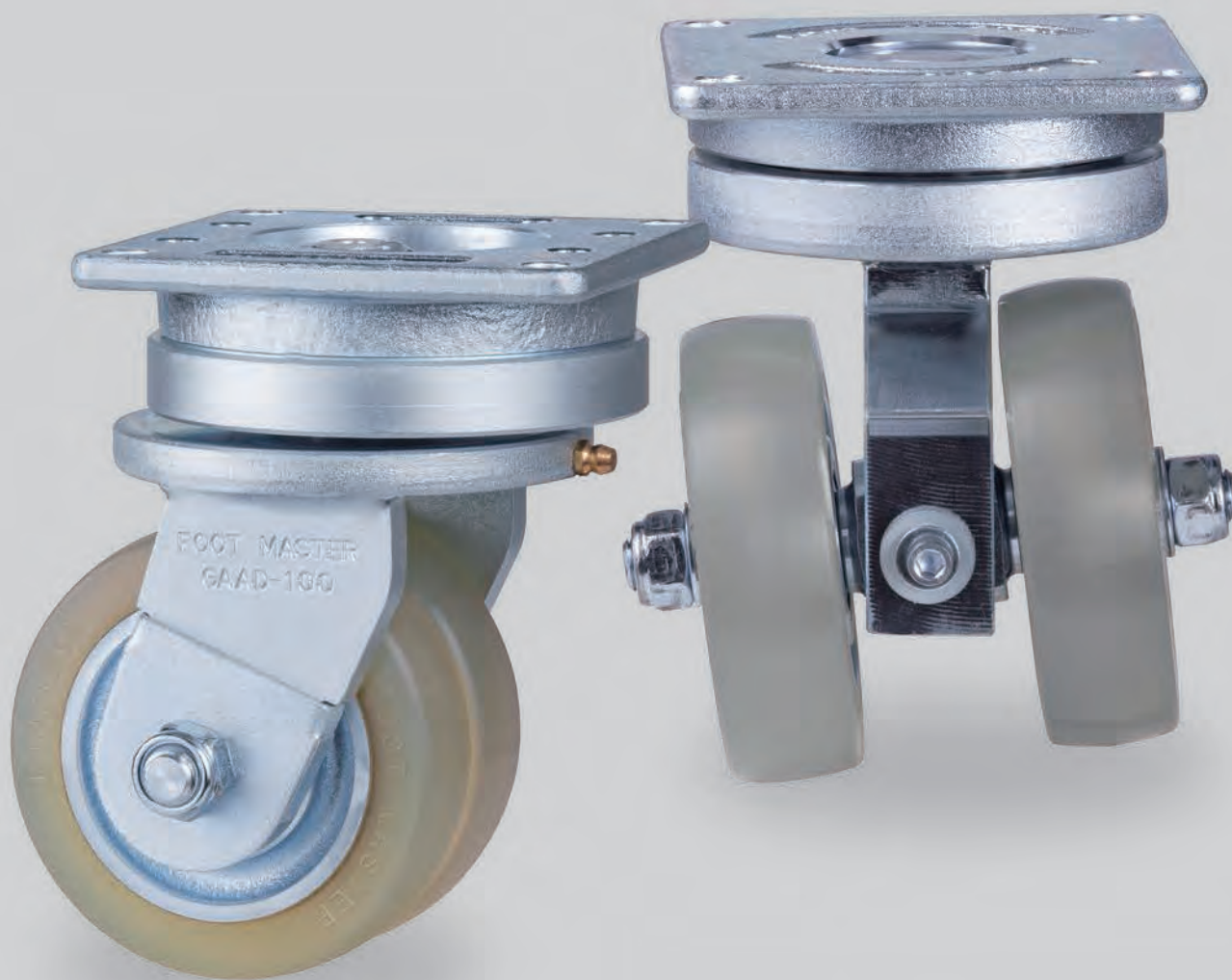

AGV casters

KEYSTONE
CASTORS & WHEELS
www.keystonecastors.co.uk



FOOT MASTER®

CONTENTS

Page	Series	Wheel Diameter	Load Rating	Description
2	GAPL Series	75mm	100kg	Pressed Steel Castor with precision ball bearing in the swivel head for smooth swivelling and excellent durability by using steel bearings with a higher strength than general structural steel in the swivel head. The polyurethane wheel has excellent repulsive elasticity that minimises the slipping phenomenon that can happen during AGV start/stop. In addition the repulsive elasticity absorbs small shocks arising from a damaged floor
4	GAPH Series	75mm	200kg	Twin Wheel AGV Castor: This castors comes with two rows of bearings in the swivel head and 4 sheets of specially hardened upper and lower protection sheets for a fast swivel action and exceptional durability by protecting the swivelling parts from wear.
6	GAGD	75mm - 150mm	250 - 630kg	Optimal Offset Castor: AGVs swing as much as the offset of the castor when changing directions. This is more apparent as the weight gets heavier and this swing leads AGVs to slip away from the regular position. This series solves this problem by setting an optimal offset which is smaller than the offset of a general castor.
8	GXTA	100mm	400kg	Forged steel plates, double ball bearings with hardened treatment in swivel head for excellent durability. Grease nipple in the swivel head
9	GXTD	110mm - 300mm	400 - 3,500kg	Twin wheel AGV Castor with Forged steel plates and double thrust bearings in swivel head for excellent durability. The 250mm and 300mm sizes have thrust bearings and taper roller bearings
10	GASD	75mm - 150mm	250 - 630kg	Spring and Dual Wheels for Heavy Loads: Even a smooth looking floor may not really be flat. AGVs are usually equipped with 4 castors, one of which is often not in contact with the floor. When changing direction, AGVs lose balance if one castor which has not been in contact with the floor suddenly touches the floor. Therefore, AGVs deviate from their regular position which results in an abrupt stop. This castor offers a solution
12	GXTS	100mm	400kg	Shock absorbing function and assists in enabling constant contact with the floor due to a special rubber, bolted wheel axle structure. The swivel head is fitted with double thrust bearings.
13	GAAD	75mm - 150mm	250 - 630kg	Self-aligning and dual wheels for heavy loads: GAAD applies two rotation axes with different rotation radius to automatically optimise the radius of rotation by aligning the rotation axis on its own according to the direction of movement
15	GASD	110mm - 150mm	400 - 600kg	Self-aligning function with dual swivel head with different swivelling radii
16	GATD	75mm - 150mm	250 - 630kg	Tilting & Dual Wheels for heavy loads: Provides a +5 degree tilt from its central axis according to the flatness of the floor. This ensures that the GATD series always keeps contact with the floor allowing smooth AGV movement and protection of the loaded cargo when changing directions







Keystone Castor Company has been assessed and approved to ISO9001:2015 Certificate No. 10208765

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Guide for selection of wheels : AGV casters

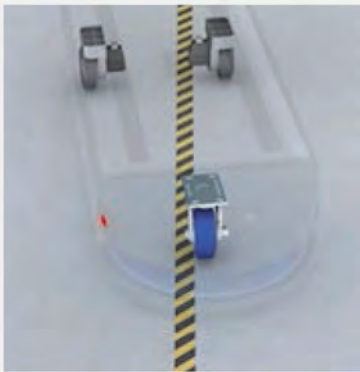
Image	Series	Description	Wheel code	Wheel dia mm	Wheel width mm	Axle bore mm	Hub length mm	Load capacity Kg	Bearing type
	HUD	– Cast polyurethane (Shore A90) – Aluminum core – Two ball bearings	HUD-75-30	75	30	8	30	100	608 ZZ
		– Cast polyurethane (Shore A95) – Aluminum core – Two ball bearings	HUD-75-23	75	23	15	23	100	6202 ZZ
	HUD	– Cast polyurethane (Shore A95) – Steel core – Two ball bearings	HUD-75-48	75	48	15	51	200	6202 ZZ
			HUD-75-30	75	30	15	30	125	6202 ZZ
			HUD-100-30	100	30	15	30	155	6202 ZZ
			HUD-125-35	125	35	15	35	220	6202 ZZ
			HUD-150-40	150	40	15	40	315	6202 ZZ
	NUD	– Cast polyurethane (Shore A95) – Steel core – Two ball bearings	NUD-75-30	75	30	15	30	125	6202 ZZ
			NUD-100-30	100	30	15	30	155	6202 ZZ
			NUD-125-35	125	35	15	35	220	6202 ZZ
			NUD-150-40	150	40	15	40	315	6202 ZZ

AGV casters

GAPL series

Excellent Durability for Light Load

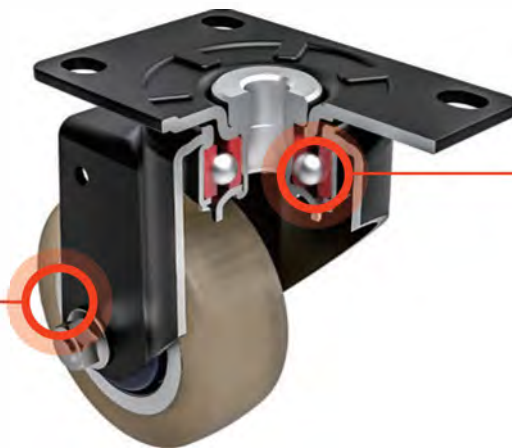
Why should we select FOOT MASTER® AGV casters – GAPL?



Unlike carts run by people on the production line, AGVs run continuously on behalf of people for 24 hours everyday. In an environment where an AGV is running for 24 hours, it can stop instantaneously or have trouble due to the durability problem of wheels, which can lead to work loss or safety accidents. After consulting with many AGV customers, G-DOK Industries has launched the most durable caster – GAPL, FOOT MASTER® AGV caster – GAPL maximizes AGV operation, ensuring cost savings and increased productivity.

Major features

01 GAPL has pride in excellent durability in the AGV environment by applying bearing steel with higher strength than general structural steel in the swivel head. In addition, GAPL shows very soft motion via minimization of friction through tolerance control of the swiveling parts.

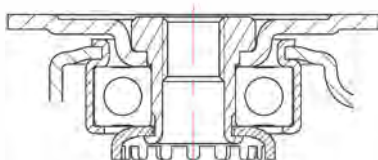


02 GAPL using polyurethane materials with excellent repulsive elasticity minimizes the slipping phenomenon that can happen during AGV start/stop. In addition, the repulsive elasticity catches fine shocks coming from a damaged floor.

AGV casters









GAPL series

 100kg  RoHS  -10~90°C




Brackets: Pressed steel plate, precision ball bearing in the swivel head which is advantageous to smooth swiveling and excellent durability, strong integrated pressed steel frame, bolted wheel axle structure
Surface Treatment: Powder coating, zinc plated

* Recommended Load = Load Cap. × 3

Swivel	Wheel type	 mm	 mm	 Kg	 mm	 mm	 mm	 mm	 mm
GAPL-75-ASF	HUD	75	30	100	113	40	95x64	78x45 72x45	9

Options

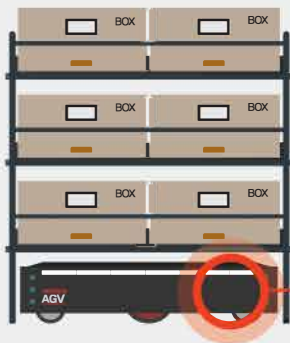
						
Code Suffix	HUD					
Description	Cast PU(A90)					
Available for	75					

AGV casters

GAPH series

Prompt swiveling and Low Height for Medium Load

Why should we select FOOT MASTER® AGV casters – GAPH?

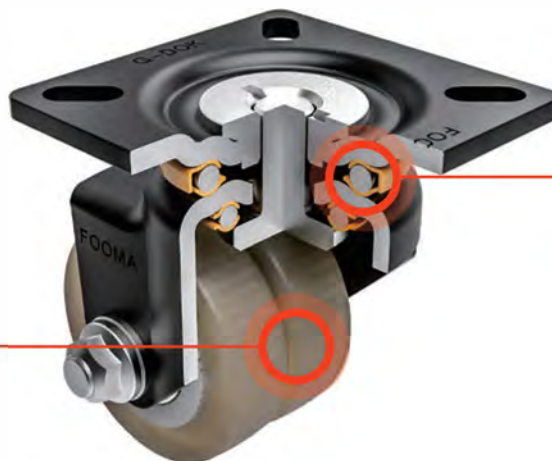


As AGV environments becomes more various, the requirements for casters used for an AGV are also becoming more strict. GAPH is an AGV caster for the compact AGV environment that not only satisfies fast swivel and high durability, but also endures high load despite low overall height.



Major features

01 GAPH guarantees fast swivel and durability. Two rows of bearings in the swivel head makes the caster swivel smoothly, but the two rows of bearings constantly wears each contacting part. The 4 sheets of specially hardened upper and lower protection sheet applied to the GAPH satisfies both fast swivel and durability by protecting the swiveling part from wear.

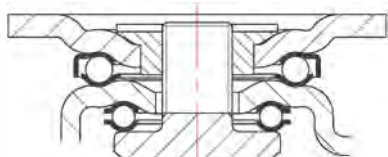


02 GAPH was designed to endure heavy load despite its small wheel size by applying polyurethane with hardness of Shore A95. In addition, the polyurethane wheel with good repulsive elasticity protects AGVs from instantaneous shocks coming from damaged floors.

AGV casters

GAPH(D) series

kg 200kg **RoHS** **-10~90°C**



Brackets: Pressed steel plate, double ball bearing with four hardened bearing seats in the swivel head which is advantageous to rapid swiveling and excellent durability, strong integrated pressed steel frame, bolted wheel axle structure

Surface Treatment: Powder coating, zinc plated

* Recommended Load = Load Cap. × 3

Swivel	Wheel type	mm	mm	Kg	mm	mm	mm	mm	mm
GAPH-75-ASF	HUD	75	48	200	115	35	100x100	78x78 64x64	10.5
GAPHD-75-ASF	HUD	75	23x2	200	115	35			

Options

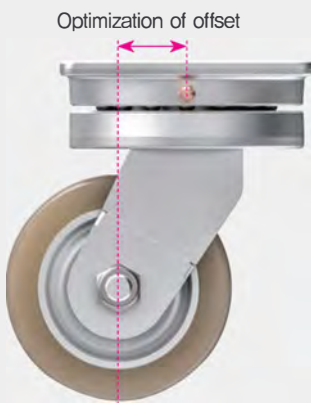
Code Suffix	HUD					
Description	Cast PU(A95)					
Available for	75					

AGV casters

GAGD series

General AGV Purpose and Dual Wheels for Heavy Load

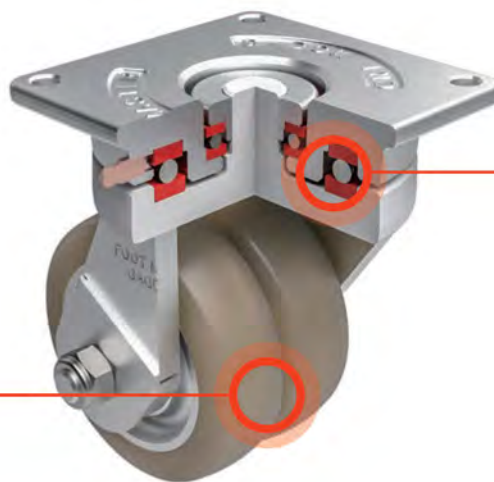
Why should we select FOOT MASTER® AGV casters – GAGD?



AGVs carrying heavy weight are not easy to change direction. In addition, AGVs swing as much as the offset of the caster when changing directions. This swing phenomenon appears more prominent as the weight is heavier, and this swing phenomenon leads AGVs stop away from the regular position. FOOT MASTER® AGV caster – GAGD endures heavy weight, and provides the best solution by setting an optimal offset which is smaller than the offset of a general caster to prevent abrupt stops when changing direction.

Major features

01 GAGD structure adopts two rows of thrust bearings to raise the swiveling power and endure very heavy weight. This guarantees durability for AGVs to run long despite heavy weight.

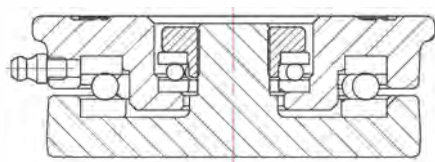


02 As the weight becomes heavier, AGV motion become more dull. For changing directions even with small force, the dual wheels structure is essential, not optional. GAGD uses high-elastic polyurethane wheels showing the highest performance in heavy weight AGV environments.

AGV casters

GAGD series







kg 250~630kg **RoHS** **°C** -10~90°C





Brackets: Forged steel plate, double thrust bearing in the swivel head to optimize the heavy load, grease nipple, strong welded frame, bolted wheel axle structure

Surface Treatment: Zinc plated

* Recommended Load = Load Cap. × 3

Swivel	Wheel type	 mm	 mm	 Kg	 mm	 mm	 mm	 mm	 mm
GAGD-75-ASF	HUD	75	30x2	250	123	30	112x112	92x92	9
GAGD-100-ASF		100	30x2	310	150	30			
GAGD-125-ASF	HUD	125	35x2	440	175	33	145x145	120x120	11
GAGD-150-ASF		150	40x2	630	200	35			
GAGD-75-ASF	NUD	75	30x2	250	123	30	112x112	92x92	9
GAGD-100-ASF		100	30x2	310	150	30			
GAGD-125-ASF	NUD	125	35x2	440	175	33	145x145	120x120	11
GAGD-150-ASF		150	40x2	630	200	35			

Options

						
Code Suffix	HUD	NUD				
Description	Cast PU(A95)	Cast PU(A95)				
Available for	75 ~ 150	75 ~ 150				

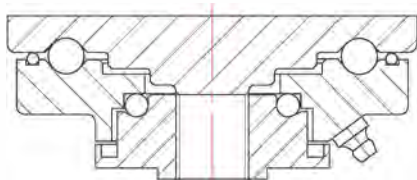
AGV casters

GXTA series

 **400kg**

RoHS

 **-10~90°C**




Brackets: Forged steel plate, double ball bearing with hardened treatment in the swivel head which is clearly advantageous to excellent durability, grease nipple, strong welded frame, bolted wheel axle structure

Surface Treatment: Powder coating, zinc plated

* Recommended Load = Load Cap. × 3

Swivel	Rigid	Wheel type	 mm	 mm	 Kg	 mm	 mm	 mm	 mm	 mm
GXTA-100-ASF	GXTA-100-ARF	HUQ	100	50	400	156	35	140x112	110x75 105x80	11

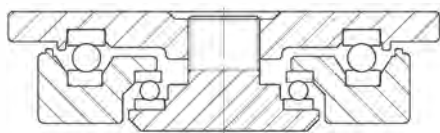
Options

						
Code Suffix	HUQ					
Description	Cast PU(A95)					
Available for	100					

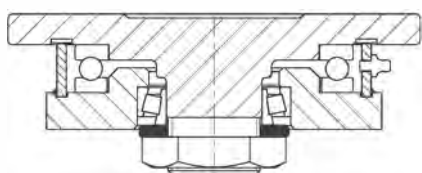
AGV casters

GXTD series

kg 400~3,500kg **RoHS** **°C** -10~90°C



GXTD(110~200)



GXTD(250~300)




Brackets: Forged steel plate, double thrust bearing in the swivel head to optimize heavy load(250/300 series: thrust bearing and taper roller bearing), grease nipple, strong welded frame, bolted wheel axle structure

Surface Treatment: Powder coating, zinc plated

* Recommended Load = Load Cap. × 3

Swivel	Rigid	Wheel type	 mm	 mm	 Kg	 mm	 mm	 mm	 mm	 mm
GXTD-110-ASF	GXTD-110-ARF	HUD	110	29x2	400	156	30	112x112	88x88	9
GXTD-150-ASF	GXTD-150-ARF		150	40x2	600	200	35	145x130	115x100	11
GXTD-200-ASF	GXTD-200-ARF		200	65x2	1,500	265	50	210x210	170x170	17
GXTD-250-ASF	GXTD-250-ARF		250	78x2	3,200	330	70	255x215	210x160	18
GXTD-300-ASF	GXTD-300-ARF		300	78x2	3,500	390	80			

Options

						
Code Suffix	HUD					
Description	Cast PU(A95)					
Available for	110 ~ 300					

AGV casters

GASD series

Spring and Dual Wheels for Heavy Load

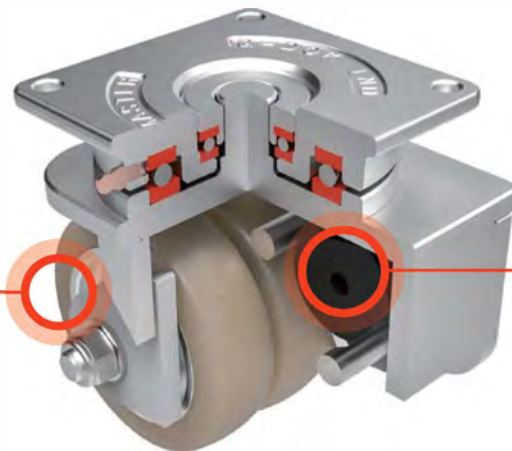
Why should we select FOOT MASTER® AGV casters – GASD?



Even a smooth looking floor is not really flat. AGVs are usually equipped with 4 casters, one of which is often not in contact with the floor. During a change in direction, AGVs lose their balance if one caster which has not been in contact with the floor suddenly touches the floor. Therefore, AGVs deviate from their regular position, which generates a abrupt stop. FOOT MASTER® AGV caster – GASD provides the best solution to remove the deviation situation due to swinging.

Major features

01 The advantage of GASD with a shock-absorbing function is that it can absorb even repeated fine shocks generated during movement on an uneven floor. The special rubber applied to GASD is made of rubber material different from the general steel coil springs to absorb fine vibrations from the floor.

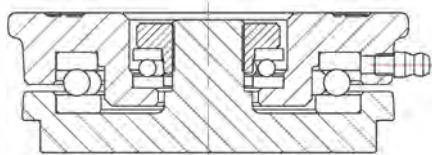


02 GASD using special rubber provides 10mm of spring section. In the 10mm spring section, AGVs always run in contact with the floor to remarkably reduce the possibility of abrupt stops generated during a change in direction.

AGV casters

GASD series

kg 250~630kg **RoHS** **°C** -10~90°C





Brackets: Forged steel plate, double thrust bearing in the swivel head to optimize heavy load, grease nipple, strong welded frame, minute shock absorption function and constant contact function to the floor with special rubber, bolted wheel axle structure

Surface Treatment: Zinc plated

* Recommended Load = Load Cap. × 3

Swivel	Wheel type	mm	mm	Kg	mm	mm	mm	mm	mm
GASD-75-ASF	HUD	75	30x2	250	130-10	30	112x112	92x92	9
GASD-100-ASF		100	30x2	310	160-10	30			
GASD-125-ASF	HUD	125	35x2	440	185-10	33	145x145	120x120	11
GASD-150-ASF		150	40x2	630	210-10	35			
GASD-75-ASF	NUD	75	30x2	250	130-10	30	112x112	92x92	9
GASD-100-ASF		100	30x2	310	160-10	30			
GASD-125-ASF	NUD	125	35x2	440	185-10	33	145x145	120x120	11
GASD-150-ASF		150	40x2	630	210-10	35			

Options

						
Code Suffix	HUD	NUD				
Description	Cast PU(A95)	Cast PU(A95)				
Available for	75 ~ 150	75 ~ 150				

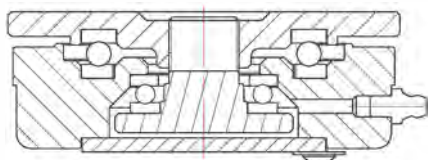


Product movie

AGV casters

GXTS series

 **400kg**  **RoHS**  **-10~90°C**




Brackets: Steel plate, double thrust bearing in the swivel head to optimize heavy load, grease nipple, strong welded frame, minute shock absorption function and constant contact function to the floor with special rubber, bolted wheel axle structure

Surface Treatment: Powder coating, zinc plated

* Recommended Load = Load Cap. × 3

Swivel	Wheel type	 mm	 mm	 Kg Kg	 mm	 mm	 mm	 mm	 mm
GXTS-100-ASF	HUQ	100	50	400	169-14	35~39	112x112	88x88	9

Options

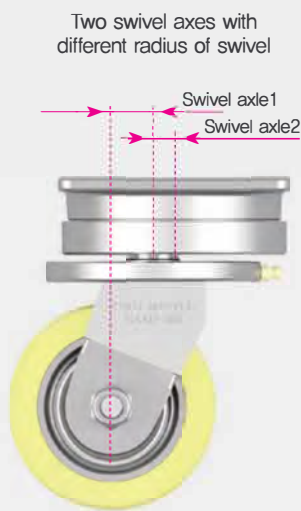
						
Code Suffix	HUQ					
Description	Cast PU(A95)					
Available for	100					

AGV casters

GAAD series

Self-Aligned and Dual Wheels for Heavy Load

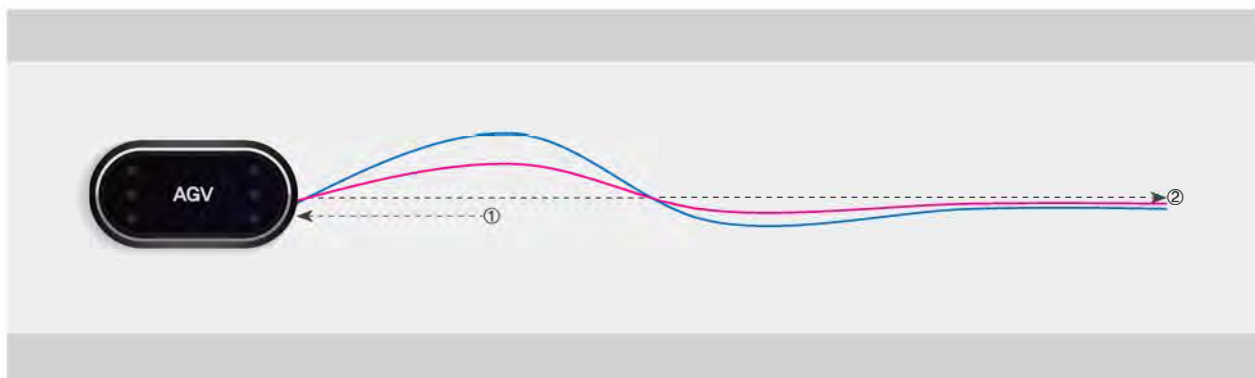
Why should we select the FOOT MASTER® AGV casters – GAAD?



GAAD applied two rotation axes with different rotation radius and has the function to automatically optimize the radius of rotation by aligning the rotation axis on its own according to the moving direction in forward/backward motion.

The movement of AGVs is affected by the caster offset. If the offset is too long, an AGV can swing, causing it to deviate from the designated path. And if the offset is too short, the drive motor is overloaded. In particular, many AGV engineers are struggling to solve this swinging problem for AGVs which inevitably require reciprocation. The patented automatic aligning function of GAAD is the best AGV caster to solve both problems simultaneously, such as the swinging of AGVs and the overloading of drive motors.

Moving direction of AGV between a Normal Caster VS GAAD



● Normal Caster ● GAAD

AGV casters

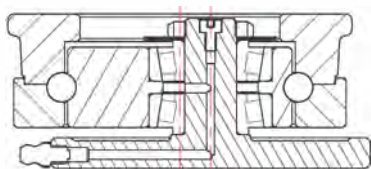
GAAD series



250~630kg



-10~90°C



Brackets: Forged steel plate, taper roller bearing with hardened treatment in the swivel head which is advantageous to excellent durability(125/150 series: double thrust bearing), grease nipple, strong welded frame, self-aligned function with two swiveling axes with different swiveling radii, bolted wheel axle structure

Surface Treatment: Zinc plated

* Recommended Load = Load Cap. × 3

Swivel	Wheel type	mm	mm	Kg	mm	mm	mm	mm	mm
GAAD-75-ASF	HUD	75	30x2	250	130	10~30	112x112	92x92	9
GAAD-100-ASF		100	30x2	310	160	10~30			
GAAD-125-ASF		125	35x2	440	190	15~33			
GAAD-150-ASF	HUD	150	40x2	630	215	15~35	145x145	120x120	11
GAAD-75-ASF		75	30x2	250	130	10~30			
GAAD-100-ASF		100	30x2	310	160	10~30			
GAAD-125-ASF	NUD	125	35x2	440	190	15~33	145x145	120x120	11
GAAD-150-ASF		150	40x2	630	215	15~35			



Product movie

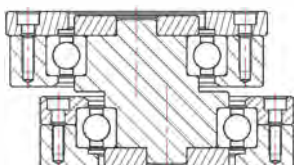
Options

Code Suffix	HUD	NUD				
Description	Cast PU(A95)	Cast PU(A95)				
Available for	75 ~ 150	75 ~ 150				

AGV casters

GSAD series




 400~600kg  RoHS  -10~90°C




Brackets: Steel plate, double precision ball bearing in the swivel head to optimize heavy load, grease nipple, strong welded frame, self-aligned function with two swiveling axes with different swiveling radii, bolted wheel axle structure

Surface Treatment: Powder coating, zinc plated

* Recommended Load = Load Cap. × 3

Swivel	Wheel type	 mm	 mm	 Kg	 mm	 mm	 mm	 mm	 mm
GSAD-110-ASF	HUD	110	29x2	400	190	15~35	112x112	92x92	9
GSAD-150-ASF	HUD	150	40x2	600	235	15~35	145x130	115x100	11

Options

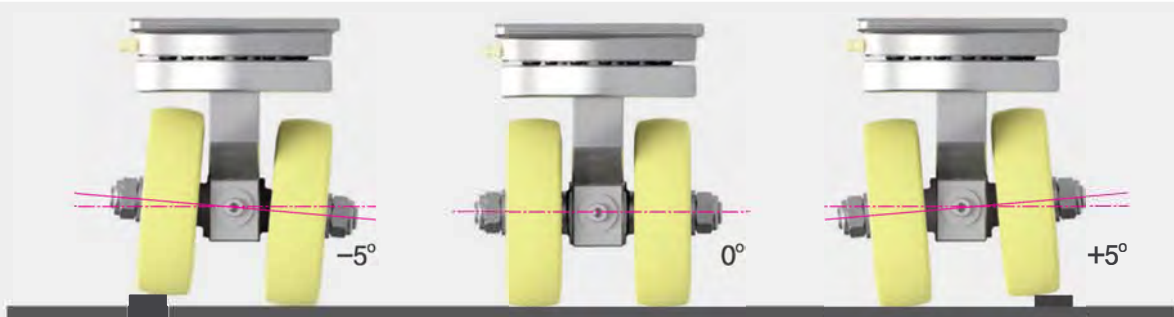
						
Code Suffix	HUD					
Description	Cast PU(A95)					
Available for	110 ~ 150					

AGV casters

GATD series

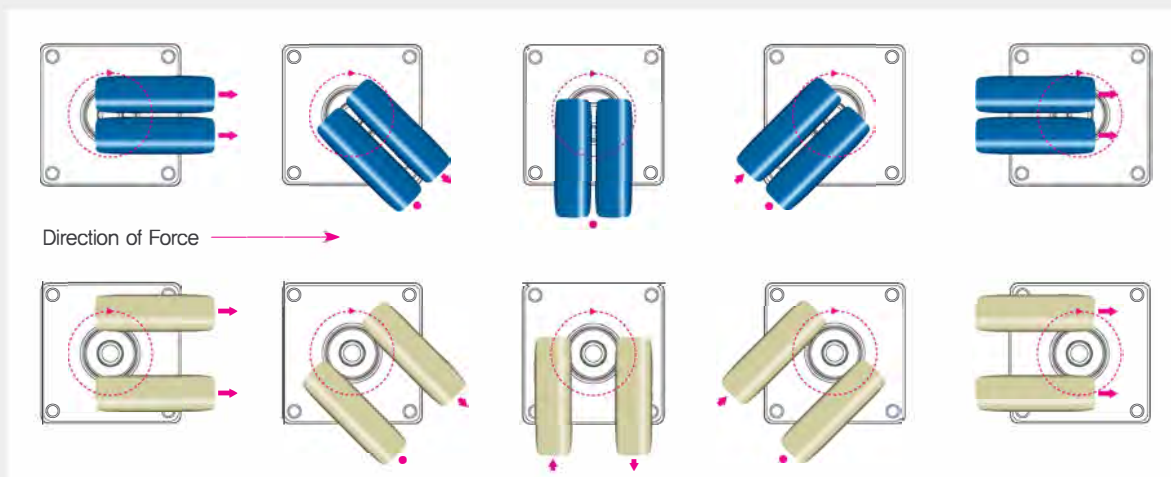
Tilting & Dual Wheels for Heavy Load(Heavy load)

Why should we select **FOOT MASTER® AGV casters – GATD?**



01 The shaft of GATD has a tilting structure that tilts freely in the range of $\pm 5^\circ$ from its central axis according to the flatness of the floor. This freedom ensures that GATD always keeps contact with the floor, causing smooth AGV movement and protection of the loaded cargo when changing directions.

Rolling directions of a general dual-wheel VS the GATD dual-wheel

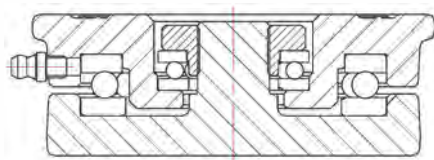


02 Unlike the general dual-wheel caster, GATD has a structure that the two wheels are separated from each other. The two wheels in the dual-wheel caster roll in the opposite direction to each other during a change in direction. This is called self-compensation effect, as it reduces caster offset automatically. FOOT MASTER® GATD has a bigger self-compensation effect than the general dual-wheel caster to prevent AGVs from deviating from the line.

AGV casters

GATD series

kg 250~630kg **RoHS** **°C** -10~90°C





Brackets: Forged steel plate, double thrust bearing in the swivel head to optimize heavy load, grease nipple, strong welded frame, tilting function to maintain contact with uneven floor, bolted wheel axle structure

Surface Treatment: Zinc plated

* Recommended Load = Load Cap. × 3

Swivel	Wheel type	mm	mm	Kg	mm	mm	mm	mm	mm
GATD-75-ASF	HUD	75	30x2	250	123	30	112x112	92x92	9
GATD-100-ASF		100	30x2	310	150	30			
GATD-125-ASF		125	35x2	440	175	33			
GATD-150-ASF	HUD	150	40x2	630	200	35	145x145	120x120	11
GATD-75-ASF		75	30x2	250	123	30			
GATD-100-ASF		100	30x2	310	150	30			
GATD-125-ASF	NUD	125	35x2	440	175	33	145x145	120x120	11
GATD-150-ASF		150	40x2	630	200	35			

Options

						
Code Suffix	HUD	NUD				
Description	Cast PU(A95)	Cast PU(A95)				
Available for	75 ~ 150	75 ~ 150				