sigma 4

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Sigma4 S.p.A.
Via Madrara, 2/1
48026 Russi (RA) Italy
Tel. +39 0544-585411 _ Fax +39 0544-585415

www.sigma4.it

Front loaders







IRON - STEEL - GOLD - TITANIUM

« The perfection of the detail »

A winning choice

"When a company is fully committed to ensure the highest quality to all single components, quality is fully perceived as real by customers"

The passion of the worker, the care for the detail and a constant update of manufacturing technologies make **SIGMA 4** one of the leading companies in the field of front end loader manufacturers and an ideal partner for those customers who want to go hand in hand with a modern, innovative, constantly updated and market oriented company.

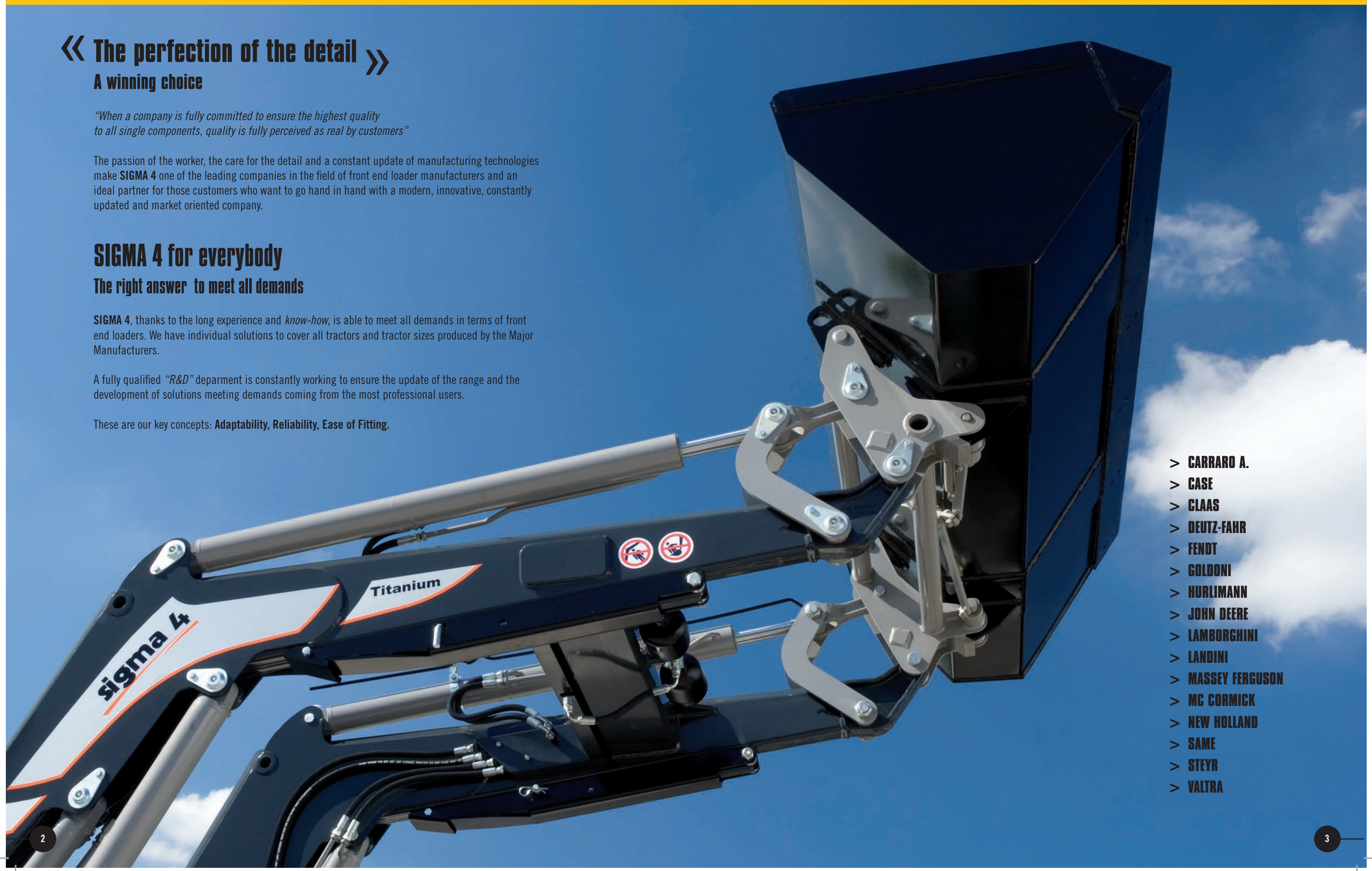
SIGMA 4 for everybody

The right answer to meet all demands

SIGMA 4, thanks to the long experience and *know-how*, is able to meet all demands in terms of front end loaders. We have individual solutions to cover all tractors and tractor sizes produced by the Major Manufacturers.

A fully qualified *"R&D"* deparment is constantly working to ensure the update of the range and the development of solutions meeting demands coming from the most professional users.

These are our key concepts: **Adaptability, Reliability, Ease of Fitting.**



- CARRARO A.
- CASE
- CLAAS
- DEUTZ-FAHR
- FENDT
- GOLDONI
- HURLIMANN
- JOHN DEERE
- LAMBORGHINI
- LANDINI
- MASSEY FERGUSON
- MC CORMICK
- NEW HOLLAND
- SAME
- STEYR
- VALTRA



Joystick remote control

Electronic joystick (TC SPEED)

This is a proportional electronic control conforming to CAN BUS technology. The joystick is fully ergonomic and, thanks to the reduced dimensions, it can be easily placed on the armrest of the tractor seat for full accessibility and ease of operation.
Besides standard loader functions such as lift/lower and tip/crowd it is possible to select the 4th float function (a standard feature with this type of joystick control), to adjust the speed of each single operation and sensitivity, to pilot electro-hydraulic selectors for additional hydraulic services. On top of this, there are push buttons for the Fast/Slow operation and emergency control.



Single lever Joystick

The single lever Joystick allows the operator to control, in an easy and precise way, all functions of the front loader. The lever is also provided with a safety system meant to prevent accidental movements.



Single lever Joystick (with optional selector 3rd and 4th services)

Optional electric push-buttons allow the operator to control electro-hydraulic selectors for the operation of implements with additional hydraulic services.





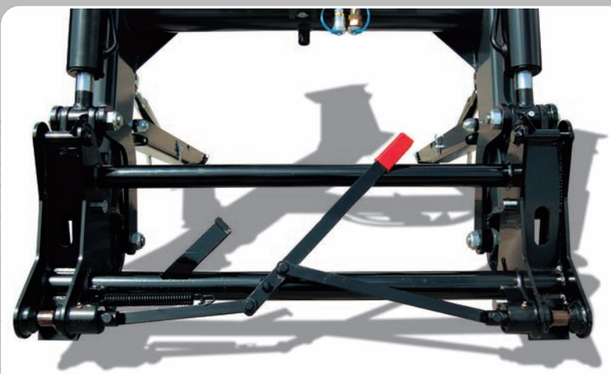


Front loader - Implement coupling

Loader quick-release system (VELOTAK)

Innovative loader/tractor quick-release system. No tools required, only a simple movement of a lever placed on the side of the frame is sufficient to complete fitting/unfitting operation of the loader in a few seconds (around 90 seconds for the fitting, and 100 seconds for the removal). The device is designed for full passive safety.
Support legs are fitted with a fine-adjust system to ensure full stability in all conditions.
All SIGMA 4 models are equipped with this feature.





Implement quick-release system

Designed to allow the easy and quick change of implements. The loader is supplied, on a standard basis, with the original heavy-duty **SIGMA 4** implement fitting system. Alternatively, a “EURO” system conforming to ISO 23206 norms can be supplied to receive all implements manufactured by third parties and conforming to these norms (standard for UK).

Implement hydraulic quick-release system

Designed for extra comfort, the change of implements can be controlled, in full safety, from the tractor seat.



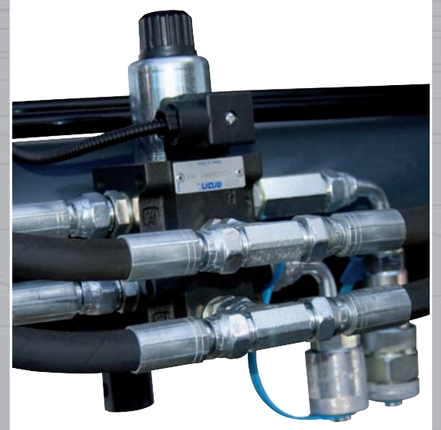


Hydraulics and accumulators



"FLASH" connector (optional)

The "FLASH" multi-connector device allows the operator to easily and quickly connect/disconnect, with a single operation, all hydraulic lines, thus avoiding possible connection errors.
The device is fitted as a standard on TITANIUM model, while it is an option on the GOLD and STEEL models and the IRON range.



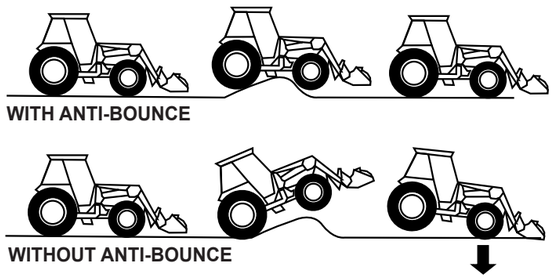
3rd and 4th services

It allows the use of implements with additional hydraulic requirements.

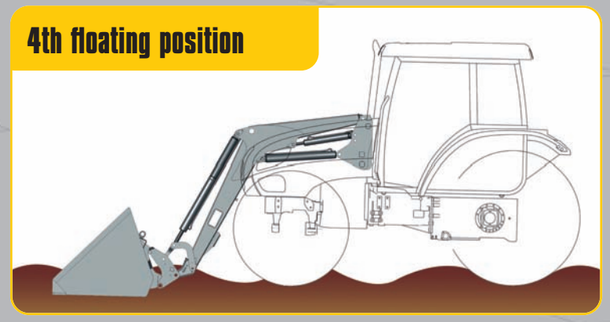


Anti-Bounce system "GENIUS®"

Two anti-shock accumulators provide enhanced comfort and safety during loading and transport phases.
The picture below shows the difference with and without the benefits offered by the anti-bounce system: shocks and stress on all components are significantly reduced when using "GENIUS" and the benefits are enhanced as the speed and load increase.
The GENIUS system is a great achievement in terms of safety, operator's comfort and reduced stress for tractor tires and front drive components.
It is a standard feature on GOLD and TITANIUM models and an option on STEEL and on the IRON range.

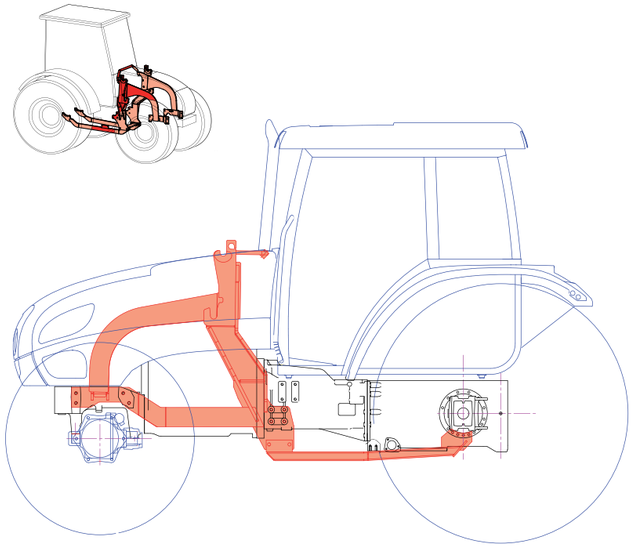


4th floating position





Subframes and self-levelling



Subframes

Subframes are a significant achievement for **SIGMA 4** and a reference for everybody in the industry.
They are connected to the tractor main frame in 3 points (front axle, bell-housing/gearbox area, rear axle) for an ideal distribution of loads, a solution that offers the best in terms of rigidity and ruggedness of the unit, for unsurpassed performance. Every tractor has a proper mounting subframe.
Particular care is also put in the design of mounting solutions for full accessibility to tractor for standard service operations, without having to remove any parts.
Steering angles are not impaired and full compatibility is assured with mudguards, front linkages, different types of pick-up hitches and cabs.



Mechanical Self-levelling

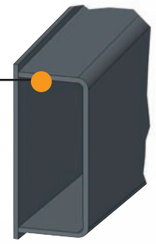
The mechanical self-levelling system is supplied as standard on the IRON M and GOLD versions. By means of this system, the load is held in the same position throughout the full travel of the boom, resulting in an increased lift capacity.
The variable geometry parallel linked system creates large working angles, thus enhancing performances and ease of operation.

Hydraulic self-levelling

The hydraulic self-levelling system is supplied as a standard on IRON H and TITANIUM versions. By means of this system, the load is held in the same position throughout the full travel of the boom, resulting in an increased load capacity. The system offers the best in terms of full operational visibility (no side linkages and rods) and unloading speed (dual-rod rams).
The compensation rams can be connected in two positions (bucket or pallet) for full adaptation to the type of implement in use.



Boom section
For the IRON series, the section of the boom is formed by an integral metal sheet in the outer area and a C profile in the inner area, an ideal solution in terms of great strength and overall lightness.



IRON F

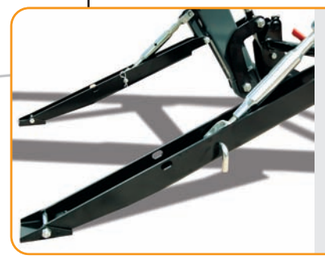
IRON M

IRON H

Bushes and pins
All articulated points are fitted with highly wear-resistant and self-lubricating bushes made of K4, a very innovative plastic polymer.
All pins are made of heavy duty steel and are fitted with a greasing point placed on the inside. The greasing nipple is thus fully protected.



Paint process
All loader components are subject to a preparation cycle prior to painting, consisting of: sand-blasting , phosphating and pickling treatments. After this, the components are primed and finally powder coated. A long process that assures ideal results in terms of paint finish and protection against weathering agents



Support legs
From the series 20 to the series 60 the support legs are integrated in the loader frame. When detaching the loader from tractor, it is sufficient to lower the legs and adjust them to suit ground conditions using the fine-adjust-system.



Boom ends
Boom ends in Cast steel, are pressed and welded into boom for strength and long life with a nice finish as well as a sense of industrialised product.



GENIUS anti-bounce system
Greater operator's comfort and reduced wear of tires and stress on front drive components. GENIUS can be supplied as an option on the whole IRON range.



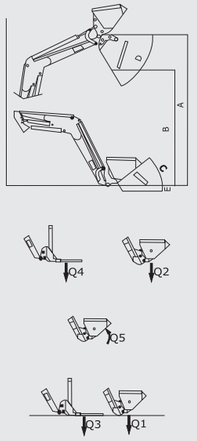
IRON F

Front loader WITHOUT self-levelling system
> Fitting brackets supporting loader from tractor front end to rear axle shafts
> Hydraulic system conforming to tractor specification

Standard equipment
> Two double acting cylinders for the lifting
> Two double acting cylinders for the operation of the implement
> Innovative quick-release of loader from tractor
> Implement quick release
> Hydraulic quick-fit couplings
> Adjustable support legs

IRON F

Lifting force at 180 bar			F10	F15	F20	F30	F40
with bucket on ground, at 300 mm from pivoting point	Q1	Kg	900	900	1300	1500	1700
with bucket at max. height, at 300 mm from pivoting point	Q2	Kg	800	800	1170	1350	1530
with fork on ground, at 600 mm from pivoting point	Q3	Kg	900	900	1300	1500	1700
with fork at max. height, at 600 mm from pivoting point	Q4	Kg	800	800	1170	1350	1530
tear out force at bucket tooth	Q5	Kg	1500	1500	1500	1500	1500
Max. lifting height							
at pivoting point	A	mm	3200	3300	3800	3870	4100
with tilted bucket	B	mm	2260	2360	2940	3010	3200
Angles							
tilting bucket on ground	C	°	45	45	45	45	45
bucket unloading	D	°	90	90	90	90	90
Digging depth	**E**	**mm**	**150**	**150**	**150**	**150**	**150**
Working duration L / 1' = 40							
Lifting at max. height		"	7	7	7	9	9
Bucket tilting		"	5	5	5	5	5
Weights							
Without implement and fitting brackets		Kg	370	380	440	473	500





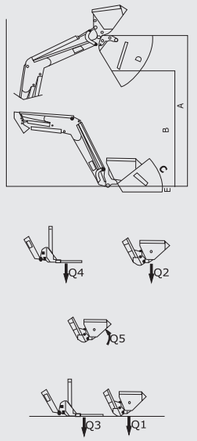
IRON M

Front loader with MECHANICAL self-levelling system
> Fitting brackets supporting loader from tractor front end to rear axle shafts
> Hydraulic system conforming to tractor specification

Standard equipment
> Two double acting cylinders for the lifting
> Two double acting cylinders for the operation of the implement
> Innovative quick-release of loader from tractor
> Implement quick release
> Hydraulic quick-fit couplings
> Adjustable support legs

IRON M

Lifting force at 180 bar			M10	M15	M20	M30	M40
with bucket on ground, at 300 mm from pivoting point	Q1	Kg	1000	1000	1400	1600	1800
with bucket at max. height, at 300 mm from pivoting point	Q2	Kg	900	900	1300	1500	1700
with fork on ground, at 600 mm from pivoting point	Q3	Kg	1000	1000	1400	1600	1800
with fork at max. height, at 600 mm from pivoting point	Q4	Kg	900	900	1300	1500	1700
tear out force at bucket tooth	Q5	Kg	1500	1500	1500	1500	1500
Max. lifting height							
at pivoting point	A	mm	3200	3300	3800	3870	4100
with tilted bucket	B	mm	2260	2360	2940	3010	3200
Angles							
tilting bucket on ground	C	°	45	45	45	45	45
bucket unloading	D	°	90	90	90	90	90
Digging depth	**E**	**mm**	**150**	**150**	**150**	**150**	**150**
Working duration L / 1' = 40							
Lifting at max. height		"	7	7	7	7	9
Bucket tilting		"	5	5	5	5	5
Weights							
Without implement and fitting brackets		Kg	433	443	500	533	560





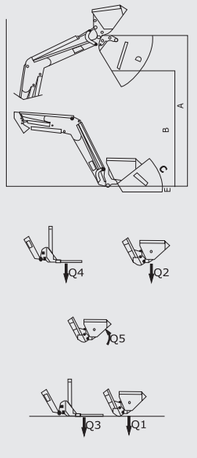
IRON H

Front loader with HYDRAULIC self-levelling system
> Fitting brackets supporting loader from tractor front end to rear axle shafts
> Hydraulic system conforming to tractor specification

Standard equipment
> Two double acting cylinders for the lifting
> Two double acting cylinders for the operation of the **implement designed with double rod for faster implement unloading**
> Innovative quick-release of loader from tractor
> Implement quick release
> Hydraulic quick-fit couplings
> Adjustable support legs

IRON H

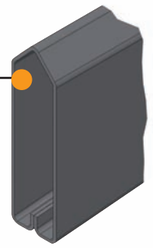
Lifting force at 180 bar			H20	H30	H40
with bucket on ground, at 300 mm from pivoting point	Q1	Kg	1400	1600	1800
with bucket at max. height, at 300 mm from pivoting point	Q2	Kg	1300	1500	1700
with fork on ground, at 600 mm from pivoting point	Q3	Kg	1400	1600	1800
with fork at max. height, at 600 mm from pivoting point	Q4	Kg	1300	1500	1800
tear out force at bucket tooth	Q5	Kg	1500	1500	1500
Max. lifting height					
at pivoting point	A	mm	3800	3870	4100
with tilted bucket	B	mm	2940	3010	3200
Angles					
tilting bucket on ground	C	°	45	45	45
bucket unloading	D	°	55	55	55
Digging depth	**E**	**mm**	**150**	**150**	**150**
Working duration L / 1' = 40					
Lifting at max. height		"	7	7	9
Bucket tilting		"	5	5	5
Weights					
Without implement and fitting brackets		Kg	500	533	560



GOLD - TITANIUM - STEEL

sigma 4

Boom section
For the series T-G-S the boom section is monobloc, consiting of a single metal sheet duly bent and welded in the lower area to form a solid structure which is robust and “light” at the same time, as well as nicely finished.





Bushes and pins
All articulated points are fitted with highly wear-resistant and self-lubricating bushes made of K4, a very innovative plastic polymer.
All pins are made of heavy duty steel and are fitted with a greasing point placed on the inside. The greasing nipple is thus fully protected.

GOLD

TITANIUM

STEEL

Paint process
All loader components are subject to a preparation cycle prior to painting, consisting of: sand-blasting , phosphating and pickling treatments. After this, the components are primed and finally powder coated. A long process that assures ideal results in terms of paint finish and protection against weathering agents



Support legs
From the series 20 to the series 60 the support legs are integrated in the loader frame. When detaching the loader from tractor, it is sufficient to lower the legs and adjust them to suit ground conditions using the fine-adjust-system.



Boom ends
Boom ends in Cast steel, are pressed and welded into boom for strength and long life with a nice finish as well as a sense of industrialised product.



GENIUS
Greater operator’s comfort and reduced wear of tires and stress on front drive components. GENIUS is supplied as a standard on GOLD and TITANIUM models, while it is an option on STEEL model.



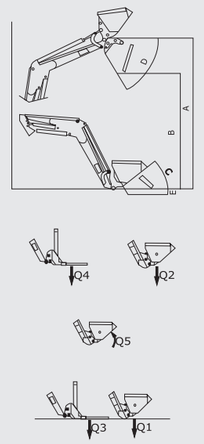
STEEL

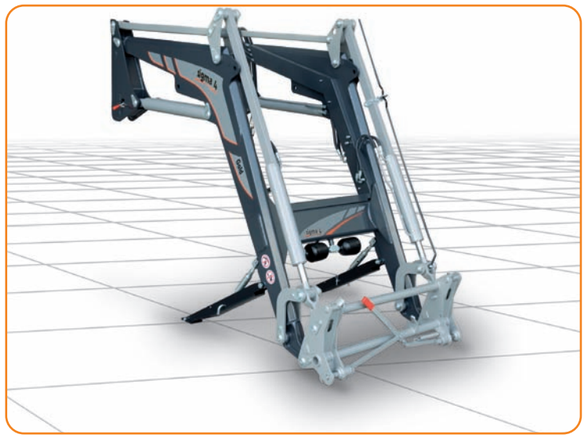
Front loader WITHOUT self-levelling system
> Fitting brackets supporting loader from tractor front end to rear axle shafts
> Hydraulic system conforming to tractor specification

Standard equipment
> Two double acting cylinders for the lifting
> Two double acting cylinders for the operation of the implement
> Innovative quick-release of loader from tractor
> Anti-wear bushes
> Implement Quick release
> Hydraulic quick-fit couplings
> Bucket level gauge
> Adjustable support legs

STEEL

Lifting force at 180 bar			S10	S15	S20	S30	S40
with bucket on ground, at 300 mm from pivoting point	Q1	Kg	1200	1200	1450	1600	2300
with bucket at max. height, at 300 mm from pivoting point	Q2	Kg	1050	1050	1360	1530	2030
with fork on ground, at 600 mm from pivoting point	Q3	Kg	1200	1200	1450	1600	2300
with fork at max. height, at 600 mm from pivoting point	Q4	Kg	1050	1050	1360	1530	2030
tear out force at bucket tooth	Q5	Kg	1400	1400	2000	2000	2000
Max. lifting height							
at pivoting point	A	mm	3200	3300	3800	3870	4100
with tilted bucket	B	mm	2260	2230	2940	3010	3200
Angles							
tilting bucket on ground	C	°	45	45	45	45	45
bucket unloading	D	°	55	55	55	55	55
Digging depth	**E**	**mm**	**150**	**150**	**150**	**150**	**150**
Working duration L / 1' = 40							
Lifting at max. height		"	9	9	9	9	9
Bucket tilting		"	5	5	5	5	5
Weights							
Without implement and fitting brackets		Kg	450	452	560	620	645





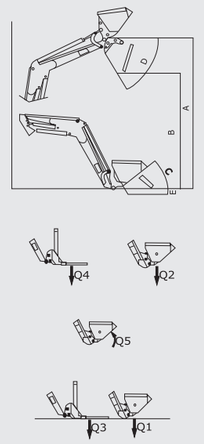
GOLD

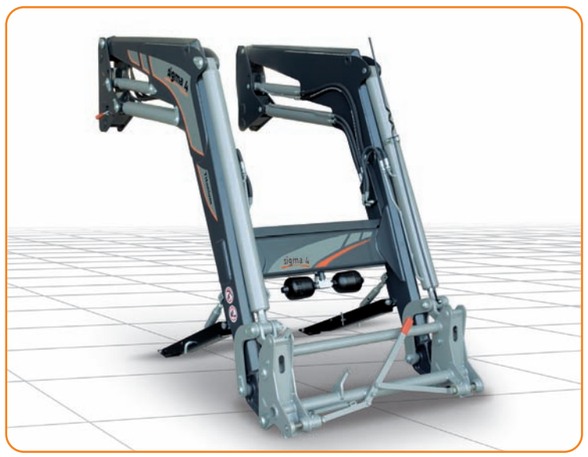
Front loader with MECHANICAL self-levelling system
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> Hydraulic system conforming to tractor specification

Standard equipment
> Two double acting cylinders for the lifting
> Two double acting cylinders for the operation of the implement
> Innovative quick-release of loader from tractor
> Anti-wear bushes
> Implement quick release
> Hydraulic quick-fit couplings
> Bucket level gauge
> Adjustable support legs
> GENIUS anti-bounce system

GOLD

Lifting force at 180 bar			G10	G15	G20	G30	G40	G50
with bucket on ground, at 300 mm from pivoting point	Q1	Kg	1300	1300	1700	1900	2600	2600
with bucket at max. height, at 300 mm from pivoting point	Q2	Kg	1200	1200	1600	1800	2300	2300
with fork on ground, at 600 mm from pivoting point	Q3	Kg	1300	1300	1700	1900	2600	2600
with fork at max. height, at 600 mm from pivoting point	Q4	Kg	1200	1200	1600	1800	2300	2300
tear out force at bucket tooth	Q5	Kg	1400	1400	2000	2000	2000	2000
Max. lifting height								
at pivoting point	A	mm	3200	3300	3800	3870	4100	4400
with tilted bucket	B	mm	2260	2360	2940	3010	3200	3500
Angles								
tilting bucket on ground	C	°	45	45	45	45	45	45
bucket unloading	D	°	90	90	90	90	90	90
Digging depth	**E**	**mm**	**150**	**150**	**150**	**150**	**150**	**150**
Working duration L / 1' = 40								
Lifting at max. height		"	9	9	9	9	9	9
Bucket tilting		"	5	5	5	5	5	5
Weights								
Without implement and fitting brackets		Kg	500	502	620	680	705	735





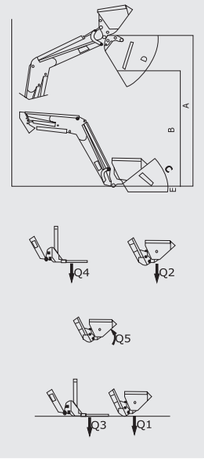
TITANIUM

Front loader with HYDRAULIC self-levelling system
> Fitting brackets supporting loader from tractor front end to rear axle shafts
> Hydraulic system conforming to tractor specification

Standard equipment
> Two double acting cylinders for the lifting
> Two double acting cylinders for the operation of the implement **designed with double rod for faster implement unloading**
> Innovative quick-release of loader from tractor
> Anti-wear bushes
> Implement Quick release
> Multi-point FLASH connector
> Hydraulic quick-fit couplings
> Bucket level gauge
> Adjustable support legs
> GENIUS anti-bounce system

TITANIUM

Lifting force at 180 bar			T20	T30	T40	T50	T60
with bucket on ground, at 300 mm from pivoting point	Q1	Kg	1700	1900	2600	2600	2300
with bucket at max. height, at 300 mm from pivoting point	Q2	Kg	1600	1800	2300	2300	2000
with fork on ground, at 600 mm from pivoting point	Q3	Kg	1700	1900	2600	2600	2300
with fork at max. height, at 600 mm from pivoting point	Q4	Kg	1600	1800	2300	2300	2000
tear out force at bucket tooth	Q5	Kg	2000	2000	2000	2000	2000
Max. lifting height							
at pivoting point	A	mm	3800	3870	4100	4400	4600
with tilted bucket	B	mm	2940	3010	3200	3500	3700
Angles							
tilting bucket on ground	C	°	45	45	45	45	45
bucket unloading	D	°	55	55	55	55	55
Digging depth	**E**	**mm**	**150**	**150**	**150**	**150**	**150**
Working duration L / 1' = 40							
Lifting at max. height		"	9	9	9	9	9
Bucket tilting		"	3	3	3	3	3
Weights							
Without implement and fitting brackets		Kg	610	670	695	725	820
CV			60-100	70-120	100-150	115-200	135-250



Earth bucket



Width [mm]	1500	1600	1800	2000	2200	2400
Length x height [mm]			660x720			
Weight [Kg]	210	211	230	274	296	318
Capacity SAE [m³]	0,46	0,49	0,56	0,62	0,68	0,74

Sugar beet bucket



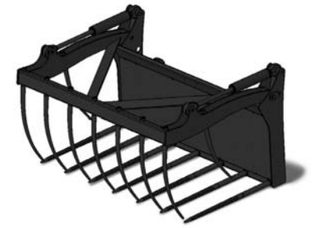
Width [mm]	2060	2200
Length x height [mm]	960x829	
Weight [Kg]	258	270
Capacity SAE [m³]	0,99	1,06

Manure fork



Width [mm]	1500	1980	2200
Length x height [mm]		900 x 800	
Weight [Kg]	246	295	315
No of tines	7	9	10

Manure fork with grab



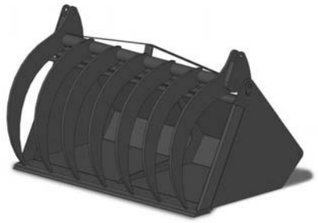
Width [mm]	1500	1980	2200
Length x height [mm]		900 x 800	
Weight [Kg]	246	295	315
No of tines	7+11	9+13	10+14
Additional hydr. services	2	2	2

Cereal bucket



Width [mm]	1800	2000	2200	2400
Length x height [mm]		958x1050		
Weight [Kg]	278	317	323	329
Capacity SAE [m³]	0,88	0,99	1,09	1,19

Multipurpose bucket



Width [mm]	2000	2200
Length x height [mm]	1090x1060	
Weight [Kg]	600	650
Capacity SAE [m³]	1,1	1,21

Stone bucket



Width [mm]	1650	1800	2150
Length x height [mm]		900 x 800	
Weight [Kg]	288	288	288
No of tines	15	17	19

Log fork with hydr. grab



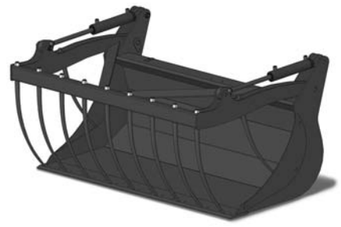
Width x Length x height [mm]	1610x1130x1100
Log diametre [mm]	900 x 800
Weight [Kg]	282
Max. loading capacity [Kg]	1000
Additional hydr. services	2

Bucket 4-in-1



Width [mm]	1800	2000	2200
Length x height [mm]		780x825	
Weight [Kg]	400	470	540
Capacity SAE [m³]	0,50	0,57	0,63

Multigrab bucket



Width [mm]	1500	1980	2200
Length x height [mm]		1150x910	
Weight [Kg]	342	412	430
Capacity SAE [m³]	0,76	1	1,12

Pallet fork



Width x height x Length [mm]	1200x400x1140		
Max. loading capacity [Kg]	1000	1500	2000
Weight [Kg]	150	163	174

Pallet fork with side shift



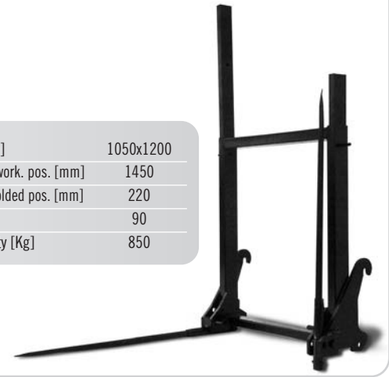
Width x height x Length [mm]	1200x600x1140	
Max. loading capacity [Kg]	1500	2000
Weight [Kg]	220	242
Additional hydr. services	2	2

Pallet fork with side shift and grab



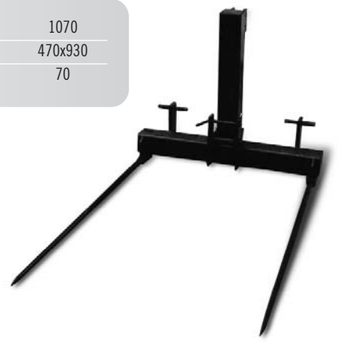
Width x height x Length [mm]	1200x600x1140
Opening min/max [mm]	1400/2400
Weight [Kg]	310
Max. loading capacity [Kg]	1500
Additional hydr. services	4

Round bale fork



Length x height [mm]	1050x1200
Length with tines in work. pos. [mm]	1450
Length with tines in folded pos. [mm]	220
Weight [Kg]	90
Max. loading capacity [Kg]	850

Rear mounted round bale fork



Width [mm]	1070
Length x height [mm]	470x930
Weight [Kg]	70

Large square bale fork



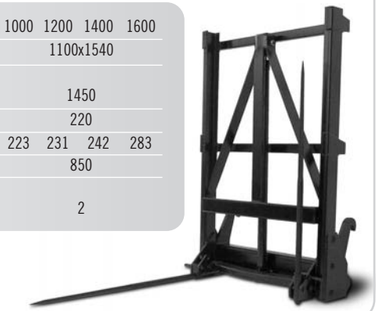
Width x height x Length [mm]	1250x2200
Length with tines in work. pos. [mm]	1500
Length with tines in folded pos. [mm]	250
Weight [Kg]	250
Max. loading capacity [Kg]	1000

Round bale fork with side shift



Width. [mm]	1200
Length x height [mm]	700x1200
Weight [Kg]	180

Round bale fork with side shift and hydr. extra lift



Max. lift capacity [mm]	1000	1200	1400	1600
Length x height [mm]		1100x1540		
Length with tines: in work. pos. [mm]		1450		
in folded pos. [mm]		220		
Weight [Kg]	223	231	242	283
Max. loading capacity [Kg]		850		
Additional hydr. services		2		

Silage cutter fork



Width x height x Length [mm]	1423x920x1065
No. of tines	10+2
Weight [Kg]	487
Max. loading capacity [Kg]	530
Additional hydr. services	2

Mechanically adjustable dozer blade



Width [mm]	2000	2300	2500	2650
Length x height [mm]		400 x 800		
Weight [Kg]	288	312	328	344

Round bale grab fork



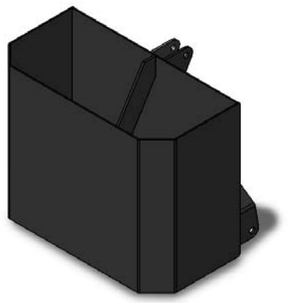
Width [mm]	1095
Length x height [mm]	1000x1100
Weight [Kg]	164

Round bale grab for wrapped bales



Width x height x Length [mm]	1480x800x1680
Bale size (min/max) [mm]	800/1500
Weight [Kg]	250
Max. loading capacity [Kg]	1000
Additional hydr. services	2

Counter weight box



Width [mm]	900
Length x height [mm]	604x715
Weight [Kg]	137/684
Capacity SAE [m3]	0,27

Hydr. implement quick-release frame



Width [mm]	1120
Length x height [mm]	290x460
Weight [Kg]	60