

Catalog No. AR-30

REPLACEMENT PARTS MANUAL

KEARNEY & TRECKER
MILWAUKEE

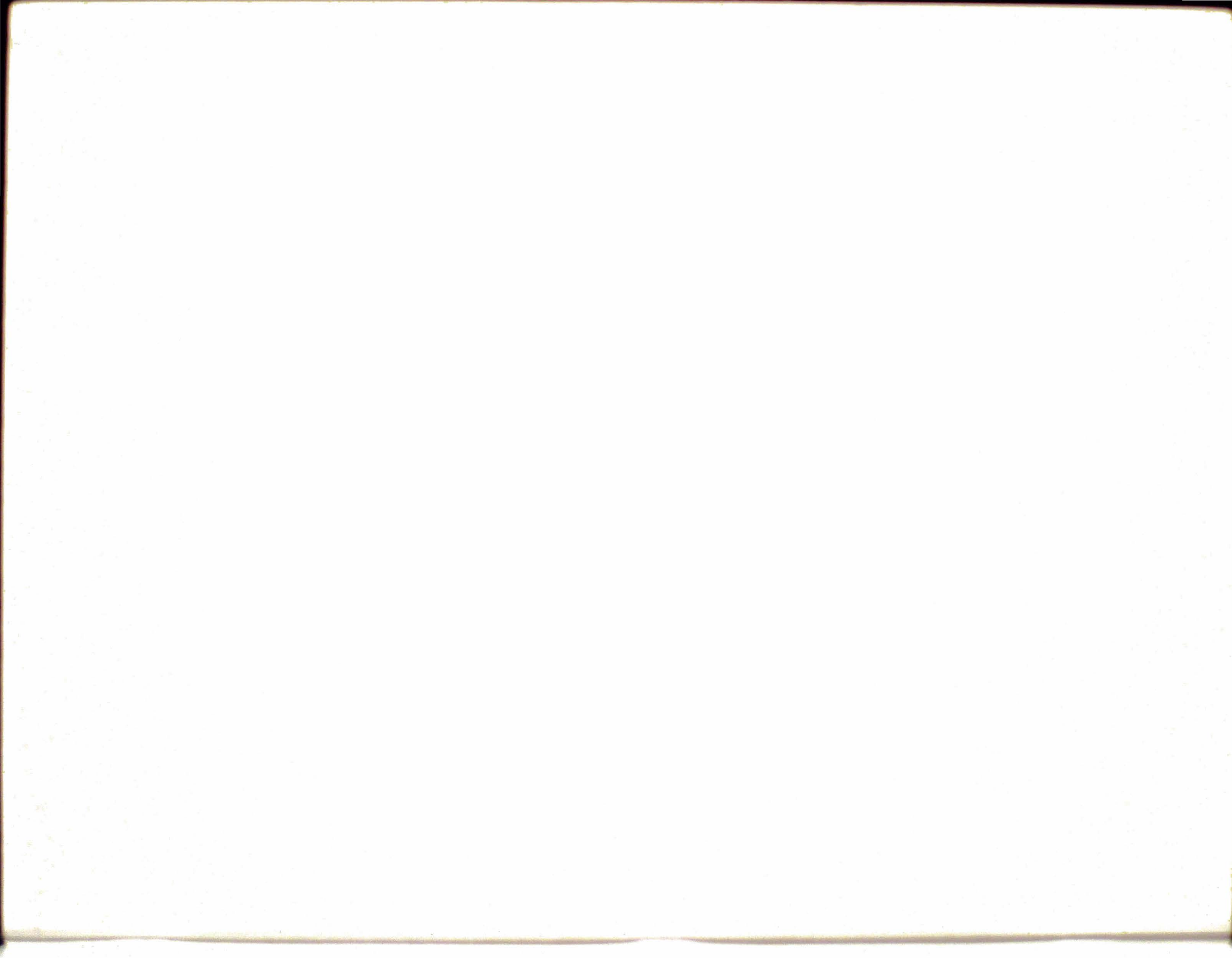
MILLING HEADS
PARKING BRACKETS
and
RAPID PARKING
ATTACHMENTS

SCOTT MACHINE TOOL CO.
MACHINE TOOLS AND SUPPLIES
411 Williams St., N. W. Atlanta 8, Ga.
Phone JACKSON 5-8311



KEARNEY & TRECKER CORPORATION

MILWAUKEE 14, WISCONSIN, U.S.A.



Catalog AR-30

REPLACEMENT PARTS MANUAL

MILLING HEADS
PARKING BRACKETS AND
ATTACHMENT CRANES
RAPID PARKING
ATTACHMENT

for



Milling Machines

One copy of this manual is furnished with each new attachment. Additional copies may be obtained by writing direct to Kearney & Trecker Corporation.

Price: \$3.00

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Kearney & Trecker

Corporation

Milwaukee 14, Wisconsin

FOREWORD

This is a replacement parts manual for milling heads, parking brackets and attachments, and rapid parking attachments used on KEARNEY & TRECKER—Milwaukee milling machines. In the purchase of these machine tools you possess an absolute guarantee of precision built equipment - designed and manufactured so as to assure the greatest measure of long life performance. There remains, however, still another responsibility - that of providing prompt service for replacement parts and general maintenance from natural wear or accidental damage to the machine - to keep them in sound operating condition. This manual will help you do that quickly.

About the manual itself; every effort has been made to make this book as clear and concise as is practical to avoid delay and misunderstanding in ordering parts. The various assemblies are arranged in a natural sequence and are indexed visually on pages 6, 7, 8, and 9.

Instructions noted in the following pages must be followed carefully. In several instances it will be observed that certain parts are mated at the home factory. Such parts cannot be replaced individually and must be sent out in pairs or sets.

KEARNEY & TRECKER maintains, insofar as possible, a complete record, based on machine serial number, of every machine and attachment built. To insure prompt and efficient service it is imperative, therefore, to include the attachment name and serial number and the size of the machine upon which the attachment is used with every inquiry or order. The serial number will be found stamped on the attachment.

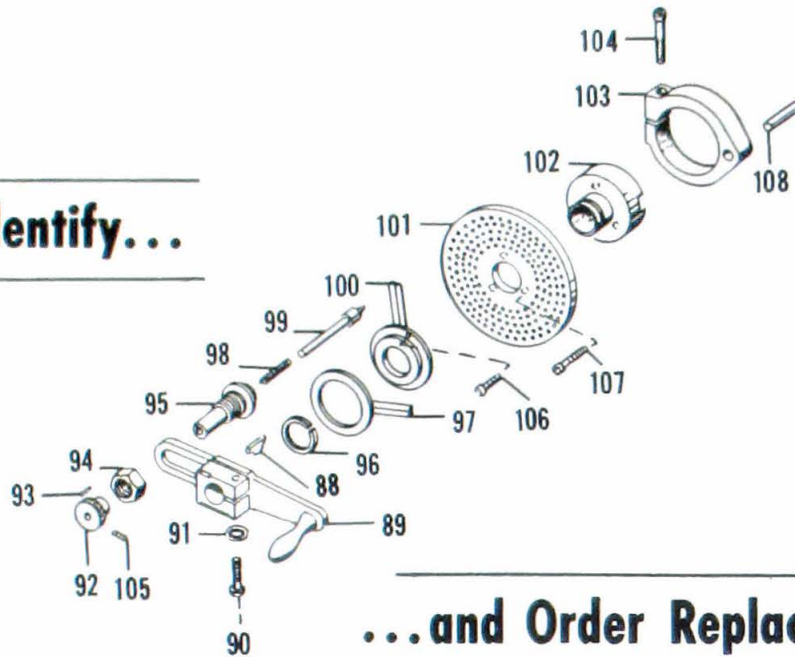
It is our intention to continually improve the service you receive from KEARNEY & TRECKER—Milwaukee milling machines and make the parts replacement problem a simple procedure. By following the instructions for identifying and ordering parts, given on the next page, you will be assured of prompt service.

KEARNEY & TRECKER
Corporation
Milwaukee 14, Wisconsin
U. S. A.

Replacement Parts Manual

STANDARD ATTACHMENTS — FOR MILLING AND BORING MACHINES

How to Identify...



...and Order Replacement Parts

1. Refer to the Visual Index on pages 6, 7, 8, and 9 to locate your attachment and its proper name. For milling heads see the Page Index explanation on page 4, and then, from the chart on page 5, locate the pages upon which the desired drawing and parts list will appear. For parking attachments, Photo Titles will refer you directly to pages upon which proper drawings appear.
2. Locate the desired part and its item number in the assembly exploded view.
3. In the parts list on the facing page, find the corresponding item number to determine the part name description and code number.
4. When ordering, indicate ① Part Name and Description, ② Code Number, ③ Name and Serial Number of the Attachment, and ④ Size and Model of the machine upon which the Attachment is being used.

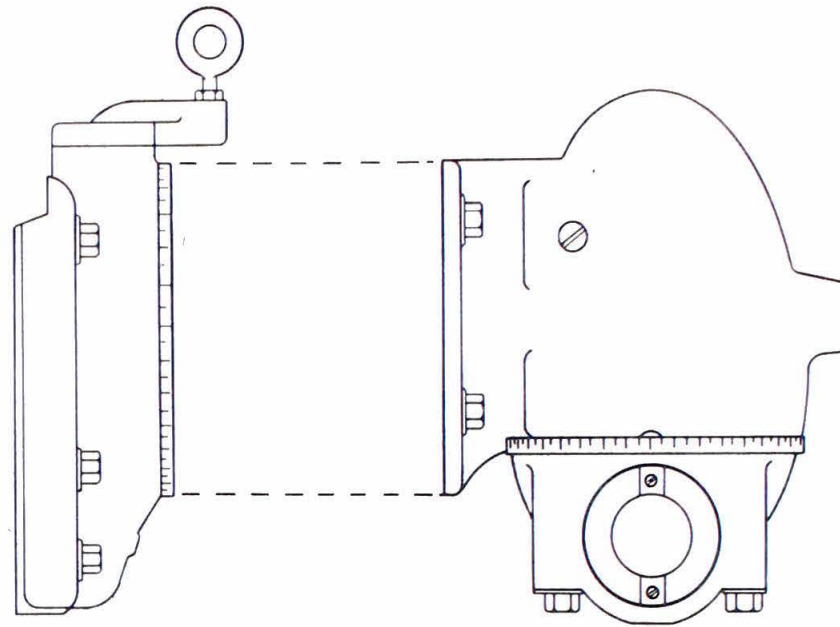
HERE IS AN EXAMPLE:

- ① BEARING CARRIER, ② Code Number AR-A44, for
- ③ 12" ROTARY TABLE Serial Number 1-1000, used on
- ④ 2CE HORIZONTAL MILLING MACHINE.

5. Send orders to—Parts Department, Kearney & Trecker Corporation, Milwaukee 14, Wisconsin, U.S.A. For service by telephone, call Greenfield 6-8300, and give the information in paragraph 4 above.

Important

HOW TO USE PAGE INDEX



DRIVE BRACKET

HEAD

KEARNEY & TRECKER—Milwaukee milling attachments are made up of two units—the drive bracket, and the head. Although the two are used as a single unit, they are shown separately. (See sketch above.) This is necessary since the drive brackets vary to conform to the column faces on various size machines.

To determine the combination of drive bracket and head used on a particular machine refer to the Page Index on page 5.

As an aid in the use of the PAGE INDEX, see the example below:

Let us assume that a vertical milling attachment is being used on a 3CH milling machine. To locate the correct parts list for this attachment, follow these steps:

1. From the VISUAL INDEX on pages 6, 7, 8.

and 9 identify the attachment which is being used and note its correct name.

In the example we find that the attachment is a "Standard Swivel Head Vertical Milling Attachment."

2. Turn to the PAGE INDEX on page 5.

3. Under the column headed "Part Name and Description" you will find this head unit and drive bracket listed.

4. At the top of the page under the heading "Machine Model Designation," locate milling machine model 3CH.

5. Follow this machine model column down to where it meets the "Standard Swivel Head Vertical Milling Attachment" column.

6. The head unit will be found on pages 10 and 11, and the drive bracket on pages 12 and 13.

Page Index for Milling Attachments

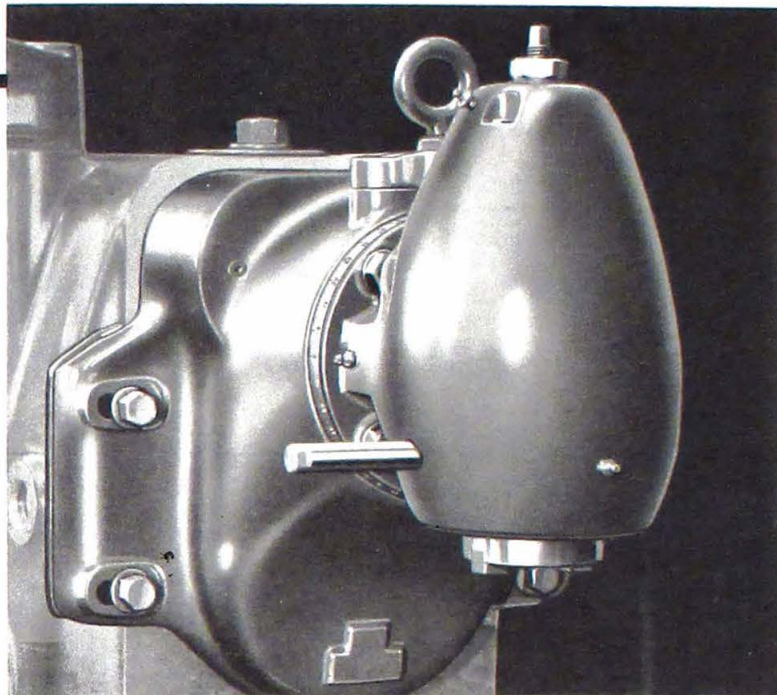
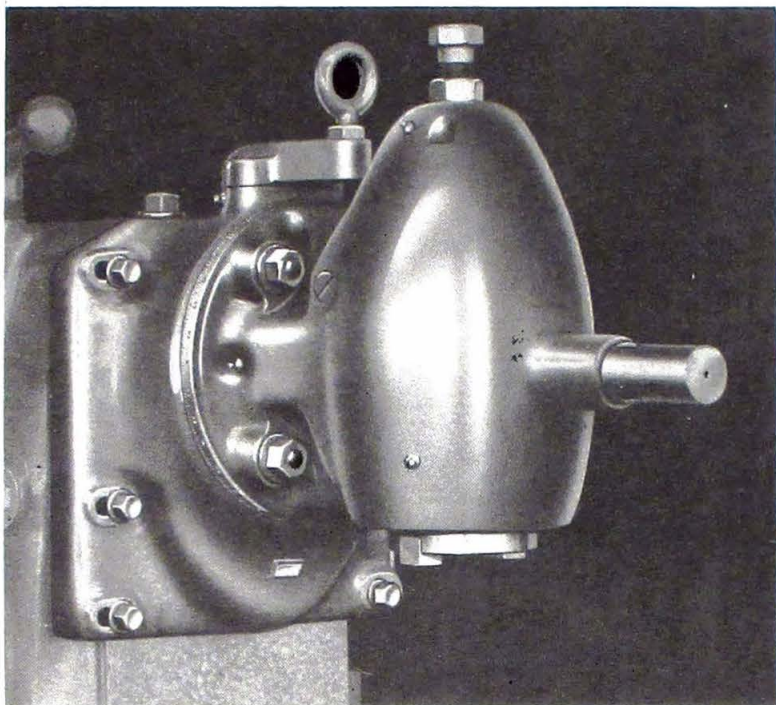
Part Name and Description	MACHINE MODEL DESIGNATIONS								
	2E 2CE	1H 1HL 2HL 2CHL 1BAC 2AC	2H 2CH	2K 2KM 2CK 2CSM 210TF 220TF	3CE 3H 3CH 3CSM(20) 310TF 320TF	3K 3KM 3CK 3CSM(30) 315TF 330TF	4H 4CH 4CSM(30) 415TF 430TF	4K 5H 5HM	4, 5, 6CK 4, 5, 6CSM 425TF 450TF 525TF 550TF 625TF 650TF
Standard Swivel Head Vertical Milling Attachment						10 & 11			
Drive Bracket				12 & 13		14 & 15		16 & 17	

Page Index for Milling Attachments

	MACHINE MODEL DESIGNATIONS								
	2E 2CE	1H 1HL 2HL 2CHL 18AC 24AC	2H 2CH	2K 2KM 2CK 2CSM 210TF 220TF	3CE 3H 3CH 3CSM(20) 310TF 320TF	3K 3KM 3CK 3CSM(30) 315TF 330TF	4H 4CH 4CSM(30) 415TF 430TF	4K 5H 5HM	4, 5, 6CK 4, 5, 6 CSM 425TF 450TF 525TF 550TF 625TF 650TF
Part Name and Description	Page Numbers								
Standard Swivel Head Vertical Milling Attachment	10 & 11								
Drive Bracket	12 & 13			14 & 15			16 & 17		
Heavy Duty Swivel Head Vertical Milling Attachment	18 & 19			24 & 25					
Drive Bracket	20 & 21	22 & 23	26 & 27	28 & 29	32 & 33	30 & 31			
Standard Universal Milling Attachment	34 & 35								
Drive Bracket	12 & 13			14 & 15			16 & 17		
Heavy Duty Universal Milling Attachment	36 & 37			38 & 39					
Drive Bracket	20 & 21	22 & 23	26 & 27	28 & 29	32 & 33	30 & 31			
Light High Speed Universal Milling Attachment (with Non-movable Quill)	40 & 41								
Drive Bracket	44 & 45	42 & 43	46 & 47	48 & 49	50 & 51	52 & 53	54 & 55		
Light High Speed Universal Milling Attachment (with Movable Quill)	56 & 57								
Drive Bracket	44 & 45	42 & 43	46 & 47	48 & 49	50 & 51	52 & 53	54 & 55		
Standard High Speed Adjustable Universal Milling Attachment (with Non-movable Quill)	58 & 59								
Drive Bracket	60 & 61	62 & 63	64 & 65	66 & 67	68 & 69	70 & 71			
Standard High Speed Adjustable Universal Milling Attachment (with Movable Quill)	72 & 73								
Drive Bracket	60 & 61	62 & 63	64 & 65	66 & 67	68 & 69	70 & 71			
Heavy Duty High Speed Adjustable Universal Milling Attachment				74 & 75					
Drive Bracket				76 & 77	78 & 79	80 & 81			

**Standard Swivel Head
Vertical Milling Attachment**

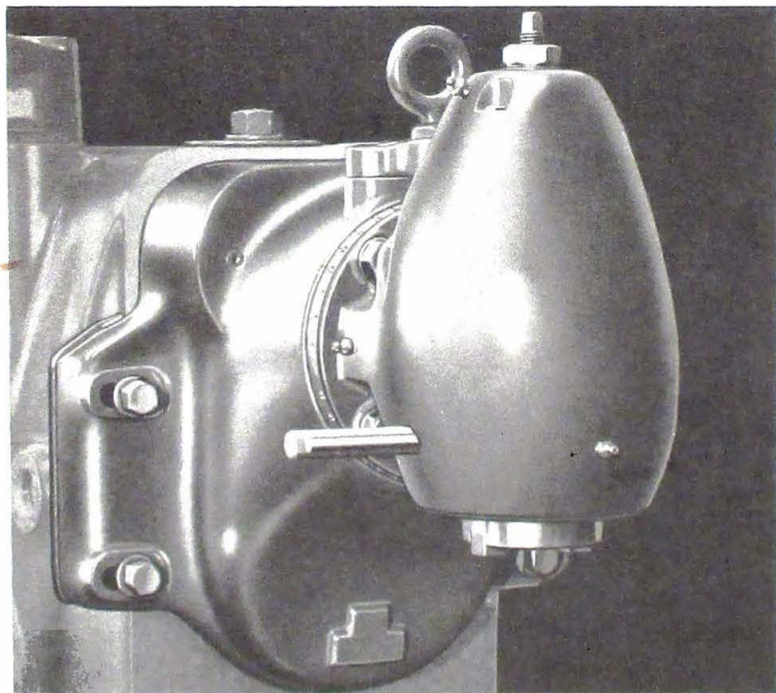
See pages 4 and 5 for Instructions and
Page Index.



**Heavy Duty Swivel Head
Vertical Milling Attachment**

For 2KM, 2K, 2CK, 2CSM(20), 3CE, 3H, 3CH, 3CSM(20),
3KM, 3K, 3CK, 3CSM(30), 4H, 4CH, 4CSM(30), 4K,
5H, 5HM, 4CK, 5CK, 6CK, 4CSM(50), 5CSM, 6CSM,
and all model TF machines.

See pages 4 and 5 for Instructions and
Page Index.



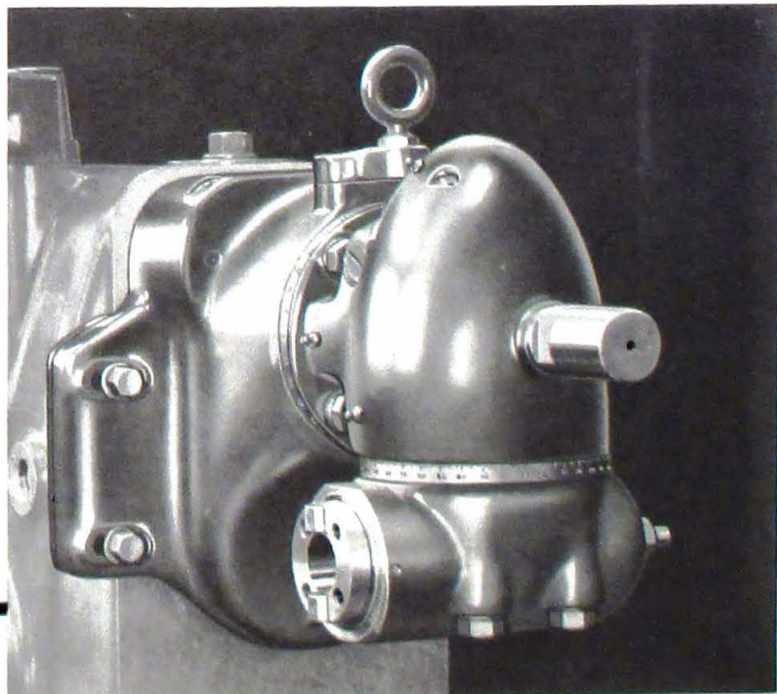
**Heavy Duty Swivel Head
Vertical Milling Attachment**

For 1H, 1CH, 2HL, 2CHL, 18AC, 24AC, 2E, 2CE, 2H,
and 2CH machines.

See pages 4 and 5 for Instructions and
Page Index.

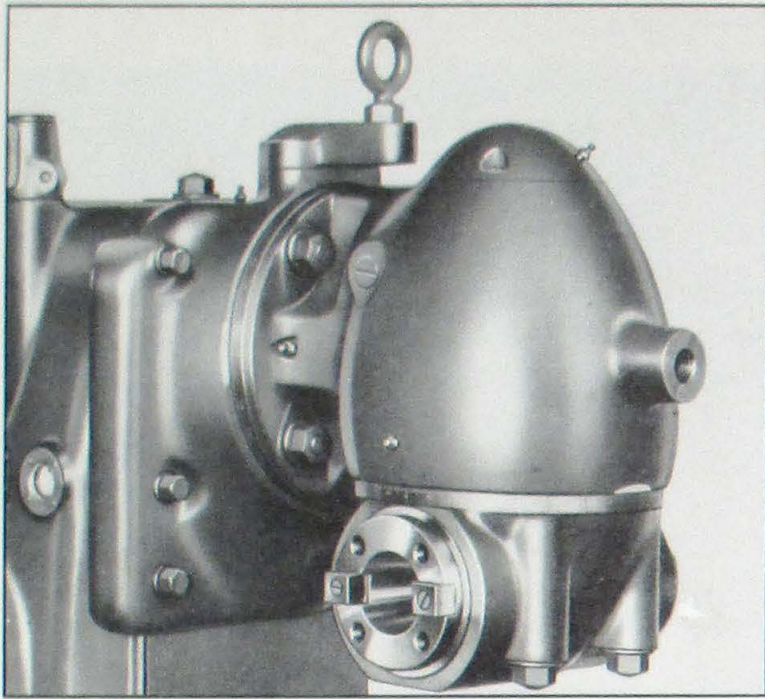
Standard Universal Milling Attachment

See pages 4 and 5 for Instructions and
Page Index.



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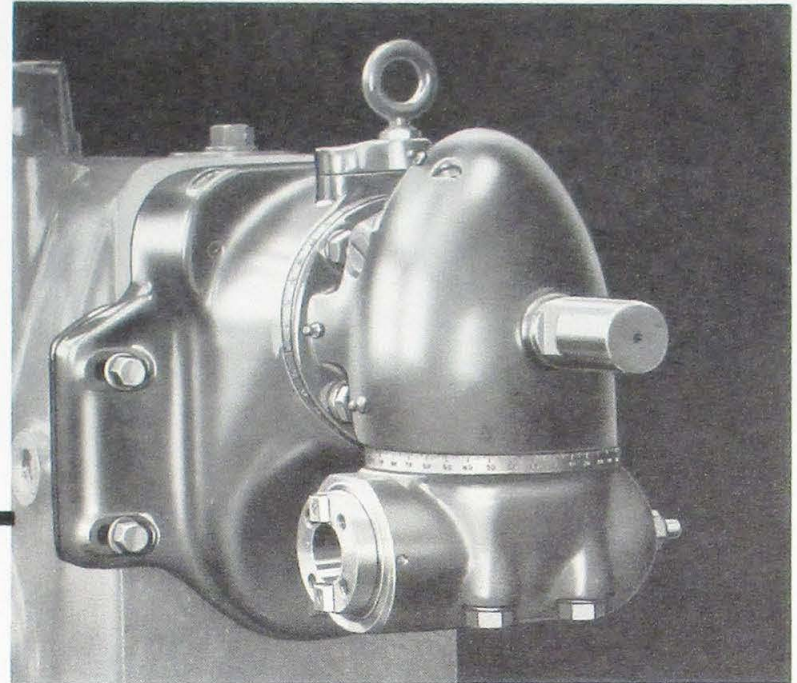
STANDARD ATTACHMENTS — FOR MILLING AND BORING MACHINES



Heavy Duty Universal Milling Attachment

For 2KM, 2K, 2CK, 2CSM(20), 3CE, 3H, 3CH, 3CSM(20), 3KM, 3K, 3CK, 3CSM(30), 4H, 4CH, 4CSM(30), 4K, 5H, 5HM, 4CK, 5CK, 6CK, 4CSM(50), 5CSM, 6CSM, and all model TF machines.

See pages 4 and 5 for Instructions and Page Index.



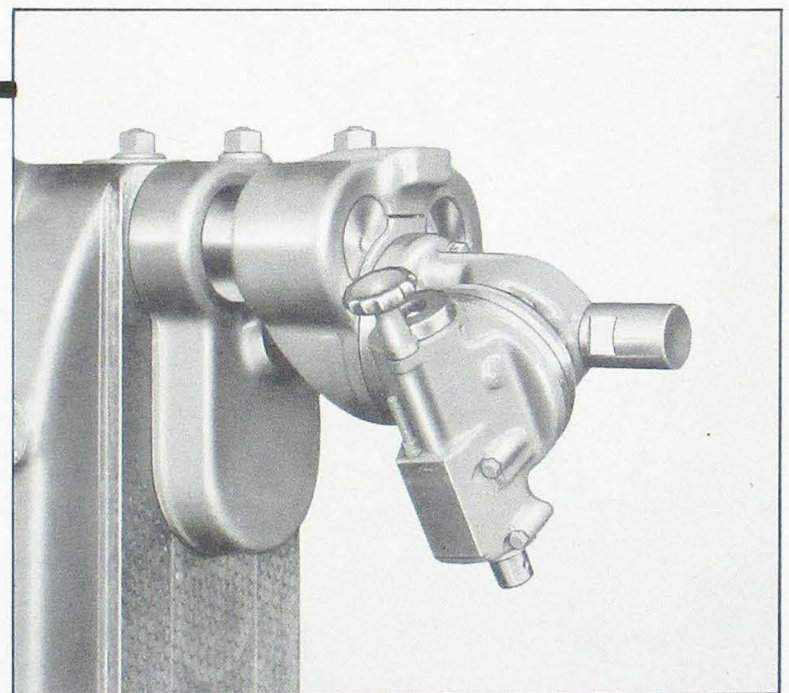
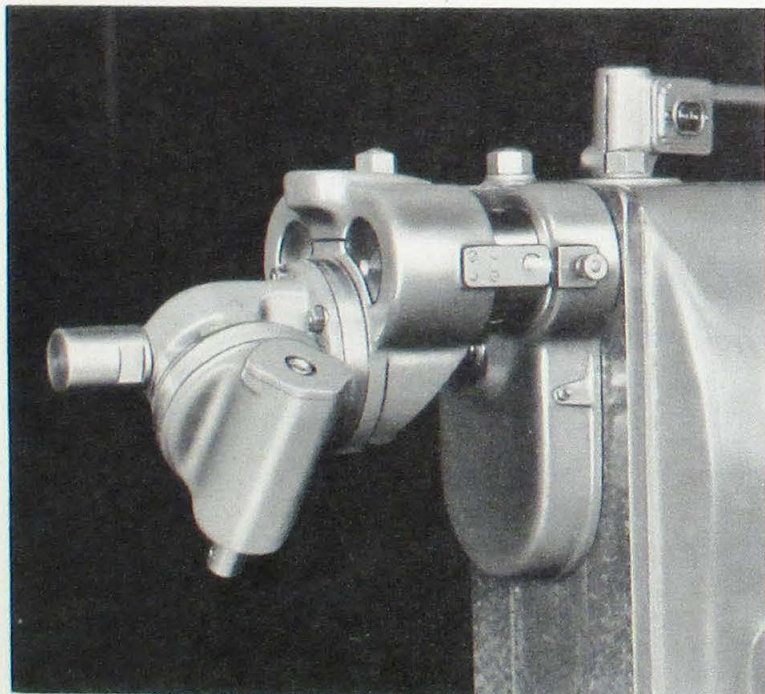
Heavy Duty Universal Milling Attachment

For 1H, 1CH, 2HL, 2CHL, 18AC, 24AC, 2E, 2CE, 2H, and 2CH machines.

See pages 4 and 5 for Instructions and Page Index.

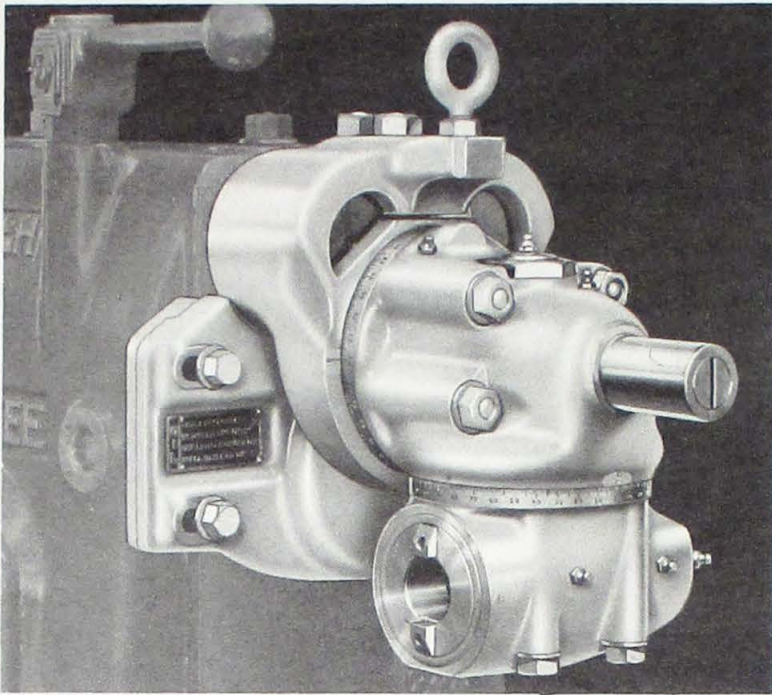
Light High Speed Universal Milling Attachment With Movable Quill

See pages 4 and 5 for Instructions and Page Index.



Light High Speed Universal Milling Attachment Without Movable Quill

See pages 4 and 5 for Instructions and Page Index.

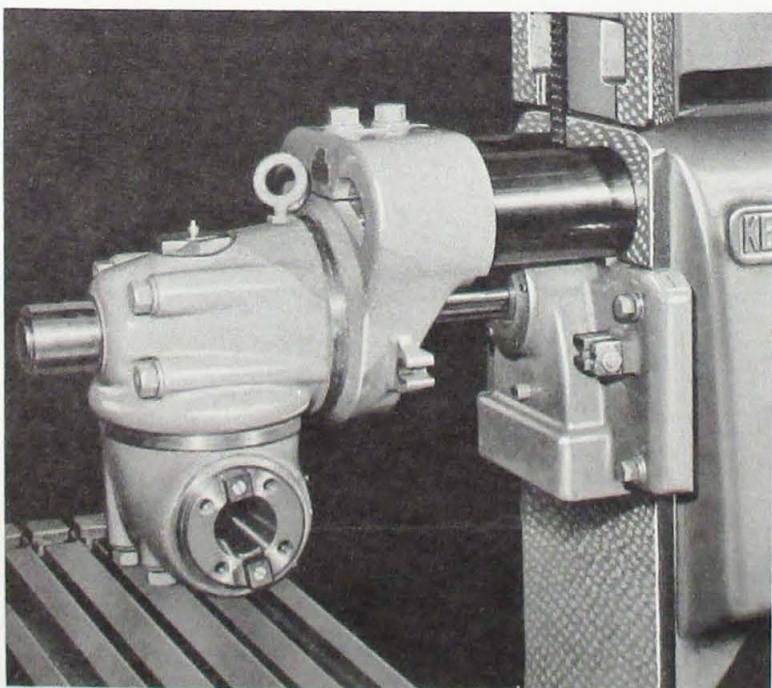
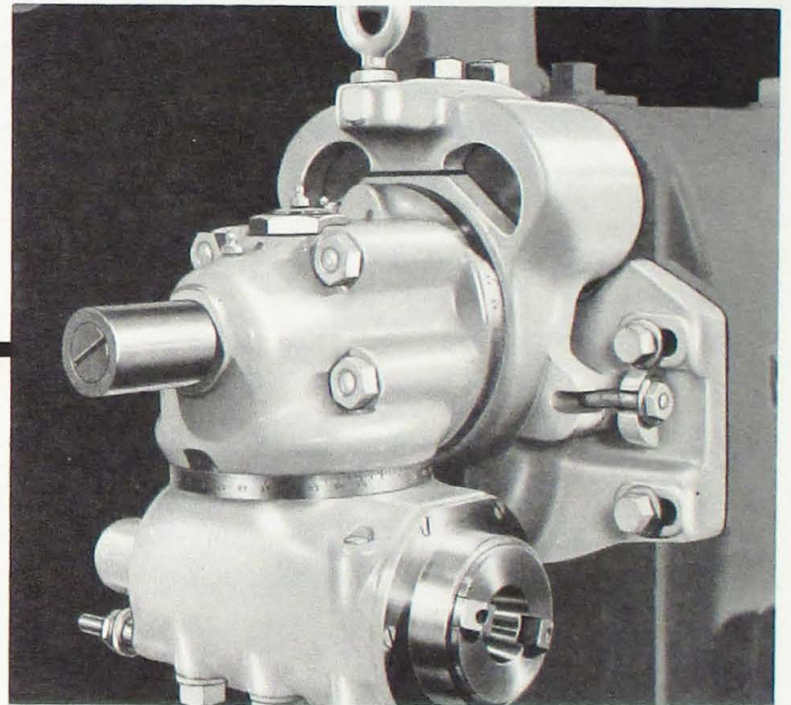


Standard High Speed Adjustable Universal Milling Attachment without Movable Quill

See pages 4 and 5 for Instructions and Page Index.

Standard High Speed Adjustable Universal Milling Attachment with Movable Quill

See pages 4 and 5 for Instructions and Page Index.

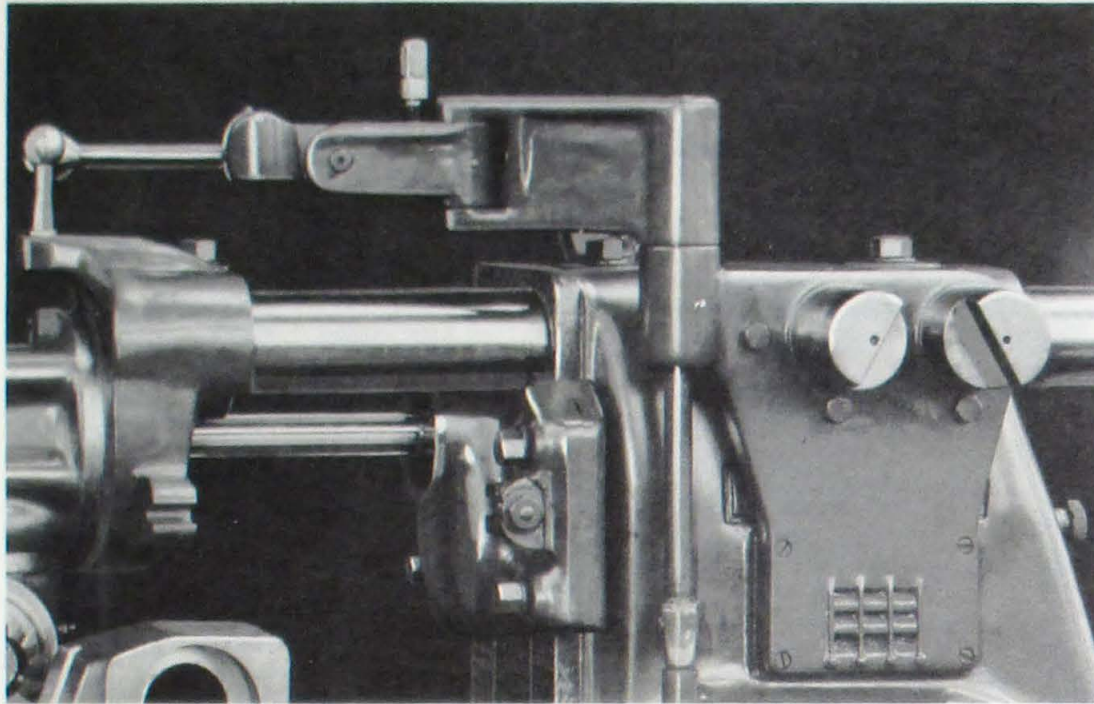


Heavy Duty High Speed Adjustable Universal Milling Attachment

See pages 4 and 5 for Instructions and Page Index.

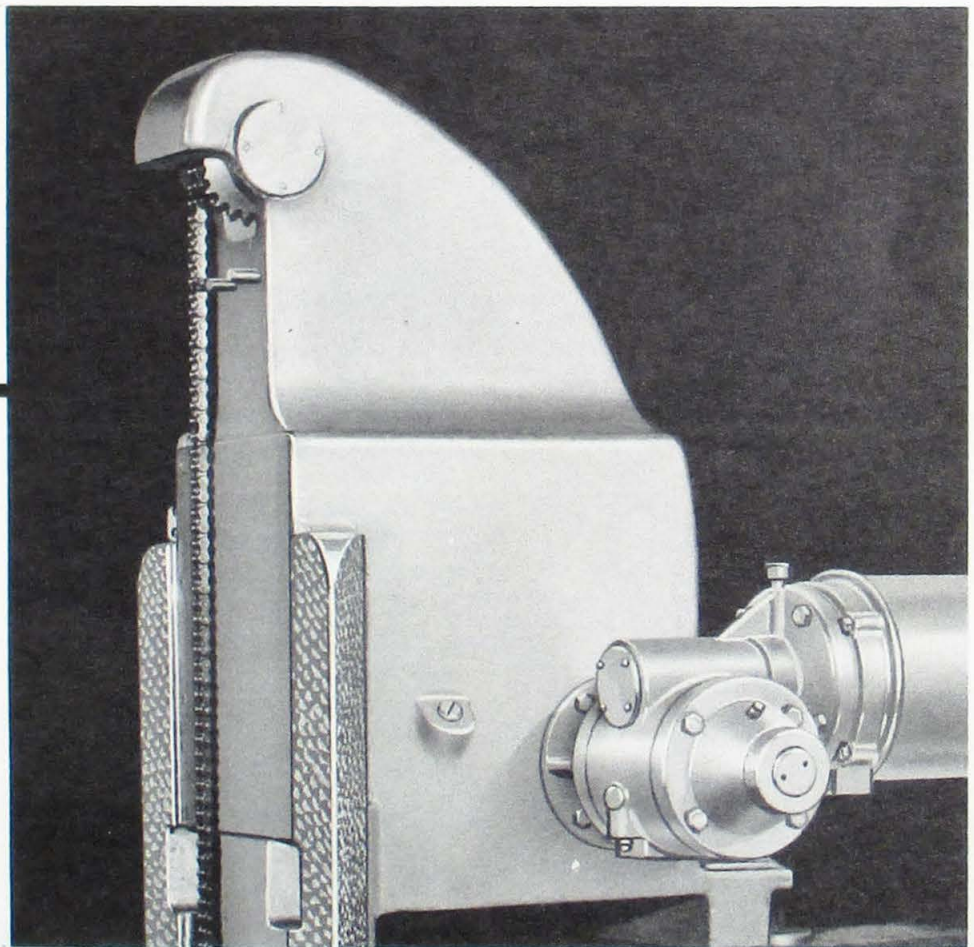
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STANDARD ATTACHMENTS — FOR MILLING AND BORING MACHINES



Parking Bracket and
Attachment Crane
See Figs. 37 to 43,
Pages 82 to 89

Rapid Parking Bracket
See Fig. 44, Page 90



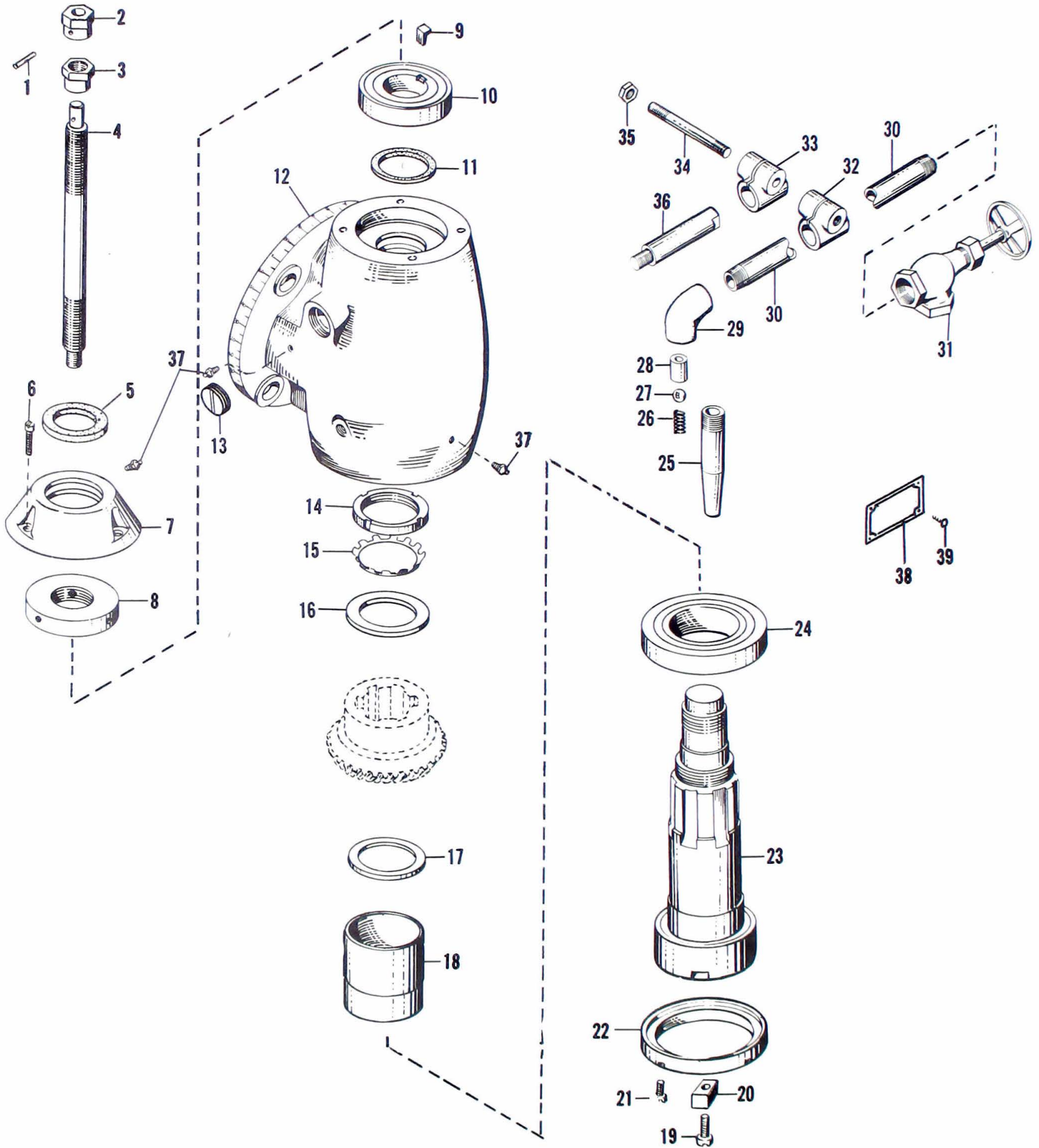


Fig. 1 — Standard Swivel Head Vertical Milling Attachment (Head Unit)
 For 2KM, 2K, 2CK, 2CSM(20), 3CE, 3H, 3CH, 3CSM(20), 3KM, 3K, 3CK, 3CSM(30), 4H, 4CH, 4CSM(30), 4K, 4CK, 4CSM(50), 5H, 5HM, 5CK, 5CSM, 6CK, 6CSM, and All TF Model Machines

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STANDARD ATTACHMENTS — FOR MILLING AND BORING MACHINES

Fig. 1 — Standard Swivel Head Vertical Milling Attachment (Head Unit)
 For 2KM, 2K, 2CK, 2CSM(20), 3CE, 3H, 3CH, 3CSM(20), 3KM, 3K, 3CK, 3CSM(30), 4H, 4CH, 4CSM(30), 4K, 4CK, 4CSM(50), 5H, 5HM, 5CK, 5CSM, 6CK, 6CSM, and All TF Model Machines

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Taper pin, #2 x 1 in.....	AR-AH1	1
2	Draw-in bolt head.....	AR-AH2	1
3	Draw-in bolt nut.....	AR-AH3	1
4	Draw-in bolt.....	AR-AH4	1
5	Felt washer.....	AR-AH5	1
6	Fillister head cap screw, $\frac{5}{16}$ —18 x $\frac{3}{4}$ in.....	AR-AH6	3
7	Swivel head cap.....	AR-AH7	1
8	Collar nut.....	AR-AH8	1
9	Timken bearing key.....	AR-AH9	1
10	Timken bearing, #332-337W.....	AR-AH10	1
11	Felt washer.....	AR-AH11	1
12	Swivel head.....	AR-AH12	1
13	Plug.....	AR-AH13	2
14	Gurney nut, #10.....	AR-AH14	1
15	Gurney washer, #10.....	AR-AH15	1
16	Thrust washer.....	AR-AH16	1
17	Fitting washer.....	AR-AH17	1
18	Grease retainer tube.....	AR-AH18	1
19	Fillister head cap screw, $\frac{1}{4}$ —20 x $\frac{7}{8}$ in.....	AR-AH19	2
20	Spindle drive keys.....	AR-AH20	2
21	Fillister head cap screw, $\frac{5}{16}$ —18 x $\frac{5}{8}$ in.....	AR-AH21	4
22	Oil retainer for spindle.....	AR-AH22	1
23	Swivel head spindle.....	AR-AH23	1
24	Timken bearing, #3920-3982.....	AR-AH24	1
25	Coolant nozzle.....	AR-AH25	1
26	Spring.....	AR-AH26	1
27	Steel ball, $\frac{3}{8}$ in.....	AR-AH27	1
28	Nozzle ball retainer.....	AR-AH28	1
29	Ell (reducing)—90° $\frac{1}{2}$ x $\frac{3}{8}$ #4141.....	AR-AH29	1
30	Coolant pipe.....	AR-AH30	1
31	Angle valve, $\frac{1}{2}$ in.....	AR-AH31	1
32	Coolant pipe clamp.....	AR-AH32	1
33	Coolant pipe clamp.....	AR-AH33	1
34	Stud, $\frac{7}{16}$ —14 x $3\frac{3}{4}$ in.....	AR-AH34	1
35	Hex nut, $\frac{7}{16}$ —14.....	AR-AH35	1
36	Clamp rod.....	AR-AH36	1
37	Alemite Zerk fitting, $\frac{1}{8}$ in., #1610.....	AR-AH37	3
38	Lubricating instruction plate.....	AR-AH38	1
39	Escutcheon pin, $\frac{3}{8}$ in., #15.....	AR-AH39	4

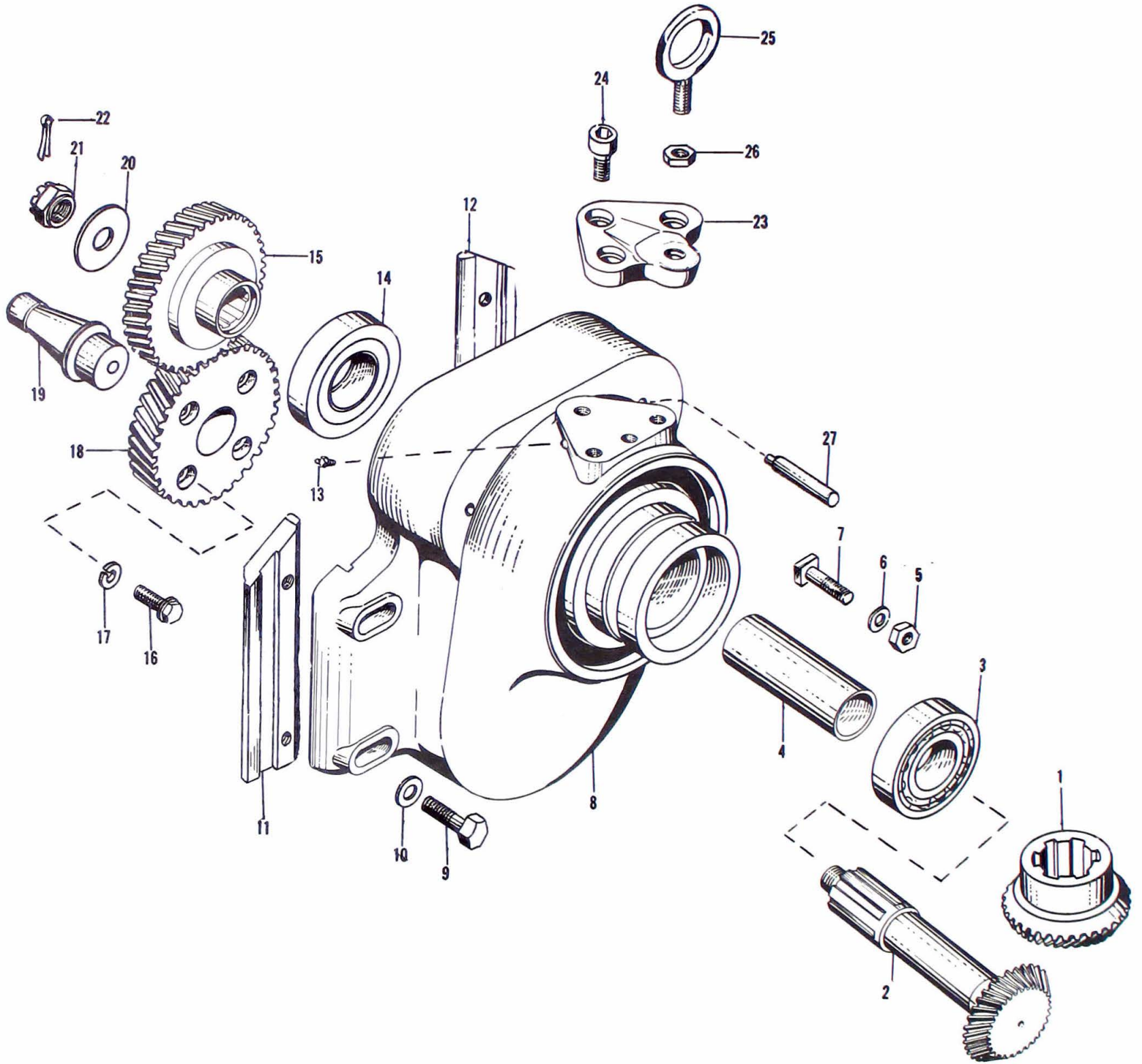


Fig. 2 — Standard Swivel Head Vertical Milling Attachment and Standard Universal Milling Attachment (Drive Bracket Unit)
 For 2KM, 2K, 2CK, 2CSM(20), 3CE, 3H, 3CH, 3CSM(20), 210TF, 220TF, 310TF, 320TF Machines

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STANDARD ATTACHMENTS — FOR MILLING AND BORING MACHINES

Fig. 2 — Standard Swivel Head Vertical Milling Attachment and Standard Universal Milling Attachment (Drive Bracket Unit)
For 2KM, 2K, 2CK, 2CSM(20), 3CE, 3H, 3CH, 3CSM(20), 210TF, 220TF, 310TF, 320TF Machines

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Spiral bevel gear (driven) (vertical attachment) ①	AR-AJ1A	1
	Spiral bevel gear (driven) (universal attachment) ②	AR-AJ1B	1
2	Spiral bevel gear drive shaft (vertical attachment) ①	AR-AJ2A	1
	Spiral bevel gear drive shaft (universal attachment) ②	AR-AJ2B	1
3	Timken bearing, #3720-3779	AR-AJ3	1
4	Bearing spacer	AR-AJ4	1
5	Hex nut, 5/8—11	AR-AJ5	4
6	Washer	AR-AJ6	4
7	T-bolt	AR-AJ7	4
8	Swivel base	AR-AJ8	1
9	Hex head screw, 5/8—11 x 2 3/16 in.	AR-AJ9	4
10	Washer	AR-AJ10	4
11	Base gib, left hand	AR-AJ11	1
12	Base gib, right hand	AR-AJ12	1
13	Alemite Zerk fitting, 1/8 in., #1610	AR-AJ13	1
14	Timken bearing, #453A-462	AR-AJ14	1
15	Spiral gear (driven)	AR-AJ15	1
16	Hex head collar screw	AR-AJ16	4
17	Lockwasher	AR-AJ17	4
18	Spiral gear (driver)	AR-AJ18	1
19	Centering plug	AR-AJ19	1
20	Thrust washer	AR-AJ20	1
21	Castellated hex nut, 7/8—14	AR-AJ21	1
22	Cotter pin, 1/8 x 1 1/2 in.	AR-AJ22	1
23	Eye bolt bracket	AR-AJ23	1
24	Allen head cap screw, 5/8—11 x 1 in.	AR-AJ24	3
25	Eye bolt, 5/8 standard	AR-AJ25	1
26	Hex nut, 5/8—11	AR-AJ26	1
27	Overarm stop pin	AR-AJ27	2

① Sold as matched set only.

② Sold as matched set only.

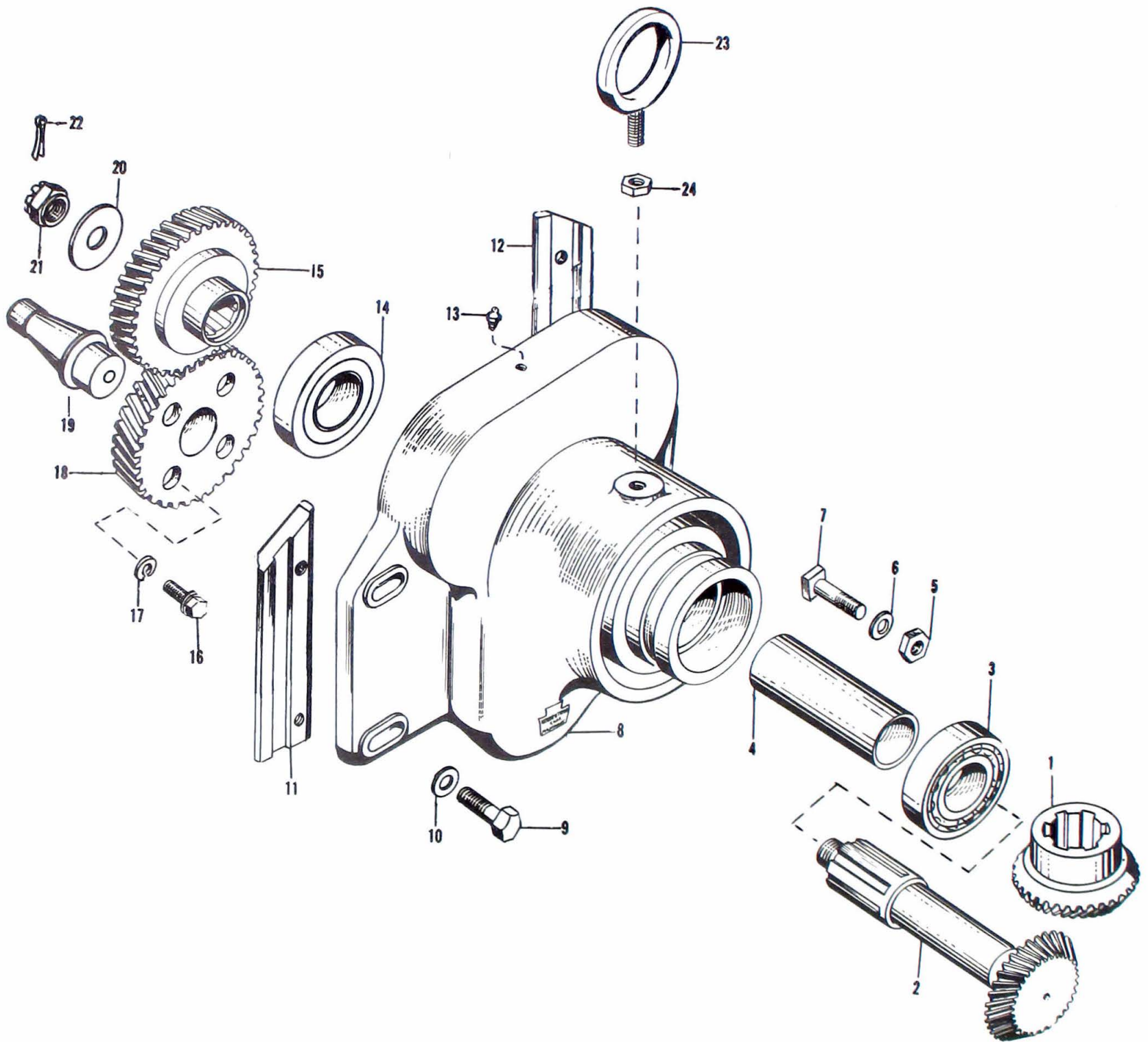


Fig. 3 — Standard Swivel Head Vertical Milling Attachment and Standard Universal Milling Attachment (Drive Bracket Unit)
 For 3KM, 3K, 3CK, 3CSM(30), 4H, 4CH, 4CSM(30), 315TF, 330TF, 415TF, and 430TF Machines

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STANDARD ATTACHMENTS — FOR MILLING AND BORING MACHINES

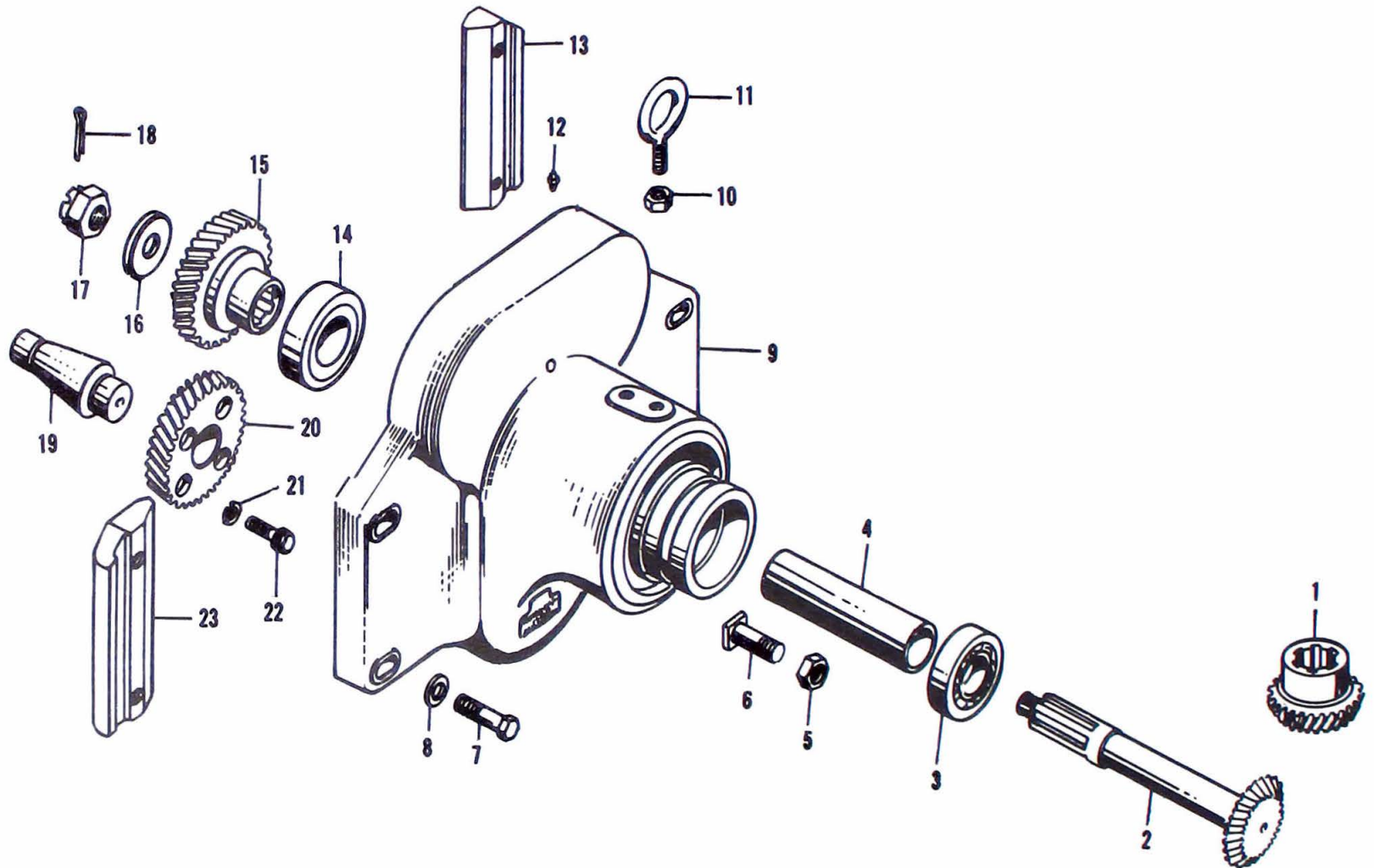
Fig. 3 — Standard Swivel Head Vertical Milling Attachment and Standard Universal Milling Attachment (Drive Bracket Unit)
For 3KM, 3K, 3CK, 3CSM(30), 4H, 4CH, 4CSM(30), 315TF, 330TF, 415TF, and 430TF Machines

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Spiral bevel gear (driven) (Vertical attachment) ①	AR-AK1A	1
	Spiral bevel gear (driven) (Universal attachment) ②	AR-AK1B	1
2	Spiral bevel gear drive shaft (Vertical attachment) ①	AR-AK2A	1
	Spiral bevel gear drive shaft (Universal attachment) ②	AR-AK2B	1
3	Timken bearing, #3720-3779	AR-AK3	1
4	Spacer	AR-AK4	1
5	Hex head nut, 5/8—11	AR-AK5	4
6	Washer	AR-AK6	4
7	T-bolt	AR-AK7	4
8	Swivel base	AR-AK8	1
9	Hex head cap screw, 5/8—11 x 2 5/16 in.	AR-AK9	4
10	Washer	AR-AK10	4
11	Base gib, left hand	AR-AK11	1
12	Base gib, right hand	AR-AK12	1
13	Alemite Zerk fitting, 1/8 in., #1610	AR-AK13	1
14	Timken bearing, #453A-462	AR-AK14	1
15	Spiral gear (driven)	AR-AK15	1
16	Hex head collar screw	AR-AK16	4
17	Lockwasher, 5/8 in.	AR-AK17	4
18	Spiral gear (driver)	AR-AK18	1
19	Centering plug	AR-AK19	1
20	Thrust washer	AR-AK20	1
21	Castellated hex nut, 7/8—14	AR-AK21	1
22	Cotter pin, 1/8 x 1 1/2 in.	AR-AK22	1
23	Eye bolt	AR-AK23	1
24	Hex head nut, 5/8—11	AR-AK24	1

① Sold as matched set only.

② Sold as matched set only.



**Fig. 4 — Standard Swivel Head Vertical Milling Attachment and
Standard Universal Milling Attachment (Drive Bracket Unit)
For 4K, 4CK, 4CSM(50), 5H, 5HM, 5CK, 5CSM, 6CK, 6CSM, 425TF, 450TF, 525TF, 550TF,
625TF, and 650TF Machines**

Fig. 4 — Standard Swivel Head Vertical Milling Attachment and Standard Universal Milling Attachment (Drive Bracket Unit)
 For 4K, 4CK, 4CSM(50), 5H, 5HM, 5CK, 5CSM, 6CK, 6CSM, 425TF, 450TF, 525TF, 550TF, 625TF, and 650TF Machines

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Spiral bevel gear (driven) (Vertical attachment) ①	AR-AL1A	1
	Spiral bevel gear (driven) (Universal attachment) ②	AR-AL1B	1
2	Spiral bevel gear drive shaft (driver) (Vertical attachment) ①	AR-AL2A	1
	Spiral bevel gear drive shaft (driver) (Universal attachment) ②	AR-AL2B	1
3	Timken bearing, #3720-3779	AR-AL3	1
4	Bearing spacer	AR-AL4	1
5	Nut, 5/8—11 in.	AR-AL5	4
6	T-bolt	AR-AL6	4
7	Screw, 5/8—11 x 2 13/16 in.	AR-AL7	4
8	Washer	AR-AL8	4
9	Swivel base	AR-AL9	1
10	Nut, 5/8—11 in.	AR-AL10	1
11	Eye bolt	AR-AL11	1
12	Alemite Zerk fitting, 1/8 in., #1610	AR-AL12	1
13	Swivel base gib, R.H.	AR-AL13	1
14	Timken bearing, #453A-462	AR-AL14	1
15	Spiral gear (driven)	AR-AL15	1
16	Thrust washer	AR-AL16	1
17	Castellated nut, 7/16—14	AR-AL17	1
18	Cotter pin, 1/8 x 1/2 in.	AR-AL18	1
19	Centering plug	AR-AL19	1
20	Spiral gear (driver)	AR-AL20	1
21	Lock washer	AR-AL21	4
22	Hex head collar screw	AR-AL22	4
23	Swivel base gib, L.H.	AR-AL23	1

① Sold as matched set only.

② Sold as matched set only.

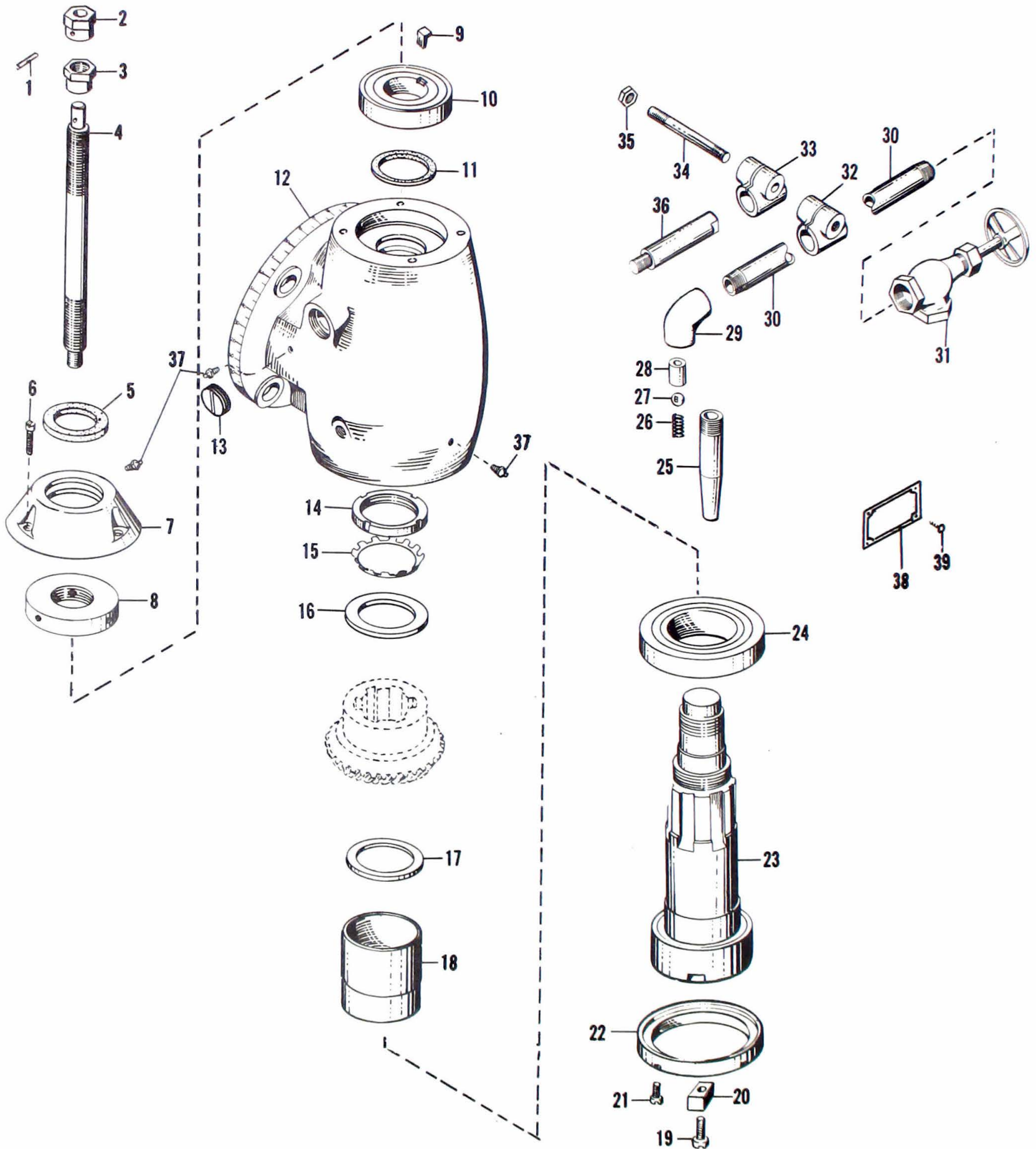


Fig. 5 — Heavy Duty Swivel Head Vertical Milling Attachment (Head Unit)
For 1H, 1CH, 2HL, 2CHL, 18AC, 24AC, 2E, 2CE, 2H, and 2CH Machines

Replacement Parts Manual

STANDARD ATTACHMENTS — FOR MILLING AND BORING MACHINES

**Fig. 5 — Heavy Duty Swivel Head Vertical Milling Attachment (Head Unit)
For 1H, 1CH, 2HL, 2CHL, 18AC, 24AC, 2E, 2CE, 2H, and 2CH Machines**

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Taper pin, #2 x 1 in.....	AR-AH1	1
2	Draw-in bolt head.....	AR-AH2	1
3	Draw-in bolt nut.....	AR-AH3	1
4	Draw-in bolt.....	AR-AH4	1
5	Felt washer.....	AR-AH5	1
6	Fillister head cap screw, 5/16—18 x 3/4 in.....	AR-AH6	3
7	Swivel head cap.....	AR-AH7	1
8	Collar nut.....	AR-AH8	1
9	Timken bearing key.....	AR-AH9	1
10	Timken bearing, #332-337W.....	AR-AH10	1
11	Felt washer.....	AR-AH11	1
12	Swivel head.....	AR-AH12	1
13	Plug.....	AR-AH13	2
14	Gurney nut, #10.....	AR-AH14	1
15	Gurney washer, #10.....	AR-AH15	1
16	Thrust washer.....	AR-AH16	1
17	Fitting washer.....	AR-AH17	1
18	Grease retainer tube.....	AR-AH18	1
19	Fillister head cap screw, 1/4—20 x 7/8 in.....	AR-AH19	2
20	Spindle drive keys.....	AR-AH20	2
21	Fillister head cap screw, 5/16—18 x 5/8 in.....	AR-AH21	4
22	Oil retainer for spindle.....	AR-AH22	1
23	Swivel head spindle.....	AR-AH23	1
24	Timken bearing, #3920-3982.....	AR-AH24	1
25	Coolant nozzle.....	AR-AH25	1
26	Spring.....	AR-AH26	1
27	Steel ball, 3/8 in.....	AR-AH27	1
28	Nozzle ball retainer.....	AR-AH28	1
29	ElI (reducing)—90° 1/2 x 3/8 #4141.....	AR-AH29	1
30	Coolant pipe.....	AR-AH30	1
31	Angle valve, 1/2 in.....	AR-AH31	1
32	Coolant pipe clamp.....	AR-AH32	1
33	Coolant pipe clamp.....	AR-AH33	1
34	Stud, 7/16—14 x 3 3/4 in.....	AR-AH34	1
35	Hex nut, 7/16—14.....	AR-AH35	1
36	Clamp rod.....	AR-AH36	1
37	Alemite Zerk fitting, 1/8 in., #1610.....	AR-AH37	3
38	Lubricating instruction plate.....	AR-AH38	1
39	Escutcheon pin, 3/8 in., #15.....	AR-AH39	4

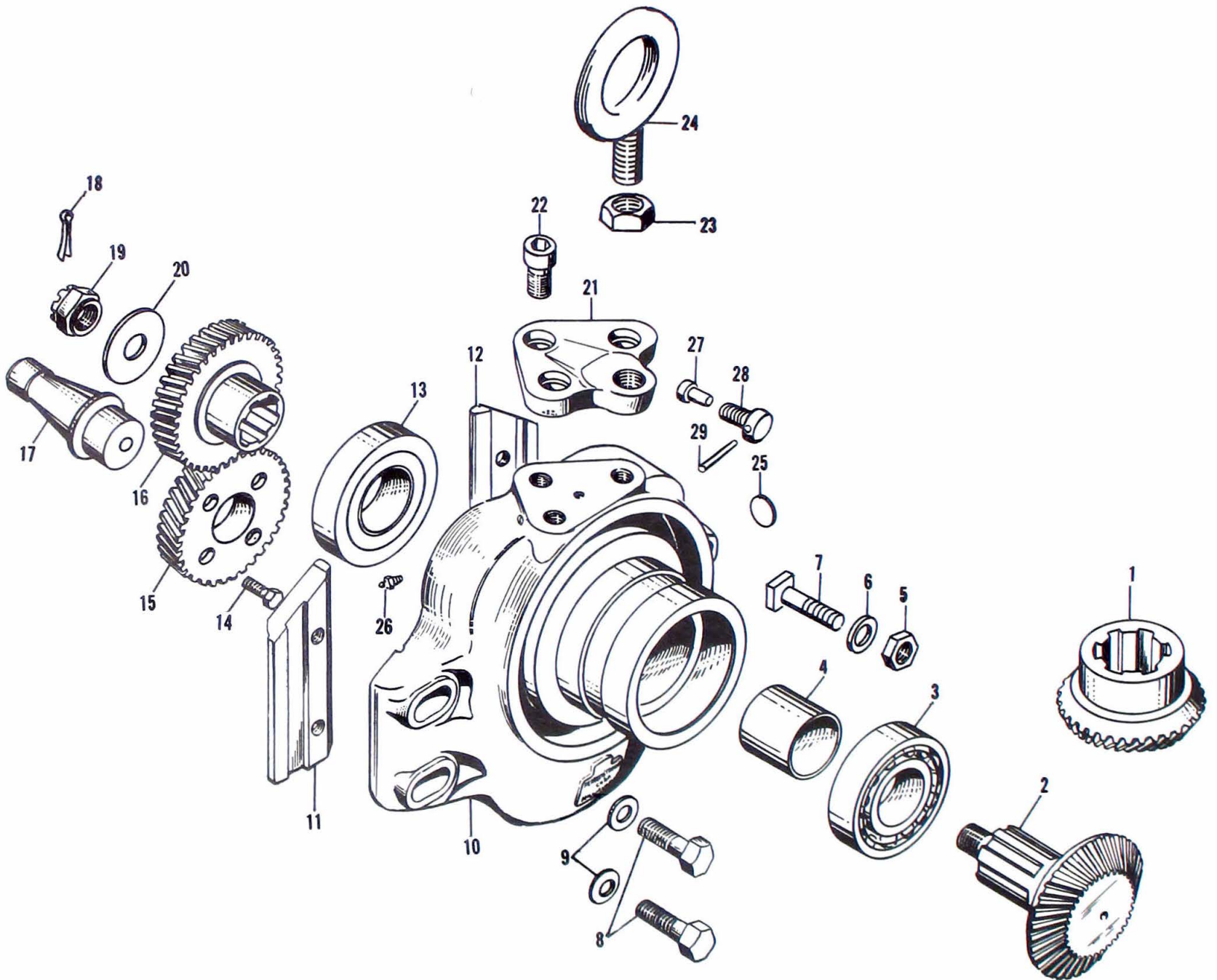


Fig. 6 — Heavy Duty Swivel Head Vertical Milling Attachment and Heavy Duty Universal Milling Attachment (Drive Bracket Unit)
 For 1H, 1CH, 2HL, 2CHL, 18AC, 24AC, 2E, and 2CE Machines

**Fig. 6 — Heavy Duty Swivel Head Vertical Milling Attachment and Heavy Duty Universal Milling Attachment (Drive Bracket Unit)
For 1H, 1CH, 2HL, 2CHL, 18AC, 24AC, 2E, and 2CE Machines**

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Spiral bevel gear (driven) (Vertical attachment) ①	AR-AM1A	1
	Spiral bevel gear (driven) (Universal attachment) ②	AR-AMB	1
2	Spiral bevel gear drive shaft (driver) (Vertical attachment) ①	AR-AM2A	1
	Spiral bevel gear drive shaft (driver) (Universal attachment) ②	AR-AM2B	1
3	Timken bearing, #432-447	AR-AM3	1
4	Spacer	AR-AM4	1
5	Hex nut, 5/8—11	AR-AM5	4
6	Washer	AR-AM6	4
7	T-bolt	AR-AM7	4
8	Hex head cap screw, 5/8—11 x 2 1/6 in.	AR-AM8	4
9	Washer	AR-AM9	4
10	Swivel base	AR-AM10	1
11	Base gib, left hand	AR-AM11	1
12	Base gib, right hand	AR-AM12	1
13	Timken bearing, #3732-3767	AR-AM13	1
14	Hex head collar screw, 1/2—13 x 1 3/8 in.	AR-AM14	4
15	Spiral gear (driver)	AR-AM15	1
16	Spiral gear (driven)	AR-AM16	1
17	Centering plug	AR-AM17	1
18	Cotter pin, 1/8 x 1 1/2 in.	AR-AM18	1
19	Castellated hex nut, 3/4—16	AR-AM19	1
20	Thrust washer	AR-AM20	1
21	Eye bolt bracket (Vertical att.)	AR-AM21A	1
	Eye bolt bracket (Universal att.)	AR-AM21B	1
22	Allen head cap screw, 5/8—11 x 1 in.	AR-AM22	3
23	Hex nut, 5/8—11 ④	AR-AM23	1
24	Eye bolt, 5/8 in. standard ④	AR-AM24	1
25	Expansion plug, 7/8 in. ④	AR-AM25	1
26	Alemite Zerk fitting, 1/8 in., #1610	AR-AM26	1
27	Overarm clamp plug ③	AR-AM27	1
28	Overarm clamp screw. ③	AR-AM28	1
29	Clamp pin ③	AR-AM29	1

① Sold as matched set only.

② Sold as matched set only.

③ Only when parking bracket is used.

④ Only when parking bracket is not used.

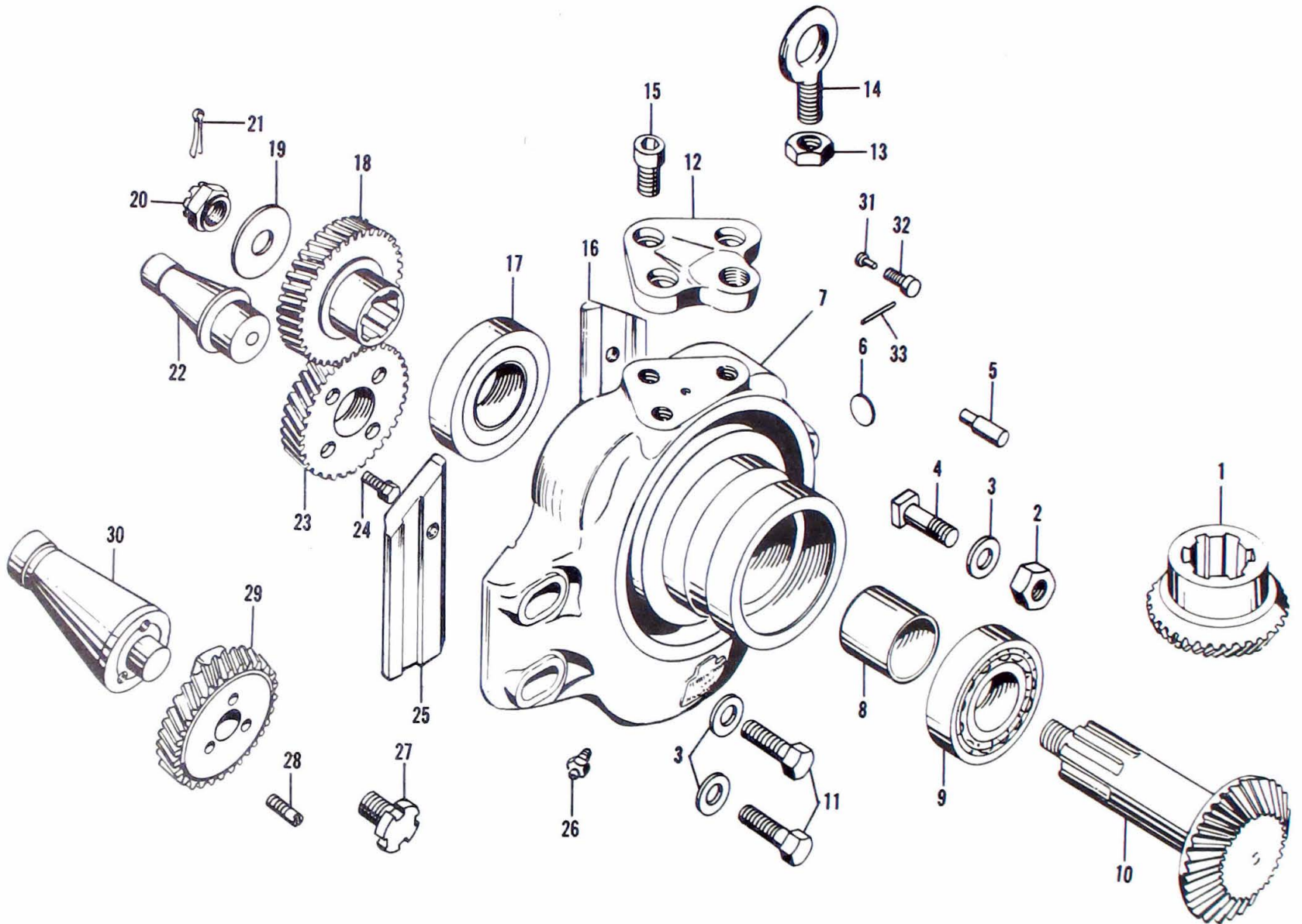


Fig. 7 — Heavy Duty Swivel Head Vertical Milling Attachment and Heavy Duty Universal Milling Attachment (Drive Bracket Unit) For 2H and 2CH Machines

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STANDARD ATTACHMENTS — FOR MILLING AND BORING MACHINES

Fig. 7 — Heavy Duty Swivel Head Vertical Milling Attachment and Heavy Duty Universal Milling Attachment (Drive Bracket Unit) For 2H and 2CH Machines

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Spiral bevel gear (driven) (Vertical attachment) ①	AR-AN1A	1
	Spiral bevel gear (driven) (Universal attachment) ②	AR-AN1B	1
2	Nut, 5/8—11 in.	AR-AN2	4
3	Washer	AR-AN3	8
4	T-bolt	AR-AN4	4
5	Overarm stop pin	AR-AN5	2
6	Expansion plug, 7/8 in. ⑤	AR-AN6	1
7	Swivel base	AR-AN7	1
8	Spacer	AR-AN8	1
9	Timken bearing, 432-447	AR-AN9	1
10	Spiral bevel gear drive shaft (Vertical attachment) ①	AR-AN10A	1
	Spiral bevel gear drive shaft (Universal attachment) ②	AR-AN10B	1
11	Hex head cap screw, 5/8—11 x 2 5/16 in.	AR-AN11	4
12	Eye bolt bracket (Vertical attachment)	AR-AN12A	1
	Eye bolt bracket (Universal attachment)	AR-AN12B	1
13	Nut, 5/8—11 in. ⑤	AR-AN13	1
14	Eye bolt, 5/8 in. ⑤	AR-AN14	1
15	Allen head screw, 5/8—1 in.	AR-AN15	3
16	Base gib, R.H.	AR-AN16	1
17	Timken bearing, 3732-3767	AR-AN17	1
18	Spiral gear (driven)	AR-AN18	1
19	Thrust washer	AR-AN19	1
20	Castellated nut, 3/4—16 in.	AR-AN20	1
21	Cotter pin, 1/8 x 1 1/2 in.	AR-AN21	1
22	Centering plug (for machines with #40 steep taper spindle)	AR-AN22	1
23	Spiral gear (driver) (for machines with #40 steep taper spindle)	AR-AN23	1
24	Collar screw	AR-AN24	4
25	Base gib, L.H.	AR-AN25	1
26	Zerk fitting, 1/8 in., #1610	AR-AN26	1
27	Arbor screw ④	AR-AN27	1
28	Rivet screw ④	AR-AN28	3
29	Spiral gear (driver) ④	AR-AN29	1
30	Centering plug for drive gear ④	AR-AN30	1
31	Overarm clamp plug ③	AR-AN38	1
32	Overarm Clamp screw ③	AR-AN39	1
33	Clamp pin ③	AR-AN40	1

① Sold as matched set only.

② Sold as matched set only.

③ Only when used with parking bracket.

④ For #50 taper machines.

⑤ Only when parking bracket is not used.

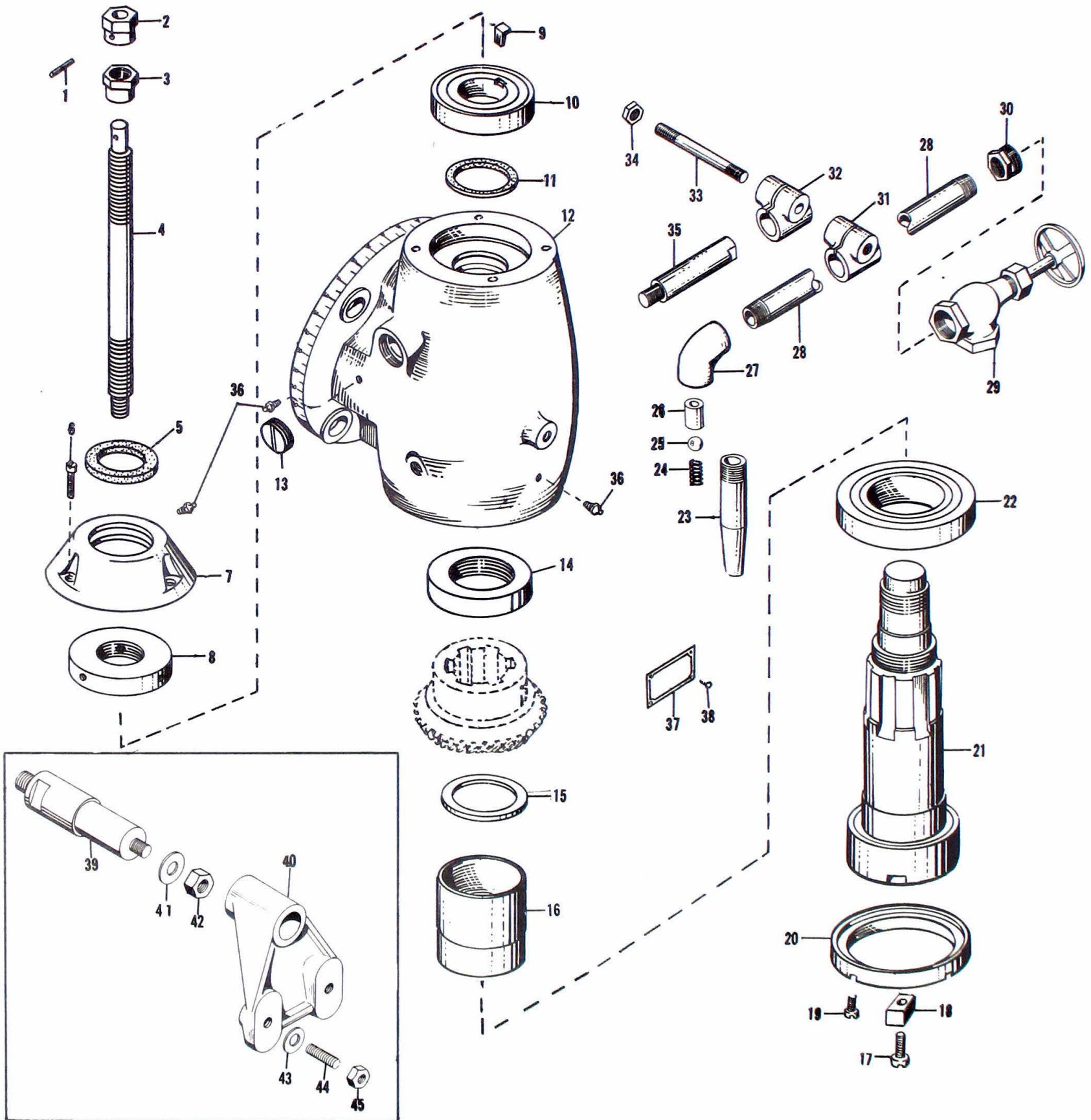


Fig. 8 — Heavy Duty Swivel Head Vertical Milling Attachment (Head Unit)
 For 2KM, 2K, 2CK, 2CSM(20), 3CE, 3H, 3CH, 3CSM(20), 3KM, 3K, 3CK, 3CSM(30), 4H, 4CH,
 4CSM(30), 4K, 4CK, 4CSM(50), 5H, 5HM, 5CK, 5CSM, 6CK, 6CSM, and All TF Model Machines

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Fig. 8 — Heavy Duty Swivel Head Vertical Milling Attachment (Head Unit)
 For 2KM, 2K, 2CK, 2CSM(20), 3CE, 3H, 3CH, 3CSM(20), 3KM, 3K, 3CK, 3CSM(30), 4H, 4CH, 4CSM(30), 4K, 4CK, 4CSM(50), 5H, 5HM, 5CK, 5CSM, 6CK, 6CSM, and All TF Model Machines

Order by CODE No. and ATTACHMENT SERIAL No.

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Taper pin, #4 x 1/4 in.	AR-AP1	1
2	Draw bolt head	AR-AP2	1
3	Draw bolt nut	AR-AP3	1
4	Draw bolt	AR-AP4	1
5	Felt washer	AR-AP5	1
6	Fillister head cap screw, 5/16—18 x 3/4 in.	AR-AP6	3
7	Swivel head cap	AR-AP7	1
8	Collar nut	AR-AP8	1
9	Drive key	AR-AP9	1
10	Timken bearing, #453A-455W	AR-AP10	1
11	Felt washer	AR-AP11	1
12	Swivel head	AR-AP12	1
13	Screw plug	AR-AP13	2
14	Fitting washer	AR-AP14	1
15	Grease retainer tube	AR-AP15	1
16	Collar nut	AR-AP16	1
17	Fillister head cap screw, 7/16—14 x 1 5/16 in.	AR-AP17	2
18	Spindle drive key	AR-AP18	2
19	Fillister head cap screw, 5/16—18 x 5/8 in.	AR-AP19	4
20	Oil shield collar	AR-AP20	1
21	Spindle	AR-AP21	1
22	Timken bearing, #749-742	AR-AP22	1
23	Coolant nozzle	AR-AP23	1
24	Spring	AR-AP24	1
25	Steel ball, 1/2 in.	AR-AP25	1
26	Nozzle ball retainer	AR-AP26	1
27	Ell, 1/2 x 90°	AR-AP27	1
28	Coolant pipe	AR-AP28	1
29	Angle valve, 3/4 in.	AR-AP29	1
30	Reducing bushing, 3/4 x 1/2	AR-AP30	1
31	Coolant pipe clamp	AR-AP31	1

Item No.	Part Name and Description	Code No.	Qty.
32	Coolant clamp	AR-AP32	1
33	Stud, 7/16—14 x 3 3/4 in.	AR-AP33	1
34	Hex nut, 7/16—14	AR-AP34	1
35	Clamp rod	AR-AP35	1
36	Alemite Zerk fitting	AR-AP36	3
37	Lubricating instruction plate	AR-AP37	1
38	Escutcheon pins, #15	AR-AP38	4
39	Outboard support stud For 2KM, 2K, 2CK, 2CSM(20), 3CE, 3H, 3CH, 3CSM(20), 210TF, 220TF, 310TF, and 320TF machine	AR-AP39A	1
	For 3KM, 3K, 3CK, 3CSM(30), 4H, 4CH, 4CSM(30), 315TF, 330TF, 415TF, and 430TF machines	AR-AP39B	1
	For 4K, 5H, and 5HM machines prior to 1940	AR-AP39C	1
	For 4K, 5H, and 5HM machines after 1939, and for 4CK, 4CSM(50), 5CK, 5CSM, 6CK, 6CSM, 425TF, 450TF, 525TF, 550TF, 625TF, and 650TF machines	AR-AP39D	1
40	Outboard support For 2KM, 2K, 2CK, 2CSM(20), 3CE, 3H, 3CH, 3CSM(20), 210TF, 220TF, 310TF, and 320TF machines	AR-AP40A	1
	For all other machines mentioned above	AR-AP40B	1
41	Washer	AR-AP41	1
42	Hex nut, 3/4—10	AR-AP42	1
43	Washer	AR-AP43	2
44	Stud, 5/8—11 x 3 in.	AR-AP44	2
45	Hex nut, 5/8—11	AR-AP45	2

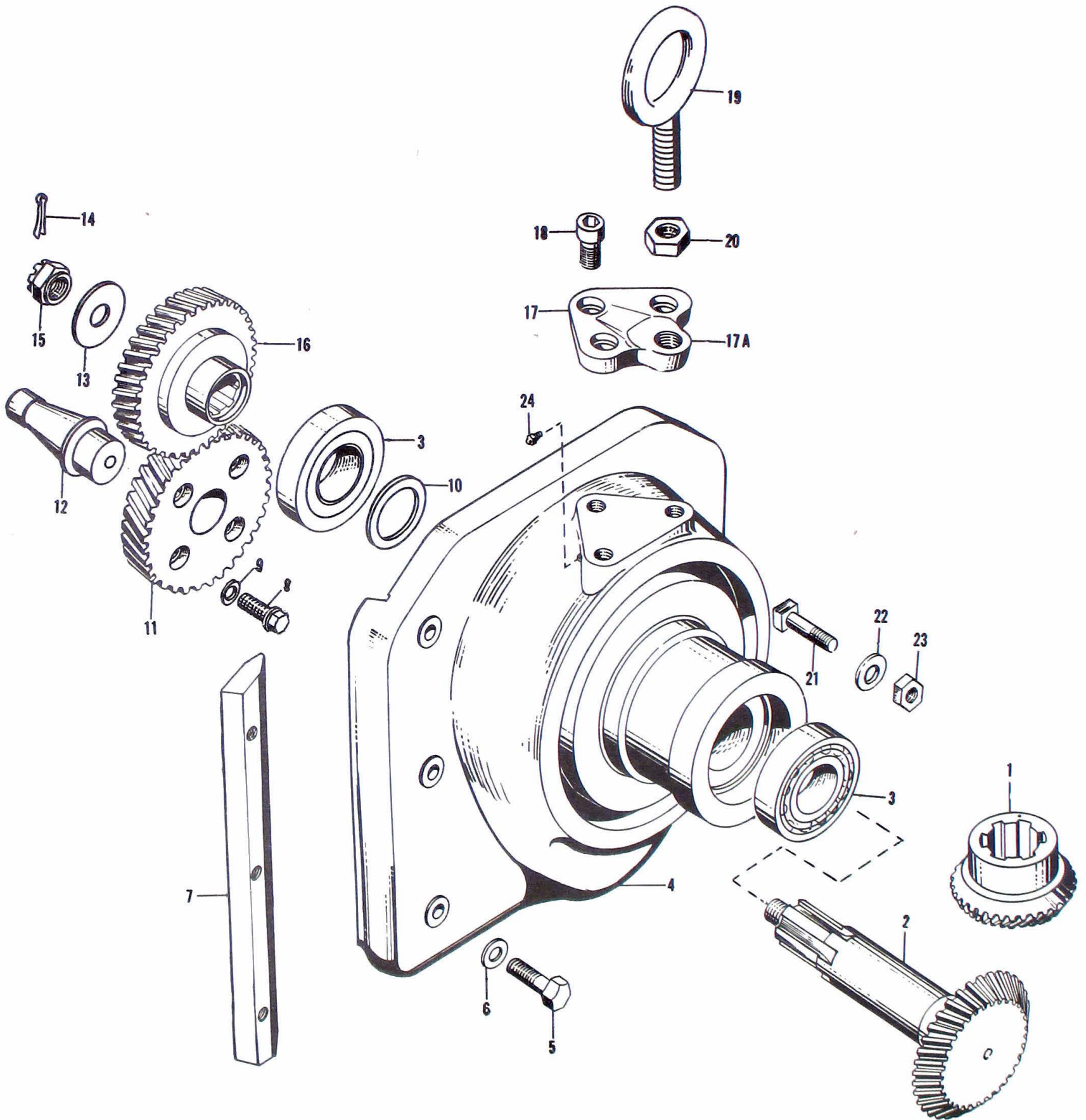


Fig. 10 — Heavy Duty Swivel Head Vertical Milling Attachment and Heavy Duty Universal Milling Attachment (Drive Bracket Unit)
 For 3KM, 3K, 3CK, 3CSM(30), 4H, 4CH, 4CSM(30), 315TF, 330TF, 415TF, and 430TF Machines

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Fig. 10 — Heavy Duty Swivel Head Vertical Milling Attachment and Heavy Duty Universal Milling Attachment (Drive Bracket Unit)
For 3KM, 3K, 3CK, 3CSM(30), 4H, 4CH, 4CSM(30), 315TF, 330TF, 415TF, and 430TF Machines

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Spiral bevel gear (driven) ①	AR-AR1	1
2	Spiral bevel gear drive shaft (driver) ①	AR-AR2	1
3	Timken bearing, #453A-462	AR-AR3	2
4	Swivel base	AR-AR4	1
5	Hex head cap screw, 5/8—11 x 2 13/16 in.	AR-AR5	3
6	Washer	AR-AR6	3
7	Base gib	AR-AR7	1
8	Hex head collar screw	AR-AR8	4
9	Lockwasher, 5/8 in.	AR-AR9	4
10	Fitting washer	AR-AR10	1
11	Spiral gear (driver)	AR-AR11	1
12	Centering plug	AR-AR12	1
13	Thrust washer	AR-AR13	1
14	Cotter pin, 5/32 x 1 1/4 in.	AR-AR14	1
15	Castellated hex nut, 7/8—14 in.	AR-AR15	1
16	Spiral gear (driven)	AR-AR16	1
17	Eye bolt bracket (vertical head)	AR-AN17A	1
	Eye bolt bracket (universal head)	AR-AN17B	1
18	Allen head cap screw, 3/4 x 1 1/4 in.	AR-AR18	3
19	Eye bolt, 3/4 in. standard	AR-AR19	1
20	Hex nut, 3/4—10	AR-AR20	1
21	T-bolt (vertical)	AR-AR21A	4
	T-bolt (horizontal)	AR-AR21B	4
22	Washer	AR-AR22	4
23	Hex nut, 3/4—10	AR-AR23	4
24	Alemite Zerk fitting, 1/8—#1610	AR-AR24	1

① Sold as matched set only.

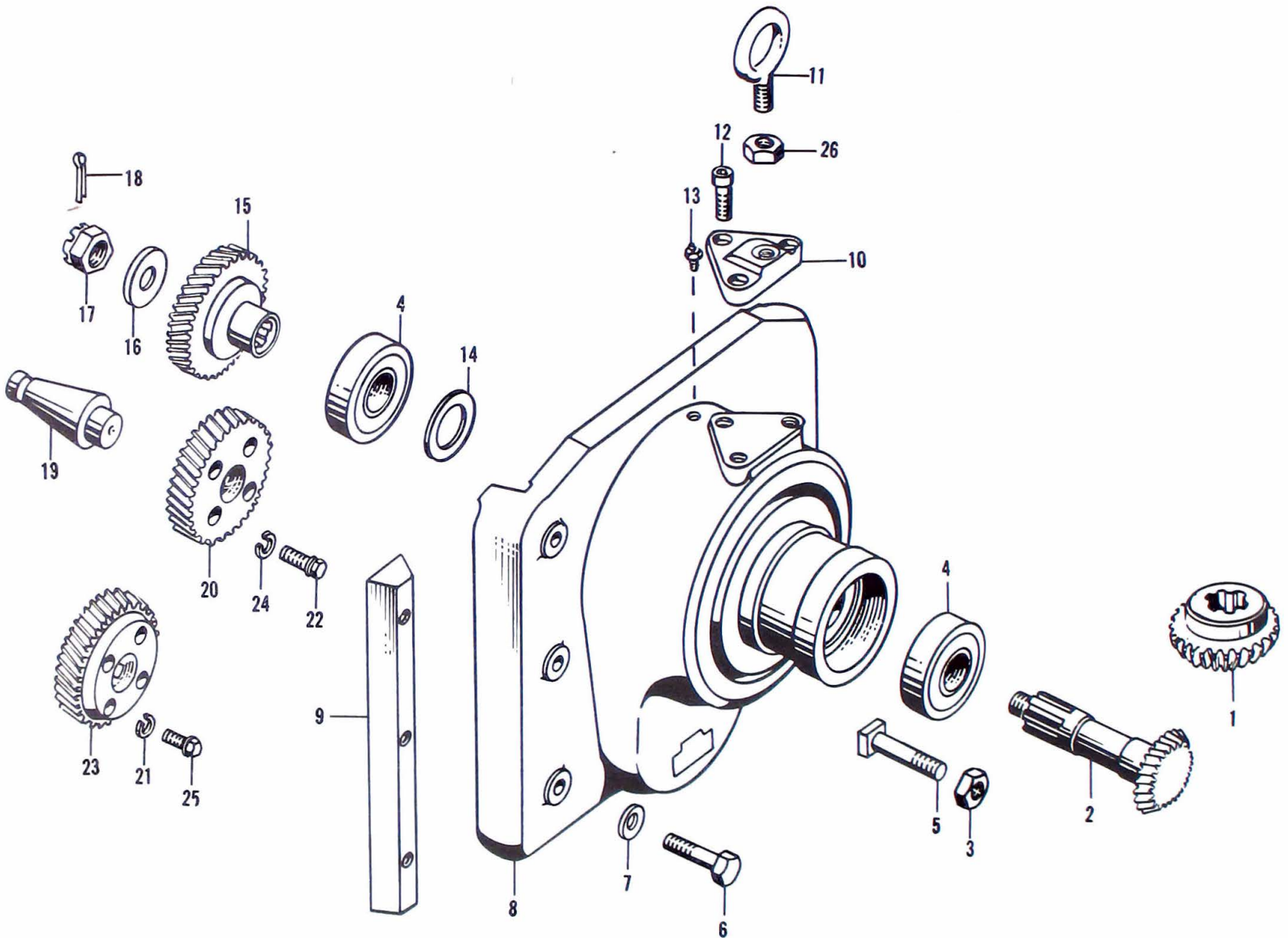


Fig. 11 — Heavy Duty Swivel Head Vertical Milling Attachment and Heavy Duty Universal Milling Attachment (Drive Bracket Unit)
 For 4K, 5H, and 5HM (After 1939), 4CK, 4CSM(50), 5CK, 5CSM, 6CK, 6CSM, 425TF, 450TF, 525TF, 550TF, 625TF, and 650TF Machines

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Fig. 11 — Heavy Duty Swivel Head Vertical Milling Attachment and Heavy Duty Universal Milling Attachment (Drive Bracket Unit)
For 4K, 5H, and 5HM (After 1939), 4CK, 4CSM(50), 5CK, 5CSM, 6CK, 6CSM, 425TF, 450TF, 525TF, 550TF, 625TF, and 650TF Machines

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Spiral bevel gear (driven) ①	AR-AS1	1
2	Spiral bevel gear drive shaft ①	AR-AS2	1
3	Nut, 3/4—10 in.	AR-AS3	4
4	Timken bearing, 453A-462	AR-AS4	2
5	T-bolt ②	AR-AS5A	4
	T-bolt ③	AR-AS5B	4
6	Hex head cap screw, 3/4—10 x 3 3/4 in.	AR-AS6	3
7	Washer	AR-AS7	3
8	Swivel base	AR-AS2	1
9	Swivel base gib	AR-AS9	1
10	Eye bolt bracket ②	AR-AS10A	1
	Eye bolt bracket ③	AR-AS10B	1
11	Eye bolt, 3/4 x 1 1/2 in.	AR-AS11	1
12	Socket head screw, 3/4 x 1 1/4 in.	AR-AS12	3
13	Zerk fitting, 1/8 in., #1610	AR-AS13	1
14	Fitting washer	AR-AS14	1
15	Spiral gear (driven)	AR-AS15	1
16	Thrust washer	AR-AS16	1
17	Castellated nut	AR-AS17	1
18	Cotter pin, 5/32 x 1 1/4 in.	AR-AS18	1
19	Centering plug	AR-AS19	1
20	Spiral gear (driver) (use on #50 NS spindle only)	AR-AS20	1
21	Washer	AR-AS21	4
22	Hex head collar screw	AR-AS22	4
23	Spiral gear (driver) (use on #50/60 combination spindle only)	AR-AS23	1
24	Washer	AR-AS24	4
25	Hex head collar screw	AR-AS25	4
26	Nut, 3/4—10	AR-AS26	1

① Sold as matched set only.

② Used on vertical head

③ Used on universal head

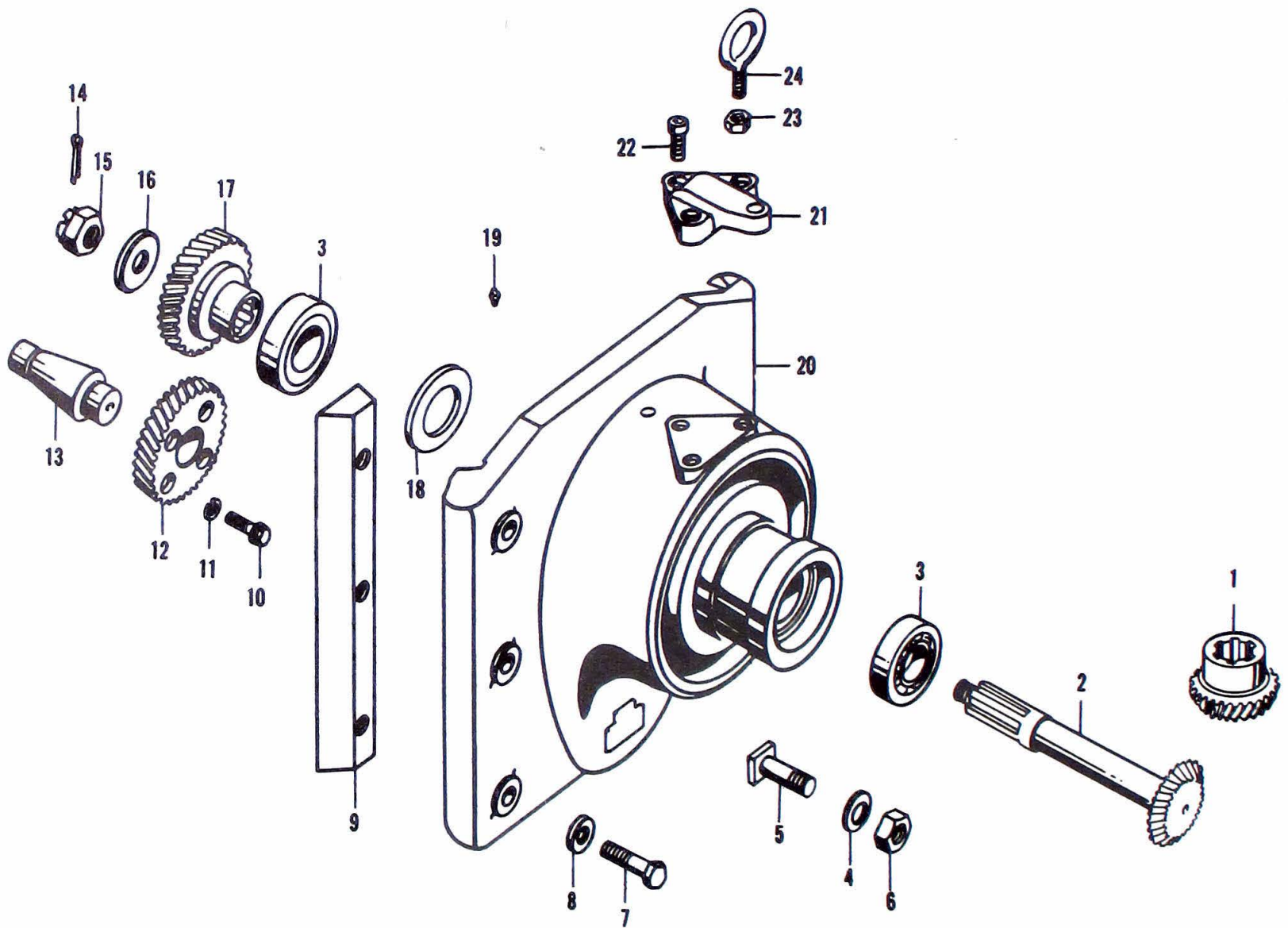


Fig. 12 — Heavy Duty Swivel Head Vertical Milling Attachment and Heavy Duty Universal Milling Attachment (Drive Bracket Unit) For 4K, 5H, and 5HM Previous to 1940

**Fig. 12 — Heavy Duty Swivel Head Vertical Milling Attachment and
Heavy Duty Universal Milling Attachment (Drive Bracket Unit)
For 4K, 5H, and 5HM Previous to 1940**

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Spiral gear (driven) ①	AR-AT1	1
2	Spiral bevel gear drive shaft ① . . .	AR-AT2	1
3	Timken bearing, 453A-462	AR-AT3	2
4	Washer	AR-AT4	4
5	T-bolt (vertical)	AR-AT5A	4
	T-bolt (universal)	AR-AT5B	4
6	Nut, 3/4—10	AR-AT6	4
7	Hex head cap screw	AR-AT7	3
8	Washer	AR-AT8	3
9	Swivel base gib	AR-AT9	1
10	Hex head collar screw	AR-AT10	4
11	Washer	AR-AT11	4
12	Spiral gear (driver)	AR-AT12	1
13	Centering plug	AR-AT13	1
14	Cotter pin, 5/32 x 2 in.	AR-AT14	1
15	Castellated nut, 7/8—14	AR-AT15	1
16	Thrust washer	AR-AT16	1
17	Spiral gear, (driven)	AR-AT17	1
18	Fitting washer	AR-AT18	1
19	Alemite Zerk fitting, 1/8 in., #1610 .	AR-AT19	1
20	Swivel base	AR-AT20	1
21	Eye bolt bracket (Universal)	AR-AT21A	1
	Eye bolt bracket (Vertical)	AR-AT21B	1
22	Allen head screw, 3/4 x 1 1/2 in.	AR-AT22	3
23	Hex nut, 3/4—10	AR-AT23	1
24	Eye bolt, 3/4 x 1 1/2 in.	AR-AT24	1

① Sold as matched set only.

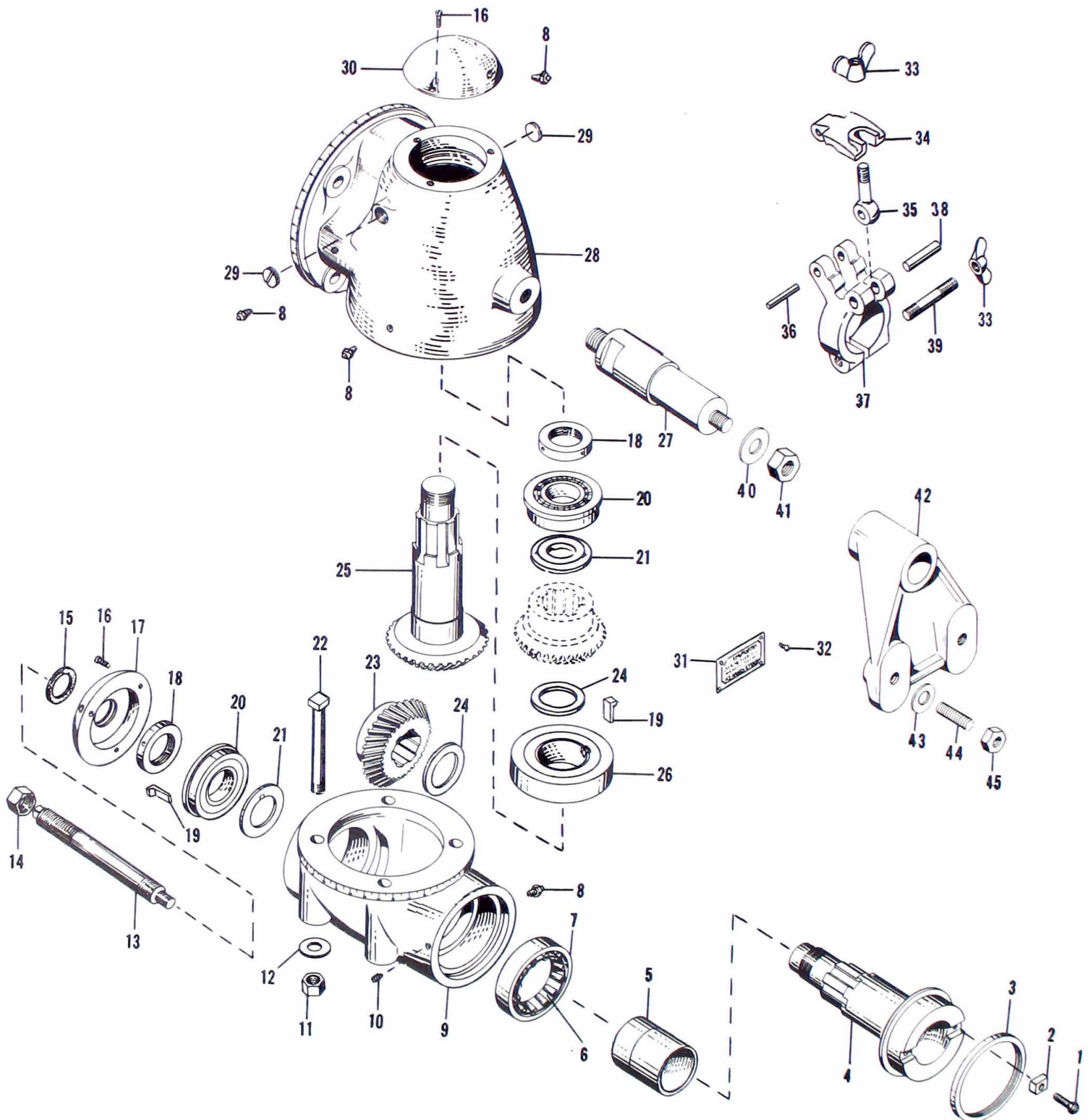


Fig. 13 — Standard Universal Milling Attachment (Head Unit)
 For 2KM, 2K, 2CK, 2CSM(20), 3CE, 3H, 3CH, 3CSM(20), 3KM, 3K, 3CK, 3CSM(30), 4H, 4CH, 4CSM(30), 4K, 4CK, 4CSM(50), 5H, 5HM, 5CK, 5CSM, 6CK, 6CSM, and All TF Model Machines

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Fig. 13 — Standard Universal Milling Attachment (Head Unit)
 For 2KM, 2K, 2CK, 2CSM(20), 3CE, 3H, 3CH, 3CSM(20), 3KM, 3K, 3CK, 3CSM(30), 4H, 4CH, 4CSM(30), 4K, 4CK, 4CSM(50), 5H, 5HM, 5CK, 5CSM, 6CK, 6CSM, and All TF Model Machines

Order by CODE No. and ATTACHMENT SERIAL No.

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Fillister head screw, 1/4—20 x 7/8 in...	AR-AU1	2
2	Spindle drive key.....	AR-AU2	2
3	Spindle grease retainer.....	AR-AU3	1
4	Spindle.....	AR-AU4	1
5	Grease retainer tube.....	AR-AU5	1
6	Timken enclosed cage, #3811 and rolls, #3008.....	AR-AU6	1
7	Timken cup, #3820.....	AR-AU7	1
8	Alemite Zerk fitting, 1/8 in., #1610....	AR-AU8	5
9	Spindle head.....	AR-AU9	1
10	Dog point screw.....	AR-AU10	2
11	Hex nut, 5/8—11.....	AR-AU11	4
12	Washer.....	AR-AU12	4
13	Draw in bolt.....	AR-AU13	1
14	Draw in nut.....	AR-AU14	1
15	Felt washer.....	AR-AU15	1
16	Fillister head screw, 1/16—18 x 3/4 in...	AR-AU16	6
17	Spindle head cap.....	AR-AU17	1
18	Collar nut.....	AR-AU18	2
19	Timken bearing key.....	AR-AU19	2
20	Timken bearing, #332B-337W.....	AR-AU20	2
21	Grease retainer.....	AR-AU21	2
22	T-bolt.....	AR-AU22	4
23	Spiral bevel gear, driven ^①	AR-AU23	1
24	Fitting washer.....	AR-AU24	2
25	Spiral bevel gear drive shaft ^①	AR-AU25	1
26	Timken bearing, #3720-3779.....	AR-AU26	1
27	Outboard support stud ^②	AR-AU27A	1
	^③	AR-AU27B	1
	^④	AR-AU27C	1
	^⑤	AR-AU27D	1

Item No.	Part Name and Description	Code No.	Qty.
28	Universal swivel.....	AR-AU28	1
29	Screw plug.....	AR-AU29	2
30	Swivel head cap.....	AR-AU30	1
31	Lubrication instruction plate.....	AR-AU31	1
32	Escutcheon pin, #15.....	AR-AU32	4
33	Wing nut.....	AR-AU33	2
34	Coolant distribution clamp.....	AR-AU34	1
35	Eye bolt.....	AR-AU35	1
36	Hinge pin.....	AR-AU36	1
37	Coolant distribution support.....	AR-AU37	1
38	Eye bolt pin.....	AR-AU38	1
39	Clamp stud, 7/16—14 x 2 1/16 in.....	AR-AU39	1
40	Washer.....	AR-AU40	1
41	Nut—3/4—10.....	AR-AU41	1
42	Outboard support ^②	AR-AU42A	1
	^③	AR-AU42B	1
	^④	AR-AU42C	1
	^⑤	AR-AU42D	1
43	Washer.....	AR-AU43	2
44	Stud, 5/8—11 x 3 in.....	AR-AU44	2
45	Nut—5/8—11.....	AR-AU45	2

① Sold as matched set only.

② For 2KM, 2K, 2CK, 2CSM (20), 3CE, 3H, 3CH, 3CSM (20), 210TF, 220TF, 310TF, 320TF machines.

③ For 3KM, 3K, 3CK, 3CSM (30), 4H, 4CH, 4CSM (30), 315TF, 330TF, 415TF, 430TF machines.

④ For 4K, 5H, 5HM machines prior to 1940.

⑤ For 4K, 5H, 5HM machines after 1939, and for 4CK, 4CSM (50), 5CK, 5CSM, 6CK, 6CSM, 425TF, 450TF, 525TF, 550TF, 625TF, 650TF machines.

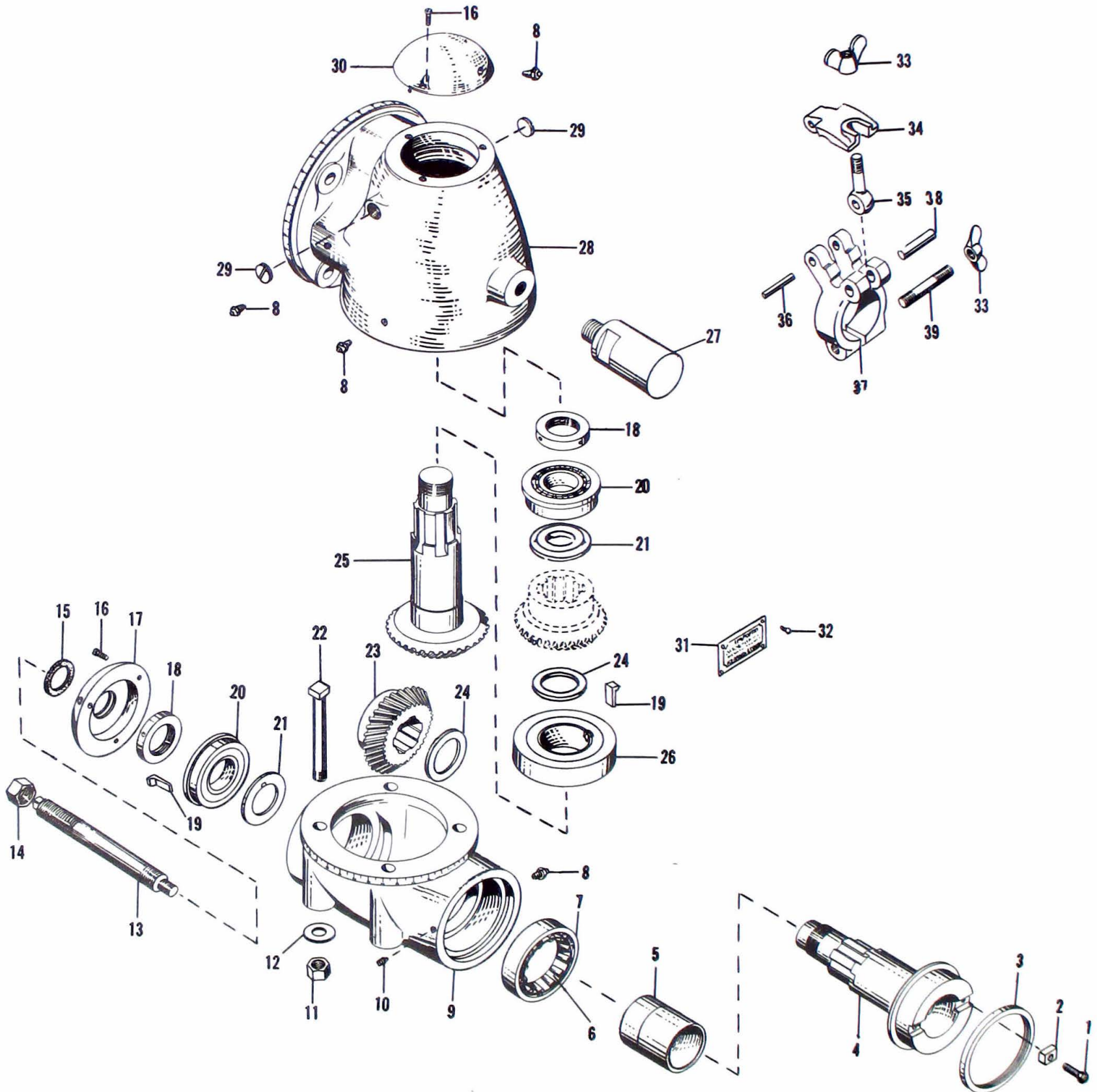


Fig. 14 — Heavy Duty Universal Milling Attachment (Head Unit)
For 1H, 1CH, 2HL, 2CHL, 18AC, 24AC, 2E, 2CE, 2H, and 2CH Machines

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**Fig. 14 — Heavy Duty Universal Milling Attachment (Head Unit)
For 1H, 1CH, 2HL, 2CHL, 18AC, 24AC, 2E, 2CE, 2H, and 2CH Machines**

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Fillister head screw, 1/4 — 20 x 7/8 in...	AR-AU1	2
2	Spindle drive key.....	AR-AU2	2
3	Spindle grease retainer.....	AR-AU3	1
4	Spindle.....	AR-AU4	1
5	Grease retainer tube.....	AR-AU5	1
6	Timken enclosed cage, #3811 and rolls, #3008.....	AR-AU6	1
7	Timken cup, #3820.....	AR-AU7	1
8	Alemite Zerk fitting, 1/8 in., #1610....	AR-AU8	5
9	Spindle head.....	AR-AU9	1
10	Dog point screw.....	AR-AU10	2
11	Hex nut, 5/8 — 11.....	AR-AU11	4
12	Washer.....	AR-AU12	4
13	Draw in bolt.....	AR-AU13	1
14	Draw in nut.....	AR-AU14	1
15	Felt washer.....	AR-AU15	1
16	Fillister head screw, 1/16 — 18 x 3/4 in...	AR-AU16	6
17	Spindle head cap.....	AR-AU17	1
18	Collar nut.....	AR-AU18	2
19	Timken bearing key.....	AR-AU19	2
20	Timken bearing, #332B-337W.....	AR-AU20	2
21	Grease retainer.....	AR-AU21	2
22	T-bolt.....	AR-AU22	4
23	Spiral bevel gear, driven ①.....	AR-AU23	1
24	Fitting washer.....	AR-AU24	2
25	Spiral bevel gear drive shaft ①.....	AR-AU25	1
26	Timken bearing, #3720-3779.....	AR-AU26	1
27	Coolant distributor clamp stud.....	AR-AU27	1
28	Universal swivel.....	AR-AU28	1
29	Screw plug.....	AR-AU29	2
30	Swivel head cap.....	AR-AU30	1
31	Lubrication instruction plate.....	AR-AU31	1
32	Escutcheon pin, #15.....	AR-AU32	4
33	Wing nut.....	AR-AU33	2
34	Coolant distribution clamp.....	AR-AU34	1
35	Eye bolt.....	AR-AU35	1
36	Hinge pin.....	AR-AU36	1
37	Coolant distribution support.....	AR-AU37	1
38	Eye bolt pin.....	AR-AU38	1
39	Clamp stud, 7/16 — 14 x 2 1/16 in.....	AR-AU39	1

① Sold as matched set only.

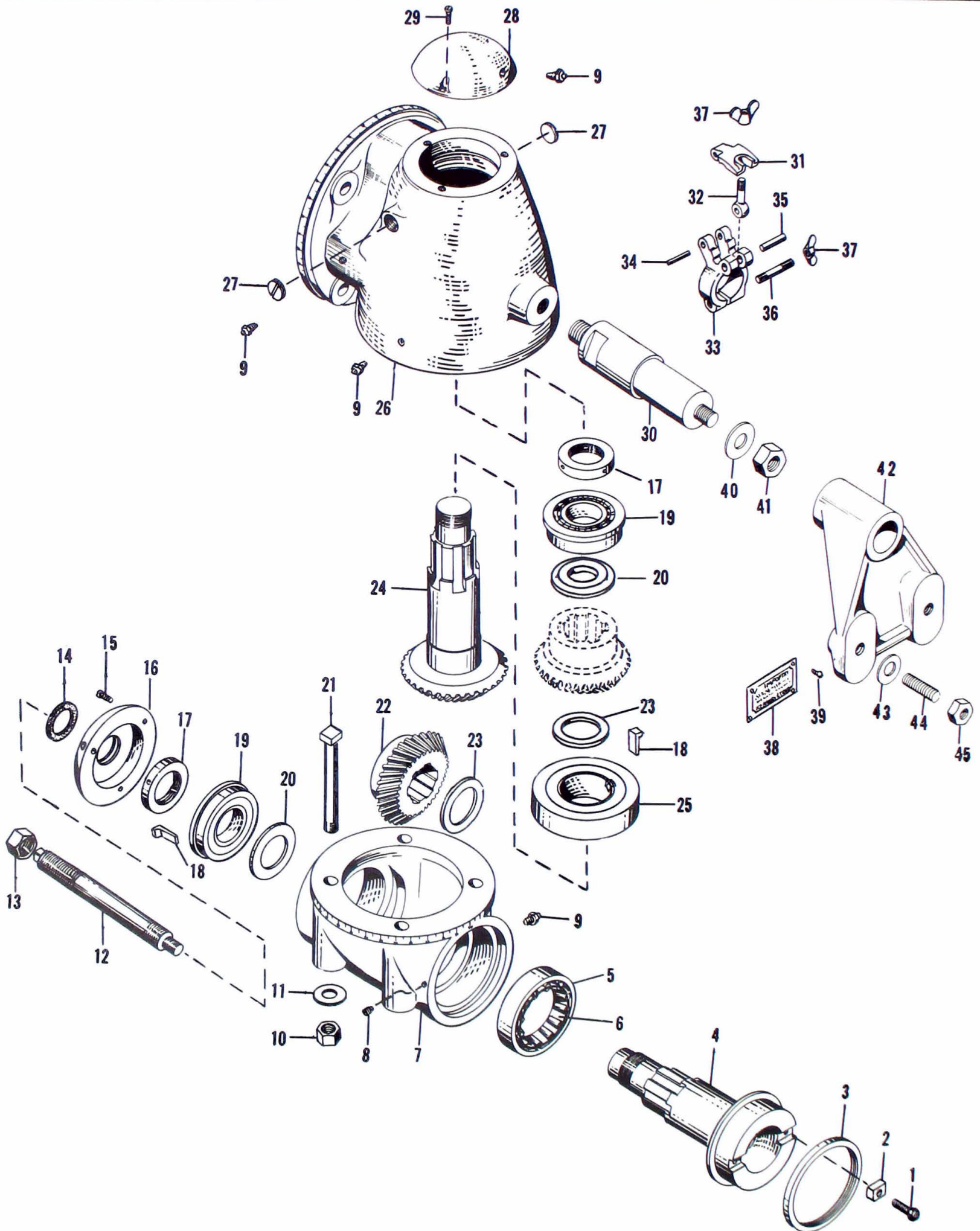


Fig. 15 — Heavy Duty Universal Milling Attachment (Head Unit)
 For 2KM, 2K, 2CK, 2CSM(20), 3CE, 3H, 3CH, 3CSM(20), 3KM, 3K, 3CK, 3CSM(30), 4H, 4CH, 4CSM(30), 4K, 4CK, 4CSM(50), 5H, 5HM, 5CK, 5CSM, 6CK, 6CSM, and All TF Model Machines

Replacement Parts Manual

STANDARD ATTACHMENTS — FOR MILLING AND BORING MACHINES

Fig. 15 — Heavy Duty Universal Milling Attachment (Head Unit)
 For 2KM, 2K, 2CK, 2CSM(20), 3CE, 3H, 3CH, 3CSM(20), 3KM, 3K, 3CK, 3CSM(30), 4H, 4CH, 4CSM(30), 4K, 4CK, 4CSM(50), 5H, 5HM, 5CK, 5CSM, 6CK, 6CSM, and All TF Model Machines

Order by CODE No. and ATTACHMENT SERIAL No.

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Fillister head screw, $\frac{7}{16}$ —14 x $1\frac{5}{16}$ in..	AR-AV1	2
2	Spindle drive key.....	AR-AV2	2
3	Spindle grease retainer.....	AR-AV3	1
4	Spindle.....	AR-AV4	1
5	Timken cup, #552.....	AR-AV5	1
6	Timken enclosed cage, #551 and Timken rolls, #502.....	AR-AV6	1
7	Spindle head.....	AR-AV7	1
8	Dog point screw, $\frac{3}{8}$ —16 x $\frac{3}{4}$ in....	AR-AV8	2
9	Alemite Zerk fitting, $\frac{1}{8}$ in., #1610....	AR-AV9	5
10	Hex nut, $\frac{3}{4}$ —10.....	AR-AV10	4
11	Washer.....	AR-AV11	4
12	Draw-in bolt.....	AR-AV12	1
13	Draw-in bolt nut.....	AR-AV13	1
14	Felt washer.....	AR-AV14	1
15	Fillister head screw, $\frac{5}{16}$ —18 x $\frac{3}{4}$ in..	AR-AV15	3
16	Spindle head cap.....	AR-AV16	1
17	Collar nut.....	AR-AV17	2
18	Drive key.....	AR-AV18	2
19	Timken bearing, #453B-455W.....	AR-AV19	2
20	Bearing spacer.....	AR-AV20	2
21	T-bolt.....	AR-AV21	4
22	Spiral bevel gear, (driven)①.....	AR-AV22	1
23	Fitting washer.....	AR-AV23	2
24	Spiral bevel gear drive shaft①.....	AR-AV24	1
25	Timken bearing, #572-575.....	AR-AV25	1
26	Universal swivel.....	AR-AV26	1
27	Screw plug.....	AR-AV27	2
28	Swivel head cap.....	AR-AV28	1
29	Fillister head screw, $\frac{5}{16}$ —18 x $\frac{3}{4}$ in..	AR-AV29	3

Item No.	Part Name and Description	Code No.	Qty.
30	Outboard support stud ②.....	AR-AV30A	1
	③.....	AR-AV30B	1
	④.....	AR-AV30C	1
	⑤.....	AR-AV30D	1
31	Coolant distributor clamp.....	AR-AV35	1
32	Eye bolt.....	AR-AV32	1
33	Coolant distributor support.....	AR-AV33	1
34	Hinge pin.....	AR-AV34	1
35	Eye bolt pin.....	AR-AV35	1
36	Clamp stud, $\frac{7}{16}$ —14 x $2\frac{1}{16}$ in....	AR-AV36	1
37	Wing nut.....	AR-AV37	2
38	Lubrication plate.....	AR-AV38	1
39	Escutcheon pins, #15.....	AR-AV39	4
40	Washer.....	AR-AV40	1
41	Nut— $\frac{3}{4}$ —10.....	AR-AV41	1
42	Outboard support ②.....	AR-AV42A	1
	③.....	AR-AV42B	1
	④.....	AR-AV42C	1
	⑤.....	AR-AV42D	1
43	Washer.....	AR-AV43	2
44	Stud, $\frac{5}{8}$ —11 x 3 in.....	AR-AV44	2
45	Nut, $\frac{5}{8}$ —11 in.....	AR-AV45	2

① Sold as matched set only.

② For 2KM, 2K, 2CK, 2CSM (20), 3CE, 3H, 3CSM (20), 210TF, 220TF, 310TF, 320TF machines.

③ For 3KM, 3K, 3CK, 3CSM (30), 4H, 4CH, 4CSM (30), 315TF, 330TF, 415TF, 430TF machines.

④ For 4K, 5H, 5HM machines prior to 1940.

⑤ For 4K, 5H, 5HM machines after 1939, and for 4CK, 4CSM, 5CK, 5CSM, 6CK, 6CSM, 425TF, 450TF, 525TF, 550TF, 625TF, 650TF machines.

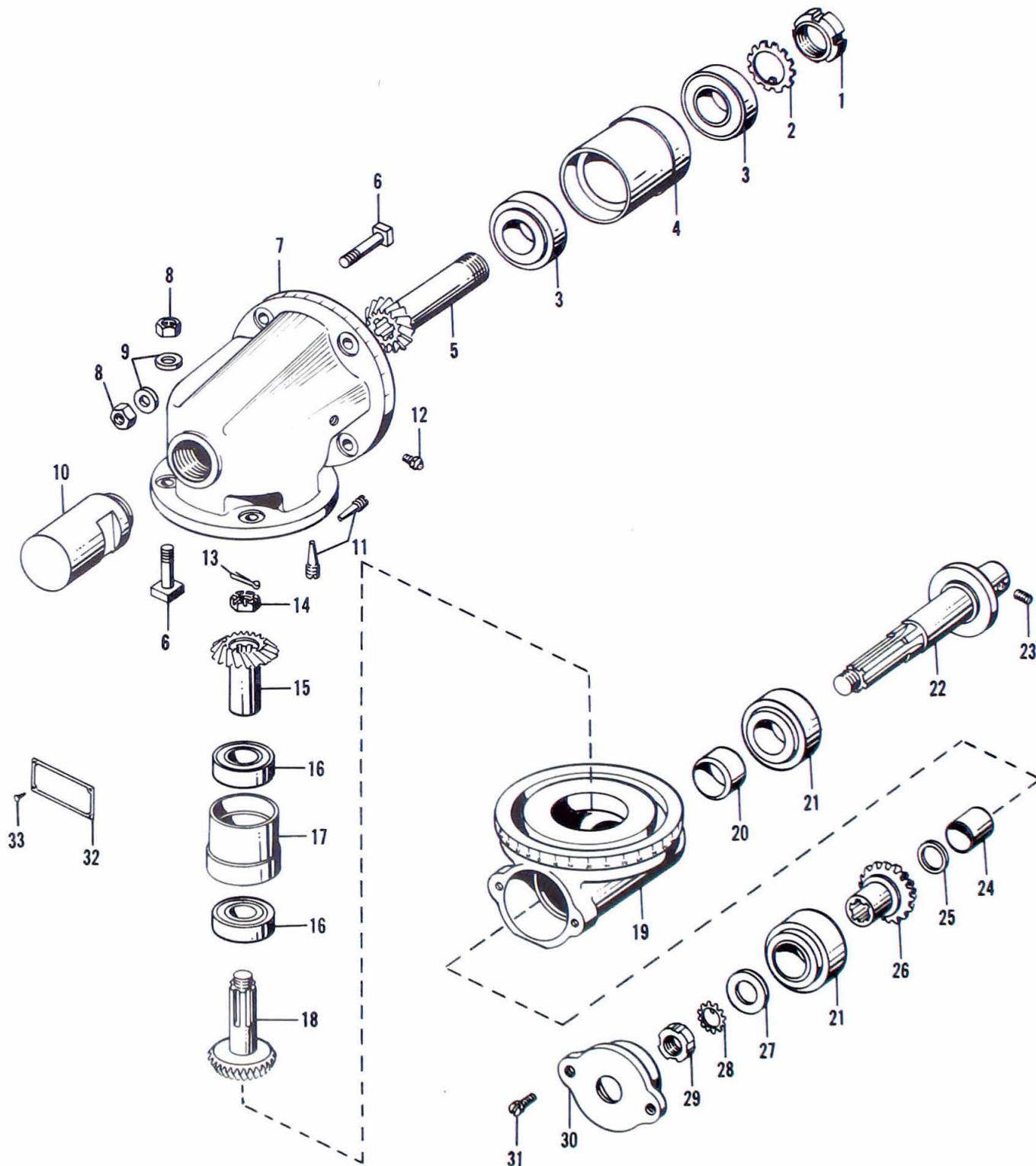


Fig. 16 — Light High Speed Universal Milling Attachment Without Movable Quill (Head Unit)
For All Model Machines

Replacement Parts Manual

STANDARD ATTACHMENTS — FOR MILLING AND BORING MACHINES

**Fig. 16 — Light High Speed Universal Milling Attachment Without Movable Quill (Head Unit)
For All Model Machines**

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	New Departure lock nut.....	AR-AW1	1
2	New Departure lock washer.....	AR-AW2	1
3	New Departure bearing, #87506Z..	AR-AW3	2
4	Sleeve gear bearing carrier.....	AR-AW4	1
5	Spiral bevel drive gear ^①	AR-AW5	1
6	T-bolt.....	AR-AW6	8
7	Swivel head.....	AR-AW7	1
8	Hex nut, 3/8—16.....	AR-AW8	8
9	Washer.....	AR-AW9	8
10	Coolant support extension.....	AR-AW10	1
11	Taper screw.....	AR-AW11	2
12	Alemite Zerk fitting, 1/8 in., #1610...	AR-AW12	1
13	Cotter pin, 3/32 x 1 in.....	AR-AW13	1
14	Bevel gear nut.....	AR-AW14	1
15	Vertical bevel gear (driven) ^①	AR-AW15	1
16	New Departure bearing, #87505Z..	AR-AW16	2
17	Spindle head pivot bushing.....	AR-AW17	1
18	Vertical bevel gear (driver) ^②	AR-AW18	1
19	Plain spindle head.....	AR-AW19	1
20	Spindle grease retainer.....	AR-AW20	1
21	New Departure bearing, #88506W.	AR-AW21	2
22	Spindle.....	AR-AW22	1
23	Set screw.....	AR-AW23	1
24	Spindle spline cover.....	AR-AW24	1
25	Fitting collar.....	AR-AW25	1
26	Spiral bevel spindle gear ^②	AR-AW26	1
27	Bearing washer.....	AR-AW27	1
28	New Departure lock washer.....	AR-AW28	1
29	New Departure lock nut.....	AR-AW29	1
30	Spindle nut cover.....	AR-AW30	1
31	Fillister head screw, 5/16—18 x 9/16 in..	AR-AW31	2
32	Lubrication plate.....	AR-AW32	1
33	Escutcheon pin, #15, 3/8 in.....	AR-AW33	4

① Sold as a matched set only.

② Sold as a matched set only.

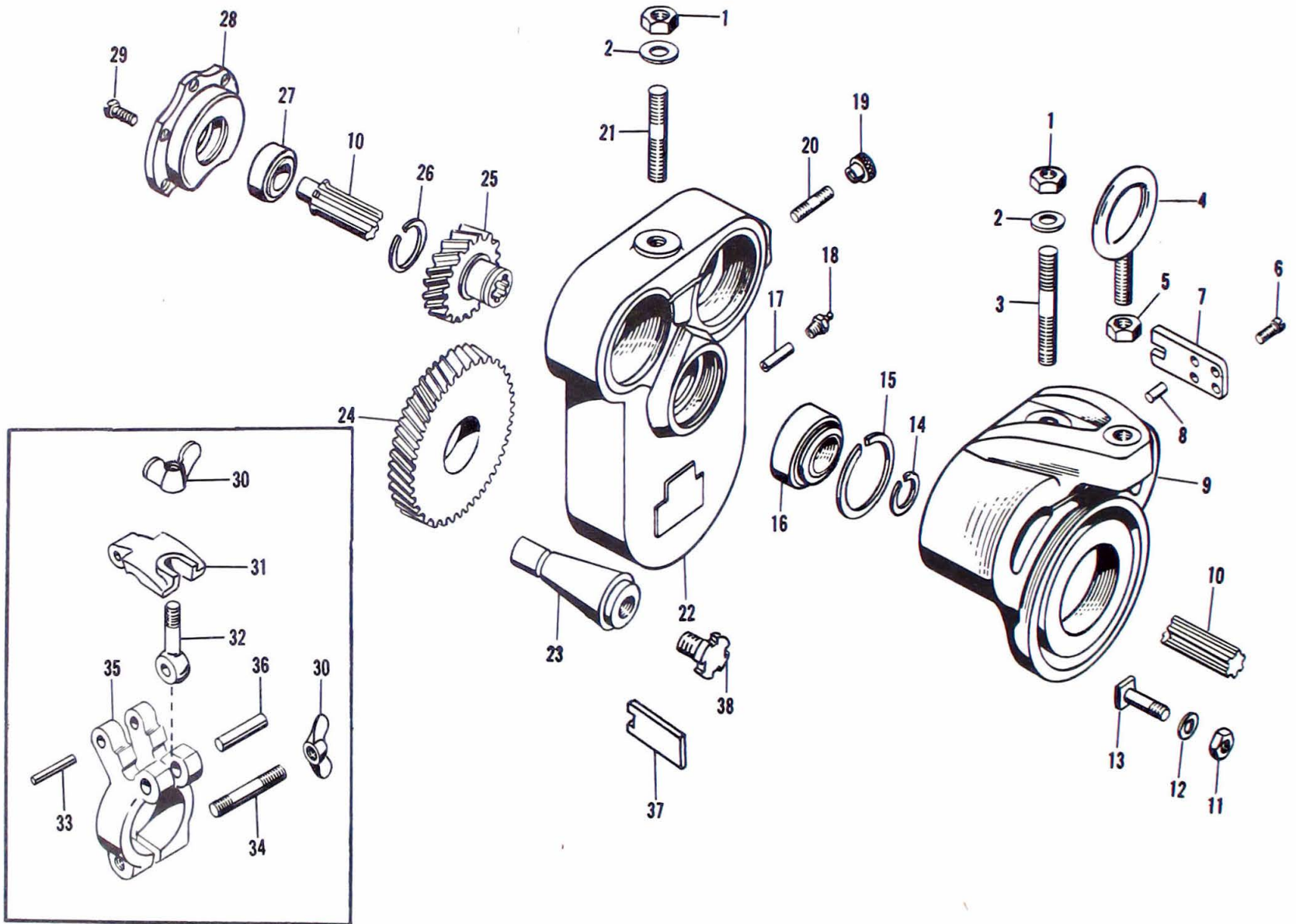


Fig. 17 — Light High Speed Universal Milling Attachment (Drive Bracket Unit)
For 1H, 1CH, 2HL, 2CHL, 18AC, and 24AC Machines

**Fig. 17 — Light High Speed Universal Milling Attachment (Drive Bracket Unit)
For 1H, 1CH, 2HL, 2CHL, 18AC, and 24AC Machines**

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Hex nut, 5/8—11	AR-AX1	2
2	Washer	AR-AX2	2
3	Stud, 5/8—11 x 4 in.	AR-AX3	1
4	Eye bolt, 5/8 in.	AR-AX4	1
5	Nut, 5/8—11 in.	AR-AX5	1
6	Fillister head screw, 1/4—20 x 1 1/16 in.	AR-AX6	2
7	Clamp block.	AR-AX7	1
8	Acme blue label dowel, 1/4 x 1/2 in.	AR-AX8	2
9	Swivel clamp bracket.	AR-AX9	1
10	Drive shaft.	AR-AX10	1
11	Nut, 3/8—16	AR-AX11	4
12	Washer.	AR-AX12	4
13	T-bolt.	AR-AX13	4
14	Snap ring.	AR-AX14	1
15	Snap ring.	AR-AX15	1
16	New departure bearing, #88506 Z.	AR-AX16	1
17	Brass tube, 5/16 x 1 in.	AR-AX17	1
18	Zerk fitting, 1/8 in., #1610.	AR-AX18	1
19	Thumb nut.	AR-AX19	1
20	Clamp stud, 3/8—16 x 1 13/16 in.	AR-AX20	1
21	Stud, 5/8—11 x 3 3/16 in.	AR-AX21	1
22	Drive gear bracket.	AR-AX22	1
23	Centering plug.	AR-AX23	1
24	Spiral gear (driver).	AR-AX24	1
25	Spiral gear (driven).	AR-AX25	1
26	Snap ring.	AR-AX26	1
27	New departure bearing, #87503 Z.	AR-AX27	1
28	Bearing carrier.	AR-AX28	1
29	Fillister head screw, 5/16—18 x 1 1/16 in.	AR-AX29	5
30	Wing nut.	AR-AX30	2
31	Coolant distribution clamp.	AR-AX31	1
32	Eye bolt.	AR-AX32	1
33	Eye bolt pin.	AR-AX33	1
34	Clamp stud, 7/16—14 x 2 1/16 in.	AR-AX34	1
35	Coolant distribution support.	AR-AX35	1
36	Clamp pin.	AR-AX36	1
37	Arbor wrench.	AR-AX37	1
38	Arbor screw.	AR-AX38	1

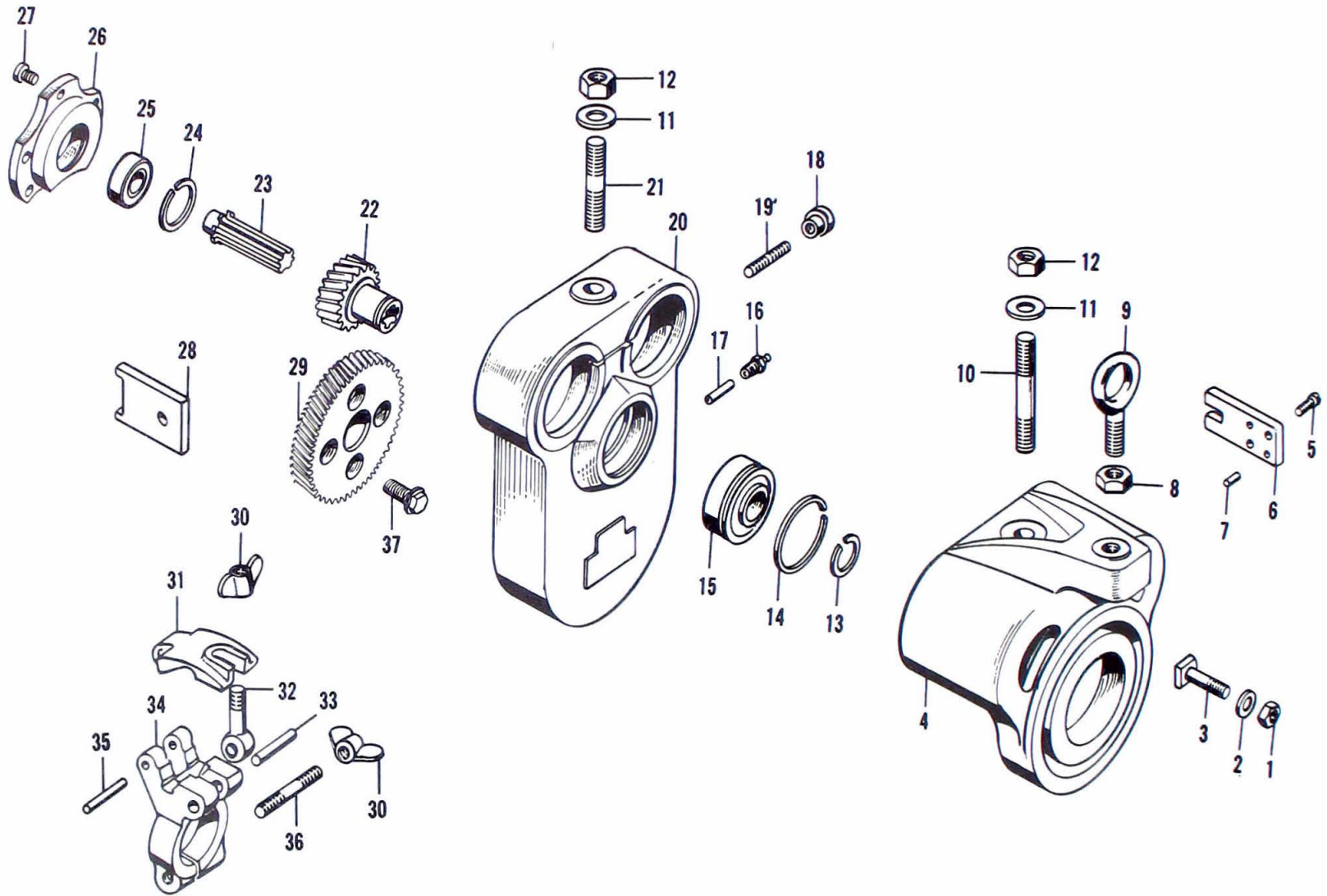


Fig. 18 — Light High Speed Universal Milling Attachment (Drive Bracket Unit)
For 2E and 2CE Machines

**Fig. 18 — Light High Speed Universal Milling Attachment (Drive Bracket Unit)
For 2E and 2CE Machines**

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Nut, $\frac{3}{8}$ —16.....	AR-AY1	4
2	Washer.....	AR-AY2	4
3	T-bolt.....	AR-AY3	4
4	Swivel clamp bracket.....	AR-AY4	1
5	Fillister head screw, $\frac{1}{4}$ —20 x $1\frac{1}{16}$ in..	AR-AY5	2
6	Clamp block.....	AR-AY6	1
7	Acme blue label dowel, $\frac{1}{4}$ x $\frac{1}{2}$ in....	AR-AY7	2
8	Nut, $\frac{5}{8}$ —11.....	AR-AY8	1
9	Eye bolt, $\frac{5}{8}$ in.....	AR-AY9	1
10	Stud, $\frac{5}{8}$ —11 x 4 in.....	AR-AY10	1
11	Washer.....	AR-AY11	2
12	Hex nut, $\frac{5}{8}$ —11.....	AR-AY12	2
13	Snap ring.....	AR-AY13	1
14	Snap ring.....	AR-AY14	1
15	New Departure bearing, #88506Z...	AR-AY15	1
16	Alemite Zerk fitting, $\frac{1}{8}$ in., #1610....	AR-AY16	1
17	Brass tube, $\frac{5}{16}$ x 1 in.....	AR-AY17	1
18	Thumb nut.....	AR-AY18	1
19	Clamp stud, $\frac{3}{8}$ —16 x $1\frac{3}{16}$ in.....	AR-AY19	1
20	Drive gear bracket.....	AR-AY20	1
21	Stud, $\frac{5}{8}$ —11 x $3\frac{3}{16}$ in.....	AR-AY21	1
22	Spiral gear (driven).....	AR-AY22	1
23	Drive shaft.....	AR-AY23	1
24	Snap ring.....	AR-AY24	1
25	New Departure bearing, #87503Z...	AR-AY25	1
26	Bearing carrier.....	AR-AY26	1
27	Fillister head screw, $\frac{5}{16}$ —18 x $1\frac{1}{16}$ in..	AR-AY27	5
28	Arbor wrench.....	AR-AY28	1
29	Spiral gear (driver).....	AR-AY29	1
30	Nut.....	AR-AY30	2
31	Coolant distributor clamp.....	AR-AY31	1
32	Eye bolt.....	AR-AY32	1
33	Eye bolt pin.....	AR-AY33	1
34	Coolant distributor support.....	AR-AY34	1
35	Hinge pin.....	AR-AY35	1
36	Stud, $\frac{7}{16}$ —14 x $2\frac{1}{16}$ in.....	AR-AY36	1
37	Drive gear screw.....	AR-AY37	1

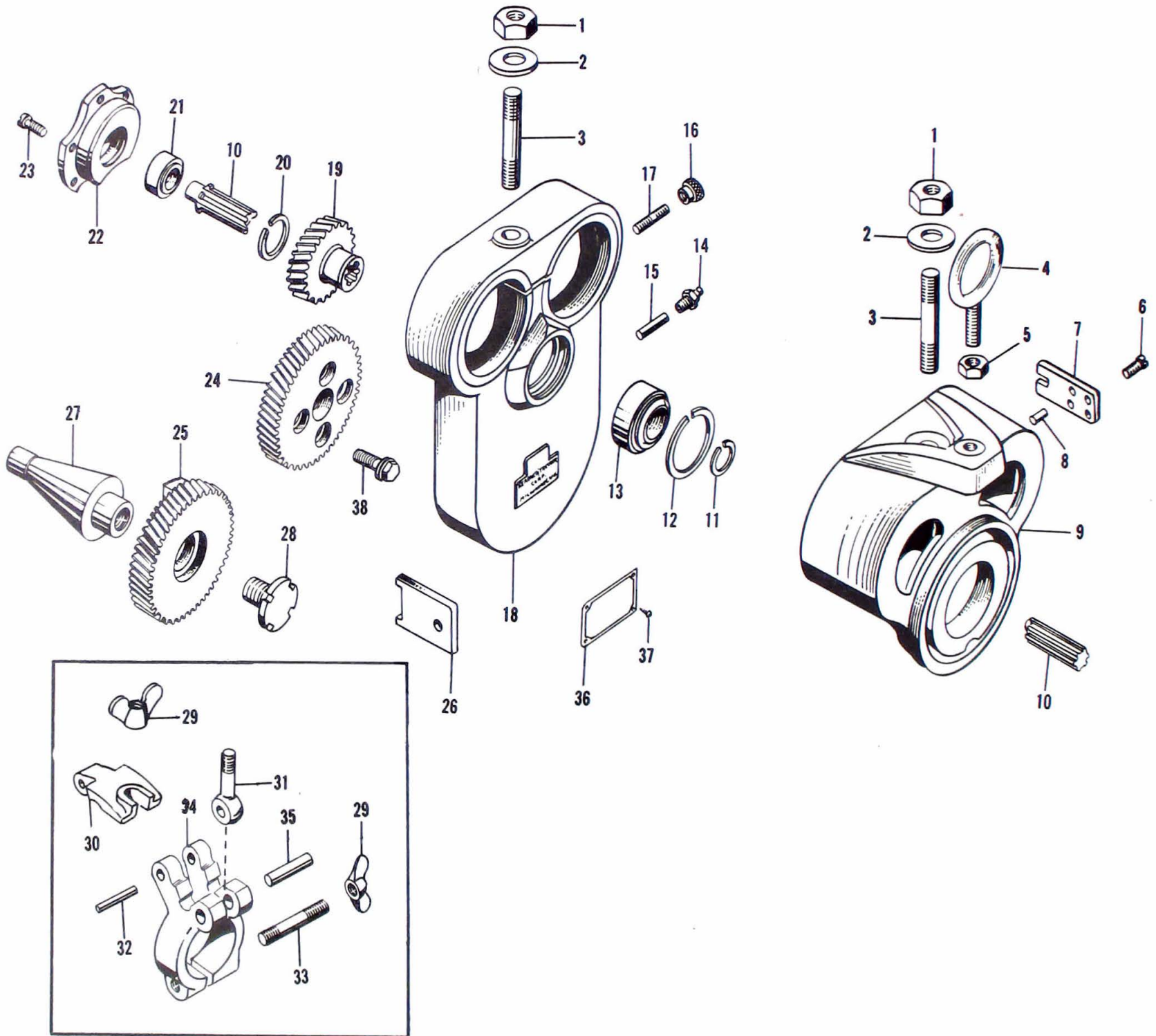


Fig. 19 — Light High Speed Universal Milling Attachment (Drive Bracket Unit)
For 2H and 2CH Machines

**Fig. 19 — Light High Speed Universal Milling Attachment (Drive Bracket Unit)
For 2H and 2CH Machines**

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Hex nut, 3/4—10	AR-AZ1	2
2	Washer	AR-AZ2	2
3	Stud, 3/4—10 x 4 1/8 in.	AR-AZ3	2
4	Eye bolt, 5/8 in.	AR-AZ4	1
5	Nut, 5/8—11	AR-AZ5	1
6	Fillister head screw, 1/4—20 x 1 1/16 in.	AR-AZ6	2
7	Drive block	AR-AZ7	1
8	Acme blue label dowel, 1/4 x 5/8 in.	AR-AZ8	2
9	Swivel clamp bracket	AR-AZ9	1
10	Drive shaft	AR-AZ10	1
11	Snap ring	AR-AZ11	1
12	Snap ring	AR-AZ12	1
13	New departure bearing, #88506 Z.	AR-AZ13	1
14	Zerk fitting, #1610	AR-AZ14	1
15	Brass tube, 5/16 x 1 1/8 in.	AR-AZ15	1
16	Thumb nut	AR-AZ16	1
17	Clamp stud, 3/8—16 x 1 13/16 in.	AR-AZ17	1
18	Drive gear bracket	AR-AZ18	1
19	Spiral gear (driven)	AR-AZ19	1
20	Snap ring	AR-AZ20	1
21	New departure bearing, #87503 Z.	AR-AZ21	1
22	Bearing carrier	AR-AZ22	1
23	Fillister head screw, 5/16—18 x 1 1/16 in.	AR-AZ23	5
24	Spiral gear (driver)—used with #40 taper spindle machines only	AR-AZ24	1
25	Spiral gear (driver) ①	AR-AZ25	1
26	Arbor wrench ①	AR-AZ26	1
27	Centering plug for drive gear ①	AR-AZ27	1
28	Arbor screw ①	AR-AZ28	1
29	Wing nut, 7/16—14	AR-AZ29	2
30	Coolant distribution clamp	AR-AZ30	1
31	Eye bolt	AR-AZ31	1
32	Eye bolt pin	AR-AZ32	1
33	Clamp stud, 7/16—14 x 2 1/16 in.	AR-AZ33	1
34	Coolant distribution support	AR-AZ34	1
35	Clamp pin	AR-AZ35	1
36	Oil lubrication plate	AR-AZ36	1
37	Escutcheon pin, #15	AR-AZ37	4
38	Drive gear screw	AR-AZ38	1

① For #50 taper machine only.

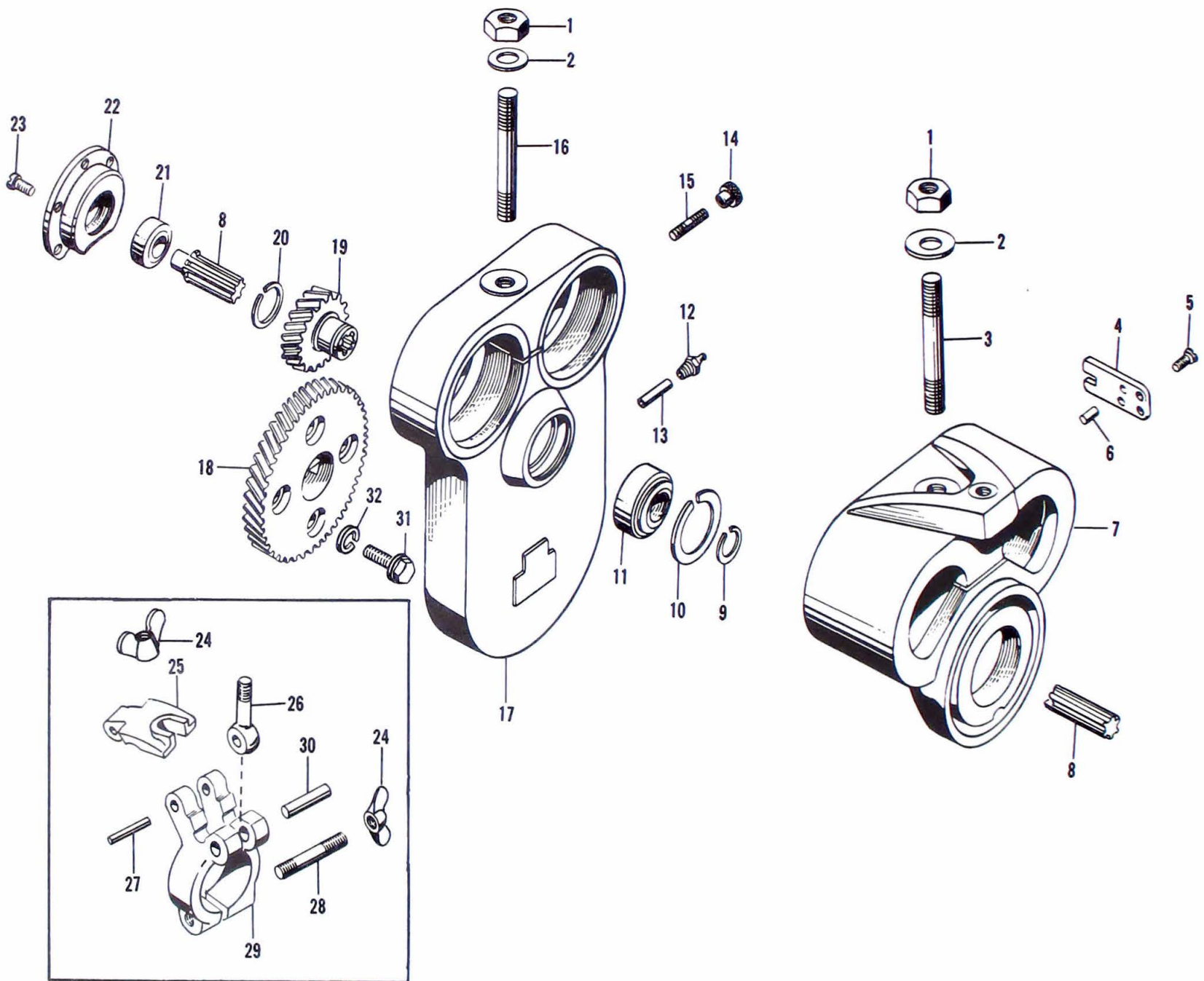


Fig. 20 — Light High Speed Universal Milling Attachment (Drive Bracket Unit)
 For 2KM, 2K, 2CK, 2CSM(20), 3CE, 3H, 3CH, 3CSM(20), 210TF, 220TF, 310TF, and 320TF Machines

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Fig. 20 — Light High Speed Universal Milling Attachment (Drive Bracket Unit)
 For 2KM, 2K, 2CK, 2CSM(20), 3CE, 3H, 3CH, 3CSM(20), 210TF, 220TF, 310TF, and 320TF Machines

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Hex nut, 3/4—10 in.....	AR-BA1	1
2	Washer.....	AR-BA2	2
3	Stud, 3/4—10 x 5 3/8 in.....	AR-BA3	1
4	Clamp block.....	AR-BA4	1
5	Fillister head screw, 1/4—20 x 1 1/16 in..	AR-BA5	2
6	Acme blue label dowel, 1/4 x 5/8 in....	AR-BA6	2
7	Swivel clamp bracket.....	AR-BA7	1
8	Drive shaft.....	AR-BA8	1
9	Snap ring.....	AR-BA9	1
10	Snap ring.....	AR-BA10	1
11	New departure bearing, #88506Z...	AR-BA11	1
12	Zerk fitting, 1/8 in., #1610.....	AR-BA12	1
13	Brass tube, 5/16 x 1 1/2 in.....	AR-BA13	1
14	Thumb nut.....	AR-BA14	1
15	Stud, 3/8—16 x 1 13/16 in.....	AR-BA15	1
16	Stud, 3/4—10 x 5 1/16 in.....	AR-BA16	1
17	Drive gear bracket.....	AR-BA17	1
18	Spiral gear (driver).....	AR-BA18	1
19	Spiral gear (driven).....	AR-BA19	1
20	Snap ring.....	AR-BA20	1
21	New departure bearing, #87503Z...	AR-BA21	1
22	Bearing carrier.....	AR-BA22	1
23	Fillister head screw, 5/16—18 x 1 1/16 in..	AR-BA23	5
24	Wing nut, 7/16—14 in.....	AR-BA24	2
25	Coolant distribution clamp.....	AR-BA25	1
26	Eye bolt.....	AR-BA26	1
27	Eye bolt pin.....	AR-BA27	1
28	Clamp stud, 7/16—14 x 2 1/16 in.....	AR-BA28	1
29	Coolant districution support.....	AR-BA29	1
30	Clamp pin.....	AR-BA30	1
31	Drive gear screw.....	AR-BA31	1
32	Washer.....	AR-BA32	1

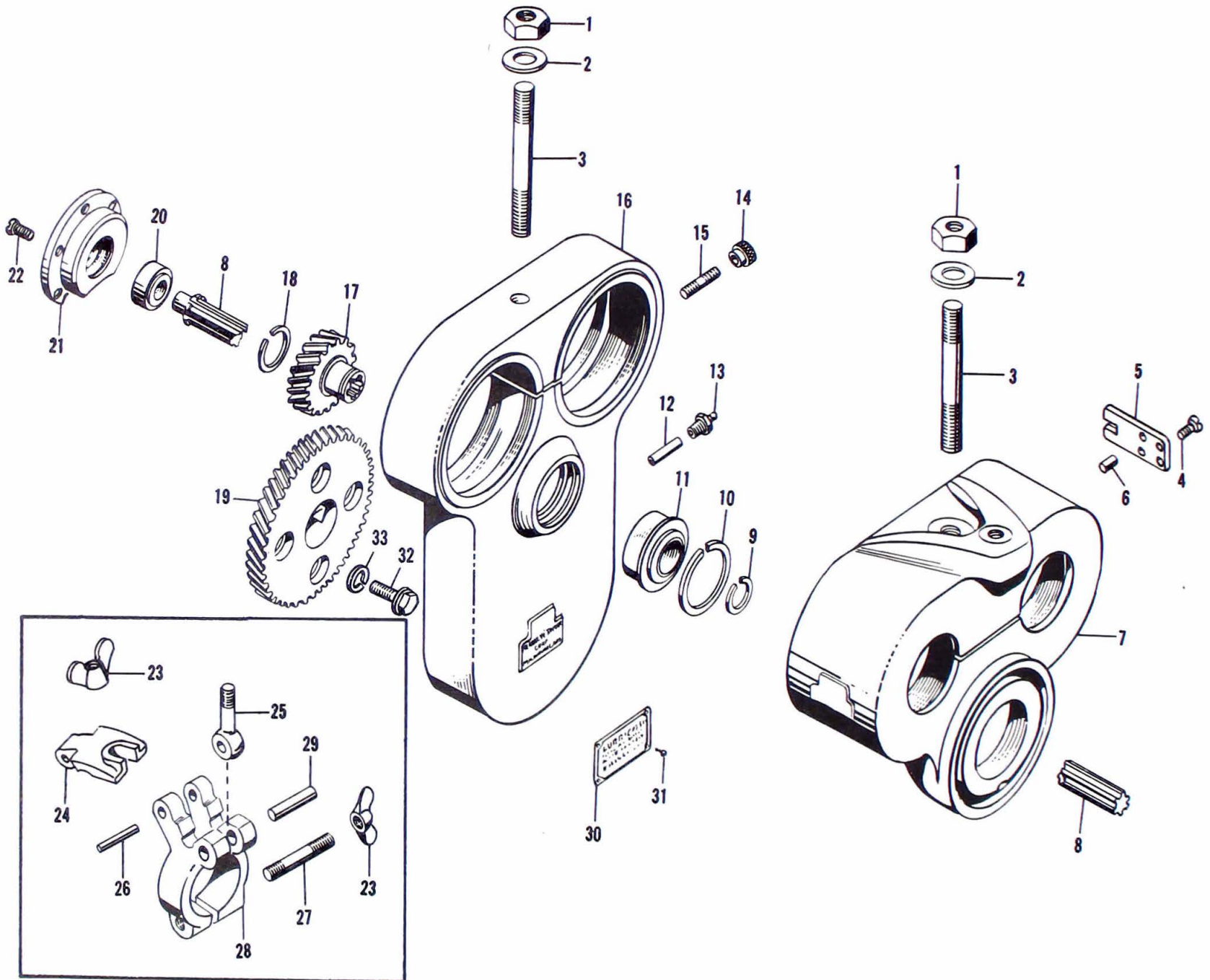


Fig. 21 — Light High Speed Universal Milling Attachment (Drive Bracket Unit)
For 3KM, 3K, 3CK, 3CSM(30), 4H, 4CH, 4CSM(30), 315TF, 330TF, 415TF, and 430TF Machines

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Fig. 21 — Light High Speed Universal Milling Attachment (Drive Bracket Unit)
 For 3KM, 3K, 3CK, 3CSM(30), 4H, 4CH, 4CSM(30), 315TF, 330TF, 415TF, and 430TF Machines

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Hex nut, $\frac{3}{4}$ —10 in.....	AR-BB1	2
2	Washer.....	AR-BB2	2
3	Stud, $\frac{3}{4}$ —10 x $6\frac{3}{8}$ in.....	AR-BB3	2
4	Fillister head screw, $\frac{1}{4}$ —20 x $1\frac{1}{16}$ in..	AR-BB4	2
5	Clamp block.....	AR-BB5	1
6	Acme blue label dowel, $\frac{1}{4}$ x $\frac{5}{8}$ in....	AR-BB6	2
7	Swivel clamp bracket.....	AR-BB7	1
8	Drive shaft.....	AR-BB8	1
9	Snap ring.....	AR-BB9	1
10	Snap ring.....	AR-BB10	1
11	New departure bearing, #88506Z....	AR-BB11	1
12	Brass tube, $\frac{5}{16}$ x $1\frac{1}{2}$ in.....	AR-BB12	1
13	Zerk fitting, $\frac{1}{8}$ in.....	AR-BB13	1
14	Thumb nut.....	AR-BB14	1
15	Stud, $\frac{3}{8}$ —16 x $1\frac{13}{16}$ in.....	AR-BB15	1
16	Drive gear bracket.....	AR-BB16	1
17	Spiral gear (driven).....	AR-BB17	1
18	Snap ring.....	AR-BB18	1
19	Spiral gear (driver).....	AR-BB19	1
20	New departure bearing, #87503Z....	AR-BB20	1
21	Bearing carrier.....	AR-BB21	1
22	Fillister head screw, $\frac{5}{16}$ —18 x $1\frac{1}{16}$ in..	AR-BB22	5
23	Wing nut.....	AR-BB23	2
24	Coolant distribution clamp.....	AR-BB24	1
25	Eye bolt.....	AR-BB25	1
26	Eye bolt pin.....	AR-BB26	1
27	Clamp stud, $\frac{7}{16}$ —14 x $2\frac{1}{16}$ in.....	AR-BB27	1
28	Coolant distribution support.....	AR-BB28	1
29	Clamp pin.....	AR-BB29	1
30	Oil lubrication plate.....	AR-BB30	1
31	Escutcheon pin, #15.....	AR-BB31	4
32	Drive gear screw.....	AR-BB32	1
33	Washer.....	AR-BB33	1

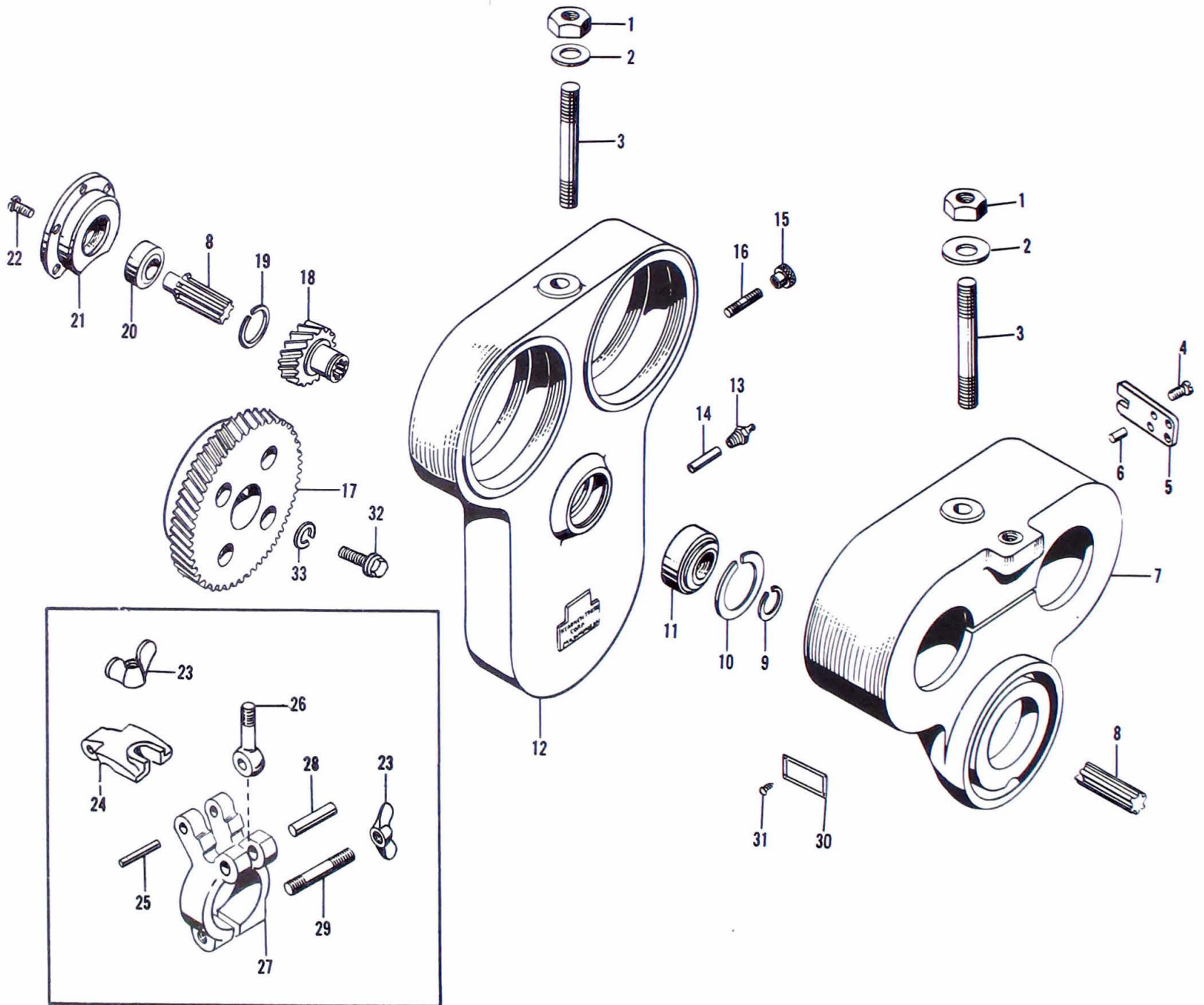


Fig. 22 — Light High Speed Universal Milling Attachment (Drive Bracket Unit)
For 4K, 5H, and 5HM Machines Previous to 1940

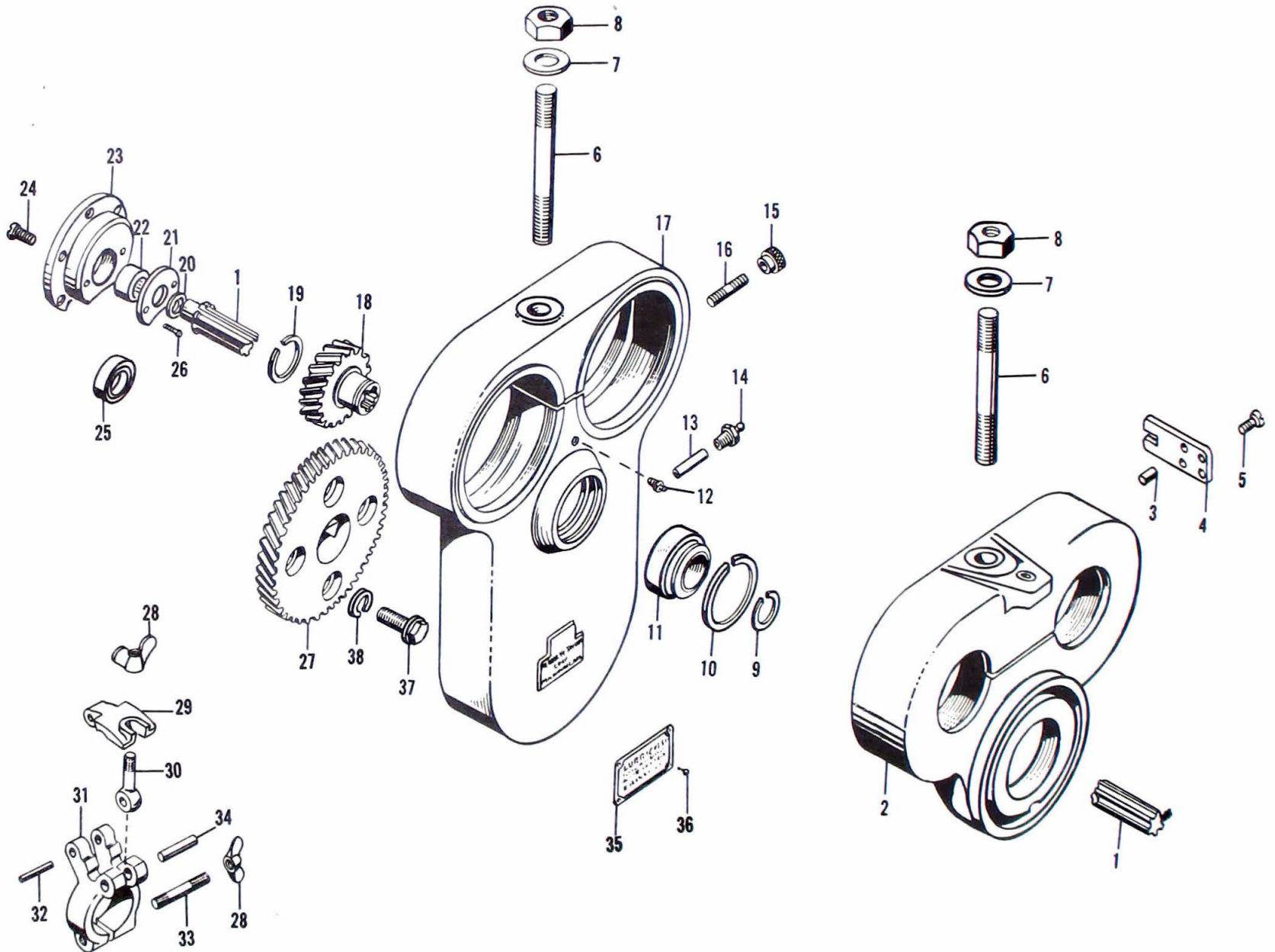
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STANDARD ATTACHMENTS — FOR MILLING AND BORING MACHINES

**Fig. 22 — Light High Speed Universal Milling Attachment (Drive Bracket Unit)
For 4K, 5H, and 5HM Machines Previous to 1940**

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Hex nut, 3/4—10	AR-BC1	2
2	Washer	AR-BC2	2
3	Stud, 3/4—10 x 5 1/16 in.	AR-BC3	2
4	Fillister head screw, 1/4—20 x 1 1/16 in.	AR-BC4	2
5	Clamp block	AR-BC5	1
6	Acme blue label dowel, 1/4 x 5/8 in.	AR-BC6	2
7	Swivel clamp bracket	AR-BC7	1
8	Drive shaft	AR-BC8	1
9	Snap ring	AR-BC9	1
10	Snap ring	AR-BC10	1
11	New departure bearing, #87506Z	AR-BC11	1
12	Drive gear Bracket	AR-BC12	1
13	Zerk fitting, 1/8 in.	AR-BC13	1
14	Brass tube, 5/16 x 1 1/2 in.	AR-BC14	1
15	Thumb nut	AR-BC15	1
16	Stud, 3/8—16 x 1 13/16 in.	AR-BC16	1
17	Spiral gear (driver)	AR-BC17	1
18	Spiral gear (driven)	AR-BC18	1
19	Snap ring	AR-BC19	1
20	New departure bearing, #87503Z	AR-BC20	1
21	Bearing carrier	AR-BC21	1
22	Fillister head screw, 5/16—18 x 1 1/16 in.	AR-BC22	5
23	Wing nut	AR-BC23	2
24	Coolant distribution clamp	AR-BC24	1
25	Clamp pin	AR-BC25	2
26	Eye bolt	AR-BC26	1
27	Coolant distribution support	AR-BC27	1
28	Eye bolt pin	AR-BC28	1
29	Stud, 7/16—14 x 2 1/16 in.	AR-BC29	1
30	Oil lubrication plate	AR-BC30	1
31	Escutcheon pin, #15	AR-BC31	4
32	Drive gear screw	AR-BC32	1
33	Washer	AR-BC32	1



**Fig. 23 — Light High Speed Universal Milling Attachment (Drive Bracket Unit)
For 4K, 5H, and 5HM Machines After 1940, and For 4CK, 4CSM(50), 5CK, 5CSM, 6CK, 6CSM
425TF, 450TF, 525TF, 550TF, 625TF, and 650TF Machines**

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STANDARD ATTACHMENTS — FOR MILLING AND BORING MACHINES

Fig. 23 — Light High Speed Universal Milling Attachment (Drive Bracket Unit)
For 4K, 5H, and 5HM Machines After 1940, and For 4CK, 4CSM(50), 5CK, 5CSM, 6CK, 6CSM
425TF, 450TF, 525TF, 550TF, 625TF, and 650TF Machines

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Drive shaft.....	AR-BD1A	1
	Drive shaft ①.....	AR-BD1B	1
2	Swivel clamp bracket.....	AR-BD2	1
3	Acme blue label dowel, 1/4 x 5/8 in....	AR-BD3	2
4	Clamp block.....	AR-BD4	1
5	Fillister head screw, 1/4—20 x 1 1/16 in..	AR-BD5	2
6	Stud, 3/4—10 x 6 1/16 in.....	AR-BD6	2
7	Washer.....	AR-BD7	2
8	Hex nut, 3/4—10.....	AR-BD8	2
9	Snap ring.....	AR-BD9	1
10	Snap ring.....	AR-BD10	1
11	New Departure bearing, #88506X1..	AR-BD11	1
12	Alemite Zerk fitting, 1/8 in., #1613....	AR-BD12	1
13	Brass tube, 5/16 x 2 3/8 in.....	AR-BD13A	1
	Brass tube, 5/16 x 1 7/8 in ①.....	AR-BD13B	1
14	Alemite Zerk fitting, 1/8 in., #1610....	AR-BD14	1
15	Thumb nut.....	AR-BD15	1
16	Stud, 3/8—16 x 3 3/8 in.....	AR-BD16	1
17	Drive gear bracket.....	AR-BD17A	1
	Drive gear bracket ①.....	AR-BD17B	1
18	Spiral gear (driven).....	AR-BD18A	1
	Spiral gear (driven) ①.....	AR-BD18B	1
19	Snap ring ①.....	AR-BD19	1
20	Thrust collar.....	AR-BD20	1
21	Thrust plate.....	AR-BD21	1
22	Orange bearing, #7153-CT.....	AR-BD22	1
23	Bearing carrier.....	AR-BD23A	1
	Bearing carrier ①.....	AR-BD23B	1
24	Fillister head screw, 5/16—18 x 1 1/16 in..	AR-BD24	4
25	New Departure bearing, #87503X1 ①	AR-BD25	1
26	Flat head machine screw, 10—32 x 3/8 in.....	AR-BD26	2
27	Spiral gear (driver).....	AR-BD27A	1
	Spiral gear (driver) ①.....	AR-BD27B	1
28	Nut.....	AR-BD28	2
29	Coolant distributor clamp.....	AR-BD29	1
30	Eye bolt.....	AR-BD30	1
31	Coolant distributor support.....	AR-BD31	1
32	Clamp pin.....	AR-BD32	2
33	Stud, 7/16—14 x 2 1/16 in.....	AR-BD33	1
34	Eye bolt pin.....	AR-BD34	1
35	Oil lubrication plate.....	AR-BD35	1
36	Escutcheon pin, #15.....	AR-BD36	4
37	Drive gear screw.....	AR-BD37A	1
	Drive gear screw ①.....	AR-BD37B	1
38	Washer.....	AR-BD38	1

① For use on #50 taper machines only.

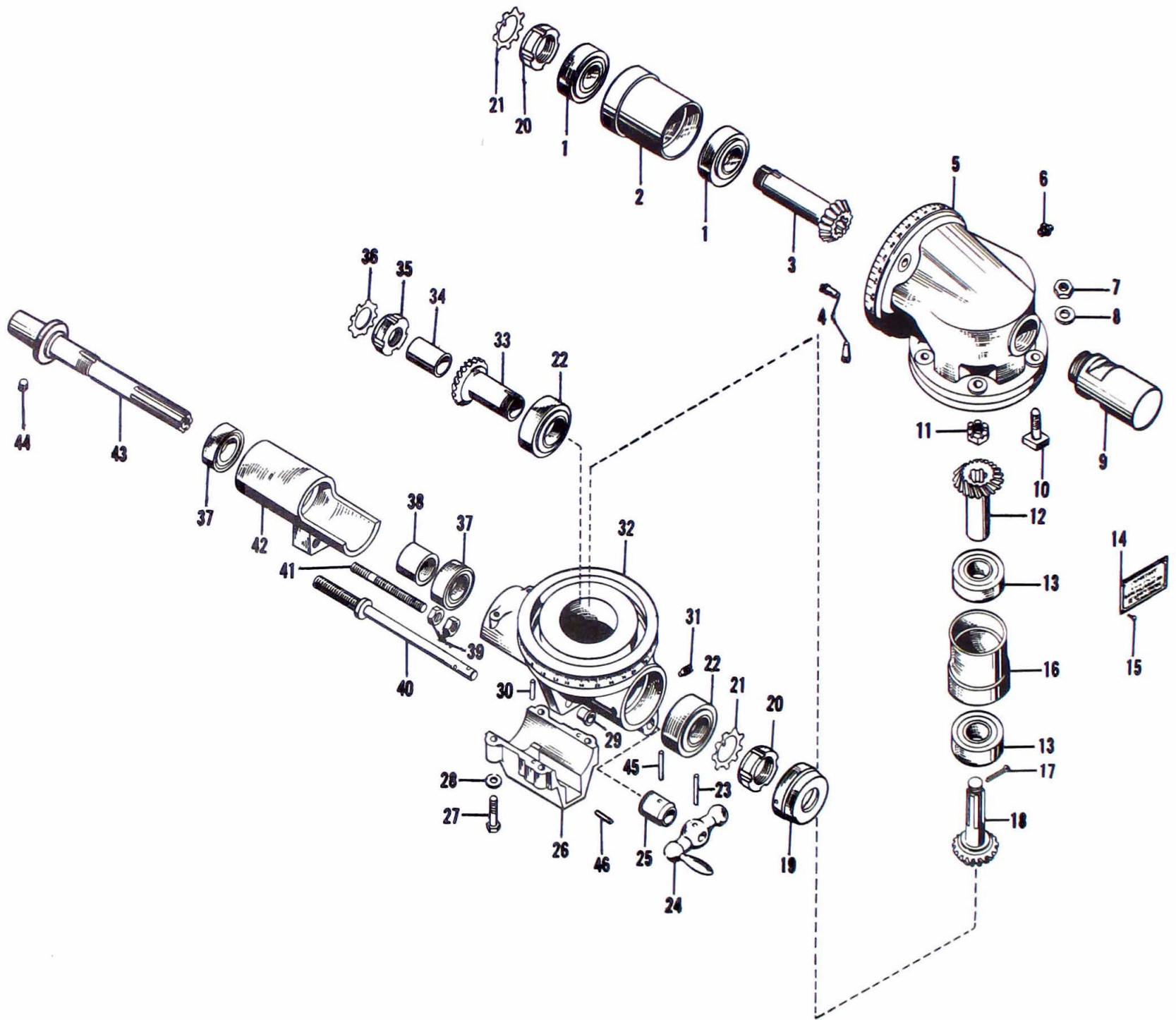


Fig. 24 — Light High Speed Universal Milling Attachment With Adjustable Quill (Head Unit)
For All Model Machines

**Fig. 24 — Light High Speed Universal Milling Attachment With Adjustable Quill (Head Unit)
For All Model Machines**

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	New departure bearing, 87506Z.....	AR-BE1	2
2	Sleeve gear bearing carrier.....	AR-BE2	1
3	Spiral bevel drive gear ^①	AR-BE3	1
4	Taper screw.....	AR-BE4	2
5	Swivel head.....	AR-BE5	1
6	Alemite Zerk fitting, #1610.....	AR-BE6	2
7	Hex nut, 3/8—16.....	AR-BE7	8
8	Washer.....	AR-BE8	8
9	Coolant support extension.....	AR-BE9	1
10	T-bolt.....	AR-BE10	8
11	Castellated nut, 5/8—18.....	AR-BE11	1
12	Vertical bevel gear (driven) ^①	AR-BE12	1
13	New departure bearing, #87505Z....	AR-BE13	2
14	Lubrication plate.....	AR-BE14	1
15	Escutcheon pin, #15, 3/8.....	AR-BE15	4
16	Spindle head pivot bushing.....	AR-BE16	1
17	Cotter pin, 3/32 x 1 in.....	AR-BE17	1
18	Vertical bevel gear (driver) ^②	AR-BE18	1
19	Spindle nut cover.....	AR-BE19	1
20	New departure lock nut.....	AR-BE20	2
21	New departure lock washer.....	AR-BE21	2
22	New departure bearing, #87506W..	AR-BE22	2
23	Taper pin, 1 1/16, #0.....	AR-BE23	1
24	Cincinnati Balcrank.....	AR-BE24	1
25	Graduated collar.....	AR-BE25	1
26	Adjusting spindle head cap.....	AR-BE26	1
27	Screw, 5/16—18 x 1 1/32.....	AR-BE27	4
28	Washer.....	AR-BE28	4
29	Adjusting stop screw bushing.....	AR-BE29	1
30	Acme blue label dowel, 1/4 x 1 3/8 in...	AR-BE30	2
31	Dog point set screw, 1/4—20.....	AR-BE31	2
32	Adjusting spindle head.....	AR-BE32	1
33	Spiral bevel spindle gear ^②	AR-BE33	1
34	Spindle spline cover.....	AR-BE34	1
35	New departure lock nut.....	AR-BE35	1
36	New departure lock washer.....	AR-BE36	1
37	New departure bearing, #87026-DB-WS-381.....	AR-BE37	2
38	Spindle bearing spacer.....	AR-BE38	1
39	Hex nut, 3/8—16.....	AR-BE39	2
40	Spindle feed screw.....	AR-BE40	1
41	Adjusting stop screw.....	AR-BE41	1
42	Spindle sleeve.....	AR-BE42	1
43	Spindle.....	AR-BE43	1
44	Set screw, 5/16—24.....	AR-BE44	1
45	Taper pin, 1 in., #0.....	AR-BE45	1
46	Pin.....	AR-BE46	2

① Sold as matched set only.

② Sold as matched set only.

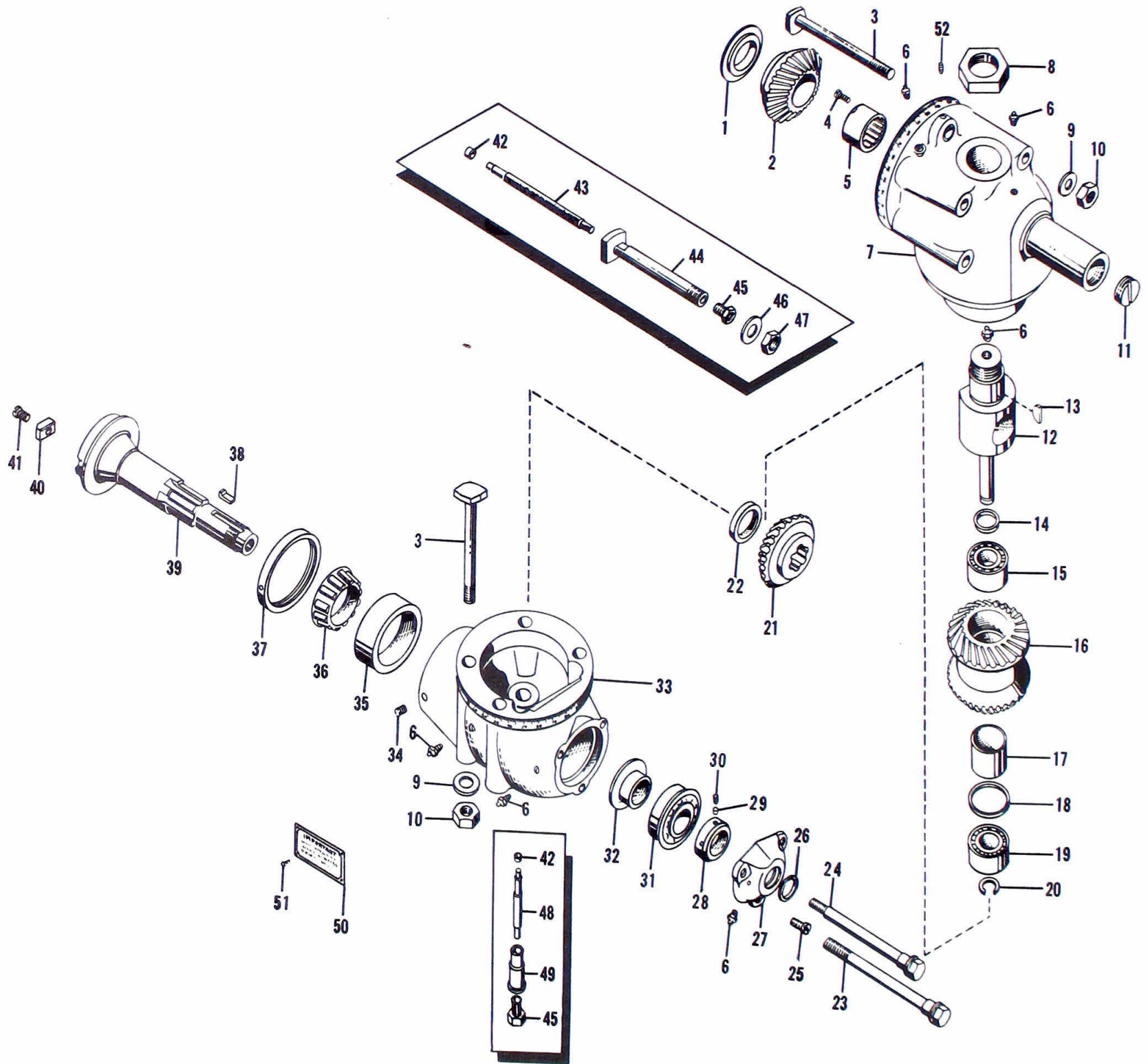


Fig. 25 — Standard High Speed Adjustable Universal Milling Attachment Without Movable Quill (Head Unit) For All Model Machines

**Fig. 25 — Standard High Speed Adjustable Universal Milling Attachment
Without Movable Quill (Head Unit)
For All Model Machines**

Order by CODE No. and ATTACHMENT SERIAL No.

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Support bracket oil slinger.....	AR-BF1	1
2	Spindle driven gear ^①	AR-BF2	1
3	T-bolt.....	AR-BF3	8
4	Screw, 1/4—20 x 3/8.....	AR-BF4	2
5	Orange bearing, #7284.....	AR-BF5	1
6	Alemite Zerk fitting, #1610.....	AR-BF6	6
7	Universal swivel.....	AR-BF7	1
8	Nut, 1 1/2—12.....	AR-BF8	1
9	Finished washer.....	AR-BF9	8
10	Standard nut, 5/8—11.....	AR-BF10	8
11	Plug.....	AR-BF11	1
12	Drive gear support stud.....	AR-BF12	1
13	Hi-pro key, #810.....	AR-BF13	1
14	Fitting washer.....	AR-BF14	1
15	New departure bearing, #ND5505.....	AR-BF15	1
16	Bevel drive gear ^①	AR-BF16	1
17	Double gear oil retainer tube.....	AR-BF17	1
18	Fitting washer.....	AR-BF18	1
19	New departure bearing, #ND5604.....	AR-BF19	1
20	Snap ring.....	AR-BF20	1
21	Universal spindle bevel gear ^①	AR-BF21	1
22	Spindle gear fitting collar.....	AR-BF22	1
23	Draw-in bolt, 5/8—11.....	AR-BF23	1
24	Draw-in bolt, 1/2—13.....	AR-BF24	1
25	Screw, 5/16—18.....	AR-BF25	3
26	Felt washer.....	AR-BF26	1
27	Spindle head cap.....	AR-BF27	1
28	Nut.....	AR-BF28	1

Item No.	Part Name and Description	Code No.	Qty.
29	Clamp screw shoe.....	AR-BF29	2
30	Screw.....	AR-BF30	2
31	Timken bearing, 2523-B2580W.....	AR-BF31	1
32	Spindle bearing spacer.....	AR-BF32	1
33	Spindle head.....	AR-BF33	1
34	Screw.....	AR-BF34	2
35	Timken bearing cup, #3820.....	AR-BF35	1
36	Set of Timken #7 Rolls and One enclosed cage "O".....	AR-BF36	1
37	Spindle grease retainer.....	AR-BF37	1
38	Key.....	AR-BF38	1
39	Spindle.....	AR-BF39	1
40	Spindle drive key.....	AR-BF40	2
41	Screw, 1/4—20 x 1/2.....	AR-BF41	2
42	Locating plunger button ^②	AR-BF42	2
43	Spindle head locating plunger ^②	AR-BF43	1
44	Spindle head clamp bolt ^②	AR-BF44	1
45	Locating plunger adjusting nut ^②	AR-BF45	2
46	Washer ^②	AR-BF46	1
47	Hex nut, 3/4—10 ^②	AR-BF47	1
48	Universal swivel locating plunger ^②	AR-BF48	1
49	Universal swivel locating guide ^②	AR-BF49	1
50	Lubricating instruction plate.....	AR-BF50	1
51	Escutcheon pin, #15.....	AR-BF51	4
52	Dog point screw.....	AR-BF52	1

① Sold as matched set only.

② Optional equipment—taper locating pins for zero positions.

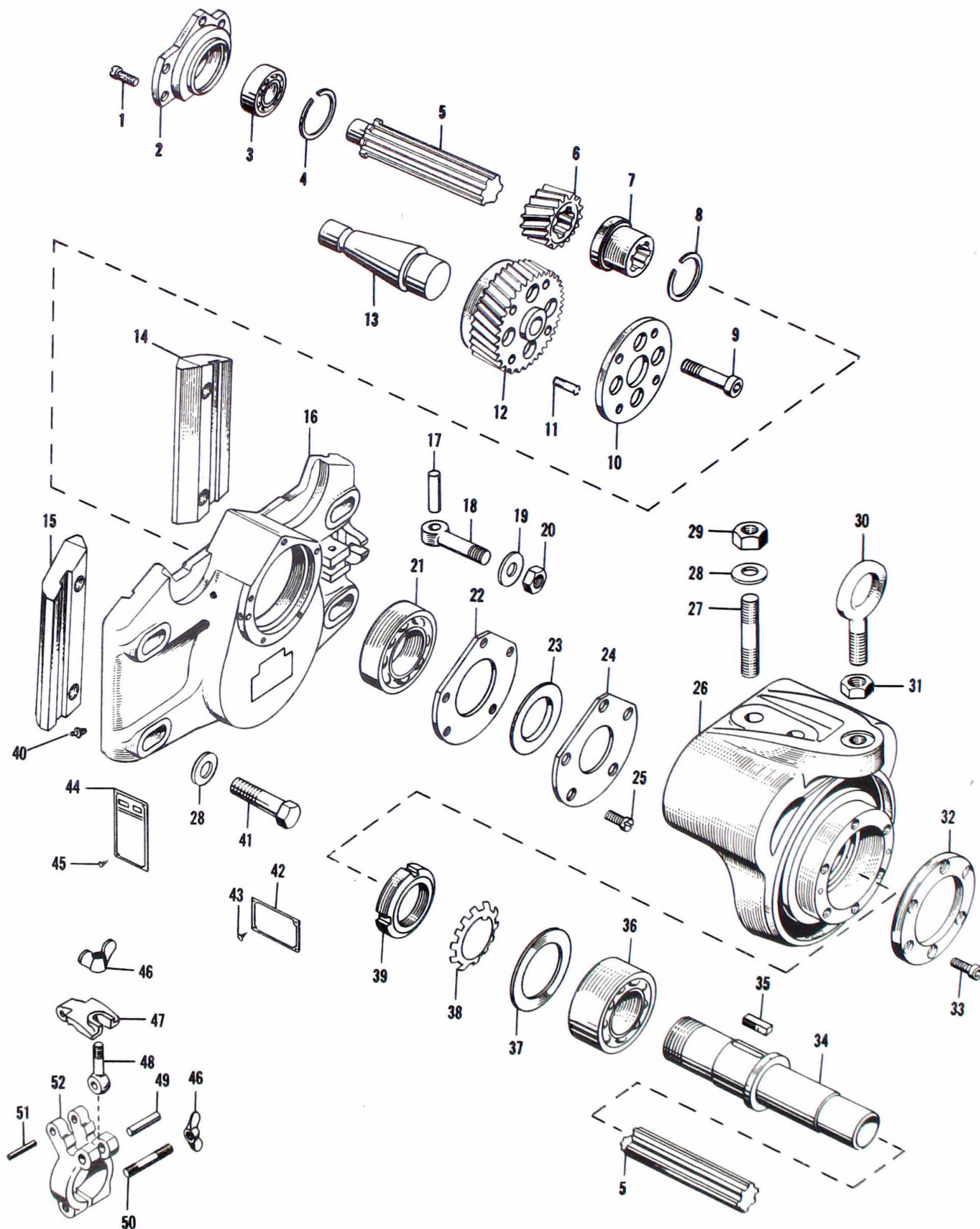


Fig. 26 — Standard High Speed Adjustable Universal Milling Attachment (Drive Bracket Unit) For 2E and 2CE Machines

Replacement Parts Manual

STANDARD ATTACHMENTS — FOR MILLING AND BORING MACHINES

**Fig. 26 — Standard High Speed Adjustable Universal Milling Attachment
(Drive Bracket Unit)
For 2E and 2CE Machines**

Order by CODE No. and ATTACHMENT SERIAL No.

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Fil hd screw, $\frac{5}{16}$ —18 x $1\frac{1}{16}$ in.....	AR-BG1	5
2	Bearing retainer.....	AR-BG2	1
3	New departure bearing, #88504.....	AR-BG3	1
4	Snap ring.....	AR-BG4	1
5	Spindle head drive shaft.....	AR-BG5	1
6	Helical gear (driven).....	AR-BG6	1
7	Helical gear spacer (upper).....	AR-BG7	1
8	Snap ring.....	AR-BG8	1
9	Socket head cap screw, $\frac{1}{2}$ —13 x 2 in.....	AR-BG9	4
10	Helical gear spacer (lower).....	AR-BG10	1
11	Stud.....	AR-BG11	4
12	Helical gear (driver).....	AR-BG12	1
13	Centering plug.....	AR-BG13	1
14	Base gib, R.H.....	AR-BG14	1
15	Base gib, L.H.....	AR-BG15	1
16	Attach. drive gear housing.....	AR-BG16	1
17	Acme blue label dowel, $\frac{3}{8}$ x $1\frac{3}{8}$	AR-BG17	1
18	Swivel clamp bolt stud.....	AR-BG18	1
19	Washer.....	AR-BG19	1
20	Hex nut, $\frac{1}{2}$ —13.....	AR-BG20	1
21	New departure bearing, #47508Z...	AR-BG21	1
22	Housing bearing retainer.....	AR-BG22	1
23	Housing oil slinger.....	AR-BG23	1
24	Housing oil retainer.....	AR-BG24	1
25	Fil head screw, $\frac{5}{16}$ —18 x $\frac{9}{16}$ in.....	AR-BG25	5
26	Swivel support bracket.....	AR-BG26	1
27	Stud.....	AR-BG27	2
28	Washer.....	AR-BG28	6
29	Hex nut.....	AR-BG29	2
30	Eye bolt, $\frac{5}{8}$	AR-BG30	1
31	Nut, $\frac{5}{8}$ —11.....	AR-BG31	1

Item No.	Part Name and Description	Code No.	Qty.
32	Support bracket bearing retainer....	AR-BG32	1
33	Allen hd screw, $\frac{5}{16}$ —18 x $\frac{3}{4}$ in.....	AR-BG33	6
34	Spindle drive gear sleeve.....	AR-BG34	1
35	Key.....	AR-BG35	1
36	New departure bearing, 5209-X-3...	AR-BG36	1
37	Bearing fitting washer.....	AR-BG37	1
38	Gurney washer, #9.....	AR-BG39	1
39	Gurney lock nut, #9.....	AR-BG39	1
40	Zerk fitting, $\frac{1}{8}$	AR-BG40	2
41	Hex hd screw, $\frac{5}{8}$ —11" x $2\frac{5}{16}$ in.....	AR-BG41	4
42	Oiling instruction plate.....	AR-BG42	1
43	Escutcheon pins, #15, $\frac{3}{8}$	AR-BG43	4
44	Spindle spd. plate (48-1200)①.....	AR-BG44A	1
	Spindle spd. plate (25 to 1000 Attach 50 to 2000)①.....	AR-BG44B	1
	Spindle spd. plate (25 to 1000) Attach 50 to 2000①.....	AR-BG44C	1
	Spindle spd. plate (25 to 1300) Attach 50 to 2600①.....	AR-BG44D	1
	Spindle spd. plate (Foreign) (25 to 1300) Attach 50 to 2600①.....	AR-BG44E	1
	Spindle spd. plate (Foreign) (24 to 600) Attach 48 to 1200①.....	AR-BG44F	1
45	Escutcheon pins, $\frac{3}{8}$, #15.....	AR-BG45	4
46	Wing nut.....	AR-BG46	2
47	Coolant distributor clamp.....	AR-BG47	1
48	Eye bolt.....	AR-BG48	1
49	Eye bolt pin.....	AR-BG49	1
50	Stud.....	AR-BG50	1
51	Hinge pin.....	AR-BG51	1
52	Coolant distributor support.....	AR-BG52	1

① 1 only as per order.

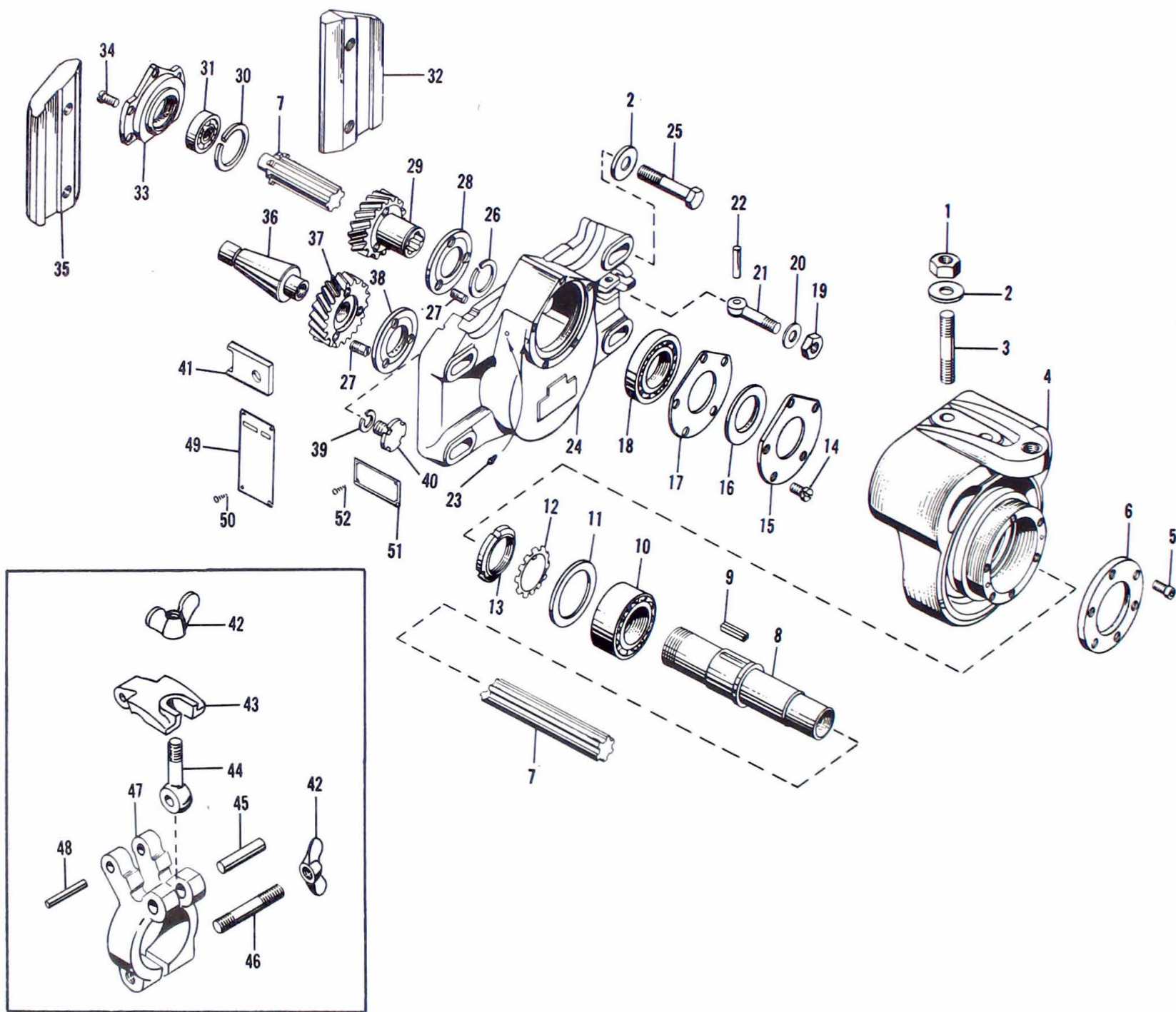


Fig. 27 — Standard High Speed Adjustable Universal Milling Attachment
 (Drive Bracket Unit)
 For 1H, 1CH, 2HL, 2CHL, 18AC, and 24AC Machines

Replacement Parts Manual

STANDARD ATTACHMENTS — FOR MILLING AND BORING MACHINES

**Fig. 27 — Standard High Speed Adjustable Universal Milling Attachment
(Drive Bracket Unit)
For 1H, 1CH, 2HL, 2CHL, 18AC, and 24AC Machines**

Order by CODE No. and ATTACHMENT SERIAL No.

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Hex nut, 3/4—10.....	AR-BH1	2
2	Washer.....	AR-BH2	6
3	Stud, 5/8—11 x 3 3/8 in.....	AR-BH3	2
4	Swivel support bracket.....	AR-BH4	1
5	Allen head screw, 5/16 x 18 x 3/4 in.....	AR-BH5	6
6	Support bracket bearing retainer.....	AR-BH6	1
7	Spindle head drive shaft.....	AR-BH7	1
8	Spindle drive gear sleeve.....	AR-BH8	1
9	Key.....	AR-BH9	1
10	New departure bearing, #5209X-3..	AR-BH10	1
11	Bearing fitting washer.....	AR-BH11	1
12	Gurney lockwasher, #9.....	AR-BH12	1
13	Gurney locknut, #9.....	AR-BH13	1
14	Fillister head screw, 5/16—18 x 9/16 in.....	AR-BH14	5
15	Housing oil retainer.....	AR-BH15	1
16	Housing oil slinger.....	AR-BH16	1
17	Housing bearing retainer.....	AR-BH17	1
18	New departure bearing, #47508Z...	AR-BH18	1
19	Hex nut, 1/2—13.....	AR-BH19	1
20	Washer.....	AR-BH20	1
21	Swivel clamp bolt stud.....	AR-BH21	1
22	Acme blue label dowel, 3/8 x 1 3/8 in.....	AR-BH22	1
23	Zerk fitting, 1/8 in.....	AR-BH23	2
24	Attachment drive gear housing.....	AR-BH24	1
25	Hex head screw, 5/8—2 5/16 in.....	AR-BH25	4
26	Snap ring.....	AR-BH26	1
27	Stud, 1/4—20 x 1 3/16 in.....	AR-BH27	6
28	Spiral gear spacer (upper).....	AR-BH28	1
29	Spiral gear (driven).....	AR-BH29	1
30	Snap ring.....	AR-BH30	1
31	New departure bearing, #88504.....	AR-BH31	1
32	Base gib, R.H.....	AR-BH32	1

Item No.	Part Name and Description	Code No.	Qty.
33	Bearing retainer.....	AR-BH33	1
34	Fillister head screw, 5/16—18 x 1 1/16 in..	AR-BH34	5
35	Base gib, L.H.....	AR-BH35	1
36	Centering plug.....	AR-BH36	1
37	Spiral gear (driver).....	AR-BH37	1
38	Spiral gear spacer (lower).....	AR-BH38	1
39	Spring lockwasher.....	AR-BH39	1
40	Arbor screw.....	AR-BH40	1
41	Wrench for style "C" arbor.....	AR-BH41	1
42	Wing nut, 7/16—14.....	AR-BH42	2
43	Coolant distribution clamp.....	AR-BH43	1
44	Eye bolt.....	AR-BH44	1
45	Eye bolt pin.....	AR-BH45	1
46	Clamp stud, 7/16—14 x 2 1/16 in.....	AR-BH46	1
47	Coolant distribution support.....	AR-BH47	1
48	Clamp pin.....	AR-BH48	1
49	Spindle speed plate (35-1400) Attachment 38 to 1460 ①.....	AR-BH49A	1
	Spindle speed plate (60-2400) Attachment 63 to 2500 ①.....	AR-BH49B	1
	Spindle speed plate (25-1500) Attachment 26 to 1565 (Foreign) ①.....	AR-BH49C	1
	Spindle speed plate (35-2100) Attachment 37 to 2191 (Foreign) ①.....	AR-BH49D	1
	Spindle speed plate (25-1500) Attachment 26 to 1565 ①.....	AR-BH49E	1
	Spindle speed plate (35-2100) Attachment 37 to 2191 ①.....	AR-BH49F	1
50	Escutcheon pin, #15, 3/8 in.....	AR-BH50	4
51	Oiling instruction plate.....	AR-BH51	1
52	Escutcheon pin, #15, 1/2 in.....	AR-BH52	4

① One only as per order.

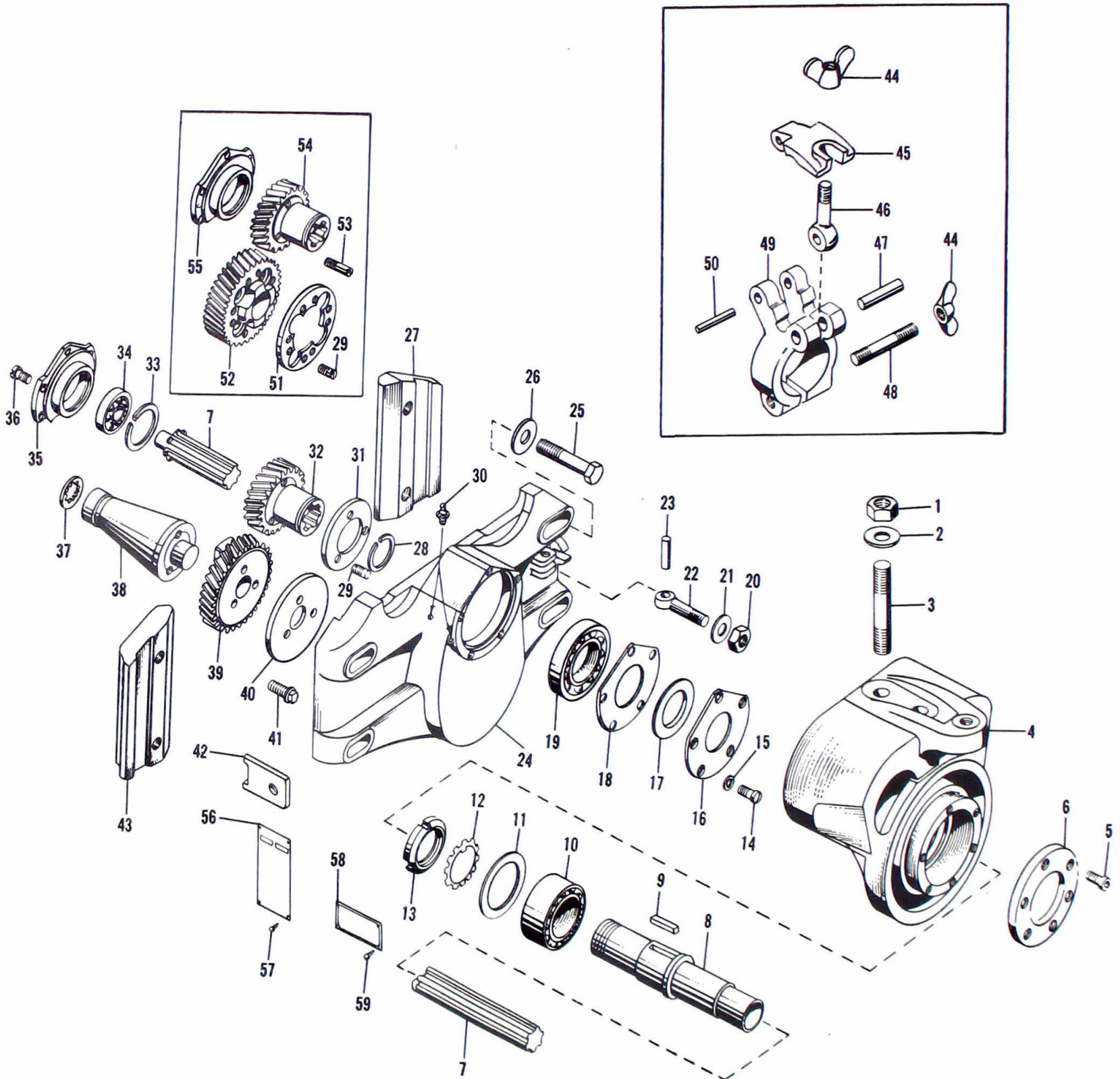


Fig. 28 — Standard High Speed Adjustable Universal Milling Attachment
(Drive Bracket Unit)
For 2H and 2CH Machines

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STANDARD ATTACHMENTS — FOR MILLING AND BORING MACHINES

**Fig. 28 — Standard High Speed Adjustable Universal Milling Attachment
(Drive Bracket Unit)
For 2H and 2CH Machines**

Order by CODE No. and ATTACHMENT SERIAL No.

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.	Item No.	Part Name and Description	Code No.	Qty.
1	Hex nut, 3/4—10.....	AR-BJ1	2	34	New departure bearing, #7304ZL....	AR-BJ34	1
2	Washer.....	AR-BJ2	2	35	Bearing retainer.....	AR-BJ35	1
3	Stud, 3/4—10 x 4 5/16 in.....	AR-BJ3	2	36	Fillister head screw, 5/16—18 x 1 1/16 in...	AR-BJ36	5
4	Swivel support bracket.....	AR-BJ4	1	37	Shakeproof lockwasher, #1228.....	AR-BJ37	1
5	Allen head screw, 5/16 x 18 x 3/4 in.....	AR-BJ5	6	38	Centering plug for drive gear.....	AR-BJ38A	1
6	Support bracket bearing retainer.....	AR-BJ6	1		Centering plug for drive gear①.....	AR-BJ38B	1
7	Spindle head drive shaft.....	AR-BJ7	1	39	Spiral gear (driver).....	AR-BJ39	1
8	Spindle drive gear sleeve.....	AR-BJ8	1	40	Spiral gear spacer (lower).....	AR-BJ40	1
9	Key.....	AR-BJ9	1	41	Spindle screw.....	AR-BJ41A	3
10	New departure bearing, #5209X-3...	AR-BJ10	1		Spindle screw①.....	AR-BJ41B	4
11	Bearing fitting washer.....	AR-BJ11	1	42	Arbor wrench.....	AR-BJ42	1
12	Gurney washer, #9.....	AR-BJ12	1	43	Base gib, L.H.....	AR-BJ43	1
13	Gurney lock nut, #9.....	AR-BJ13	1	44	Wing nut, 7/16—14 in.....	AR-BJ44	2
14	Hex head screw, 5/16—18 x 1 5/16 in.....	AR-BJ14	5	45	Coolant distribution clamp.....	AR-BJ45	1
15	Washer.....	AR-BJ15	5	46	Eye bolt.....	AR-BJ46	1
16	Housing oil retainer.....	AR-BJ16	1	47	Eye bolt pin.....	AR-BJ47	1
17	Housing oil slinger.....	AR-BJ17	1	48	Clamp stud, 7/16—14 x 2 1/16 in.....	AR-BJ48	1
18	Housing bearing retainer.....	AR-BJ18	1	49	Coolant distribution support.....	AR-BJ49	1
19	New departure bearing, #47509Z....	AR-BJ19	1	50	Clamp pin.....	AR-BJ50	1
20	Hex nut, 1/2—13 in.....	AR-BJ20	1	51	Spiral gear spacer (lower)①.....	AR-BJ51	1
21	Washer.....	AR-BJ21	1	52	Spiral gear (driver)①.....	AR-BJ52	1
22	Swivel clamp bolt stud.....	AR-BJ22	1	53	Rivet screw①.....	AR-BJ53	3
23	Acme blue label dowel, 3/8 x 1 3/8 in...	AR-BJ23	1	54	Spiral gear (driven)①.....	AR-BJ54	1
24	Attachment drive gear housing.....	AR-BJ24	1	55	Bearing retainer①.....	AR-BJ55	1
25	Hex head screw, 5/8—11 x 2 5/16 in.....	AR-BJ25	4	56	Spindle speed plate (50-2000)		
26	Washer.....	AR-BJ26	4		Attachment 63 to 2500②③.....	AR-BJ56A	1
27	Base gib, R.H.....	AR-BJ27	1		Spindle speed plate (35-1400)		
28	Snap ring.....	AR-BJ28	1		Attachment 44 to 1750②③.....	AR-BJ56B	1
29	Stud.....	AR-BJ29	11		Spindle speed plate (35-2100)		
30	Zerk fitting, 1/8 in.....	AR-BJ30	2		Attach. 44 to 2625 (Foreign)②④..	AR-BJ56C	1
31	Spiral gear spacer (upper).....	AR-BJ31	1		Spindle speed plate (25-1500)		
32	Spiral gear (driven).....	AR-BJ32	1		Attach. 31 to 1875 (Foreign)②④..	AR-BJ56D	1
33	Snap ring.....	AR-BJ33	1		Spindle speed plate (25-1500)		
					Attachment 31 to 1875②④.....	AR-BJ56E	1
					Spindle speed plate (35-2100)		
					Attachment 44 to 2625②④.....	AR-BJ56F	1
				57	Escutcheon pin, #15, 3/8 in.....	AR-BJ57	4
				58	Oiling instruction plate.....	AR-BJ58	1
				59	Escutcheon pin, #15, 1/2 in.....	AR-BJ59	4

① Used only on a #40 taper spindle machine.

② One only to order.

③ For 2H only.

④ For 2CH only.

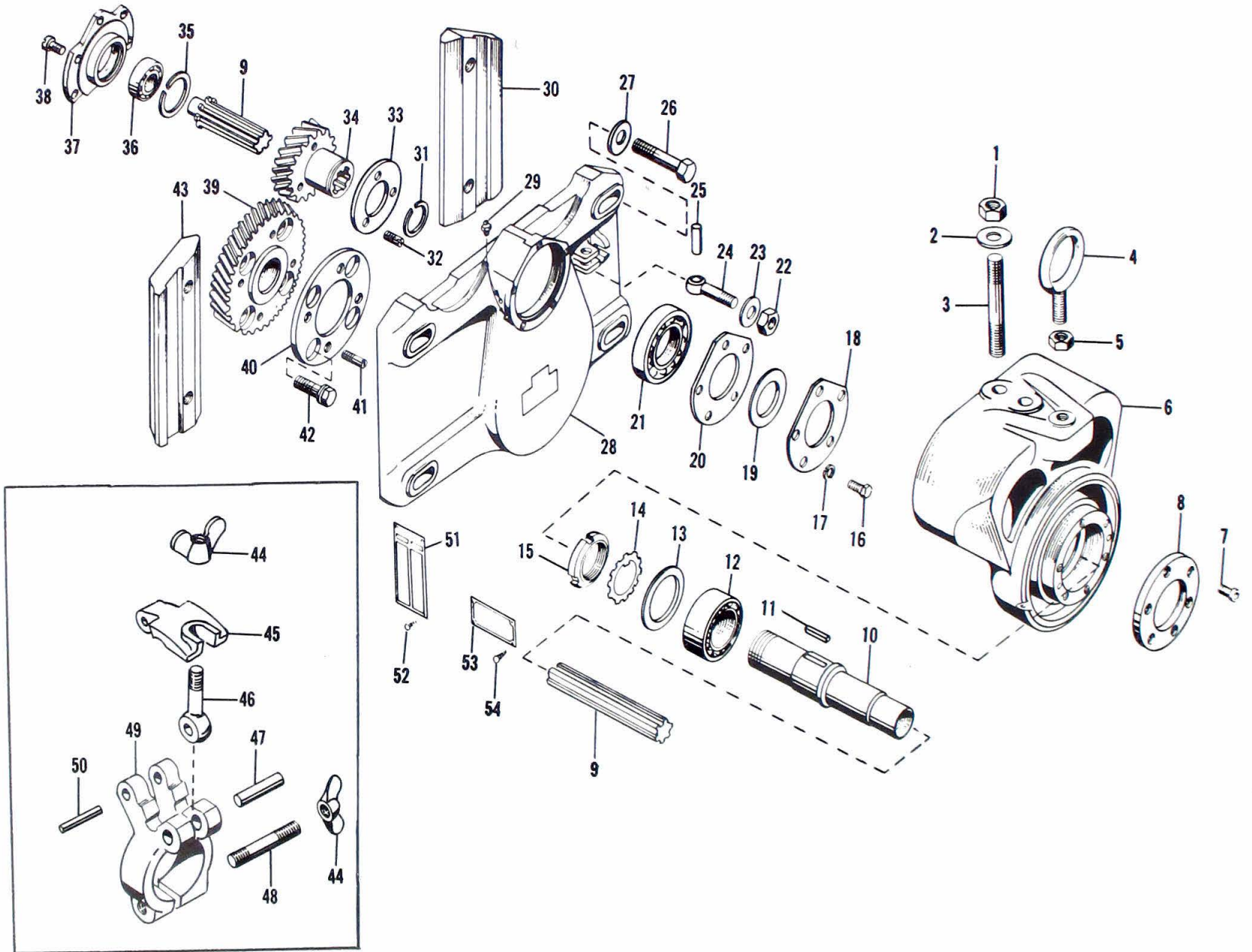


Fig. 29 — Standard High Speed Adjustable Universal Milling Attachment
(Drive Bracket Unit)

For 2KM, 2K, 2CK, 2CSM(20), 3CE, 3H, 3CH, 3CSM(20), 210TF, 220TF, 310TF, and 320TF Machines

Replacement Parts Manual

STANDARD ATTACHMENTS — FOR MILLING AND BORING MACHINES

**Fig. 29 — Standard High Speed Adjustable Universal Milling Attachment
(Drive Bracket Unit)**

For 2KM, 2K, 2CK, 2CSM(20), 3CE, 3H, 3CH, 3CSM(20), 210TF, 220TF, 310TF, and 320TF Machines

Order by CODE No. and ATTACHMENT SERIAL No.

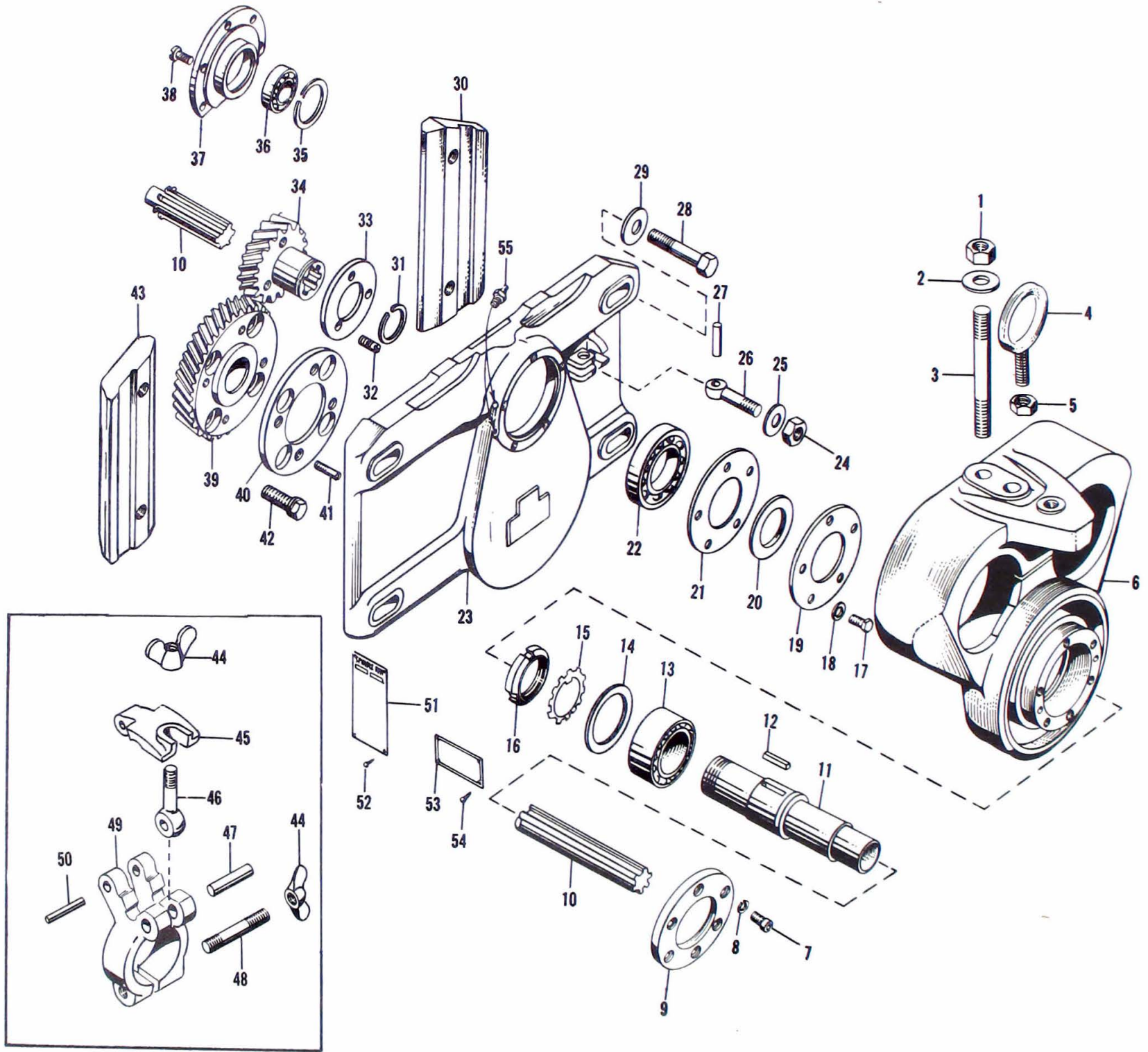
Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Hex nut, 3/4—10 in.	AR-BK1	2
2	Washer	AR-BK2	2
3	Stud, 3/4—10 x 4 15/16 in.	AR-BK3	2
4	Eye bolt, 5/8 in.	AR-BK4	1
5	Nut	AR-BK5	1
6	Swivel support bracket	AR-BK6	1
7	Allen head screw, 5/16 x 18 3/4 in.	AR-BK7	6
8	Support bracket bearing retainer	AR-BK8	1
9	Spindle head drive shaft	AR-BK9	1
10	Spindle drive gear sleeve	AR-BK10	1
11	Key	AR-BK11	1
12	New departure bearing, #5209X-3	AR-BK12	1
13	Bearing fitting washer	AR-BK13	1
14	Gurney washer, #9	AR-BK14	1
15	Gurney locknut, #9	AR-BK15	1
16	Hex head screw, 5/16—18 x 1 5/16 in.	AR-BK16	5
17	Washer	AR-BK17	5
18	Housing oil retainer	AR-BK18	1
19	Housing oil slinger	AR-BK19	1
20	Housing bearing retainer	AR-BK20	1
21	New departure bearing, #47509	AR-BK21	1
22	Hex nut, 1/2—13 in.	AR-BK22	1
23	Washer	AR-BK23	1
24	Swivel clamp bolt stud	AR-BK24	1
25	Acme blue label dowel, 3/8 x 1 1/2 in.	AR-BK25	1
26	Hex head screw, 5/8—11 x 2 13/16 in.	AR-BK26	4
27	Washer	AR-BK27	4
28	Attachment drive gear housing	AR-BK28	1
29	Zerk fitting, 1/8 in., #1610	AR-BK29	2
30	Housing gib, R.H.	AR-BK30	1
31	Snap ring	AR-BK31	1
32	Stud	AR-BK32	4
33	Spiral gear spacer (upper)	AR-BK33	1

Item No.	Part Name and Description	Code No.	Qty.
34	Spiral gear (driven)	AR-BK34	1
35	Snap ring	AR-BK35	1
36	New departure bearing, #7304ZL	AR-BK36	1
37	Bearing retainer	AR-BK37	1
38	Fil head screw, 5/16—18 x 1 1/16 in.	AR-BK38	5
39	Spiral gear (driver)	AR-BK39	1
40	Spiral gear spacer (lower)	AR-BK40	1
41	Rivet screw	AR-BK41	4
42	Spindle screw	AR-BK42	4
43	Housing gib, L.H.	AR-BK43	1
44	Wing nut, 7/16—14 in.	AR-BK44	2
45	Coolant distribution clamp	AR-BK45A	1
	Coolant distribution clamp ^②	AR-BK45B	1
46	Eye bolt	AR-BK46A	1
	Eye bolt ^②	AR-BK46B	1
47	Eye bolt pin	AR-BK47A	1
	Eye bolt pin ^②	AR-BK47B	1
48	Clamp stud, 7/16—14 x 2 11/16 in.	AR-BK48	1
49	Coolant distribution support	AR-BK49A	1
	Coolant distribution support ^②	AR-BK49B	1
50	Clamp pin	AR-BK50A	1
	Clamp pin ^②	AR-BK50B	1
51	Spindle speed plate (15-1500) ^①	AR-BK51A	1
	Spindle speed plate (15-750) ^①	AR-BK51B	1
	Spindle speed plate (30-1500) ^①	AR-BK51C	1
	Spindle speed plate (20-1000) ^①	AR-BK51D	1
	Spindle speed plate (50-1250) ^①	AR-BK51E	1
52	Escutcheon pin, #15, 3/8 in.	AR-BK52	4
53	Oiling instruction plate	AR-BK53	1
54	Escutcheon pin, #15, 1/2 in.	AR-BK54	4

① One only as per order.

② For 3CE only.



**Fig. 30 — Standard High Speed Adjustable Universal Milling Attachment
(Drive Bracket Unit)**
For 3KM, 3K, 3CK, 3CSM(30), 4H, 4CH, 4CSM(30), 315TF, 330TF, 415TF, and 430TF Machines

Replacement Parts Manual

STANDARD ATTACHMENTS — FOR MILLING AND BORING MACHINES

**Fig. 30 — Standard High Speed Adjustable Universal Milling Attachment
(Drive Bracket Unit)**

For 3KM, 3K, 3CK, 3CSM(30), 4H, 4CH, 4CSM(30), 315TF, 330TF, 415TF, and 430TF Machines

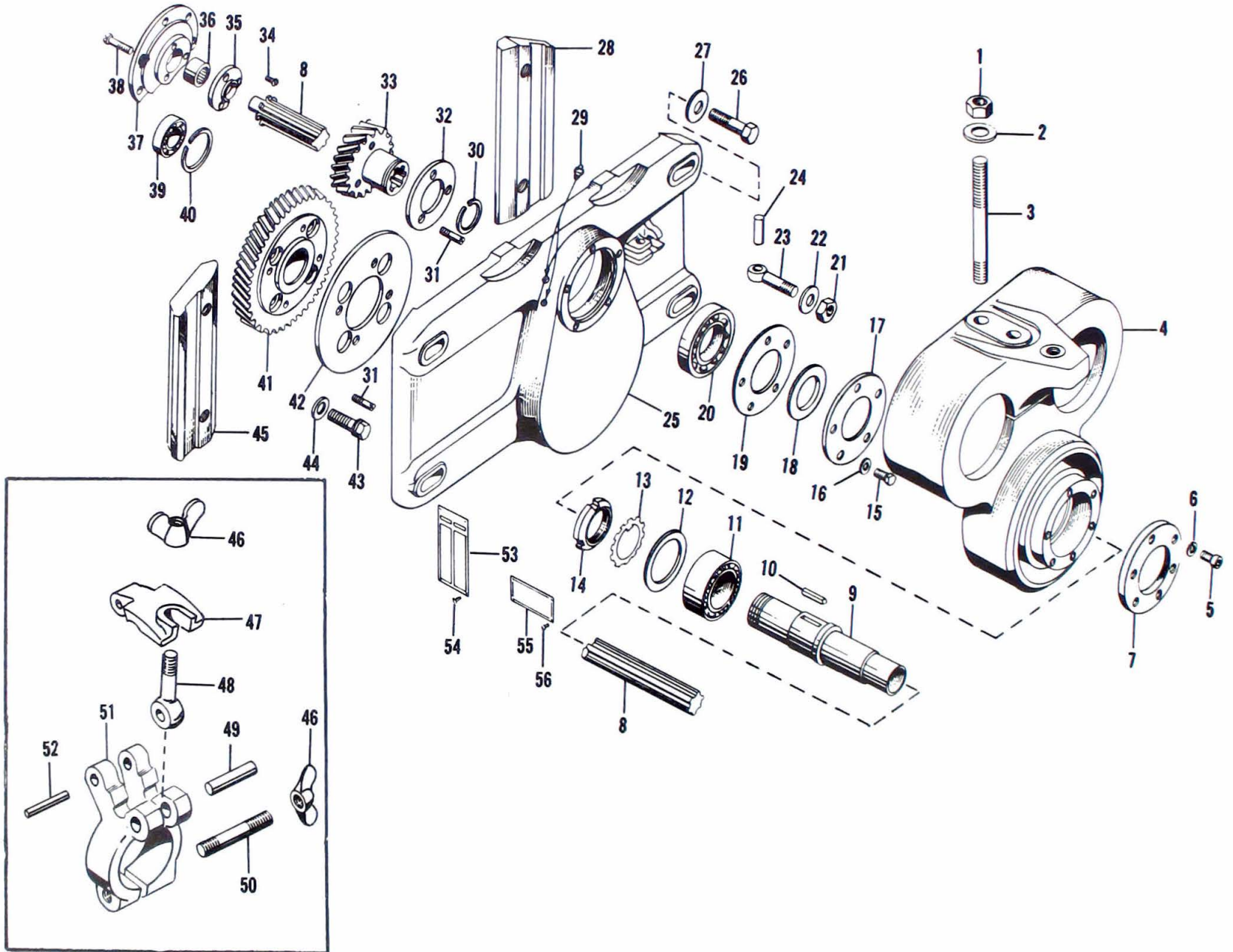
Order by CODE No. and ATTACHMENT SERIAL No.

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Hex nut, 3/4—10 in.	AR-BL1	2
2	Washer	AR-BL2	2
3	Stud, 3/4—10 x 6 1/8 in.	AR-BL3	2
4	Eye bolt, 5/8 in.	AR-BL4	1
5	Nut, 5/8—11	AR-BL5	1
6	Swivel support bracket	AR-BL6	1
7	Allen head screw, 5/16 x 18 x 3/4 in.	AR-BL7	6
8	Washer	AR-BL8	6
9	Support bracket bearing retainer	AR-BL9	1
10	Spindle head drive shaft	AR-BL10	1
11	Spindle drive gear sleeve	AR-BL11	1
12	Key	AR-BL12	1
13	New departure bearing, #5209X-3	AR-BL13	1
14	Bearing fitting washer	AR-BL14	1
15	Gurney washer #9	AR-BL15	1
16	Gurney locknut, #9	AR-BL16	1
17	Hex head screw, 5/16—18 x 1 5/16 in.	AR-BL17	5
18	Washer	AR-BL18	5
19	Housing oil retainer	AR-BL19	1
20	Housing oil slinger	AR-BL20	1
21	Housing bearing retainer	AR-BL21	1
22	New departure bearing, #47509Z	AR-BL22	1
23	Attachment drive gear housing	AR-BL23	1
24	Nut, 1/2—13	AR-BL24	1
25	Washer	AR-BL25	1
26	Swivel bolt clamp stud	AR-BL26	1
27	Acme blue label dowel, 3/8 x 1 1/2 in.	AR-BL27	1
28	Hex head screw, 5/8—11 x 2 13/16 in.	AR-BL28	4
29	Washer	AR-BL29	4
30	Housing gib, R.H.	AR-BL30	1
31	Snap ring	AR-BL31	1

Item No.	Part Name and Description	Code No.	Qty.
32	Stud, 1/4—20 x 1 3/16 in.	AR-BL32	4
33	Spiral gear spacer (upper)	AR-BL33	1
34	Spiral gear (driven)	AR-BL34	1
35	Snap ring	AR-BL35	1
36	New departure bearing, #7304ZL	AR-BL36	1
37	Bearing retainer	AR-BL37	1
38	Fillister head screw, 5/16—18 x 1 1/16 in.	AR-BL38	5
39	Spiral gear (driver)	AR-BL39	1
40	Spiral gear spacer (lower)	AR-BL40	1
41	Rivet screw	AR-BL41	4
42	Spindle screw	AR-BL42	4
43	Housing gib, L.H.	AR-BL43	1
44	Wing nut	AR-BL44	2
45	Coolant distribution clamp	AR-BL45	1
46	Eye bolt	AR-BL46	1
47	Eye bolt pin	AR-BL47	1
48	Clamp stud, 7/16—14 x 2 1/16 in.	AR-BL48	1
49	Coolant distribution support	AR-BL49	1
50	Clamp pin	AR-BL50	1
51	Spindle speed plate (15-500) ①	AR-BL51A	1
	Spindle speed plate (15-750) ①	AR-BL51B	1
	Spindle speed plate (30-1500) ①	AR-BL51C	1
	Spindle speed plate (20-1000) ①	AR-BL51D	1
	Spindle speed plate (50-1250) ①	AR-BL51E	1
52	Escutcheon pin, #15, 3/8 in.	AR-BL52	4
53	Oiling instruction plate	AR-BL53	1
54	Escutcheon pin, #15, 1/2 in.	AR-BL54	4
55	Zerk fitting, 1/8 in.	AR-BL55	2

① One only as per order.



**Fig. 31 — Standard High Speed Adjustable Universal Milling Attachment
(Drive Bracket Unit)**

**For 4K, 4CK, 4CSM(50), 5H, 5HM, 5CK, 5CSM, 6CK, 6CSM, 425TF, 450TF, 525TF, 550TF,
625TF, and 650TF Machines**

Replacement Parts Manual

STANDARD ATTACHMENTS — FOR MILLING AND BORING MACHINES

**Fig. 31 — Standard High Speed Adjustable Universal Milling Attachment
(Drive Bracket Unit)**

For 4K, 4CK, 4CSM(50), 5H, 5HM, 5CK, 5CSM, 6CK, 6CSM, 425TF, 450TF, 525TF, 550TF, 625TF, and 650TF Machines

Order by CODE No. and ATTACHMENT SERIAL No.

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.	Item No.	Part Name and Description	Code No.	Qty.
1	Hex nut, 3/4 10 in.	AR-BM1	2	33	Spiral gear (driven)	AR-BM33A	1
2	Washer	AR-BM2	2		Spiral gear (driven) ①	AR-BM33B	1
3	Stud, 3/4—10 x 6 1/16 in.	AR-BM3	2	34	Flat head machine screw, 10—32 x 3/8 in.	AR-BM34	3
4	Swivel support bracket	AR-BM4	1	35	Thrust collar	AR-BM35	1
5	Socket head cap screw, 5/16—18 x 3/4 in.	AR-BM5	6	36	Orange bearing, #7153 CT.	AR-BM36	1
6	Washer	AR-BM6	6	37	Bearing retainer	AR-BM37A	1
7	Support bracket bearing retainer	AR-BM7	1		Bearing retainer ①	AR-BM37B	1
8	Spindle head drive shaft	AR-BM8A	1	38	Fillister head screw, 5/16—18 x 1 1/4 in.	AR-BM38A	5
	Spindle head drive shaft ①	AR-BM8B	1		Fillister head screw, 5/16—18 x 1 1/16 in. ①	AR-BM38B	5
9	Spindle drive gear sleeve	AR-BM9	1	39	New departure bearing, #7304ZL ①	AR-BM39	1
10	Key	AR-BM10	1	40	Snap ring ①	AR-BM40	1
11	New departure bearing, #5209ZL	AR-BM11	1	41	Spiral gear (driver)	AR-BM41A	1
12	Bearing fitting washer	AR-BM12	1		Spiral gear (driver) ①	AR-BM41B	1
13	Gurney washer, #9	AR-BM13	1	42	Spiral gear spacer (lower)	AR-BM42	1
14	Gurney locknut, #9	AR-BM14	1	43	Spindle screw	AR-BM43A	4
15	Hex head screw, 5/16—18 x 1 5/16 in.	AR-BM15	5		Spindle screw ①	AR-BM43B	4
16	Washer	AR-BM16	5	44	Washer	AR-BM44	4
17	Housing oil retainer	AR-BM17	1	45	Housing gib, L.H.	AR-BM45	1
18	Housing oil slinger	AR-BM18	1	46	Wing nut, 7/16—14 in.	AR-BM46	2
19	Housing bearing retainer	AR-BM19	1	47	Coolant distribution clamp	AR-BM47	1
20	New departure bearing, #47509Z	AR-BM20	1	48	Eye bolt	AR-BM48	1
21	Nut, 1/2—13 in.	AR-BM21	1	49	Eye bolt pin	AR-BM49	1
22	Washer	AR-BM22	1	50	Clamp stud, 7/16—14 x 2 1/16 in.	AR-BM50	1
23	Swivel clamp bolt	AR-BM23	1	51	Coolant distribution support	AR-BM51	1
24	Acme blue label dowel, 3/8 x 1 1/4 in.	AR-BM24	1	52	Clamp pin	AR-BM52	1
25	Drive gear housing	AR-BM25A	1	53	Spindle speed plate (13-1300) ②	AR-BM53A	1
	Drive gear housing ①	AR-BM25B	1		Spindle speed plate (50-1250) ②	AR-BM53B	1
26	Hex head screw, 5/8—11 x 2 5/16 in.	AR-BM26	4	54	Escutcheon pin, #15, 3/8 in.	AR-BM54	4
27	Washer	AR-BM27	4	55	Oiling instruction plate	AR-BM55	1
28	Housing gib, R.H.	AR-BM28	1	56	Escutcheon pin, #15, 1/2 in.	AR-BM56	4
29	Alemite fitting, #1610	AR-BM29	2				
30	Snap ring	AR-BM30	1				
31	Stud	AR-BM31	8				
32	Spiral gear spacer (upper)	AR-BM32A	1				
	Spiral gear spacer (upper) ①	AR-BM32B	1				

① Used only on machines having #50 taper spindle.

② One only as per order.

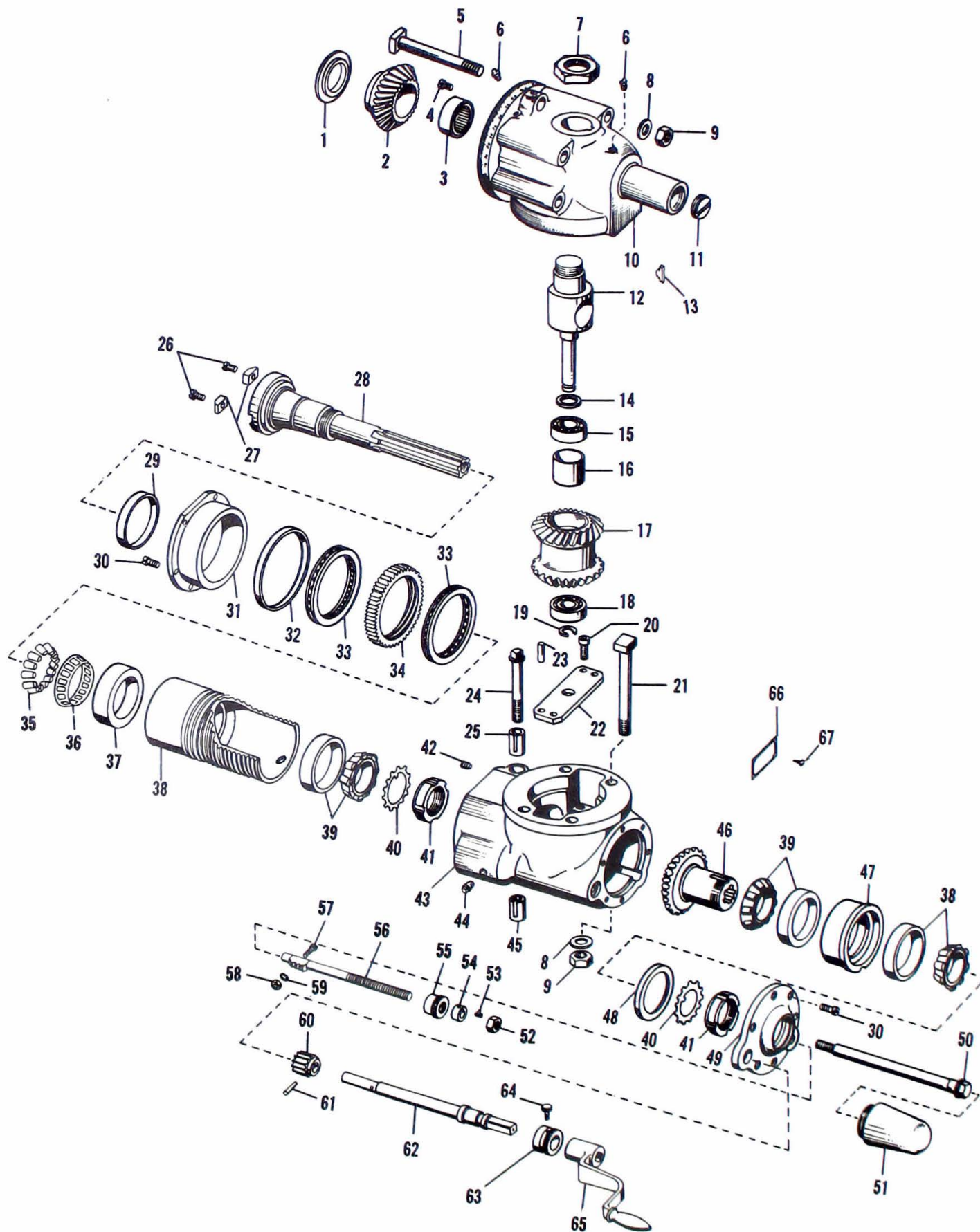


Fig. 32 — Standard High Speed Adjustable Universal Milling Attachment
With Movable Quill (Head Unit)
For All Model Machines

Replacement Parts Manual

STANDARD ATTACHMENTS — FOR MILLING AND BORING MACHINES

**Fig. 32 — Standard High Speed Adjustable Universal Milling Attachment
With Movable Quill (Head Unit)
For All Model Machines**

Order by CODE No. and ATTACHMENT SERIAL No.

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.	Item No.	Part Name and Description	Code No.	Qty.
1	Oil slinger.....	AR-BN1	1	38	Spindle quill.....	AR-BN38A	1
2	Spindle driven gear ^②	AR-BN2	1		Spindle quill ^③	AR-BN38B	1
3	Orange bearing, #7284.....	AR-BN3	1	39	Timken bearing, 13318-13181.....	AR-BN39	3
4	Fil hd screw, 1/4 — 20 x 3/8 in.....	AR-BN4	2	40	Timken washer.....	AR-BN40	2
5	T-bolt.....	AR-BN5	4	41	Timken lock nut.....	AR-BN41	2
6	Alemite Zerk fitting, 1/8 in., #1610.....	AR-BN6	3	42	Screw.....	AR-BN42	2
7	Nut, 1 1/2 — 12.....	AR-BN7	1	43	Adjustable spindle head.....	AR-BN43	1
8	Washer.....	AR-BN8	8	44	Slotted pipe plug, 1/4 in.....	AR-BN44	1
9	Nut, 5/8 — 11.....	AR-BN9	8	45	Quill clamp nut.....	AR-BN45	1
10	Universal swivel.....	AR-BN10	1	46	Universal spindle bevel gear ^②	AR-BN46	1
11	Plug.....	AR-BN11	1	47	Bearing carrier.....	AR-BN47	1
12	Drive gear support stud.....	AR-BN12	1	48	Rear grease slinger.....	AR-BN48	1
13	Hi-Pro key, HP-810.....	AR-BN13	1	49	Bearing cover.....	AR-BN49	1
14	Fitting washer.....	AR-BN14	1	50	Draw-in bolt, 5/8 in.....	AR-BN50	1
15	New departure bearing, #5505-L3-S20.....	AR-BN15	1		Draw-in bolt, 7/16 in. ^①	AR-BN50	1
16	Double gear oil return tube.....	AR-BN16	1		Draw-in bolt, 1/2 in. ^①	AR-BN50	1
17	Bevel drive gear (double) ^②	AR-BN17	1	51	Spline guard.....	AR-BN51	1
18	New departure bearing, #5604-L3-S20.....	AR-BN18	1	52	Check nut.....	AR-BN52A	1
19	Snap ring.....	AR-BN19	1		Check nut ^③	AR-BN52B	1
20	Socket head cap screw, 3/8 — 16 x 1 in.....	AR-BN20	2	53	Tit key.....	AR-BN53	1
21	T-bolt.....	AR-BN21	4	54	Graduated collar spacer.....	AR-BN54	1
22	Drive gear stud support.....	AR-BN22	1	55	Positive stop graduated collar.....	AR-BN55A	1
23	Acme blue label dowel, 3/8 x 1 in.....	AR-BN23	2		Positive stop grad collar ^③	AR-BN55B	1
24	Quill clamp screw.....	AR-BN24	1	56	Positive stop rod.....	AR-BN56A	1
25	Quill clamp sleeve.....	AR-BN25	1		Positive stop rod ^③	AR-BN56B	1
26	Screw, 1/4 — 20 x 1/2 in.....	AR-BN26	2	57	Fil head screw, 1/4 — 20 x 7/8 in.....	AR-BN57	1
27	Spindle drive key.....	AR-BN27	2	58	Nut, 1/4 — 20.....	AR-BN58	1
28	Spindle.....	AR-BN28	1	59	Lock washer.....	AR-BN59	1
29	Spindle nose grease seal.....	AR-BN29	1	60	Quill feed pinion.....	AR-BN60	1
30	Screw.....	AR-BN30	12	61	Taper pin, #3, 1 1/8 in.....	AR-BN61	1
31	Quill clamp ring.....	AR-BN31	1	62	Quill feed pinion shaft.....	AR-BN62	1
32	Quill bearing spacer.....	AR-BN32	1	63	Quill feed dial.....	AR-BN63A	1
33	Quill bearing.....	AR-BN33	2		Quill feed dial ^③	AR-BN63B	1
34	Quill feed nut.....	AR-BN34A	1	64	Screw.....	AR-BN64	1
	Quill feed nut ^③	AR-BN34B	1	65	Quill feed crank.....	AR-BN65	1
35	Timken rolls, #3008, #7.....	AR-BN35	16	66	Lubrication instruction plate.....	AR-BN66	1
36	Enclosed cage, #3811 Timken, #0.....	AR-BN36	1	67	Escutcheon pin, 3/8 in.....	AR-BN67	4
37	Timken bearing cup, #3820.....	AR-BN37	1				

① To order only.

② Sold in matched sets only.

③ Metric.

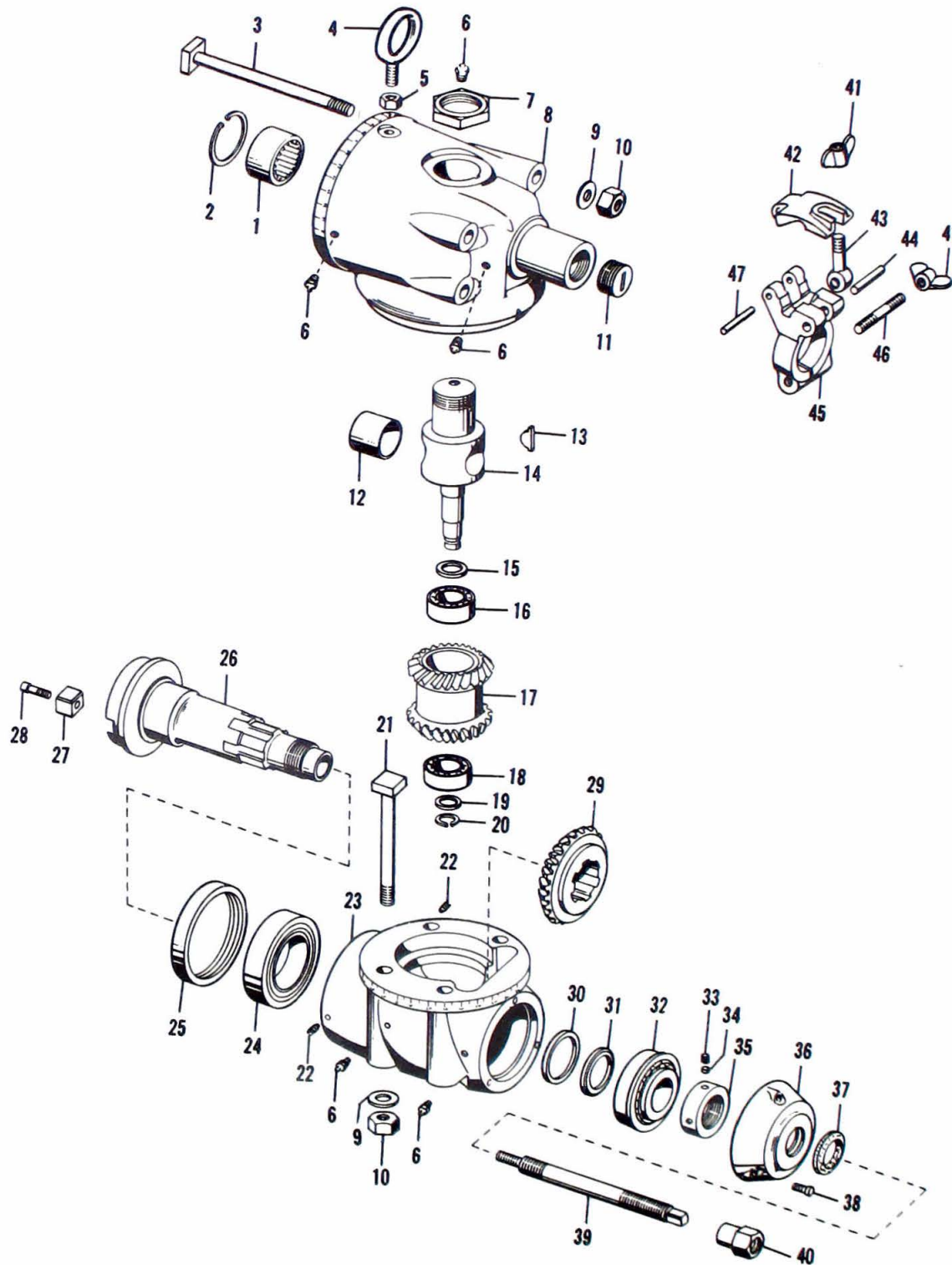


Fig. 33 — Heavy Duty High Speed Adjustable Universal Milling Attachment (Head Unit)
 For 2KM, 2K, 2CK, 2CSM(20), 3CE, 3H, 3CH, 3CSM(20), 3KM, 3K, 3CK, 3CSM(30), 4H, 4CH, 4CSM(30), 4K, 4CK, 4CSM(50), 5H, 5HM, 5CK, 5CSM, 6CK, 6CSM, and All TF Model Machines

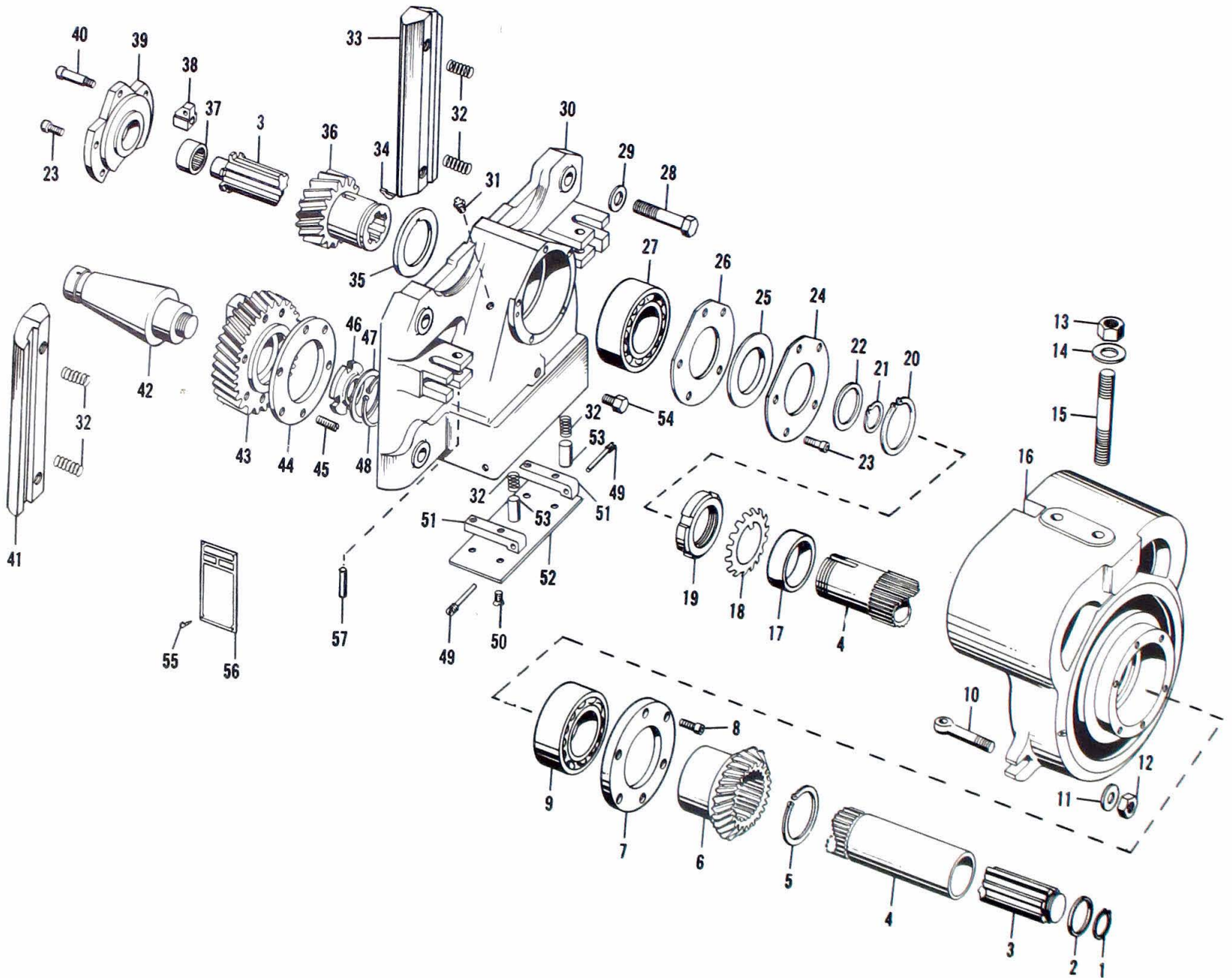
**Fig. 33 — Heavy Duty High Speed Adjustable Universal Milling Attachment
(Head Unit)**

For 2KM, 2K, 2CK, 2CSM(20), 3CE, 3H, 3CH, 3CSM(20), 3KM, 3K, 3CK, 3CSM(30), 4H, 4CH, 4CSM(30), 4K, 4CK, 4CSM(50), 5H, 5HM, 5CK, 5CSM, 6CK, 6CSM, and All TF Model Machines

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Orange bearing, 8406CT.....	AR-BP1	1
2	Tru-arc retainer, 5000-300.....	AR-BP2	1
3	"T" slot bolt.....	AR-BP3	4
4	Eye bolt.....	AR-BP4	1
5	Nut, 5/8—11.....	AR-BP5	1
6	Alemite Zerk fitting, 1/8 in., #1610....	AR-BP6	5
7	Tacup adjusting nut.....	AR-BP7	1
8	Universal swivel.....	AR-BP8	1
9	Washer.....	AR-BP9	8
10	Nut, 3/4—10.....	AR-BP10	8
11	Universal swivel plug.....	AR-BP11	1
12	Dual gear oil retainer.....	AR-BP12	1
13	Hi-Pro key, #1112.....	AR-BP13	1
14	Drive gear support stud.....	AR-BP14	1
15	Fitting washer.....	AR-BP15	1
16	New departure bearing, #5506.....	AR-BP16	1
17	Spiral bevel gear dual ^①	AR-BP17	1
18	New departure bearing, #5605.....	AR-BP18	1
19	Fitting washer.....	AR-BP19	1
20	Tru-arc retainer, 5100-93.....	AR-BP20	1
21	"T" slot bolt.....	AR-BP21	4
22	Headless dowel screw.....	AR-BP22	2
23	Spindle head.....	AR-BP23	1
24	Timken bearing, #47620-17686.....	AR-BP24	1
25	Spindle grease retainer.....	AR-BP25	1
26	Spindle.....	AR-BP26	1
27	Spindle drive key.....	AR-BP27	2
28	Spindle key screw.....	AR-BP28	2
29	Spiral bevel gear (driven) ^①	AR-BP29	1
30	Fitting washer.....	AR-BP30	1
31	Thrust washer.....	AR-BP31	1
32	Timken bearing, #453B-455.....	AR-BP32	1
33	Screw.....	AR-BP33	2
34	Collar nut shoe.....	AR-BP34	2
35	Collar nut.....	AR-BP35	1
36	Spindle head cap.....	AR-BP36	1
37	Felt washer.....	AR-BP37	1
38	Socket hd set screw, 5/16—18 x 7/8 in..	AR-BP38	3
39	Draw-in bolt.....	AR-BP39	1
40	Nut.....	AR-BP40	1
41	Wing nut.....	AR-BP41	2
42	Coolant distributor clamp.....	AR-BP42	1
43	Eye bolt.....	AR-BP43	1
44	Clamp pin.....	AR-BP44	1
45	Coolant distributor support.....	AR-BP45	1
46	Stud.....	AR-BP46	1
47	Eye bolt pin.....	AR-BP47	1

① Sold in matched sets only.



**Fig. 34 — Heavy Duty High Speed Adjustable Universal Milling Attachment
(Drive Bracket Unit)**
For 2KM, 2K, 2CK, 2CSM(20), 3CE, 3H, 3CH, 3CSM(20), 210TF, 220TF, 310TF, and 320TF Machines

Replacement Parts Manual

STANDARD ATTACHMENTS — FOR MILLING AND BORING MACHINES

**Fig. 34 — Heavy Duty High Speed Adjustable Universal Milling Attachment
(Drive Bracket Unit)**

For 2KM, 2K, 2CK, 2CSM(20), 3CE, 3H, 3CH, 3CSM(20), 210TF, 220TF, 310TF, and 320TF Machines

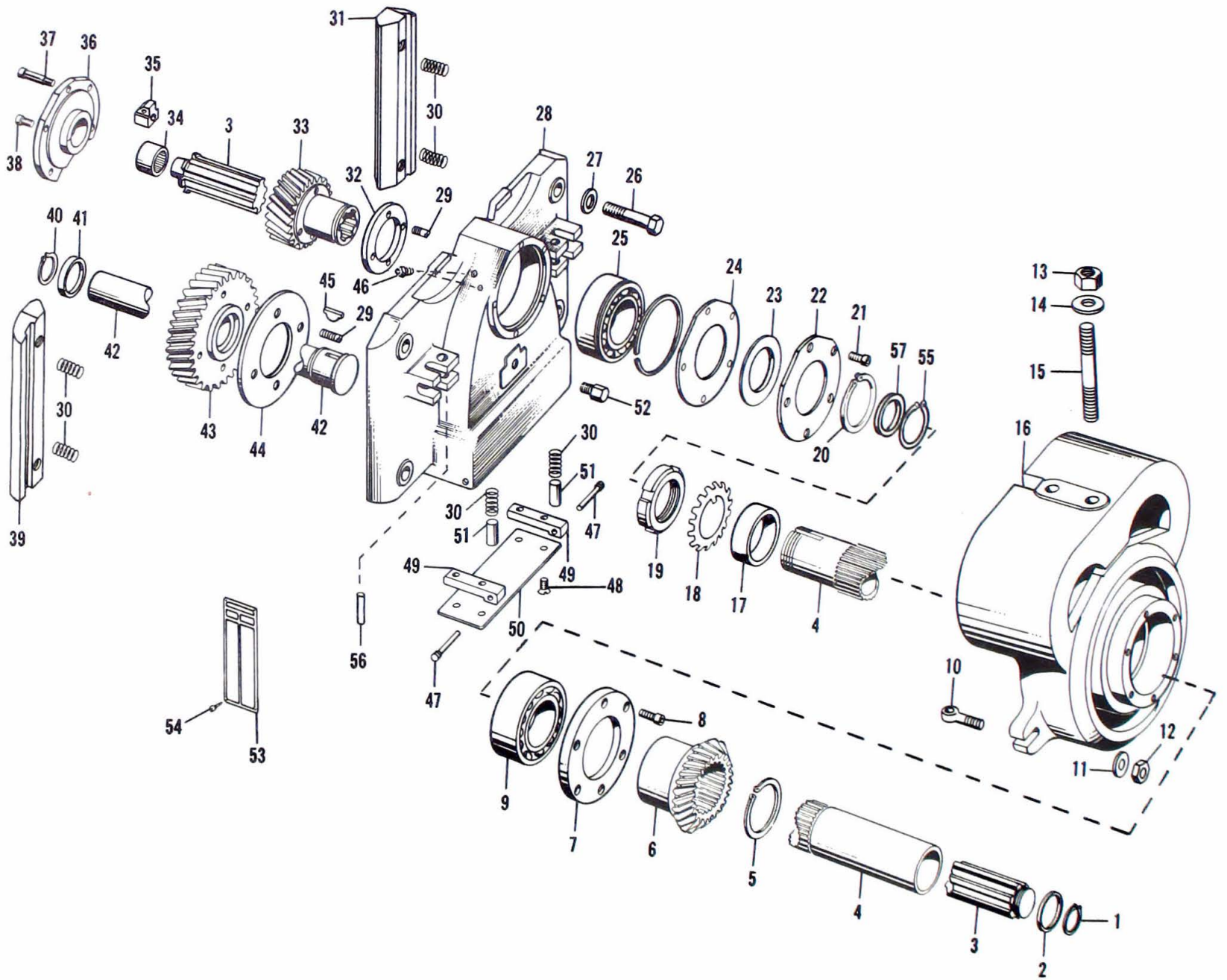
Order by CODE No. and ATTACHMENT SERIAL No.

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Tru-arc retainer, 5100-137.....	AR-BQ1	1
2	Fitting washer.....	AR-BQ2	1
3	Spindle head drive shaft.....	AR-BQ3	1
4	Spindle drive gear sleeve.....	AR-BQ4	1
5	Tru-arc retainer, 5100-225.....	AR-BQ5	1
6	Spiral bevel gear (driver) ①.....	AR-BQ6	1
7	Support bracket bearing retainer....	AR-BQ7	1
8	Socket head cap screw, 5/16— 18 x t in.....	AR-BQ8	6
9	New departure bearing, #5511.....	AR-BQ9	1
10	Swivel clamp bolt.....	AR-BQ10	2
11	Washer.....	AR-BQ11	2
12	Nut, 1/2—13.....	AR-BQ12	2
13	Nut, 3/4—10.....	AR-BQ13	2
14	Washer.....	AR-BQ14	2
15	Stud, 3/4—10 x 5 in.....	AR-BQ15	2
16	Swivel support bracket.....	AR-BQ16	1
17	Bearing spacer.....	AR-BQ17	1
18	New departure lock washer, #W-11..	AR-BQ18	1
19	New departure bearing nut, #N-11..	AR-BQ19	1
20	Tru-arc retainer, 5100-215.....	AR-BQ20	1
21	Tru-arc retainer, 5100-175.....	AR-BQ21	1
22	Fitting washer.....	AR-BQ22	1
23	Socket hd cap screw, 5/16—18 x 3/4 in..	AR-BQ23	9
24	Housing oil retainer.....	AR-BQ24	1
25	Housing oil slinger.....	AR-BQ25	1
26	Housing bearing retainer.....	AR-BQ26	1
27	New departure bearing, #5511.....	AR-BQ27	1
28	Hex hd bolt, 5/8—11 x 2 13/16 in.....	AR-BQ28	4
29	Washer.....	AR-BQ29	4

Item No.	Part Name and Description	Code No.	Qty.
30	Drive gear housing.....	AR-BQ30	1
31	Alemite Zerk fitting, 1/8 in., #1610...	AR-BQ31	2
32	Spring.....	AR-BQ32	6
33	Housing gib, R.H.....	AR-BQ33	1
34	Pitch spacer key.....	AR-BQ34	1
35	Helical gear spacer.....	AR-BQ35	1
36	Helical gear (driven).....	AR-BQ36	1
37	Orange bearing, #7193.....	AR-BQ37	1
38	Chain anchor block.....	AR-BQ38	1
39	Bearing retainer.....	AR-BQ39	1
40	Shoulder screw, 5/16 x 1 1/4 in.....	AR-BQ40	1
41	Housing gib, L.H.....	AR-BQ41	1
42	Adapter plug.....	AR-BQ42	1
43	Helical drive gear.....	AR-BQ43	1
44	Helical gear spacer.....	AR-BQ44	1
45	Stud, 1/4—20 x 1 5/16 in.....	AR-BQ45	4
46	Adapter plug nut.....	AR-BQ46	1
47	Washer.....	AR-BQ47	1
48	Tru-arc retainer, 5000-250.....	AR-BQ48	1
49	Headless dowel screw.....	AR-BQ49	2
50	Flat hd machine screw, 1/4—20.....	AR-BQ50	4
51	Housing door hinge.....	AR-BQ51	2
52	Drive gear housing door.....	AR-BQ52	1
53	Plunger pin.....	AR-BQ53	2
54	Adjustable stop screw.....	AR-BQ54	1
55	Escutcheon pin.....	AR-BQ55	4
56	Spindle speed plate (bronze).....	AR-BQ56	1
	Spindle speed plate (zinc).....	AR-BQ56	1
57	Dowel, 3/8 x 1 3/8 lg.....	AR-BQ57	2

① Sold in matched sets only.



**Fig. 35 — Heavy Duty High Speed Adjustable Universal Milling Attachment
(Drive Bracket Unit)**

For 3KM, 3K, 3CK, 3CSM(30), 4H, 4CH, 4CSM(30), 315TF, 330TF, 415TF, and 430TF Machines

Replacement Parts Manual

STANDARD ATTACHMENTS — FOR MILLING AND BORING MACHINES

**Fig. 35 — Heavy Duty High Speed Adjustable Universal Milling Attachment
(Drive Bracket Unit)**

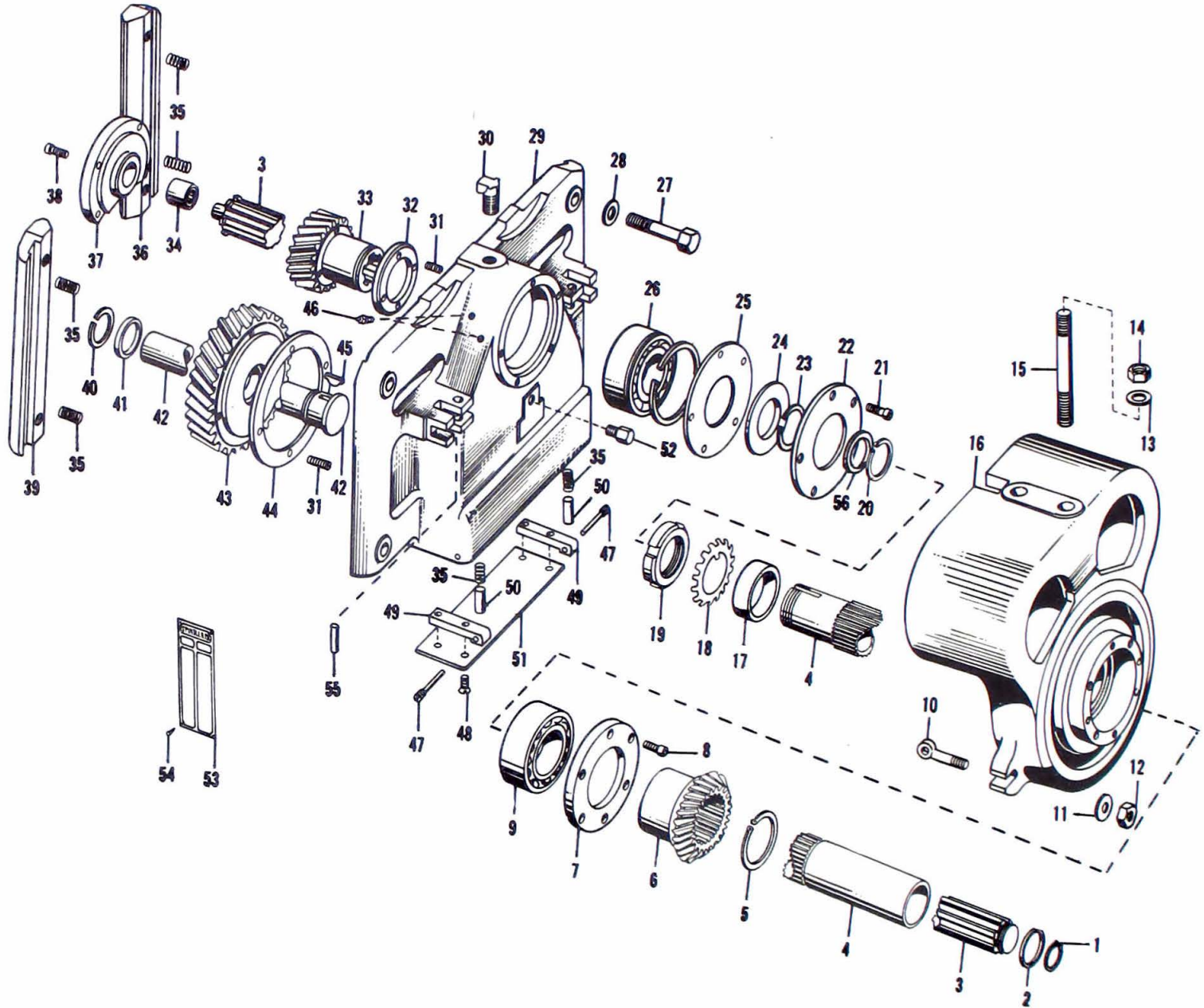
For 3KM, 3K, 3CK, 3CSM(30), 4H, 4CH, 4CSM(30), 315TF, 330TF, 415TF, and 430TF Machines

Order by CODE No. and ATTACHMENT SERIAL No.

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.	Item No.	Part Name and Description	Code No.	Qty.
1	Tru-arc retainer, 5100-137.....	AR-BR1	1	31	Housing gib, R.H.....	AR-BR31	1
2	Washer.....	AR-BR2	1	32	Spiral gear spacer (upper).....	AR-BR32	1
3	Spindle head drive shaft.....	AR-BR3	1	33	Spiral gear (driven).....	AR-BR33	1
4	Spindle drive gear sleeve.....	AR-BR4	1	34	Orange bearing, #7193CT.....	AR-BR34	1
5	Tru-arc retainer, 5100-225.....	AR-BR5	1	35	Chain anchor block.....	AR-BR35	1
6	Spiral bevel gear (driver)①.....	AR-BR6	1	36	Bearing retainer.....	AR-BR36	1
7	Support bracket bearing retainer.....	AR-BR7	1	37	Socket head shoulder screw, 5/16 x 1 1/4 in.....	AR-BR37	1
8	Socket head cap screw, 5/16—18 x 5/8 in.....	AR-BR8	6	38	Socket head cap screw, 1/4—20 x 5/8 in.....	AR-BR38	4
9	New departure bearing, #5511.....	AR-BR9	1	39	Housing gib, L.H.....	AR-BR39	1
10	Swivel clamp bolt.....	AR-BR10	2	40	Tru-arc retainer, 5100-162.....	AR-BR40	1
11	Washer.....	AR-BR11	2	41	Fitting washer.....	AR-BR41	1
12	Nut, 1/2—13.....	AR-BR12	2	42	Drive gear extension.....	AR-BR42	1
13	Nut, 3/4—10.....	AR-BR13	2	43	Spiral gear (driver).....	AR-BR43	1
14	Washer.....	AR-BR14	2	44	Spiral gear spacer.....	AR-BR44	1
15	Stud, 3/4—10 x 5 1/2 in.....	AR-BR15	2	45	Hi-Pro key, #505.....	AR-BR45	1
16	Swivel support bracket.....	AR-BR16	1	46	Alemite Zerk fitting, 1/8 in., #1610....	AR-BR46	2
17	Bearing spacer.....	AR-BR17	1	47	Headless dowel screw.....	AR-BR47	2
18	New departure lock washer, #W-11..	AR-BR18	1	48	Flat head machine screw, 1/4—20....	AR-BR48	4
19	New departure bearing nut, #N-11...	AR-BR19	1	49	Housing door hinge.....	AR-BR49	2
20	Tru-arc retainer, 5100-215.....	AR-BR20	1	50	Drive gear housing door.....	AR-BR50	1
21	Socket head cap screw, 5/16—18 x 7/8 in.....	AR-BR21	5	51	Plunger pin.....	AR-BR51	2
22	Housing oil retainer.....	AR-BR22	1	52	Adjustable stop screw.....	AR-BR52	1
23	Housing oil slinger.....	AR-BR23	1	53	Spindle speed plate (15 to 1500) ...	AR-BR53	1
24	Housing bearing retainer.....	AR-BR24	1		Spindle speed plate (50 to 1250) ...	AR-BR53	1
25	New departure bearing, #45511.....	AR-BR25	1	54	Escutcheon pin, #15, 3/8 in.....	AR-BR54	4
26	Hex hd bolt, 5/8 x 2 13/16 in.....	AR-BR26	4	55	Tru-arc retainer, 5100-175.....	AR-BR55	1
27	Washer.....	AR-BR27	4	56	Dowel, 3/8 x 1 3/8 in.....	AR-BR56	2
28	Drive gear housing.....	AR-BR28	1	57	Fitting washer.....	AR-BR57	1
29	Stud, 1/4—20.....	AR-BR29	8				
30	Spring.....	AR-BR30	6				

① Sold as matched set only.



**Fig. 36 — Heavy Duty High Speed Adjustable Universal Milling Attachment
(Drive Bracket Unit)**
For 4K, 4CK, 4CSM(50), 5H, 5HM, 5CK, 5CSM, 6CK, 6CSM, 425TF, 450TF, 525TF, 550TF, 625TF,
and 650TF Machines

Replacement Parts Manual

STANDARD ATTACHMENTS — FOR MILLING AND BORING MACHINES

**Fig. 36 — Heavy Duty High Speed Adjustable Universal Milling Attachment
(Drive Bracket Unit)**

*For 4K, 4CK, 4CSM(50), 5H, 5HM, 5CK, 5CSM, 6CK, 6CSM, 425TF, 450TF, 525TF, 550TF, 625TF,
and 650TF Machines*

Order by CODE No. and ATTACHMENT SERIAL No.

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Tru-arc retainer, 5100-137.....	AR-BS1	1
2	Washer.....	AR-BS2	1
3	Spindle head drive shaft.....	AR-BS3	1
4	Spindle drive gear sleeve.....	AR-BS4	1
5	Tru-arc retainer, 5100-225.....	AR-BS5	1
6	Spiral bevel gear (driver) ①.....	AR-BS6	1
7	Support bracket bearing retainer.....	AR-BS7	1
8	Socket head cap screw, 5/16—18 x 5/8 in.....	AR-BS8	6
9	New departure bearing, #5511.....	AR-BS9	1
10	Swivel clamp bolt.....	AR-BS10	2
11	Washer.....	AR-BS11	2
12	Nut, 1/2—13.....	AR-BS12	2
13	Washer.....	AR-BS13	2
14	Nut, 3/4—10.....	AR-BS14	2
15	Stud, 3/4—10 x 6 1/16 in.....	AR-BS15	2
16	Swivel support bracket.....	AR-BS16	1
17	Bearing spacer.....	AR-BS17	1
18	New departure lock washer, #W-11..	AR-BS18	1
19	New departure bearing nut, #N-11...	AR-BS19	1
20	Tru-arc retainer, 5100-175.....	AR-BS20	1
21	Socket hd cap screw, 5/16—18 x 7/8 in..	AR-BS21	5
22	Housing oil retainer.....	AR-BS22	1
23	Tru-arc retainer, 5100-215.....	AR-BS23	1
24	Housing oil slinger.....	AR-BS24	1
25	Housing bearing retainer.....	AR-BS25	1
26	New departure bearing, #45511....	AR-BS26	1
27	Hex head bolt, 5/8 x 2 13/16 in.....	AR-BS27	4
28	Washer.....	AR-BS28	4
29	Drive gear housing.....	AR-BS29	1

Item No.	Part Name and Description	Code No.	Qty.
30	Lift stud.....	AR-BS30	1
31	Stud, 1/4—20.....	AR-BS31	8
32	Spiral gear spacer.....	AR-BS32	1
33	Spiral gear (driven).....	AR-BS33	1
34	Orange bearing, #7154CT.....	AR-BS34	1
35	Spring.....	AR-BS35	6
36	Housing gib, R.H.....	AR-BS36	1
37	Bearing retainer.....	AR-BS37	1
38	Socket hd cap screw, 5/16—18 x 3/4 in..	AR-BS38	4
39	Housing gib, L.H.....	AR-BS39	1
40	Tru-arc retainer, 5100-162.....	AR-BS40	1
41	Fitting washer.....	AR-BS41	1
42	Drive gear extension.....	AR-BS42	1
43	Spiral gear (driver).....	AR-BS43	1
44	Spiral gear spacer.....	AR-BS44	1
45	Hi-Pro key, #505.....	AR-BS45	1
46	Alemite Zerk fitting, 1/8 in., #1610....	AR-BS46	2
47	Headless dowel screw.....	AR-BS47	2
48	Flat head mach screw, 1/4—20.....	AR-BS48	4
49	Housing door hinge.....	AR-BS49	1
50	Plunger pin.....	AR-BS50	2
51	Drive gear housing door.....	AR-BS51	1
52	Adjustable stop screw.....	AR-BS52	1
53	Speed plate (13-1300).....	AR-BS53	1
	Speed plate (50-1250).....	AR-BS53	1
54	Escutcheon pin, #15, 3/8 in.....	AR-BS54	4
55	Dowel, 3/8 x 1 3/8 in. long.....	AR-BS55	2
56	Fitting washer.....	AR-BS56	1

① Sold in matched sets only.

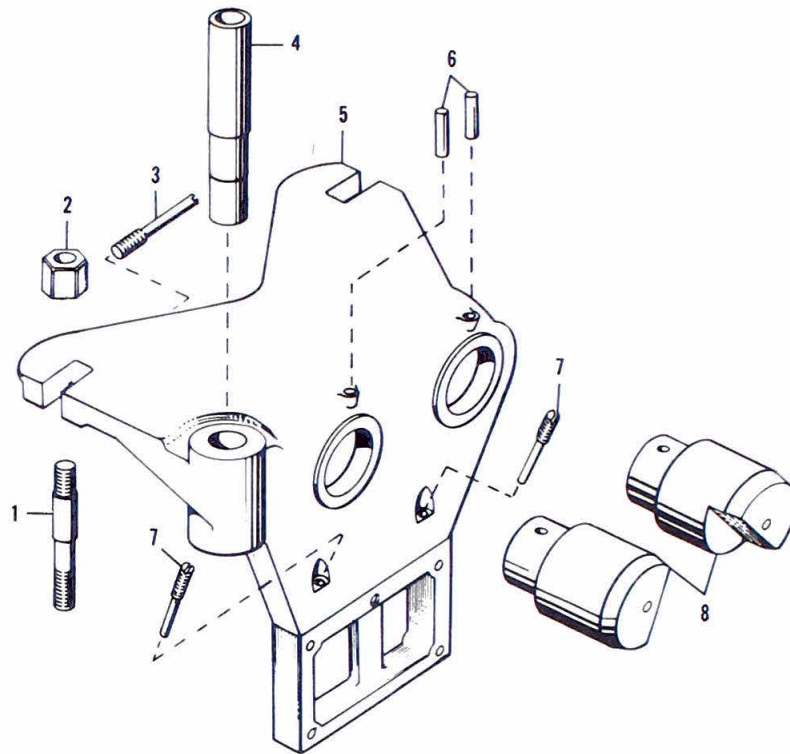
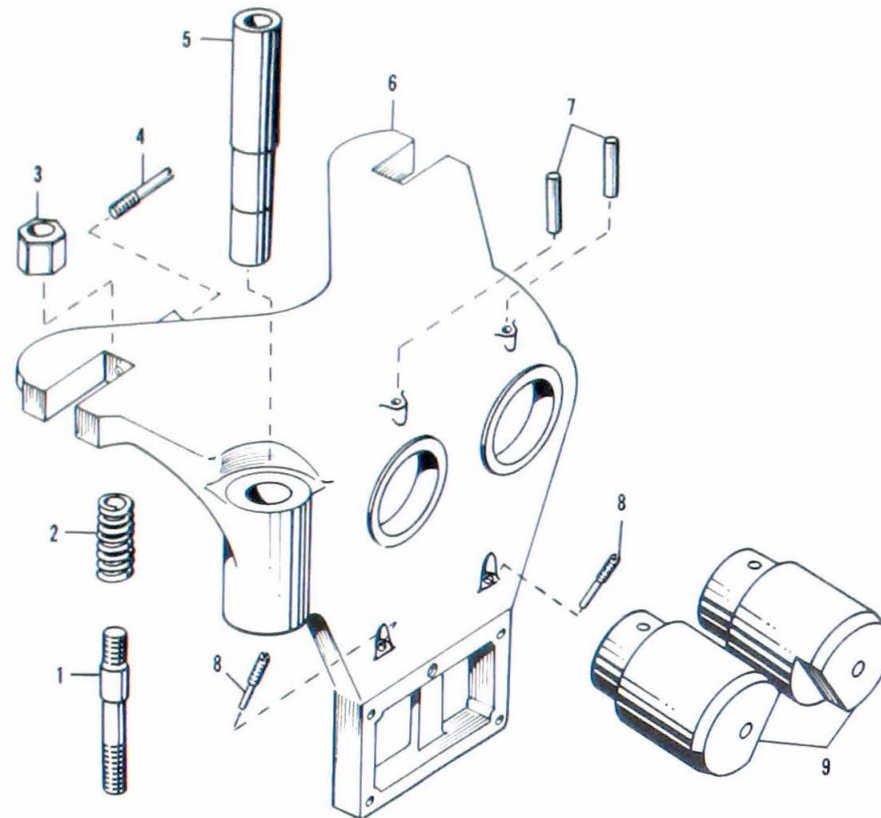


Fig. 37 — Parking Bracket
 For 1H, 1CH, 2HL, 2CHL, 18AC, and 24AC Machines

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code Numbers		Qty.
		1H, 2HL	1CH, 2CHL, 18AC, 24AC	
1	Overarm clamp stud	AR-BT1	AR-BU1	2
2	Eccentric hex block	AR-BT2	AR-BU2	2
3	Eccentric hex block screw	AR-BT3	AR-BU3	2
4	Swivel post	AR-BT4	AR-BU4	1
5	Parking bracket	AR-BT5	AR-BU5	1
6	Stub overarm pin	AR-BT6	AR-BU6	2
7	Support screw	AR-BT7	AR-BU7	2
8	Stub overarm	AR-BT8	AR-BU8	2

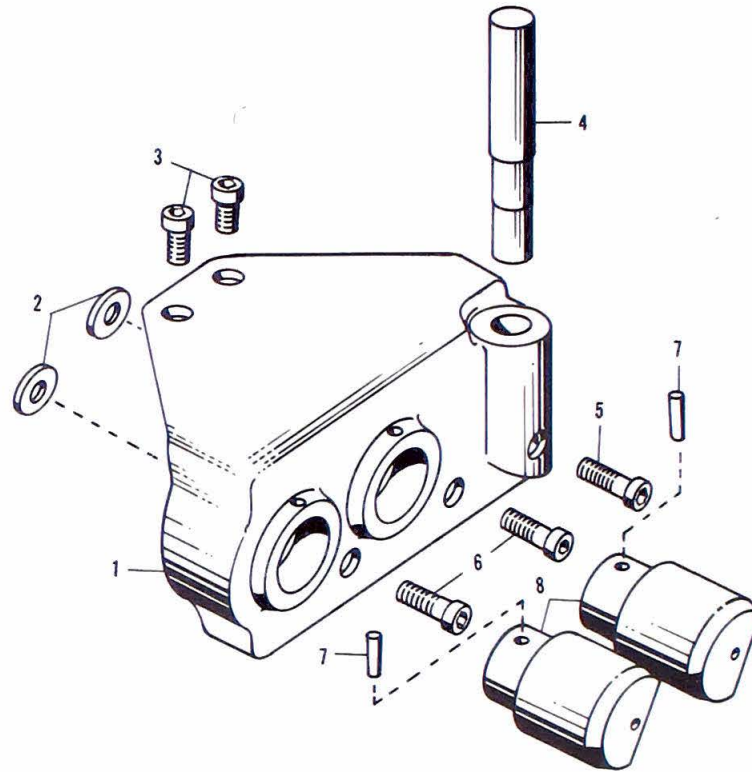


**Fig. 38 — Parking Bracket
For 2H and 2CH Machines**

Order by **CODE No.** and **ATTACHMENT SERIAL No.**

Item No.	Part Name and Description	Code Numbers		Qty.
		2H	2CH	
1	Overarm clamp stud	AR-BV1	AR-BW1	2
2	Clamp stud spring ①	—	AR-BW2	2
3	Eccentric hex block	AR-BV3	AR-BW3	2
4	Eccentric hex block screw	AR-BV4	AR-BW4	2
5	Swivel post	AR-BV5	AR-BW5	1
6	Parking bracket	AR-BV6	AR-BW6	1
7	Stub overarm pin	AR-BV7	AR-BW7	2
8	Support screw	AR-BV8	AR-BW8	2
9	Stub overarm	AR-BV9	AR-BW9	2

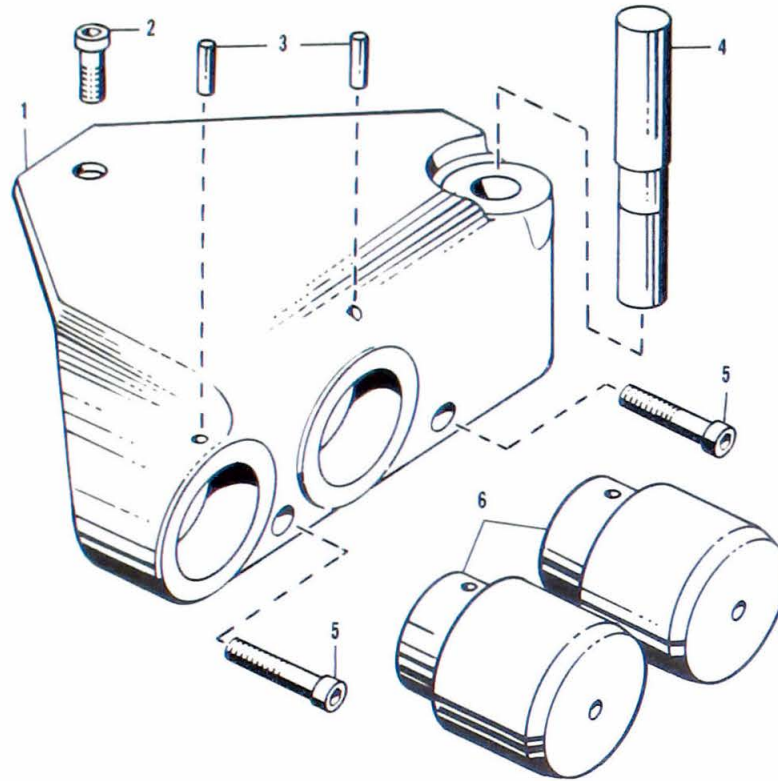
① Not found on 2H bracket.



**Fig. 39 — Parking Bracket
For 2E and 2CE Machines**

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Parking bracket.....	AR-BX1	1
2	Fitting washer.....	AR-BX2	2
3	Socket head cap screw, 5/8—11 x 1 in..	AR-BX3	2
4	Main swivel shaft.....	AR-BX4	1
5	Socket head cap screw, 5/8—11 x 3 in..	AR-BX5	1
6	Socket hd cap screw, 5/8—11 x 1 3/4 in..	AR-BX6	2
7	Pin, 3/8 x 1 1/4 in.....	AR-BX7	2
8	Stub overarm.....	AR-BX8	2



**Fig. 40 — Parking Bracket
For 3CE Machines**

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Parking bracket.....	AR-BY1	1
2	Socket hd cap screw, $\frac{5}{8}$ —11 x 1½ in..	AR-BY2	1
3	Acme blue label dowel, $\frac{3}{8}$ x 1½ in....	AR-BY3	2
4	Swivel post.....	AR-BY4	1
5	Socket head cap screw, $\frac{5}{8}$ —11 x 3 in..	AR-BY5	2
6	Stub overarm	AR-BY6	2

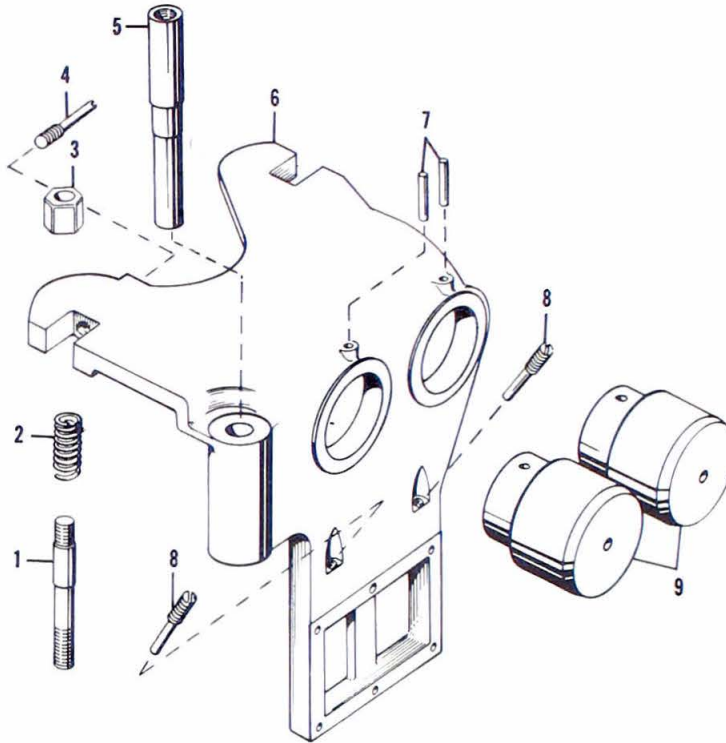


Fig. 41 — Parking Bracket
 For 2KM, 2K, 2CK, 2CSM(20), 3H,
 3CH, 3CSM(20), 3KM, 3K, 3CK,
 3CSM(30), 4H, 4CH, 4CSM(30),
 210TF, 220TF, 310TF, 320TF, 315TF,
 330TF, 415TF, and 430TF Machines

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code Numbers		Qty.
		2KM, 2K, 2CK, 2CSM(20), 3H, 3CH, 3CSM(20), 210TF, 220TF, 310TF, 320TF	3KM, 3K, 3CK, 3CSM(30), 4H, 4CH, 4CSM(30), 315TF, 330TF, 415TF, 430TF	
1	Overarm clamp stud	AR-BZ1	AR-CA1	2
2	Clamp stud spring	AR-BZ2	AR-CA2	2
3	Eccentric hex block	AR-BZ3	AR-CA3	2
4	Eccentric hex block screw	AR-BZ4	AR-CA4	2
5	Swivel post	AR-BZ5	AR-CA5	1
6	Parking bracket	AR-BZ6	AR-CA6	1
7	Stub overarm pin	AR-BZ7	AR-CA7	2
8	Support screw	AR-BZ8	AR-CA8	2
9	Stub overarm	AR-BZ9	AR-CA9	2

Replacement Parts Manual

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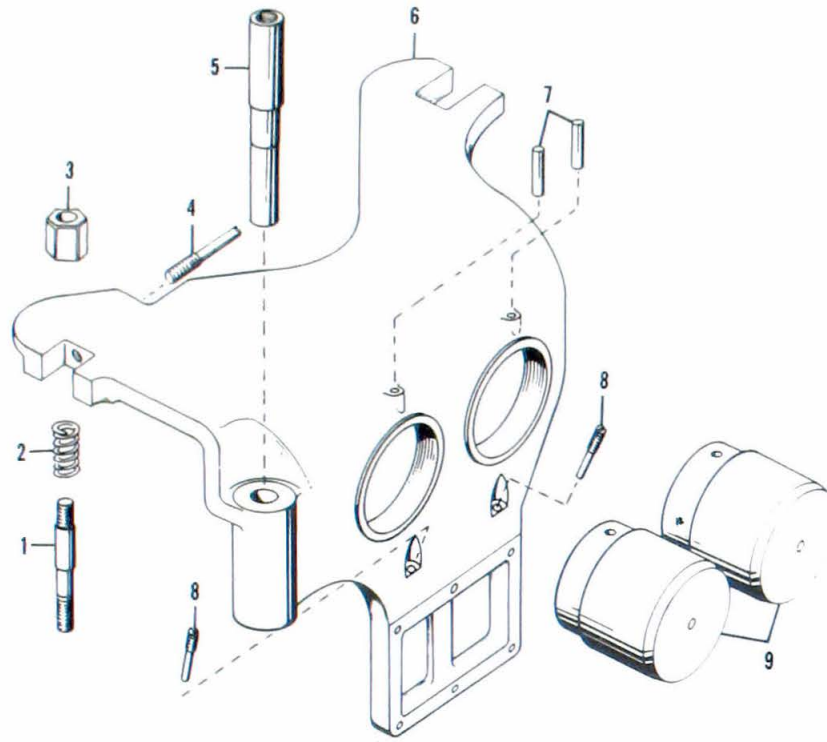


Fig. 42 — Parking Bracket
 For 4K, 4CK, 4CSM(50), 5H, 5HM,
 5CK, 5CSM, 6CK, 6CSM, 425TF,
 450TF, 525TF, 550TF, 625TF, and
 650TF Machines

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Overarm clamp stud.....	AR-CB1	2
2	Clamp stud spring.....	AR-CB2	2
3	Eccentric hex block.....	AR-CB3	2
4	Eccentric hex block screw.....	AR-CB4	2
5	Swivel post.....	AR-CB5	1
6	Parking bracket.....	AR-CB6A	1
	Parking bracket ^①	AR-CB6B	1
7	Stub overarm pin.....	AR-CB7	2
8	Support screw.....	AR-CB8	2
9	Stub overarm.....	AR-CB9	2

^①For 4K, 5H and 5HM machines only.

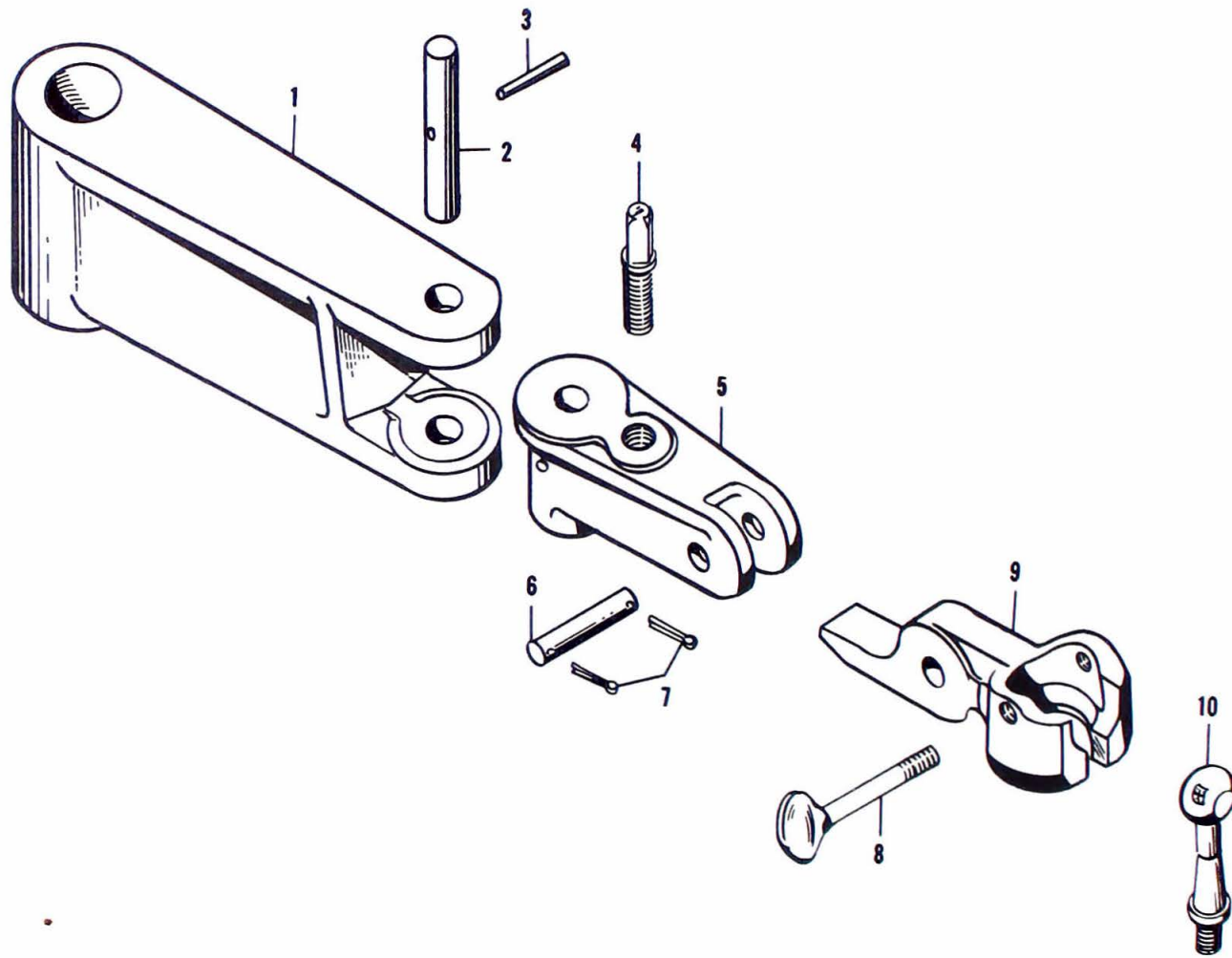


Fig. 43 — Attachment Crane
For All Model Machines as Indicated

Fig. 43 — Attachment Crane
For All Model Machines as Indicated

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Attachment crane (For 1H, 1CH, 2HL, 2CHL, 18AC, 24AC, 2E, 2CE machines)	AR-CC1A	1
	Attachment crane (For 2H, 2CH, 2KM, 2K, 2CK, 2CSM (20), 3CE, 3H, 3CH, 3CSM (20), 3KM, 3K, 3CK, 3CSM (30), 4H, 4CH, 4CSM (30), 210TF, 220TF, 310TF, 320TF, 415TF, 430TF machines)	AR-CC1B	1
	Attachment crane (For 4K, 4CK, 4CSM (50), 5CK, 5CSM, 6CK, 6CSM, 425TF, 450TF, 525TF, 550TF, 625TF, 650TF machines.)	AR-CC1C	1
2	Swivel arm shaft	AR-CC2	1
3	Taper pin, #5, 2 in.	AR-CC3	1
4	Elevating screw	AR-CC4	1
5	Attachment crane swivel arm	AR-CC5	1
6	Elevating arm fulcrum	AR-CC6	2
7	Cotter pin, $\frac{3}{32}$ x 1 in.	AR-CC7	1
8	Williams "D" screw	AR-CC8	1
9	Attachment crane elevating arm	AR-CC9	1
10	Attachment support stud (long)	AR-CC10	1
	Attachment support stud (short) ① (For 1H, 1CH, 2HL, 2CHL, 18AC, 24AC, 2E, 2CE machines only)	AR-CC11	1

① Use either one as required on machines mentioned.

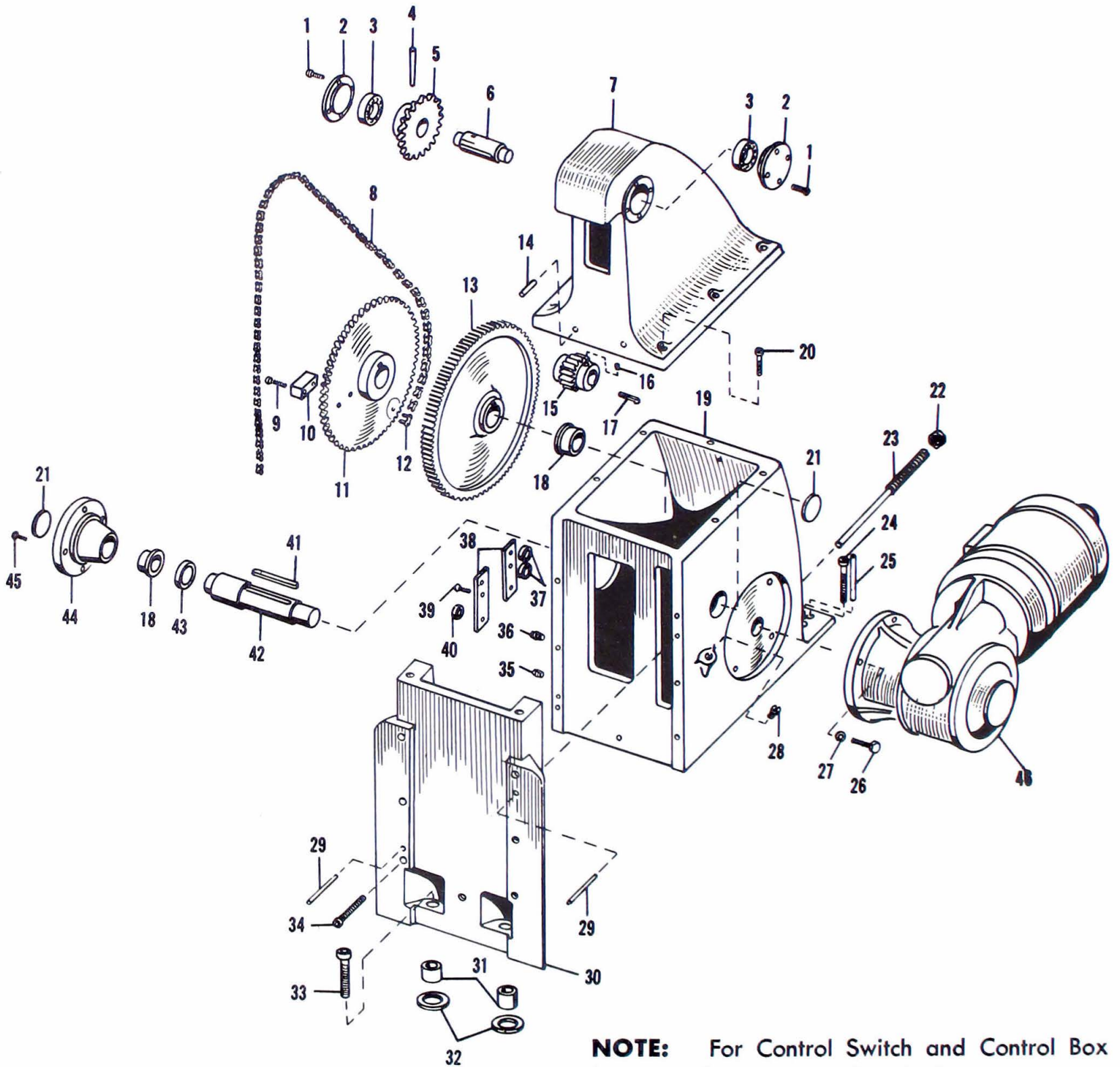


Fig. 44 — Rapid Parking Attachment
For Machines Indicated Only

Replacement Parts Manual

STANDARD ATTACHMENTS — FOR MILLING AND BORING MACHINES

**Fig. 44 — Rapid Parking Attachment
For Machines Indicated Only**

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
1	Fil hd screw, 1/4—20 x 1/2 in.....	AR-CD1	8
2	Bearing retainer.....	AR-CD2	2
3	New departure seal bearing, #88505.....	AR-CD3	2
4	Taper pin, #4, 2 1/4 in.....	AR-CD4	1
5	Idler sprocket.....	AR-CD5	1
6	Idler shaft.....	AR-CD6	1
7	Hoist cover.....	AR-CD7	1
8	Diamond chain 5/8 pitch 53 1/2 in. centerline pin, #449.....	AR-CD8	1
9	Socket hd cap screw, 3/8—16 x 1 1/2 in.....	AR-CD9	2
10	Travel limit block.....	AR-CD10	1
11	Drive sprocket.....	AR-CD11	1
12	Diamond connecting link (riveted type) #449.....	AR-CD12	2
13	Drive gear.....	AR-CD13	1
14	Pin, 7/16 x 1 13/16 in.....	AR-CD14	2
15	Motor drive pinion.....	AR-CD15	1
16	Half dog point set screw, 5/16— 18 x 5/16 in.....	AR-CD16	1
17	Key, 1/4 sq. x 2 1/8.....	AR-CD17	1
18	Oilite flange bearing, F-1314-2.....	AR-CD18	2
19	Hoist housing.....	AR-CD19	1
20	Socket hd cap screw, 7/16—14 x 1 1/2 in.....	AR-CD20	7
21	Expansion plug, 1 5/8.....	AR-CD21	2
22	Nut.....	AR-CD22	1
23	Stud.....	AR-CD23	1
24	Socket hd cap screw, 5/8—18 x 3 in..	AR-CD24	2
25	Acme blue label dowel, 1/2 x 3 1/2....	AR-CD25	2
26	Hex head cap screw.....	AR-CD26	4

Order by CODE No. and ATTACHMENT SERIAL No.

Item No.	Part Name and Description	Code No.	Qty.
27	Lockwasher, 3/8 in.....	AR-CD27	4
28	Oil hole screw.....	AR-CD28	1
29	Acme blue label dowel, 3/8 x 3 1/2....	AR-CD29	2
30	Hoist housing way ①.....	AR-CD30A	1
	Hoist housing way ②.....	AR-CD30B	1
	Hoist housing way ③.....	AR-CD30C	1
31	Bushing.....	AR-CD31	2
32	Fitting washer.....	AR-CD32	2
33	Socket hd cap screw, 5/8—18 x 1 3/4 in.....	AR-CD33	2
34	Socket hd cap screw, 7/16—14 x 3 in..	AR-CD34	7
35	Socket head pipe plug, 1/8.....	AR-CD35	1
36	Socket head pipe plug, 1/4.....	AR-CD36	1
37	Control box spacer.....	AR-CD37	4
38	Control box bracket.....	AR-CD38	2
39	Flat head screw, 1/4—20.....	AR-CD39	4
40	Control box spacer.....	AR-CD40	2
41	Key (3/8 sq. x 3 1/8 in.).....	AR-CD41	1
42	Drive shaft.....	AR-CD42	1
43	Fitting washer.....	AR-CD43	1
44	Bearing carrier.....	AR-CD44	1
45	Socket hd cap screw, 5/16—18 x 3/4 in.....	AR-CD45	4
46	Right angle drive motor.....	AR-CD46	1
47	Control switch (not shown).....	AR-CD47	1
48	Control box (not shown).....	AR-CD48	1

① For 2KM, 2K, 2CK, 2CSM (20), 3CE, 3H, 3CH, 3CSM (20), 210TF, 220TF, 310TF, 320TF machines only.

② For 3KM, 3K, 3CK, 3CSM (30), 4H, 4CH, 4CSM (30), 315TF, 330TF, 415TF, 430TF machines only.

③ For 4K, 4CK, 4CSM, 5H, 5HM, 5CK, 5CSM, 6CK, 6CSM, 425TF, 450TF, 525TF, 625TF, 650TF machines only.

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