



**GULLCO**

## KBM<sup>®</sup>-28U

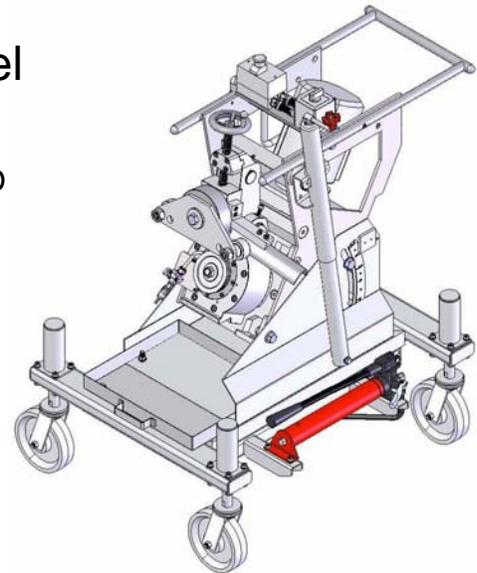
# INVERTED PORTABLE PLATE EDGE BEVELLING MACHINE

Adjustable bevel head produces bevel  
angles from 22.5° through 55°

Supplied with angle bevel pin for 30°

Other bevel angle pins are available  
upon request.

**NOTE: Machine shipped with the 30°  
bevel pin in place.**



## PARTS LIST & OPERATING INSTRUCTIONS

Website: [www.gullco.com](http://www.gullco.com)

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## **READ BEFORE USING THE KBM®-28U BEVELLER**

Please refer to the KBM®-28 Portable Plate Edge Beveling Machine Parts List & Operating Instructions document (GD-047) for all other information not contained within this supplemental manual, as it contains all of the major wear components used in the KBM®-28U machine along with similar principles of operational procedure, safety instruction, maintenance etc.

## **KBM®-28U PLATE EDGE BEVELLING MACHINE DETAILS**

This manual (in combination with the KBM®-28 manual, GD-047) covers the operation instructions, maintenance requirements and provides parts lists for the **Gulco Inverted Plate Edge Beveling Machine**, part number: **KBM®-28U**.

**DECLARATION OF CONFORMITY - CE** - designed and manufactured in compliance with 2006/42/EC provisions and further amendments.

### **MACHINE SPECIFICATIONS**

<b>Maximum Bevel Width:</b>	1.10" [28 mm] at standard 30° bevel angle on material with a tensile strength of 64,000 lb/in <sup>2</sup> [45 Kg/mm <sup>2</sup> ] (multiple passes)
<b>Maximum Bevel Depth:</b>	0.95" [24.2 mm] at standard 30° bevel angle on material with a tensile strength of 64,000 lb/in <sup>2</sup> [45 Kg/mm <sup>2</sup> ] (multiple passes)
<b>Minimum Plate Thickness:</b>	5/16" (8.0 mm)
<b>Maximum Plate Thickness:</b>	2" (50 mm)
<b>Bevel Speed:</b>	10' [3 m] per minute <sup>†</sup>
<b>Motor:</b>	3 H.p., 3 phase, available for 230, 460 and 575 V at 60 Hz. and also 380 and 400/415 V at 50 Hz. supply
<b>Gearbox Oil:</b>	4.8 US Gallon (18 Litres) of Shell Tivera S 320 ( <a href="#">See section "Periodic Inspection &amp; Maintenance" for further details</a> )
<b>Weight:</b>	924 lbs. [420 Kg.] including hydraulic undercarriage assembly

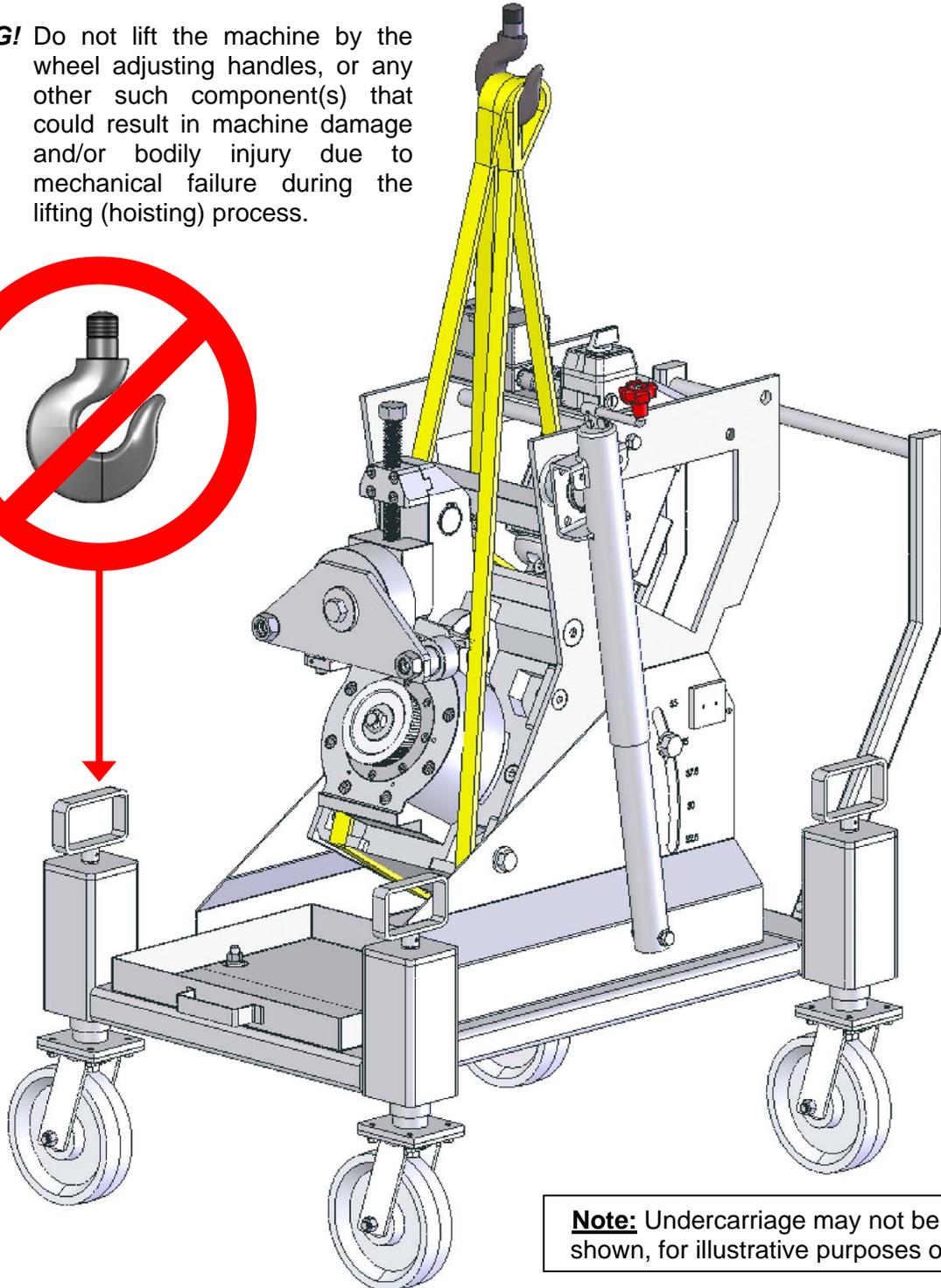
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<sup>†</sup> Top speed can vary depending on variations of bevel depth, voltage and frequency.

## LIFTING (HOISTING)

The recommended method of lifting (hoisting) the Gullco KBM®-28U Inverted Portable Plate Edge Beveling machine is to use two (2) equal length slings of sufficient capacity (924 lbs [420 Kg] minimum), fed through the machine as shown below. All lifting (hoisting) equipment must be suitably rated and clearly identified to be of adequate capacity. Never raise the machine any higher than necessary and never transport it over the top of people!

**WARNING!** Do not lift the machine by the wheel adjusting handles, or any other such component(s) that could result in machine damage and/or bodily injury due to mechanical failure during the lifting (hoisting) process.

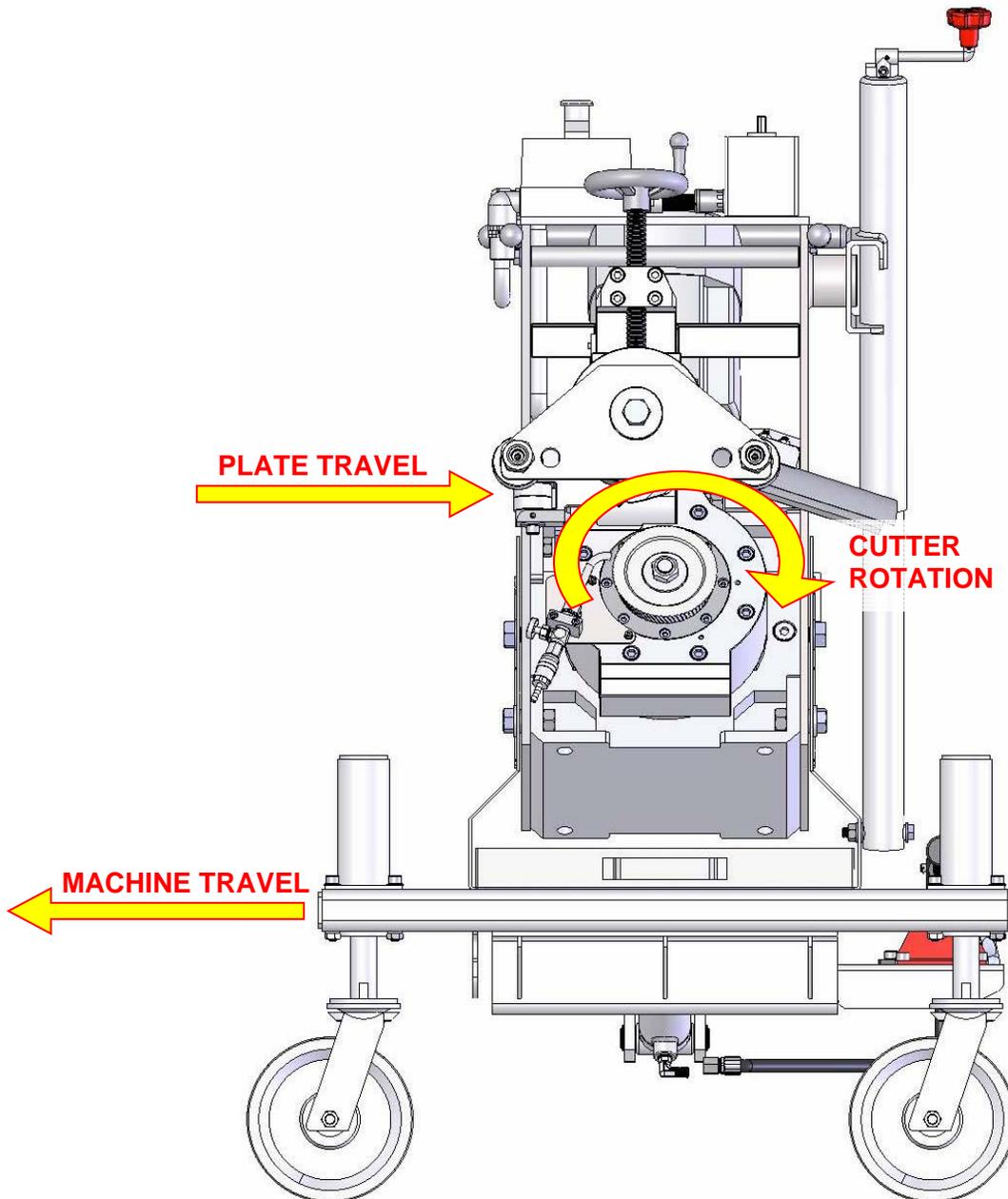


**Note:** Undercarriage may not be as shown, for illustrative purposes only

## INSTALLATION

### ELECTRICAL CONNECTION

**WARNING!** As shown in the accompanying drawing, the cutter rotation **MUST** be clockwise (as viewed from the front). **IT IS IMPORTANT THAT THIS ROTATION DIRECTION BE CORRECT OTHERWISE DAMAGE TO THE MACHINE MAY OCCUR AND WARRANTY WILL BE VOID.** Be certain to check the cutter rotation before operating the machine. The plate should be fed in the direction shown if the machine is static and the material is being manually fed, alternatively, the bevelling machine should travel in the direction shown if the plate is static and the machine is running along the plate. If the cutter rotation is incorrect, it means that the 3 phase AC connection is incorrect and two out of the three Live wires must be swapped.



## INSPECTION & MAINTENANCE

### FREQUENT INSPECTIONS

**IMPORTANT:** Due to the inverted operating position of the KBM bevelling machine, contamination from the bevelled plate tends to build-up around the back of the cutter and may eventually work its way into the gearbox bearing causing machine damage, if not regularly cleaned and inspected.

The area around the cutter should be cleaned multiple times during a day of operation. The removal of any rust and/or mill scale from the edge of the plate before bevelling will help reduce build-up, component wear and prolong the life of the machine.

After a week of operation the cutter should be removed and the area behind the cutter cleaned and inspected for wear. The Cutter Felt Insert, the Cutter Shaft Collar and/or the Stop Disc should be replaced if worn or damaged.

It is also recommended that the gearbox's main roller bearing be regularly inspected, cleaned and replaced as necessary.

### PERIODIC INSPECTION & MAINTENANCE

**IMPORTANT:** The gearbox oil must be changed after the first 300 hours of operation (approximately 2 months of single shift usage) and then every 12,500 hours thereafter.

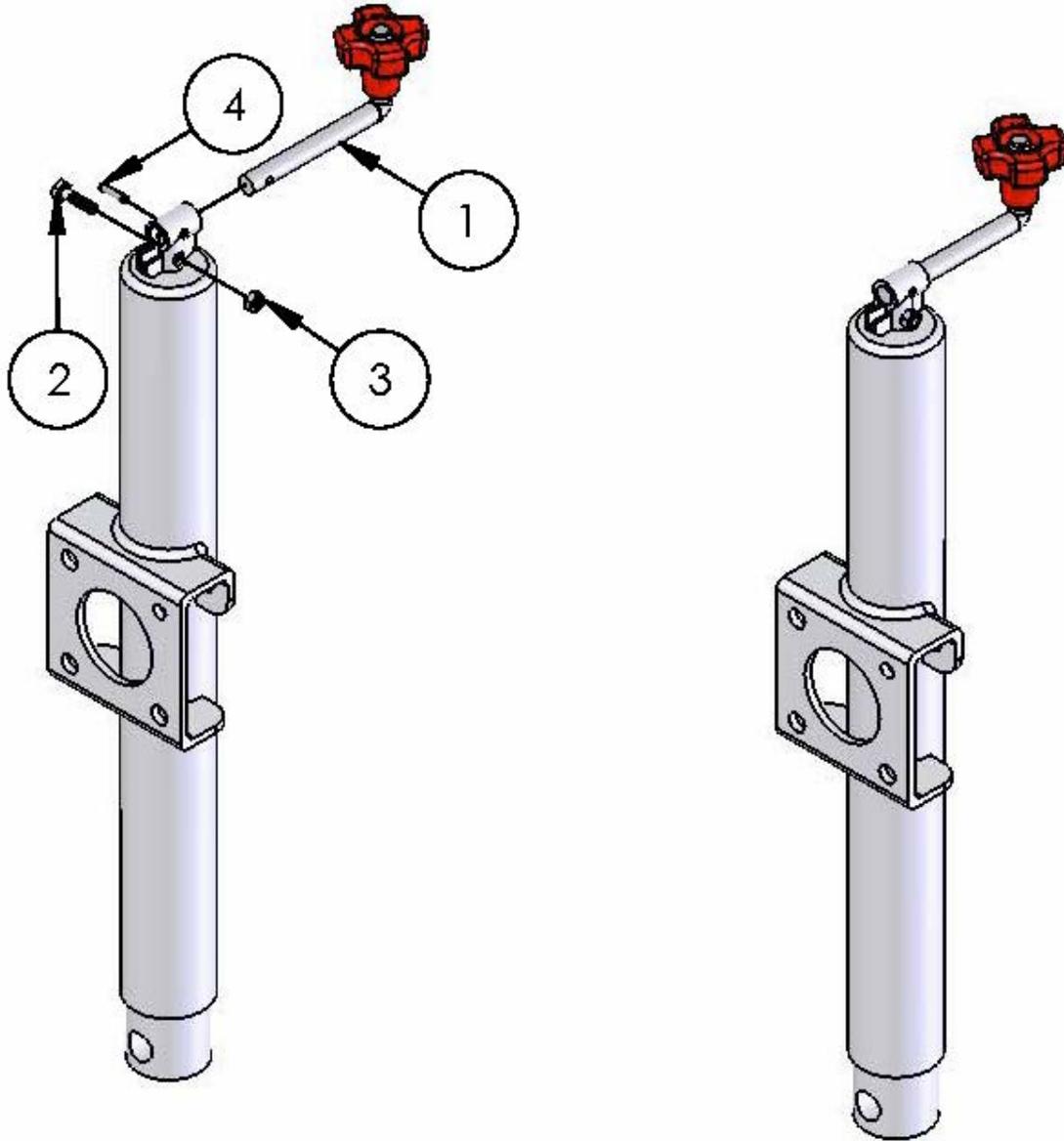
The Gearbox is typically shipped from the factory with "Shell Tivera S320" - a synthetic, ISO VG 320 oil. When replacing the gearbox oil, refer to the chart below for the best Viscosity Grade (VG) oil to suit the operating environment of the machine. The gearbox requires **4.8** Gallons (US) [**18** Litres] of oil.

**NOTE:** Do not mix mineral oils with synthetic oils! If necessary to change from one type of oil to the other, carefully wash the internal parts of the unit using suitable detergents.

32 – 70°F [0 - 20°C]		70 - 104°F [20 - 40°C]	
Mineral Oil ISO VG	Synthetic Oil ISO VG	Mineral Oil ISO VG	Synthetic Oil ISO VG
220	220	460	320

## LIFTING JACK ASSEMBLY BREAKDOWN

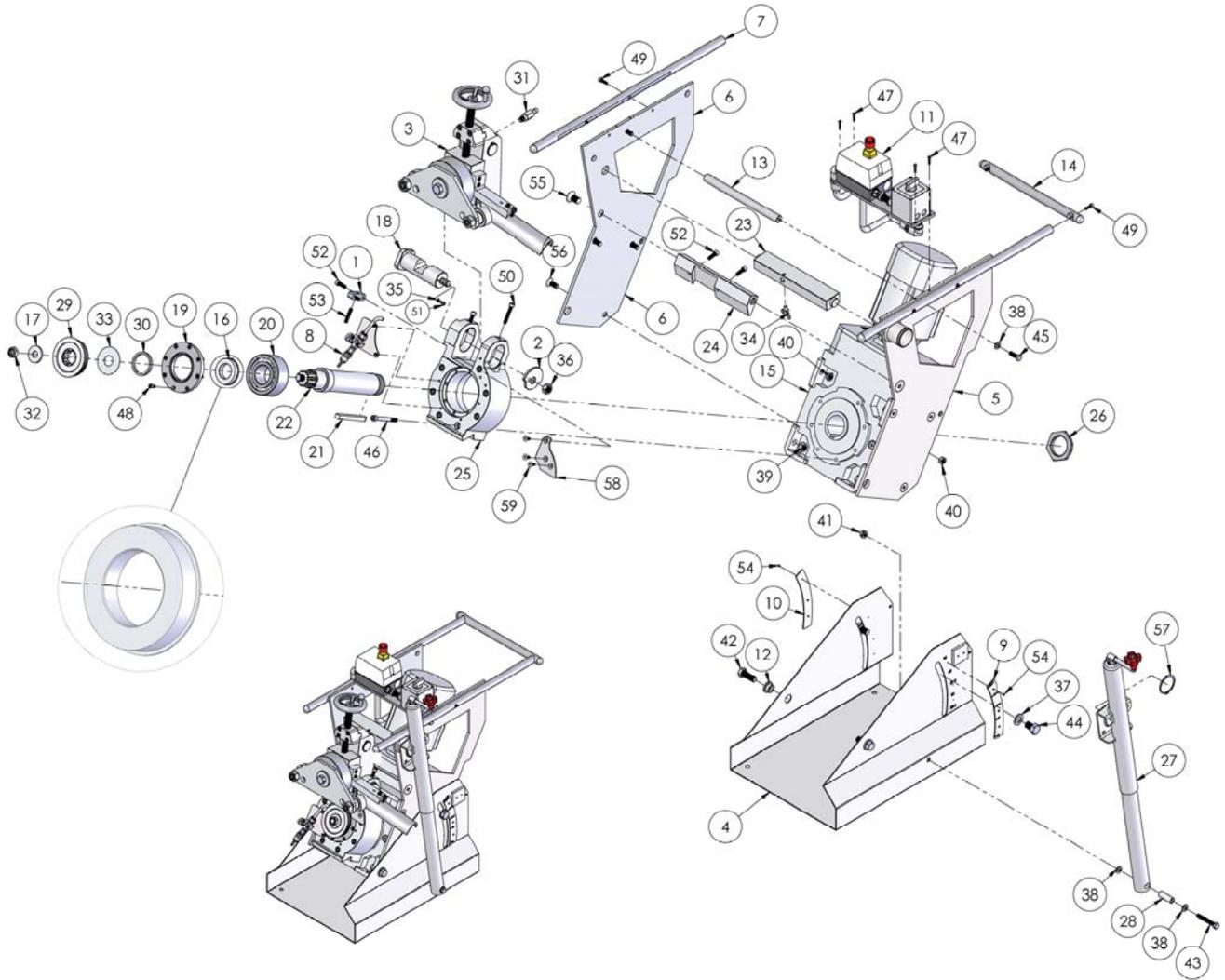
Drawing Number: KBM-18U-004



ITEM	PART NUMBER	DESCRIPTION	QTY
1	KBM-18U-004-1	JACK HANDLE	1
2	GK-108-052	1/4-20UNC x 1 HEX BOLT	1
3	GK-109-050	1/4-20UNC HEX NUT	1
4	GK-117-033	3/16 x 3/4 SPRING PIN	1

# **KBM®-28U GENERAL ASSEMBLY BREAKDOWN**

Drawing Number: KBM-28U-100



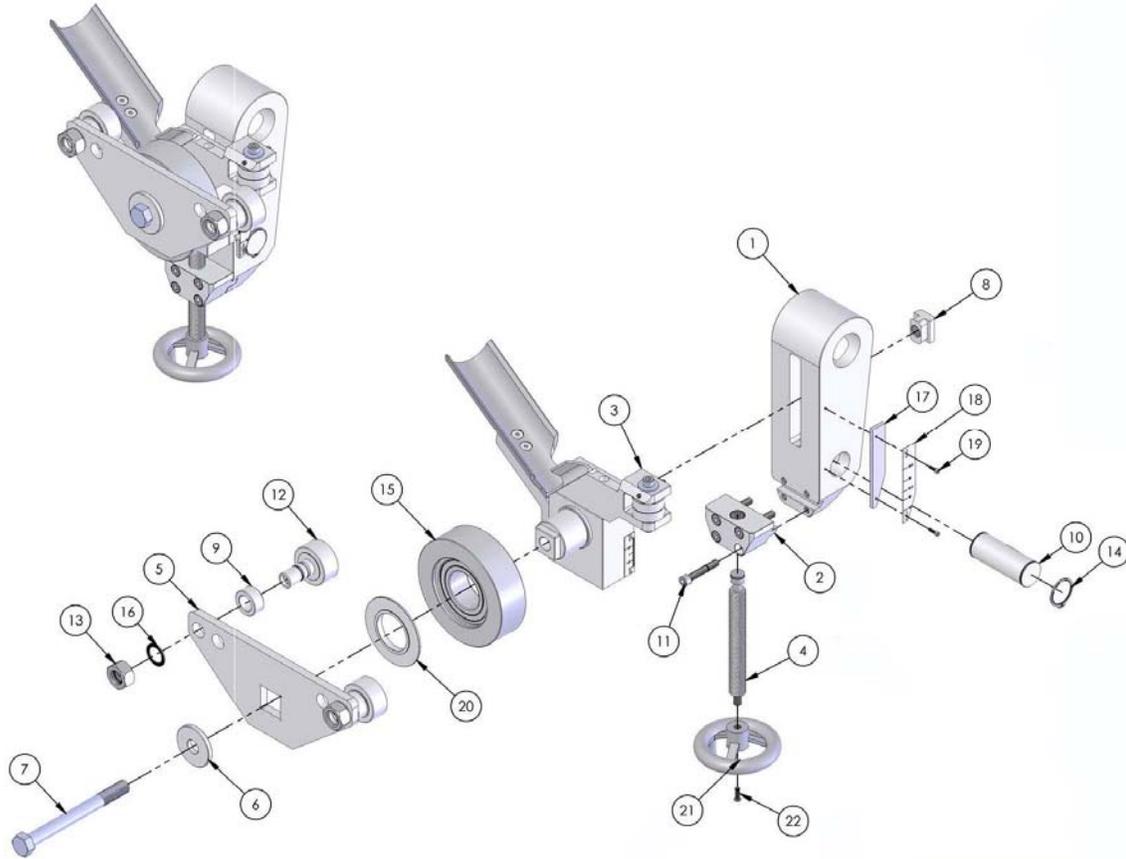
## KBM®-28U GENERAL ASSEMBLY BREAKDOWN

Drawing Number: KBM-28U-100

ITEM	PART NO.	DESCRIPTION	QTY.
1	KBM-28U-055	SHAFT LIFTING SCREW BLOCK	1
2	KBM-28U-049	ALIGNMENT BOLT WASHER	1
3	KBM-28U-044	PIVOT ARM ASSEMBLY	1
4	KBM-28U-025	TILTING FRAME	1
5	KBM-28U-024-R	RIGHT BODY SIDE	1
6	KBM-28U-024-L	LEFT BODY SIDE	1
7	KBM-28U-021	HANDLE	2
8	KBM-28U-018	AIR JET ASSEMBLY (OPTIONAL)	1
9	KBM-28U-013-R	RIGHT ANGLE PLAQUE	1
10	KBM-28U-013-L	LEFT ANGLE PLAQUE	1
11	KBM-28U-056	STARTER ASSEMBLY	1
12	KBM-28U-006	PIVOT COLLAR	2
13	KBM-28U-005	STIFFENER ROD	1
14	KBM-28-123	HANDLE SUPPORT	1
15	KBM-28U-120-A	230/460V GEARMOTOR (KBM-28U-A,B,C&D)	1
	KBM-28U-120-B	575V GEARMOTOR (KBM-28U-E)	
16	KBM-28-065	CUTTER SHAFT COLLAR	1
17	KBM-28-058	CUTTER NUT WASHER	1
18	KBM-28-054	ANGLE ALIGNMENT BOLT	1
19	KBM-28-042	STOP DISC	1
20	KBM-28-038	CUTTER SHAFT BEARING	1
21	KBM-28-023	CUTTER SHAFT KEY	1
22	KBM-28-022	CUTTER SHAFT	1
23	KBM-28-021	ANGLE SUPPORT BAR	1
24	KBM-28-019	MAIN SUPPORT BAR	1
25	KBM-28-015	CUTTER SHAFT HOUSING	1
26	KBM-28-007	65MM SELF-LOCKING NUT	1
27	KBM-18U-004	LIFTING JACK ASSEMBLY	1
28	KBM-18U-002	PIVOT PIN	1
29	KBM-28-X1C	MEDIUM TOOTH CUTTER (SOLD SEPARATELY)	1
	KBM-28-X1H	HIGH TENSILE MATERIAL CUTTER (SOLD SEPARATELY)	
	KBM-28-X1A	DEEP TOOTH CUTTER (SOLD SEPARATELY)	
	GBM-28-FXS	FINE TOOTH CUTTER (SOLD SEPARATELY)	
30	GBM-18-094	CUTTER FELT INSERT	1
31	GBM-28-040-225	22.5 DEGREE ANGLE PIN (OPTIONAL)	1
	GBM-28-040-30	30 DEGREE ANGLE PIN	
	GBM-28-040-375	37.5 DEGREE ANGLE PIN (OPTIONAL)	
	GBM-28-040-45	45 DEGREE ANGLE PIN (OPTIONAL)	
	GBM-28-040-55	55 DEGREE ANGLE PIN (OPTIONAL)	
32	GBM-28-07779	CUTTER NUT	1
33	GBM-28-015-A	0.5mm CUTTER SHIM	INCLUDES (1) OF EACH USE AS NEEDED
	GBM-28-015-B	1.0mm CUTTER SHIM	
34	GK-161-003	M10x16 WING SCREW	1
35	GK-136-072	LOCK WASHER 6mm BOLT	1
36	GK-135-062	M20-2.5 NYLOK HEX NUT	1
37	GK-111-100	WASHER 20mm BOLT x 37 OD x 3.0	2
38	GK-111-095	WASHER 12mm BOLT x 24 OD x 2.5	5
39	GK-109-082	M18-2.5 HEX NUT	2
40	GK-109-081	M14-2.0 HEX NUT	6
41	GK-109-072	M12-1.75 HEX NUT	1
42	GK-108-155	M18-2.5 x 50mm HEX BOLT	2
43	GK-108-149	M12-1.75 x 80mm HEX BOLT	1
44	GK-108-145	M20-2.5 x 30mm HEX BOLT	2
45	GK-108-134	M12-1.75 x 35mm HEX BOLT	2
46	GK-107-142	M12-1.75 x 110mm SHCS	7
47	GK-107-127	M5-0.8 x 25mm SHCS	4
48	GK-107-123	M8-1.25 x 16mm SHCS	8
49	GK-107-121	M8-1.25 x 25mm SHCS	6
50	GK-107-102	M10-1.5 x 60mm SHCS FULL THREAD	2
51	GK-107-094	M6-1.0 x 12mm SHCS	1
52	GK-107-083	M10-1.5 x 30mm SHCS	4
53	GK-106-081	M10-1.5 x 50mm SET SCREW	1
54	GK-105-106	M3-0.5 x 6mm FHSCS	6
55	GK-105-103	M20 x 35mm FHSCS	2
56	GK-105-102	M14 x 35mm FHSCS	6
57	GK119-069	2.5 RETAINING RING	1
58	KBM-28-210	CUTTER SHAFT HOUSING WEAR PLATE	1
59	GK-105-075	M8 x 20mm FHSCS	3

## PIVOT ARM ASSEMBLY BREAKDOWN

Part Number: KBM-28U-044

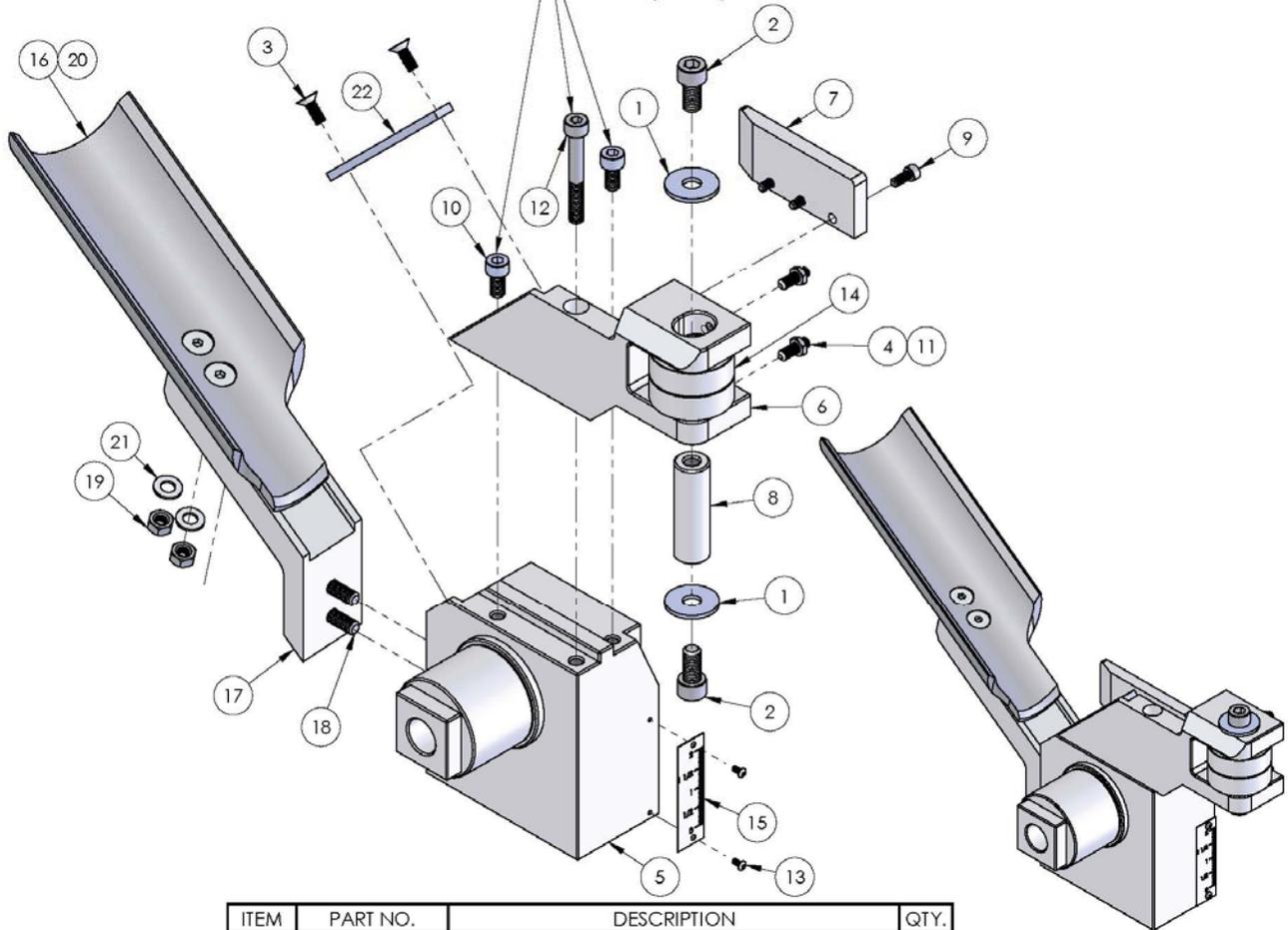


ITEM	PART NO.	DESCRIPTION	QTY.
1	KBM-28-017	PIVOT ARM BLOCK	1
2	KBM-28-069	ADJUSTING BOLT SUPPORT	1
3	KBM-28U-043	SLIDE BASE ASSEMBLY	1
4	KBM-28U-020	SLIDE BASE ADJUSTING ROD	1
5	KBM-28-014	SUPPORT ROLLER PLATE	1
6	KBM-28-049	WASHER	1
7	GK-108-135	M20-2.5 x 200mm HEX BOLT	1
8	KBM-28-016	"T" NUT	1
9	KBM-28-046	SUPPORT ROLLER SPACER	2
10	KBM-28-052	ANGLE PIVOT PIN	1
11	GK-107-102	M10-1.5 x 60mm SHCS	4
12	KBM-28-037	INK KR 62 PP STUD TRACK SUPPORT ROLLER	2
13	GK-109-080	M24-1.5 HEX NUT	2
14	GK-119-068	40MM EXTERNAL RETAINING RING	2
15	KBM-28-041	MAIN ROLLER ASSEMBLY	1
16	GK-111-102	M24 SCHNORR WASHER	2
17	KBM-28-067	ANGLE REFERENCE SCALE SPACER	1
18	KBM-28-027	ANGLE REFERENCE SCALE	1
19	GK-107-105	M4-0.7 x 14mm SHCS	2
20	KBM-28-048	COVER PLATE	1
21	KBM-28-039	5" HAND WHEEL	1
22	GK-112-131	M6-1.0 x 20mm BHCS	1

## SLIDE BASE ASSEMBLY BREAKDOWN

Part Number: KBM-28U-043

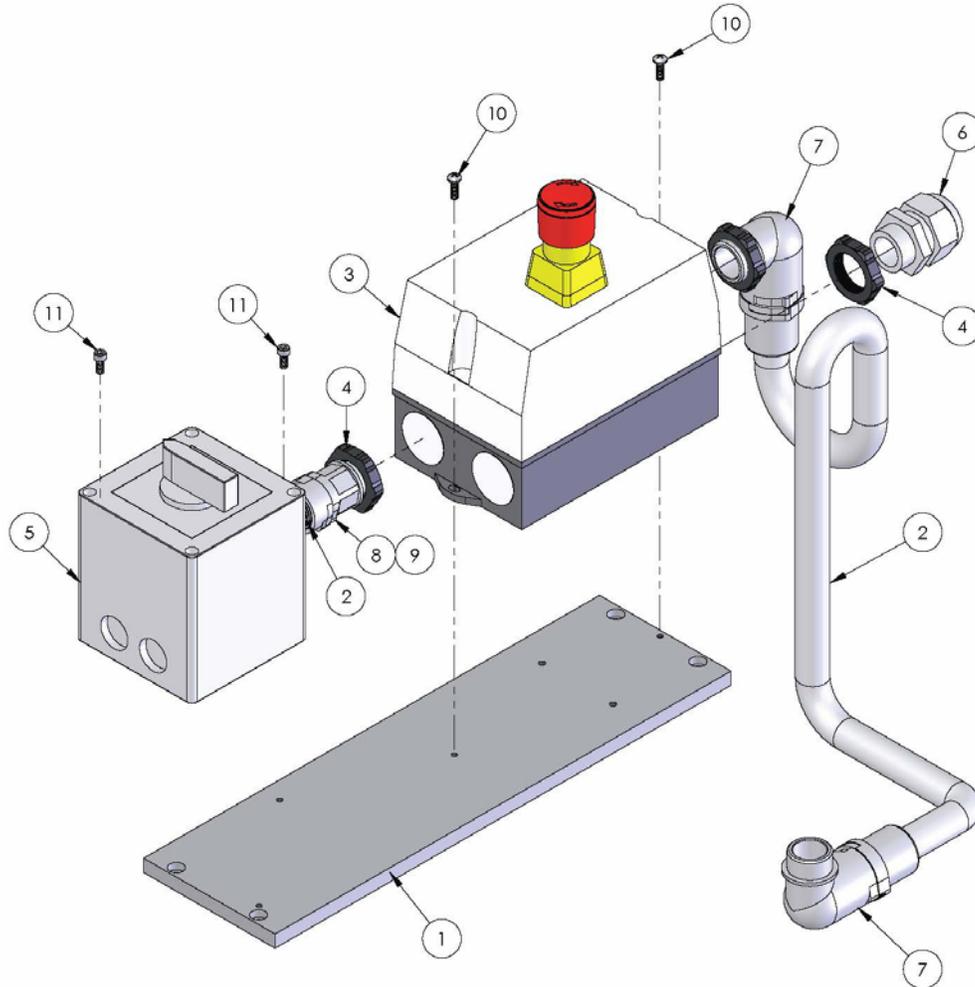
ASSEMBLY TORQUE  
(12.9 CLASS SHCS)  
= 29 lb-ft (33 N-m)



ITEM	PART NO.	DESCRIPTION	QTY.
1	GK-111-098	FENDER WASHER 10mm BOLT x 30 OD x 2.5	2
2	GK-107-126	M10-1.5 x 20mm SHCS	2
3	GK-105-092	M6 x 16mm FHSCS	2
4	GK-106-086	M6-1.0 x 20mm SET SCREW	2
5	KBM-28-011	SLIDE BASE	1
6	KBM-28-012	GUIDE ROLLER BRACKET	1
7	KBM-28-212	REAR CHIP DEFLECTOR	1
8	KBM-28-047	TRACK SPACER	1
9	GK-107-131	M5-0.8 x 12mm SHCS	3
10	GK-107-123	M8-1.25 x 16mm SHCS	2
11	GK-110-071	M6 x 1.0 HEX HEAD JAM NUT	2
12	GK-107-141	M8-1.25 x 60mm SHCS	1
13	GK-112-132	M3 x 6mm BHCS	2
14	KBM-28-059	GUIDE ROLLER BEARING	2
15	KBM-28-026	ROOT FACE SCALE	1
16	KBM-28U-009	AUXILIARY CHIP DEFLECTOR	1
17	KBM-28U-010	MOUNTING BRACKET	1
18	GK-107-106	M8-1.25 x 30mm SHCS	2
19	GK-109-064	M8-1.25 HEX NUT	2
20	GK-105-104	M8 x 40mm FHSCS	2
21	GK-111-101	WASHER 8mm BOLT x 16 OD x 1.6	2
22	KBM-28-211	SLIDE BASE WEAR PLATE	1

## STARTER ASSEMBLY BREAKDOWN

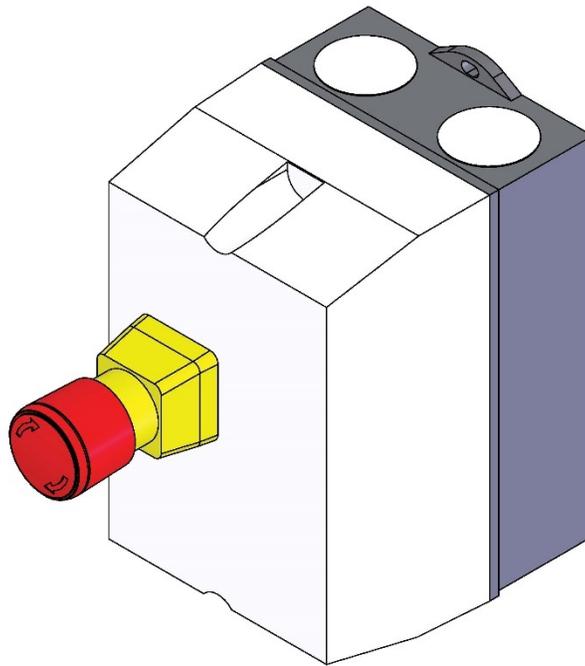
Drawing Number: KBM-28U-056



ITEM	PART NO.	DESCRIPTION	QTY.
1	KBM-28U-002	STARTER MOUNTING BRACKET	1
2	RM-114-111	FLEX CONDUIT (1pc @ 2-1/2 LONG) (1pc @ 22 LONG)	1
3	KBM-28-225-1	MANUAL STARTER ASSEMBLY (230V)	1
	KBM-28-225-2	MANUAL STARTER ASSEMBLY (380V, 415V & 460V)	
	KBM-28-225-3	MANUAL STARTER ASSEMBLY (575V)	
4	KBM-28-224	M25 X 1.5 LOCK NUT	3
5	KBM-28-072	ROTARY DIRECTION SWITCH	1
6	GK-148-032	M25 CABLE GLAND	1
7	GK-148-031	M25-1.5MM 90 DEG. CONNECTOR	2
8	GK-148-030	M25 STRAIGHT CONNECTOR	1
9	GK-148-025	PG16 STRAIGHT CONNECTOR	1
10	GK-112-050	#8-32UNC x 1/2 RND HEAD SCREW	2
11	GK-107-065	#8-32UNC x 3/8 SHCS	2

## MANUAL STARTER ASSEMBLY BREAKDOWN

Drawing Number: KBM-28-225-1/2/3



### **KBM-28-225-1 (230V)**

PART NO.	DESCRIPTION	QTY.
KBM-28-215	SURFACE MOUNT ENCLOSURE WITH E-STOP	1
KBM-28-216	MANUAL MOTOR STARTER 6.3-10A	1
KBM-28-219	UNDERVOLTAGE TRIP RELEASE 230V	1

### **KBM-28-225-2 (380V, 415V & 460V)**

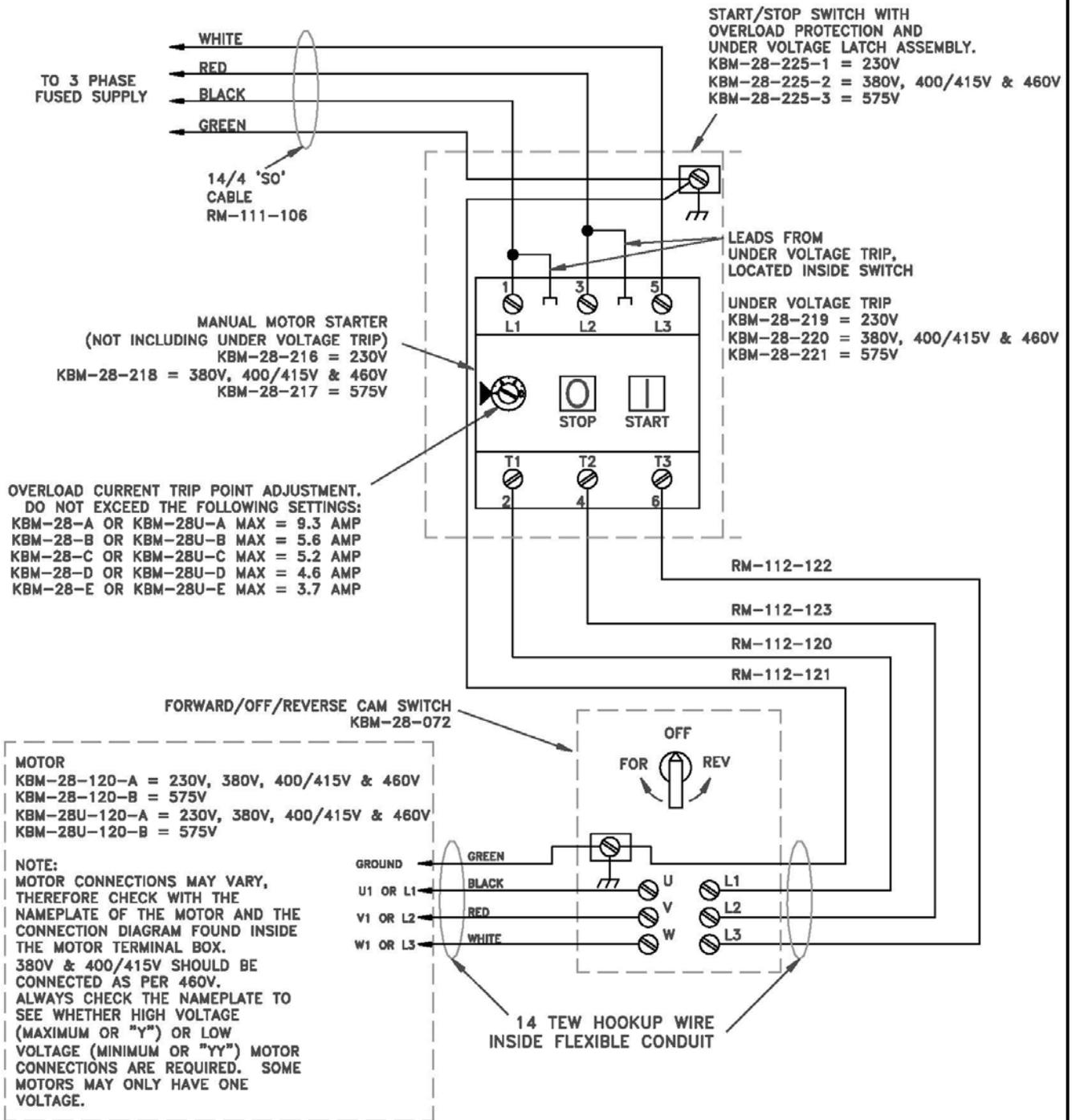
PART NO.	DESCRIPTION	QTY.
KBM-28-215	SURFACE MOUNT ENCLOSURE WITH E-STOP	1
KBM-28-218	MANUAL MOTOR STARTER 4-6.3A	1
KBM-28-220	UNDERVOLTAGE TRIP RELEASE 380V TO 460V	1

### **KBM-28-225-3 (575V)**

PART NO.	DESCRIPTION	QTY.
KBM-28-215	SURFACE MOUNT ENCLOSURE WITH E-STOP	1
KBM-28-217	MANUAL MOTOR STARTER 2.5-4A	1
KBM-28-221	UNDERVOLTAGE TRIP RELEASE 575V	1

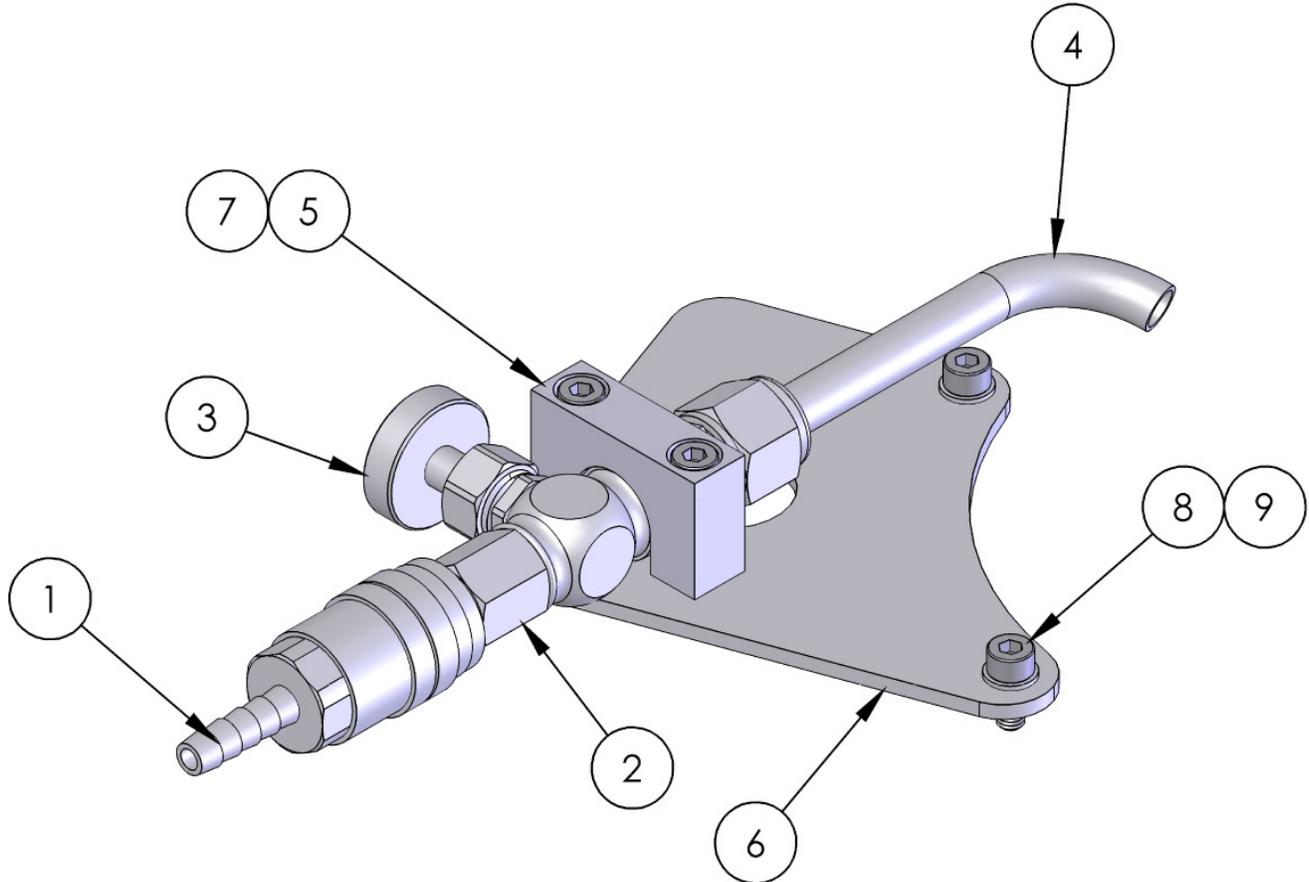
# KBM®-28 WIRING SCHEMATIC

Drawing Number: KBM-28-225-SCH



## OPTIONAL AIR JET ASSEMBLY BREAKDOWN

Drawing Number: KBM-28U-018



ITEM	PART NO.	DESCRIPTION	QTY.
1	GF-168-010	QUICK CONNECT COUPLER	1
2	GBM-25-018	QUICK CONNECT PLUG	1
3	GBM-25-017	FLOW VALVE	1
4	KBM-28U-019	FORMED AIR PIPE	1
5	KBM-28U-016	AIR BLOWER MOUNTING CLAMP	1
6	KBM-28U-017	MOUNT PLATE	1
7	GK-107-127	M5-0.8 x 25mm SHCS	2
8	GK-107-131	M5-0.8 x 12mm SHCS	2
9	GK-111-106	WASHER 5mm BOLT x 10 OD x 1.0	2

## REVISIONS LIST

### May, 2006

Overall First release.

### August, 2006

Title Page Changed Gullco India's e-mail back to the original.  
Page 8 Updated & added to reflect new RoHS compliant starter components.  
Page 10 Increased thread size of Slide Base Adjusting Bolt & Adjusting Bolt Support.

### April, 2007

Title Page Updated Gullco contact details.  
Pg 1 & 10 Updated 415 V reference to 400/415 V.  
Page 4 Added Frequent Inspections section.  
Pg 6, 8 & 9 Updated to show new Auxiliary Chip Deflector components.  
Page 7 Changed item 24 from 55mm long to 60mm long SHCS (full thread length).

### April, 2008

Title Page Updated Gullco contact details.  
Pgs 6, 7 & 11 Added optional Air Jet Assembly details.

### Dec, 2014

Title Page Updated Gullco contact details.  
Page 1 Updated CE Declaration of conformity, oil type was Mobil SHC 630.  
General Updated drawing views to reflect the hydraulic undercarriage.

### May, 2018

Pgs. 10, 11 & 12 Updated starter details and part numbers.

## ADDITIONAL NOTES

Specifications and products are subject to change without notice.  
KAT, Moggy, Sam, KATBAK & KBM are registered trademarks of Gullco International Enterprises Ltd.  
Only use genuine/authorized replacement parts.





# GULLCO



LINEAR or RADIAL  
HIGH DEPOSIT RATE  
QUICK SETUP TIME

## KAT® OSCILLATOR

- Motorized weld center line adjustment
- Motorized stroke width
- Oscillation speed control
- Store up to 10 welding programs



PORTABLE PLATE EDGE  
BEVELLING MACHINE  
QUICK SETUP TIME

## KBM®

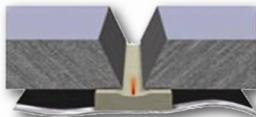
- Produce clean bevels with no thermal distortion
- Bevels angles 22° to 55° (other angles available)
- Hydraulic and Adjustable undercarriages available
- Bevels Mild Steel, Stainless Steel, and Aluminium
- Reduce cost and save time by minimising defects and poor fit up



ONE SIDED WELDING  
X-RAY QUALITY BEADS  
HIGH DEPOSIT RATE

## KATBAK® CERAMIC WELD BACKING

- Eliminate Defects And Rework
- Eliminate Costly Unnecessary Gouging And Grinding
- Sizes 1/4" (6.3 mm) to 2" (51 mm)
- Special Sizes And Configurations Available



PORTABLE AND COMPACT  
INCREASE EFFICIENCY  
MORE ARC ON TIME

## MOGGY® FILLET WELD CARRIAGE

- Single or Dual Torch Models
- Magnet or Non Magnetic Base
- Continuous or Stitch Welding Models
- Fillet, Lap, Butt and Dual Torch Welding

