4 / 1.6 / 2.0
Load Centre Distance	-	600	500 / 600	600	600	600
Dimensions						
Overall Length (mm)	l1 (mm)	2404 - 2640	2351 - 2563	2379 - 2538	2418 - 2547	1800 - 1903
Height of Mast Lowered	H1 (mm)	2210 - 5118	2130 - 4930	2195 - 3227	2050 - 5026	2020 - 5440
Free Lift	H2 (mm)	1560 - 4468	1001 - 3801	1648 - 4248	1320 - 4296	1350 - 4770
Lift	H3 (mm)	4800 - 13000	4355 - 11455	4650 - 12500	4250 - 13000	4145 - 13000
Height of Mast Extended	H4 (mm)	5630 - 13830	5101 - 12201	5263 - 13113	4996 - 13746	4700 - 13625
Height of overhead guard (Cabin)	H6 (mm)	2200	2110	2175	2190	2175 / 2375 / 2554
Height of Seat/ Stand on Platform	H7 (mm)	1030	910 / 1040	1082	1057	1125 / 1113
Height of Support Arms	H8 (mm)	360	Unknown	308	285 / 355	301 - 346
Ground Clearance, Wheelbase Center	M2 (mm)	75	75	66 / 76	80 / 95	76
Reach Travel (mm)	l4 (mm)	381 - 582	465 - 657	491 - 686	558 - 736	415 - 674
Overall Width	B1/B2 (mm)	1100 - 1440	1140-1270	1125 -1345	1120 - 1270	1120 - 1285
Fork Spread, Min/Max	B5 (mm)	315 / 710	296 - 316 / 520 - 710	220 - 260 / 640 - 680	335 - 356 / 560 - 750	750 - 980
Width between reach legs	B4 (mm)	900 / 1070	790 - 920	795 - 900	760 - 940	905 - 1255
Performance & MISC						
Turning Radius (mm)	(mm)	1541 - 1749	1541 - 1749	1671 - 1911	1620 - 1865	1638 - 1809
Travel Speed, With/Without Load (Kmh)	(Kmh)	11 - 14 / 12 - 14	14/14	14/14	14/14	10-14 / 10-14
Lifting Speed, With/Without Load (m/s)	(m/s)	0.3 - 0.4 / 0.65 - 0.7	0.44 - 0.45 / 0.52 - 0.7	0.30 - 0.42 / 0.63 - 0.68	0.35 - 0.5 / 0.64 - 0.7	0.32 - 0.41 / 0.54 - 0.69
Lowering Speed, With/Withoutload (m/s)	(m/s)	0.55 / 0.5	0.55 / 04 - 0.55	0.55/0.55	0.55/0.55	0.5 - 0.57 / 0.5 - 0.57
Acceleration Time, With/Without Load	(s)	4.8 - 5.2 / 4.4 - 4.6	3.8 / 3.6	unknown	4.6 - 5.4 / 4.2 - 4.8	unknown
Maximum Climbing, with/Without Load (%)	(%)	10.0 / 15.0	10.0 / 10.0	12.0/15.0	8.0 - 9.0 / 12.0 - 15.0	12.0/12.0
Battery Votage/ Rated Cap (V/Ah)	(V/Ah)	48 / 465 - *930	48/ 420 - 840	48 / 420 - 700	48 / 465 - 930	48/280-920
Drive Control Type	-	Stepless	Unknown	AC	MOSFET / AC	Transistor
Service Brake	-	Electric	Hydro / Mech	Electric	Electric	Regenerative Electric/Hydraulic
Noise Level	(dB(A))	66	63 - 64	69.7	68	65
Electric Motors						
Drive motor capacity	(kW)	7.5	6.5	6.4	6.90 - 7.0	6.8
Lift Motor Output	(kW)	10.0 / 14.0	14	14	14	13.6



## PRODUCT POSITIONING





# SENSIA

## ON THE MOVE

Updated: 4<sup>th</sup> Dec'17





**MITSUBISHI**  
**FORKLIFT TRUCKS**