

NISUKA INDUSTRIES PRIVATE LIMITED



We are committed to delivering excellence

SMSR
GEARBOX



PLUMMER
BLOCK
200 - SERIES



PLUMMER
BLOCK
300 - SERIES



PLUMMER
BLOCK
K - SERIES



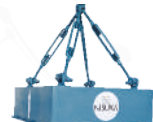
PULLEYS
TAPER LOCK



TENSION
UNIT



GEAR
OIL PUMP



SUSPENSION
MAGNET



METAL
DETECTOR

ISO 9001
BUREAU VERITAS
Certification



Including Design



QM 003

An ISO 9001 : 2015
Certified Company



About Nisuka

With an aim to establish market leadership in High Quality Precision Engineering Components, Nisuka Industries Pvt. Ltd. was established in 1994. It was established in an area of 7600 sq.ft.

Nisuka is a leading manufacturer of SMSR - Gearbox, Plummer Block, Pulleys, Tension Unit, Gear Oil Pump, Suspension Magnet, Metal Detector and other conveyor accessories.

We primarily cater to quarry and stone crushing plants, cement industries, asphalt plants, mining industries, sand and coal plants and other conveyer belt-based industrial applications.

Nisuka's Vision

To become a India's leading Manufacturer Company in the field of excellent quality product & service.

Nisuka's Mission

To Establish Dealer Network Across India.

Nisuka's Core Values

More responsible to meet customer satisfaction with innovation implementations.

Patent Progress

● **Shaft Mounted Speed reducer Gearbox - Patent Granted - Patent No - 386473**

● **Applied for Plummer Block - Patent Application No - PCT/IN2014/000257**

Nisuka Industries Private Limited - The journey so far....

1994

Mr. S. N. KALOLIA driven by innovative ideas founded Nisuka Industries.

1995

Builds a custom production pattern used in foundry.

1997

Commences manufacturing of machine components and high precision job-works.

2002

Develops revolutionary SMSR Gearbox based on an innovative design and shape, targeted for superior performance with a wide range of applications in Conveyor System.

2005

Designs and develops the Plummer Block with modified bearing to ensure smooth and highly durable dust-free working.

2013

Applies for patent for Shaft Mounted Speed Reducer Gearbox, Application No.: PCT/IN2013/000786.

2014

Transitions to a Private Limited Company.
Applies for patent for the Plummer Block, Application No.: PCT/IN2014/000257

2015

Commences development of other products generally used in industrial application.

2016

Forays into the development of the revolutionary textile products with unique design and technology.

2017

Implements and applies for ISO 9001:2015 from Bureau Veritas (India) Pvt. Ltd.

2018

Develops Plummer Block new series - 22200 K Series

2019

Completes 25 years, and on this occasion, the technocrat founder Mr. S. N. Kalolia and company director Mr. Nikhil S. Kalolia launch New Series of SMSR Gearbox - 'Power Plus' & 'Force Series'.

2020

Launched Nisuka Metal Detector and Nisuka Suspension Magnet.

2022

Patent Granted for Shaft mounted speed reducer Gearbox
Patent No - 386473

Partnership in Technology

Salient features and benefits of Nisuka SMSR Gearbox

- Unique-Custom-designed to bear heavy shock loads.
- Anti-pitting design of tooth for conveyor belt gearbox.
- Case-hardened pinions and gear wheels.
- Laps to increase gear bending and life.
- All anti-friction bearings are selected based on international standard ISO 281, and nominal life is often a satisfactory estimate of a bearing's performance capabilities .
- Pinions and gears are adequately supported by ample capacity of anti-friction bearings to permit overhung and shock loads.
- Gearbox's main housing is fabricated using closely grained Cast Iron. It is designed to be oil-tight, dust-proof, and it can take shock loads.
- Double lips seals are used to prevent oil leakage, and to avoid intrusion of external elements like atmospheric dust.
- Machining of critical mounting surfaces and boring, done using high precision CNC machines.
- Quick and easy gear mounting and alignment.
- All gearbox models are available with Hold Back system.
- All gearboxes are equipped with drive motor mounting stand.
- Tough, durable and maintenance-free gearbox.
- Gearboxes designed as per DIN/ IS/ ISO standards.

Unit Selection For Nisuka SMSR Gearbox Models

How to select the right fitting Nisuka Model?

To select the right fitting Nisuka models, follow the steps given below :

Step - 1 Service Factor :

From the table here, select the service factor applicable to the drive.

Step - 2 Design Power :

Multiply the power consumed or motor power by the service factor chosen in Step - 1.

Note: Ensure that the design power exceeds motor-rated power.

Step - 3 Unit Selection :

Based on the value obtained in Step-2, refer to the table given here and select the correct size of the gear unit.

The output/input speed will determine the selection of single or double reduction gear-box. The Power Rating table shows the normal operating speeds for all gearbox models. For more information, please feel free to consult with us.



SELECTION EXAMPLE :

Application "Conveyor Gearbox"
 Duty hours operating more than 16 hours per day
 Motor power 10 kW
 Motor speed 1500 rpm
 Conveyor speed requires 50 rpm
 Require service factor 2 (From Table 1)
 Gearbox rating require = Motor power x Service factor = $10 \times 2 = 20\text{ kW}$
 From power rating table 3 Gear box rating 23kW at output speed 50 rpm for N8 gear model.

Table 2 : Power Rating (kW) Ratio 7 : 1 units (Single reduction) (1 HP = 0.746kW)

FACTOR OF SAFETY 2.0 INCLUDED

GEARBOX INPUT SPEED (N1)	GEARBOX OUTPUT SPEED (N2)	N1	N2	N3	N4
300	42.9	1.08	1.50	2.25	3.75
327	46.7	1.18	1.64	2.45	4.09
350	50.0	1.26	1.75	2.63	4.38
360	51.4	1.30	1.80	2.70	4.50
375	53.6	1.35	1.88	2.81	4.69
400	57.1	1.50	2.00	3.00	5.00
425	60.7	1.59	2.13	3.19	5.31
450	64.3	1.69	2.25	3.38	5.63
500	71.4	1.88	2.50	3.75	6.25
600	85.7	2.25	3.00	4.50	7.50
700	100.0	2.63	3.50	5.25	8.75
800	114.3	3.00	4.00	6.00	10.00
900	128.6	3.38	4.50	6.75	11.25
1000	142.9	3.75	5.00	7.50	12.50
1100	157.1	4.13	5.50	8.25	13.75
1200	171.4	4.50	6.00	9.00	15.00



Table 1 : Section Of Service Factor Based On Applications.

TYPE OF DRIVEN MACHINE	Up to 10 hrs	10 to 16 hrs	Over 16 hrs
UNIFORM Agitators and Mixers - liquid or semi-liquid Blowers-Centrifugal, Bottling machine, Conveyors and Elevators Uniformly loaded Cookers Laundry Washing Machines - Non-reversing Line Shafts, Pumps-Centrifugal and gear, Wire Drawing machines	1	1.12	1.25
MODERATE SHOCK Agitators and Mixure - Variable density Conveyors - Non Uniformly Loaded Cranes - Travel motion and hoisting Draw bench, Feeders - Pulsating load Hoists Kilns, Laundry Tumbler, Lifts Piston Pumps - with 3 or more cylinders Pulp and Paper making Machinery Rubber Mixers and Calenders Rotary Screens, Textile Machinery	1.25	1.4	1.6
HEAVY SHOCK Brick Press, Briquetting Machine Conveyors - reciprocating and shaker Crushers Feeders reciprocating Hammer Mills, Piston Pumps - 1 or 2 cylinders Rubber Masticators, Vibrating Machine	1.6	1.8	2

Table 3 : Power Rating (kW) Ratio 6 : 1 units (Single reduction) (1 HP = 0.746kW)

FACTOR OF SAFETY 2.0 INCLUDED

GEARBOX INPUT SPEED (N1)	GEARBOX OUTPUT SPEED (N2)	N5	N6	N7	N8
300	50	5.6	9.0	14.6	23
327	54.5	7.5	11.9	19.4	25.1
350	58.3	8.0	12.7	20.8	26.9
360	60	8.4	13.4	21.9	27.6
375	62.5	8.8	14.0	22.8	28.8
400	66.7	9.6	15.4	25	30.7
425	70.8	10.2	16.4	26.6	32.6
450	75	11.3	17.9	29.2	34.5
500	83.3	12.6	19.9	32.4	38.3
600	100	15.1	23.9	38.9	46.0
700	116.7	17.6	27.8	45.4	53.7
800	133.3	20.1	31.8	51.9	61.3
900	150	22.6	35.8	58.4	69.0
1000	166.7	25.1	39.8	64.9	76.7
1100	183.3	27.6	43.8	71.4	84.3
1200	200	30.1	47.7	77.9	92.0



NISUKA SMSR GEARBOX

POWER PLUS | POWER | FORCE

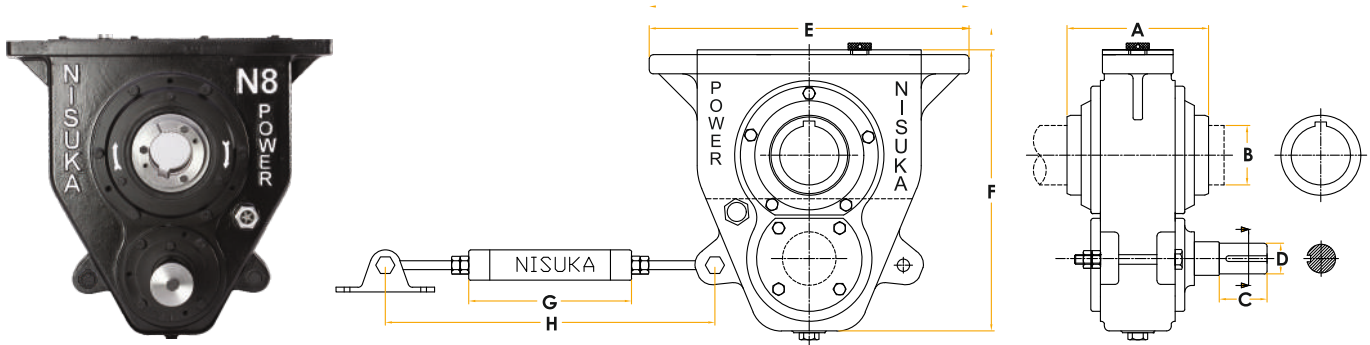
Shaft mounted Speed reducer - Patented Product - Patent No - 386473

► Nisuka Power Plus

Nisuka Power Plus Gearbox are available in Model N1 to N4 ratio 7 : 1 with Teeth Grinding.
Nisuka Power Plus Gearbox are available in Model N5 to N8 ratio 6.75 : 1 with Teeth Grinding.
Dimensional details are the same as for Nisuka Power.

► Nisuka Power

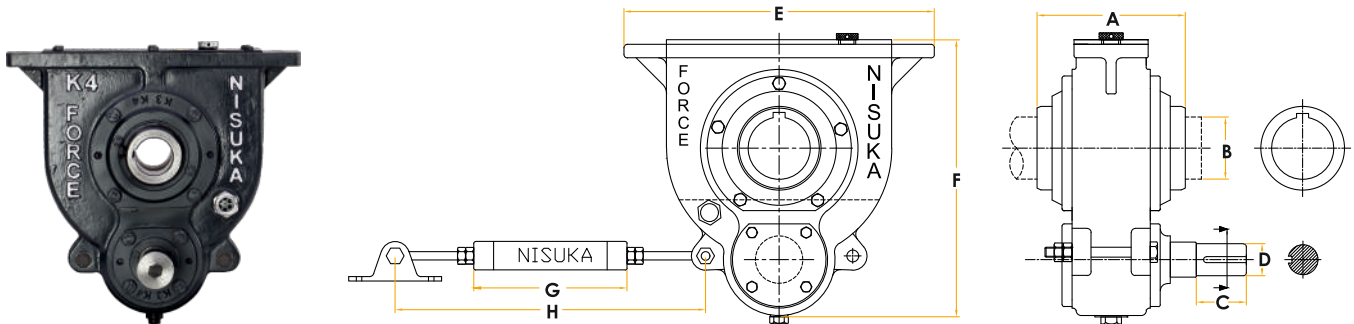
Dimensional Drawing



MODEL	RATIO	A	B	C	D	INPUT SHAFT KEY WAY	E	F	G	H		APPROX. MASS (KG)	OIL CAPACITY (LTR)
										MIN	MAX		
N1	7:1	163	40	50	28	8 X 3.5	335	290	170	300	400	26	1.3
N2	7:1	180	50	50	28	8 X 3.5	360	320	170	300	400	32	1.5
N3	7:1	185	50	55	28	8 X 3.5	415	350	170	300	400	39	2
N4	7:1	197	65	55	28	8 X 3.5	440	380	170	300	400	50	3
N5	6:1	205	65	80	38	10 X 4.7	445	400	170	300	400	59	3.5
N6	6:1	215	75	80	38	10 X 4.7	510	444	210	400	525	78	4.5
N7	6:1	232	80	85	48	14 X 5.2	550	496	210	400	525	102	6
N8	6:1	246	100	85	48	14 X 5.2	590	536	210	400	525	125	8

► Nisuka Force

Dimensional Drawing



MODEL	RATIO	A	B	C	D	INPUT SHAFT KEY WAY	E	F	G	H		APPROX. MASS (KG)	OIL CAPACITY (LTR)
										MIN	MAX		
K3	7:1	175	50	55	28	8 x 3.5	370	325	170	300	400	31	1.5
K4	7:1	180	50	55	28	8 x 3.5	400	360	170	300	400	37	2
K5	6:1	193	65	75	38	10 x 4.7	435	380	170	300	400	52	2.4
K6	6:1	205	75	75	38	10 x 4.7	460	405	170	400	525	64	2.6

► Additional accessories for Nisuka SMSR gearbox

TAPER LOCK BUSH

Taper Lock Bush and Support Bushes are manufactured from special steel to permanently remove any possibility of corrosion. The unique Taper Bush Locking system is custom-designed to overcome the challenges faced by other mounting methods in corrosive conditions. Bores of varied sizes are available for Taper Lock Bush to facilitate quick and easy mounting on different shaft sizes.

TECHNICAL DETAILS		
MODEL	TAPER LOCK BUSH HOLE	
	MM	Inch
N4/N5/K5	50/55	50.8 (2")
	60/65	63.5 (2.5")
N6/K6	50/55	50.8 (2")
	60/65	63.5 (2.5")
	70/75	76.2 (3")
N7	65/70	63.5 (2.5")
	75/85	76.2 (3")
N8	70/75	76.2 (3")
	85/100	101.6 (4")

The metric & inches holes of taper lock bush are bored to F7 tolerance

BACKSTOPS

Backstops (Holdback) are designed to prevent reverse rotation or to hold a device to prevent reverse rotation in applications such as conveyors, bucket elevators, fan, rotary pumps and kilns. Backstops are not recommended for use on systems that are designed for handling people, such as elevators, man lifts, sky lifts, etc. Backstop cannot be used as a brake. The Backstop does not need additional lubrication as it gets oil from the gearbox.



MOTOR MOUNTS

For shaft mounted gear units, motor mounting options are available to fit directly onto the gear unit through special motor mounting tools for shaft mounted gear unit. Motor mounting tools are designed with robust base plate which accommodates wide range of motor frame sizes. Each size of motor mount has sufficient adjustment to ensure that belt can be fitted and tensioned whenever required throughout life of belts.



► Nisuka Power & Force Series SMSR Gearbox Technical Details

Given Below Selection of Gear unit calculation for drive Pulley Dia 300 mm

GEAR UNIT		MOTOR HP	MOTOR SPEED RPM	GEAR PULLEY SIZE	MOTOR PULLEY SIZE	CONVEYOR SPEED RPM	
MODEL	RATIO						
N1	7:1	1, 1.5, 2	1440	18"	5"	57	
N2			960	12"			
N3/K3		2, 3	1440	18"			
			960	12"			
N4/K4		3, 5	1440	18"			
		960	12"				
N5/K5	6:1	5, 7.5	960	14"	5"		
N6/K6		7.5, 10	960				
N7		10, 15, 20	960				
N8		20, 25, 30	960				
N5/K5		5, 7.5	1440	20"	5"	60	
N6/K6		7.5, 10	1440				
N7		10, 15, 20	1440				
N8		20, 25, 30	1440				
N1	7:1	1, 1.5, 2	1440	16"	5"		64
N2		2	1440				
N3/K3		2, 3	1440				
N4/K4		3, 5	1440				
N5/K5	6:1	5, 7.5	1440	18"	5"	67	
			960				12"
N6/K6		7.5, 10	1440				18"
			960				12"
N7		10, 15, 20	1440				18"
			960				12"
N8		20, 25, 30	1440				18"
			960				12"

OUTPUT SHAFT KEY DIMENSIONS

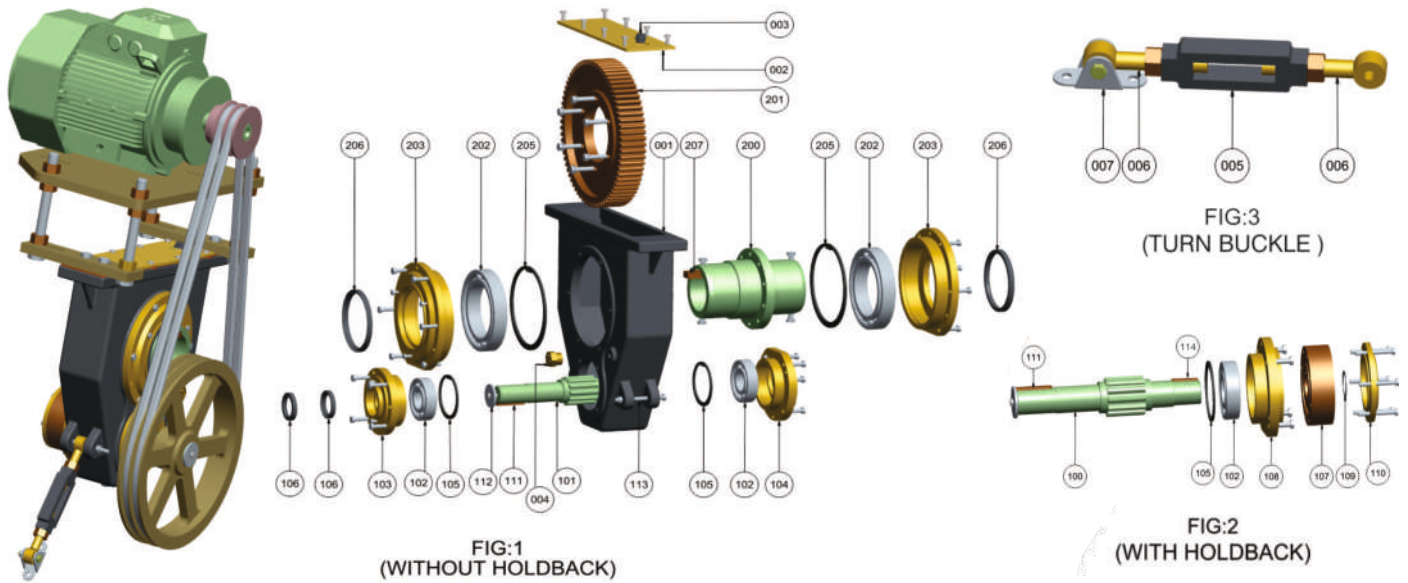
STANDARD METRICS KEY WAYS

STANDARD HUB BORE (MM)	HUB KEYWAY	KEY SIZE
35	10 x 3.5	10 x 8
40	12 x 3.5	12 x 8
50	14 x 4	14 x 9
55	16 x 4.5	16 x 10
60	18 x 4.6	18 x 11
65	18 x 4.6	18 x 11
70	20 x 5.1	20 x 12
75	20 x 5.1	20 x 12
80	22 x 5.6	22 x 14
85	22 x 5.6	22 x 14
90	25 x 5.6	25 x 14
100	28 x 6.6	28 x 16

STANDARD INCH KEY WAYS

STANDARD HUB BORE (INCH)	HUB KEYWAY	KEY SIZE
1.5"	9.52 x 2.77	9.52(3/8") x 6.35(1/4")
2"	12.70 x 3.70	12.70(1/2") x 7.93(5/16")
2.5"	15.87 x 5.05	15.87(5/8") x 11.11(7/16")
3"	19.05 x 5.70	19.05(3/4") x 12.70(1/2")
4"	25.40 x 8.45	25.40(1") x 19.05(3/4")

► Parts Identification For Nisuka SMSR Gearbox



► Individual Replacement Parts List

PART LIST	DESCRIPTION	QTY						
001	GEAR HOUSING	1	102	INPUT PINION BEARING	2	112	END PLATE AND BOLT	1
002	INSPECTION COVER	1	103	INPUT PINION OPEN COVER	1	113	TURN BUCKLE'S BRACKET BOLT	1
003	BREATHER PLUG	1	104	INPUT PINION BLANK COVER	1	114	HOLDBACK KEY	1
004	OIL LEVEL INDICATOR	1	105	INPUT PINION BEARING CIRCLIP	2	200	OUTPUT SHAFT	1
005	TURN BUCKLE	1	106	INPUT PINION OIL SEAL	2	201	GEAR WHEEL	1
006	TORQUE ARM (L.H. & R.H.)	2	107	BACK STOP (HOLDBACK)	1	202	OUTPUT SHAFT BEARINGS	2
007	FULCRUM	1	108	OPEN COVER (IF HOLDBACK)	1	203	OUTPUT SHAFT OPEN COVER	2
100	INPUT PINION (WITH HOLDBACK)	1	109	HOLDBACK CIRCLIP	1	205	OUTPUT SHAFT BEARINGS CIRCLIP	2
101	INPUT PINION (WITHOUT HOLDBACK)	1	110	HOLDBACK BLANK COVER	1	206	OUTPUT SHAFT OIL SEAL	2
			111	INPUT SHAFT KEY	1	207	KEY FOR OUTPUT SHAFT	1

NISUKA PLUMMER BLOCK

Patent Application No : PCT/IN2014/000257

We at Nisuka have developed a new series of Plummer Blocks. A Plummer Block refers to a housing with a mounted anti-friction bearing where in the mounted shaft is in parallel plane to the mounting surface.

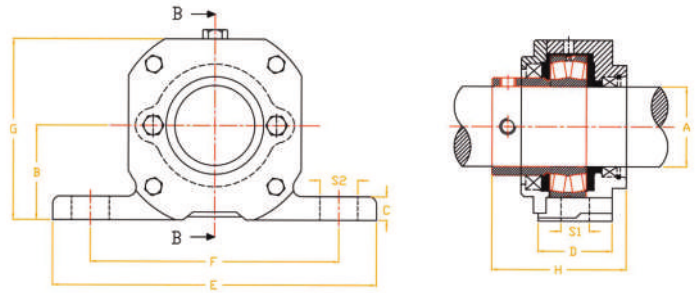
Compared to our previous version, these redesigned Plummer Blocks are equipped with greater housing rigidity, enhanced performance and reliability in highly corrosive production environment. Grease lubricated Plummer Blocks are used for large plants, industrial machinery & Conveyor industries.

Special features of plummer block

- Single piece bearing housing to increase strength of the Plummer Block and bearing life.
- Special spherical roller bearing designed to take highly miss-aligned shafts.
- Single piece bearing housing designed to take loads from all angles.
- The length of the inner bearing ring is extended to facilitate high gripping of the shaft and provide additional locking provisions.
- Dual side oil seal locking arrangement.
- Reinforcement rectangle base with slot type fixing arrangement for easy assembly with the machine.
- Housing reinforced with good heat flow to increase the stiffness of the housing.
- Instead of the inner ring, the outer ring is fixed to allow high mis-alignment .
- Quick and easy assembly of the Plummer Block.

► Nisuka 200 series plummer block

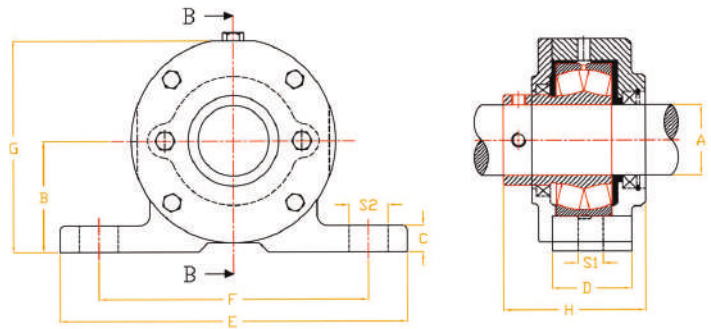
Dimensional Drawing



MODEL	MATERIAL	A		B	C	D	E	F	G	H	S1	S2	APPROX Mass (KG)
		MM	INCH										
22206	C.I.		1.25"	43	13	36	156	118	80	67	14	18	2
22208	C.I.		1.5"	53	14	44	178	138	102	73	14	18	3.4
22210	M.S.	50	2"	60	15	51	211	164	115	85	18	24	4
22212	M.S.	60	2.5"	72	16	58	240	190	138	94	18	24	6.2

► Nisuka 300 series plummer block

Dimensional Drawing



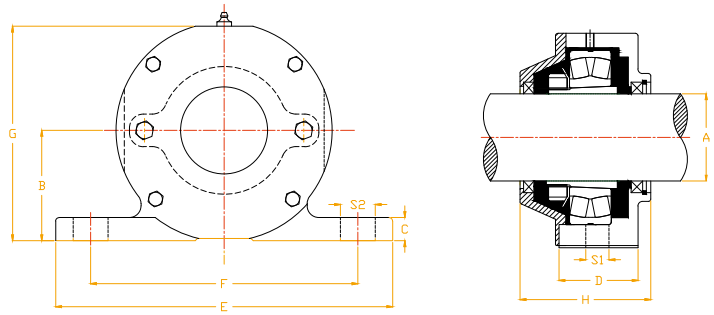
Material : Mild Steel

MODEL	A		B	C	D	E	F	G	H	S1	S2	APPROX MASS (KG)
	MM	INCH										
22310	50.00	2"	80	18	51	238	184	151	102	18	28	8
22311	55.00	-	85	18	56	246	192	161	105	18	28	9.8
22312	60.00	2.5"	90	19	58	256	202	171	111	18	28	11.8
22313	65.00	-	95	19	62	269	213	181	112	18	28	12.7
22314	70.00	-	100	20	66	284	226	192	120	18	30	15.4
22315	75.00	3"	105	21	71	295	233	201	124	18	32	18
22316	80.00	-	110	21	74	305	243	212	128	18	32	20.2



► Nisuka K series plummer block

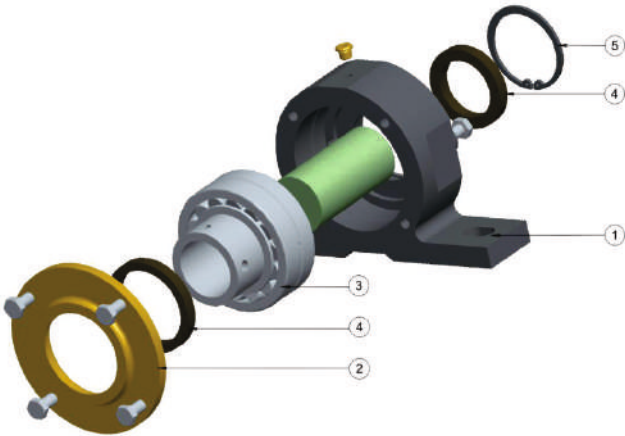
Dimensional Drawing



Material : Mild Steel

MODEL	A		B	C	D	E	F	G	H	S1	S2	APPROX Mass (KG)
	MM	INCH										
22211 K	50.00	2"	70	16	50	215	160	132	92	18	28	6
22215 K	65.00	2.5"	85	18	62	255	200	164	105	18	28	10
22217 K	75.00	3"	95	20	70	290	230	185	113	22	30	14
22220 K	90.00	-	112	21	80	330	262	217	125	27	35	21
22222 K	100.00	4"	125	22	90	355	285	240	137	27	35	27.5

► Plummer block part details



PART LIST	DESCRIPTION	QTY
1	PLUMMER BLOCK HOUSING	1
2	HOUSING COVER	1
3	SPHERICAL ROLLER BEARING	1
4	OIL SEAL	2
5	CIRCLIP	1



► Nisuka V Belt Pulley & Taper Lock Pulley

Nisuka's standard range of V-Belt pulleys are applicable with B,C,D, and SPB & SPC belt section and one to four grooves. Pulleys are available in GG25 cast iron. The Pulley is widely used in conveyors, gear box, stone crushing plants and other industrial applications. We offer assured and precisely engineered product quality.

Taper Lock & Bush:

Nisuka's Taper Lock & Bush are available in B & SPB belt section.

V-Belt Pulley: Nisuka's V-Belt Pulleys available in C,D, SPC We provide V-belt Pulleys 4'' to 24''.



► Nisuka Tension Unit

The Tensioning System used in a conveyor belt is a vital component in ensuring optimum belt performance. The tension unit creates and maintains adequate pre-tension to allow the conveyor roller to dive under all running conditions. The conveyor drive pulley can be moved easily by using the tension unit. This ensures that the belt maintenance and alignment can be easily accomplished, leading to an extended belt life.



Advantages

- It can be quickly fixed. Dust resistance ensures smooth and long working life.
- The tension unit consists of the least amount of simple components and so is quite cost-efficient.
- Most common method of tensioning, promising maximum familiarity for maintenance crew.

Technical Specification

MODEL	SIZE	WORKING CAPACITY
NI-080	80 x 80	300 MM
NI-100	100 x 100	300 MM

► Nisuka Gear Oil Pump

Gear Oil Pumps offered by Nisuka are used to pump and transfer all sorts of viscous liquids like oil and petroleum products. They are available in spherulitic graphite cast iron grade with single helical alloy steel hardened gears and ground shafts. Flow switch and oil tank can be provided at extra costs, according to client requirements.



Technical Specification

MODEL	SUCTION & DELIVERY	MOTOR	CAPACITY AT 960 RPM
NI-050	1/2" x 1/2"	0.50 HP 960 RPM 3PH	20 LPM
NI-100	3/4" x 3/4"	1.00 HP 960 RPM 3PH	40 LPM

► Nisuka Suspension Magnet

NISUKA SUSPENSION MAGNET which are useful for products carried by the belt conveyors in the conveyor belt-based industries. Suspension type magnets are used for arrest ferrous objects thru magnetic field is produced in highly magnitude forces to arrest the ferrous objects. The equipment must be frequently cleaned.

- NSM available for 400mm to 1200mm belt Size.
- Supplies as Customized Requirement also.
- Magnet grade – Y-40.
- Body Material - Stainless Steel.
- Hanging hooks – 4 nos.
- No need for electric supply.



► Nisuka Metal Detector

NISUKA METAL DETECTOR is used to detect unwanted metal objects on the moving conveyor belt in in the conveyor belt based industries such as mining and stone crusher.

“NMD” instantly gives audible and visual alarms when a suspect metal object passes over its sensor coil. Also the belt stops automatically, if the relay output contacts on the Control Unit are connected to the belt operating mechanism.



Technical Specifications

MODEL NMD	DETECTION WIDTH (MM)	EQUIPMENT WIDTH (MM)	HEIGHT (MM)	BELT WIDTH (MM)	FIELD STRENGTH (MM)
650	650	400	85	400-650	Adjustable
800	800	400	85	650-800	Adjustable
1000	1000	400	85	800-1100	Adjustable



Nisuka Industries Private Limited

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Note : Nisuka Industries Private Limited reserves right to change the specification of product without any prior notice.