

BETENBENDER

Manufacturing, Inc.

AMERICAN MADE WITH PRIDE AND DURABILITY

Press Brake Operators Manual & Parts Catalog



*The Betenbender Family of American-Made
Hydraulic Shears and Press Brakes
SINCE 1972*

On the Web at
www.betenbender.com



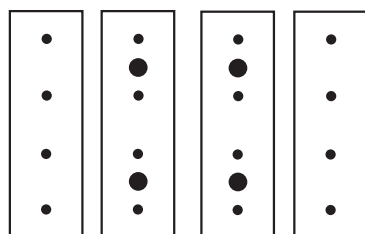


319-435-2378

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PRESS BRAKE PARTS

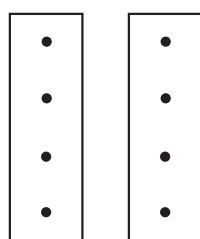
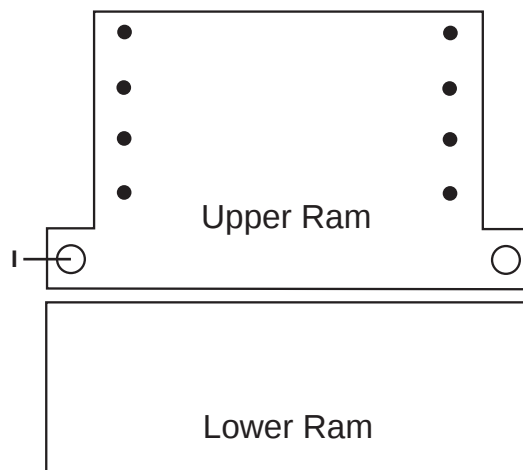
Press Brake Parts



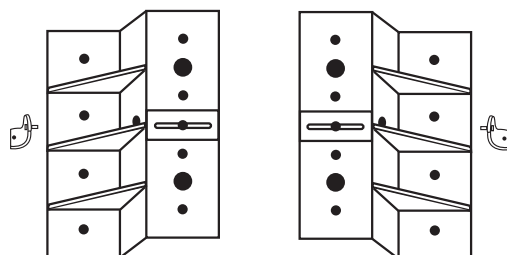
A

B

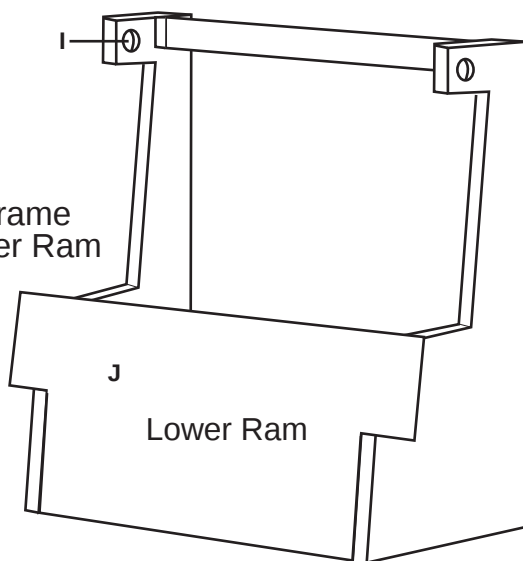
- A. Bearing Support
- B. Bearing
- C. Gib for Alignment of Ram
- D. Bearing
- E. Bearing Retainer
- F. Straightening Bar
- G. End Housing
- H. Upper Ram
- I. Self-Aligning Bearing
- J. Lower Ram



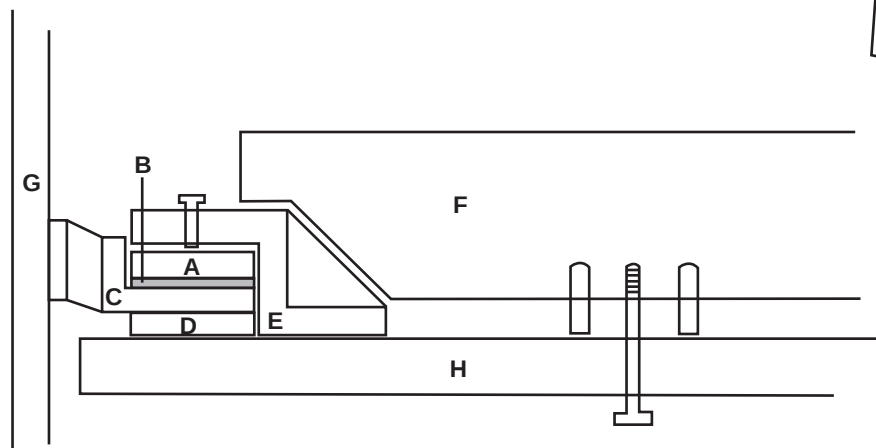
D



E

Main Frame
with Lower Ram

Lower Ram



LEFT GIBS/HOSES

Betenbender Manufacturing, Inc.

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LEFT GIB ASSEMBLY

ITEM #	PART #	DESCRIPTION	QTY.
1.....	L4560.....	Left Gib Assembly.....	1
		50-70 Ton	
1.....	L190175.....	Left Gib Assembly.....	1
		95-300 Ton	
C.....	145175.....	Rub Block Adjuster.....	1
D.....	37500.....	Set Screws.....	5
E.....	37035.....	Ram Align. Settings.....	2

HYDRAULIC HOSE

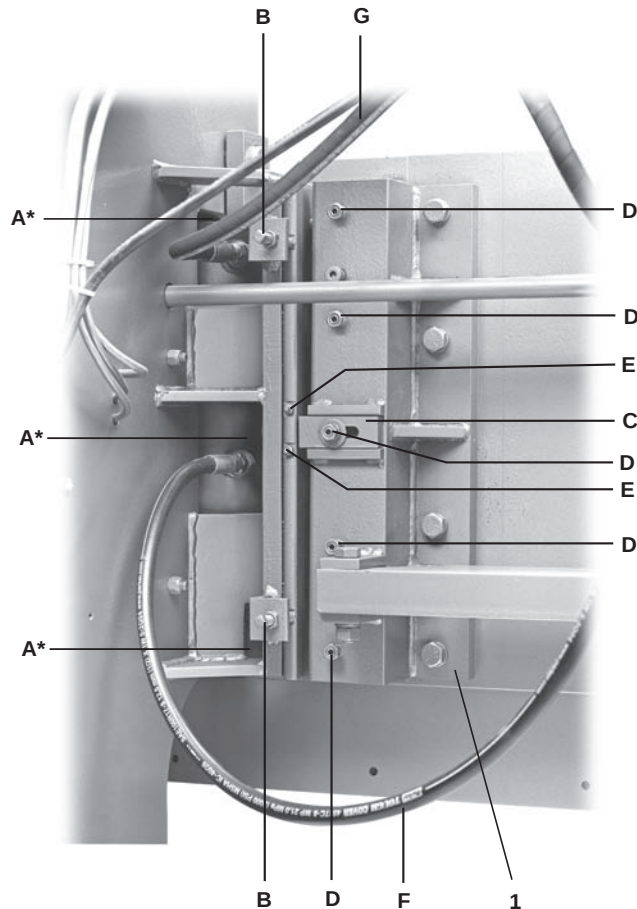
(3000 psi) w/10643 fittings

F.....	500102.....	4'-50-70 Ton.....	1
	500114.....	6'-50-70 Ton.....	1
	500126.....	8'-50-70 Ton.....	1
	500138.....	10'-50-70 Ton.....	1
	500150.....	12'-50-70 Ton.....	1
	500162.....	14'-70 Ton.....	1
	750162.....	14'-95-190 Ton.....	1
	750114.....	6'-95-300 Ton.....	1
	750126.....	8'-95-300 Ton.....	1
	750138.....	10'-95-300 Ton.....	1
	750150.....	12'-95-300 Ton.....	1

HYDRAULIC HOSE

(4000 psi) w/10643 fittings

G.....	50090.....	4'-50-70 Ton.....	1
	500102.....	6'-50-70 Ton.....	1
	500114.....	8'-50-70 Ton.....	1
	500126.....	10'-50-70 Ton.....	1
	500138.....	12'-50-70 Ton.....	1
	500150.....	14'-70 Ton.....	1
	750102.....	6'-95-300 Ton.....	1
	750114.....	8'-95-300 Ton.....	1
	750126.....	10'-95-300 Ton.....	1
	750138.....	12'-95-300 Ton.....	1
	750150.....	14'-95-300 Ton.....	1



Gib Adjustment Bolts

- A.* Bolts (Not Pictured)
- B. Ram Alignment Settings
- C. Rub Block Adjuster
- D. Set Screws-Tighten till snug.
Tighten lock nut.
- E. Grease Zerks
- F. Hose (3000 psi)
- G. Hose (4000 psi)

PRESS BRAKE PARTS

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RIGHT GIB ASSEMBLY

ITEM #	PART #	DESCRIPTION	QTY.
1.....	L4560.....	Right Gib Assembly.....	1
		50-70 Ton	
1.....	L190175.....	Right Gib Assembly.....	1
		95-300 Ton	
C.....	145175.....	Rub Block Adjuster.....	1
D.....	37500.....	Set Screws.....	5
B.....	37035.....	Ram Align. Settings.....	2

HYDRAULIC HOSE

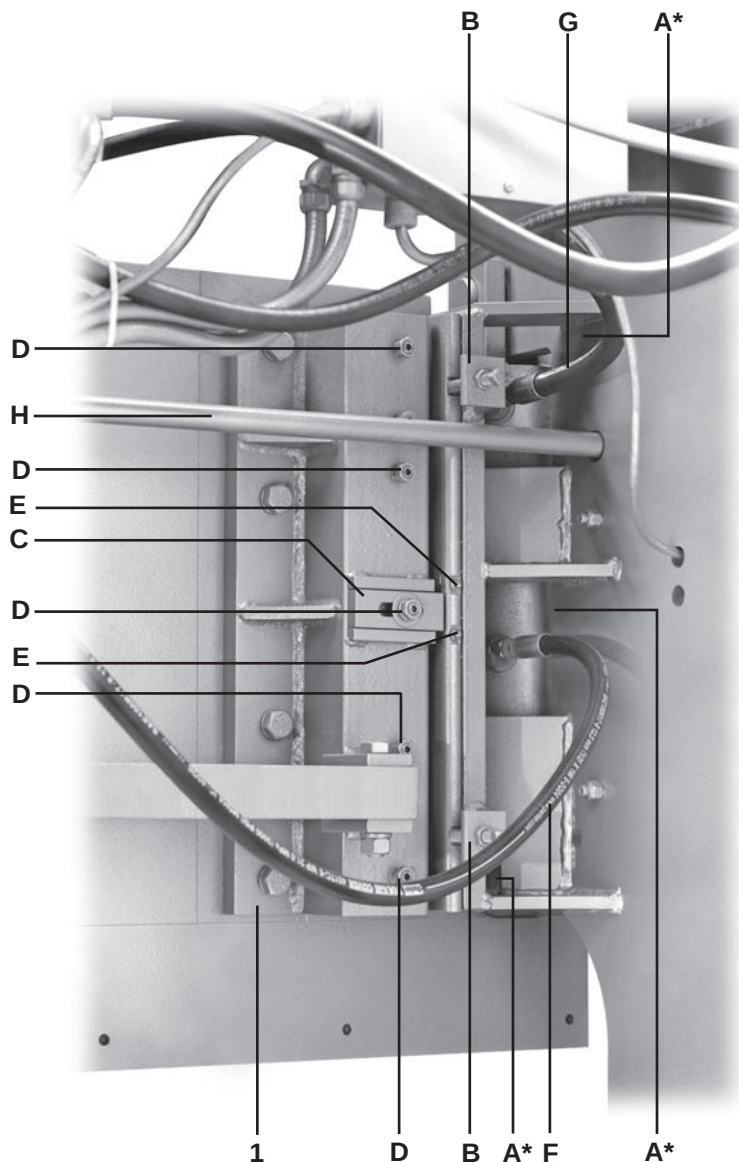
(4000 psi) w/10643 fittings

F.....	500102.....	4'-50-70 Ton.....	1
	500114.....	6'-50-70 Ton.....	1
	500126.....	8'-50-70 Ton.....	1
	500138.....	10'-50-70 Ton.....	1
	500150.....	12'-50-70 Ton.....	1
	500162.....	14'-70 Ton.....	1
	750162.....	14'-95-190 Ton.....	1
	750114.....	6'-95-300 Ton.....	1
	750126.....	8'-95-300 Ton.....	1
	750138.....	10'-95-300 Ton.....	1
	750150.....	12'-95-300 Ton.....	1

HYDRAULIC HOSE

(3000 psi) w/10643 fittings

G.....	50090.....	4'-50-70 Ton.....	1
	500102.....	6'-50-70 Ton.....	1
	500114.....	8'-50-70 Ton.....	1
	500126.....	10'-50-70 Ton.....	1
	500138.....	12'-50-70 Ton.....	1
	500150.....	14'-70 Ton.....	1
	750102.....	6'-95-300 Ton.....	1
	750114.....	8'-95-300 Ton.....	1
	750126.....	10'-95-300 Ton.....	1
	750138.....	12'-95-300 Ton.....	1
	750150.....	14'-95-300 Ton.....	1



Gib Adjustment Bolts

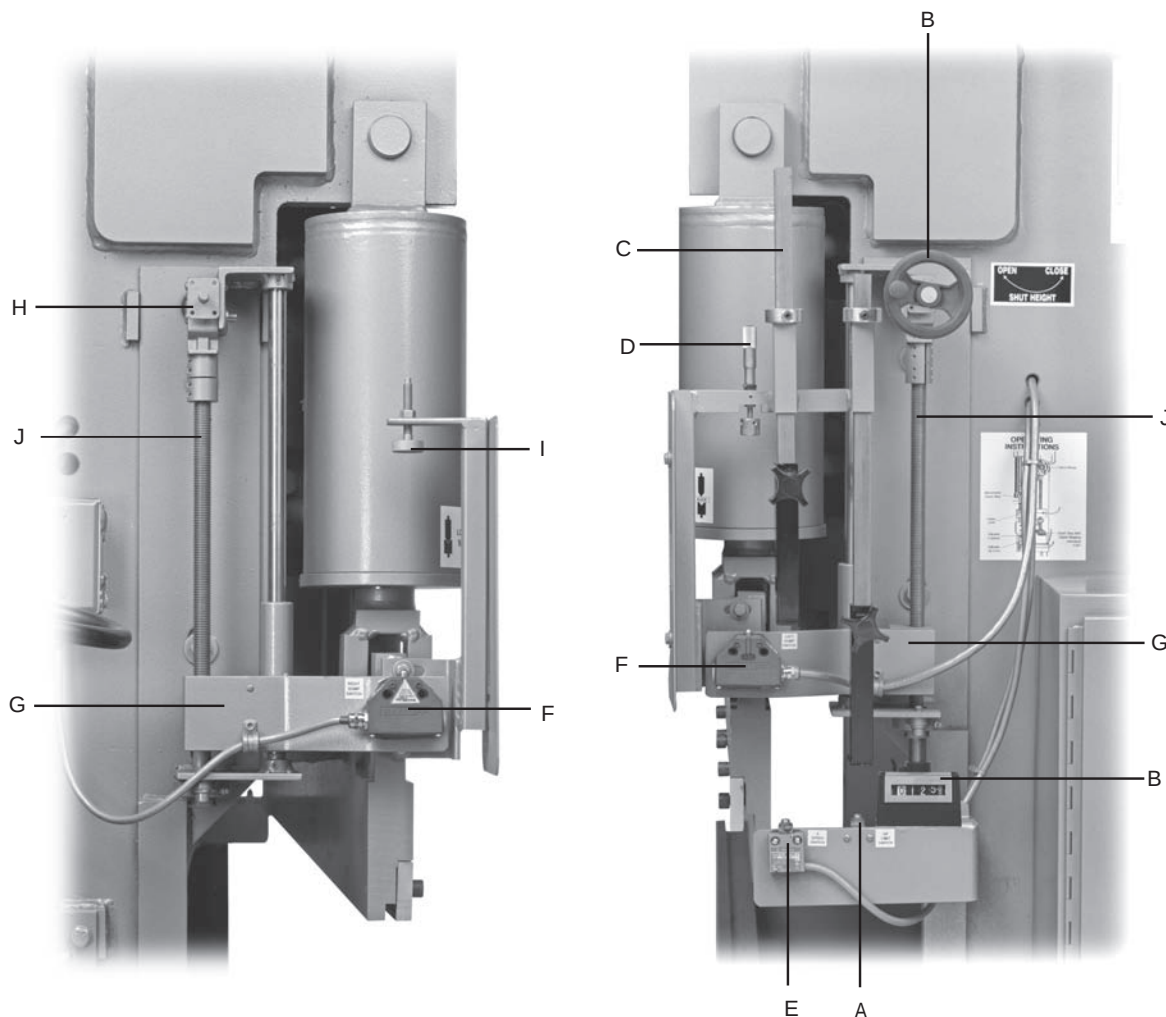
- A.* Bolts (Not Pictured)
- B. Ram Alignment Settings
- C. Rub Block Adjuster
- D. Set Screws-Tighten till snug.
Tighten lock nut.
- E. Grease Zerks
- F. Hose (3000 psi)
- G. Hose (4000 psi)
- H. Cross Shaft

SWITCH BRACKETS

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ITEM #	PART#	DESCRIPTION
A.....	S0506.....	Up Limit Switch
B.....	250C.....	Analog Read-Out Unit and Hand Wheel for adjustment of degrees of bend.
C.....		2 Speed Adjustment Rod Assy.
D.....	263L.....	Adjuster for Ram Tilt in .001" allowing for Tilt of Ram or making Ram and Bed Parallel
E.....	S0506.....	2 Speed Limit Switch
F.....	S0506.....	Dump Valve Switch
G.....	BNS819.....	Limit Switch Carrier
H.....	RAB-1.....	Right Angle Gearbox
I.....	TS375-25.....	Thumb Screw for Crosshead (Ram) Stop
J.....	AS375.....	Adjusting Screw for Crosshead (Ram) Stop



PRESS BRAKE PARTS

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Pride and Durability

BACKGAUGE PARTS

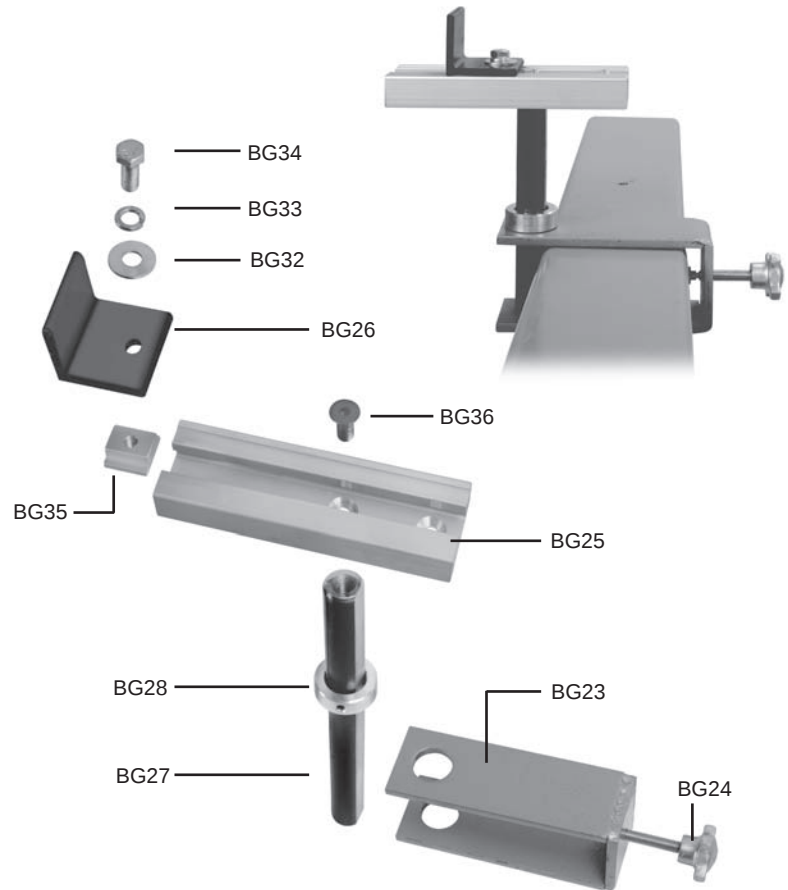
BACKGAUGE PARTS

FRONT OPERATING BACKGAUGE PARTS

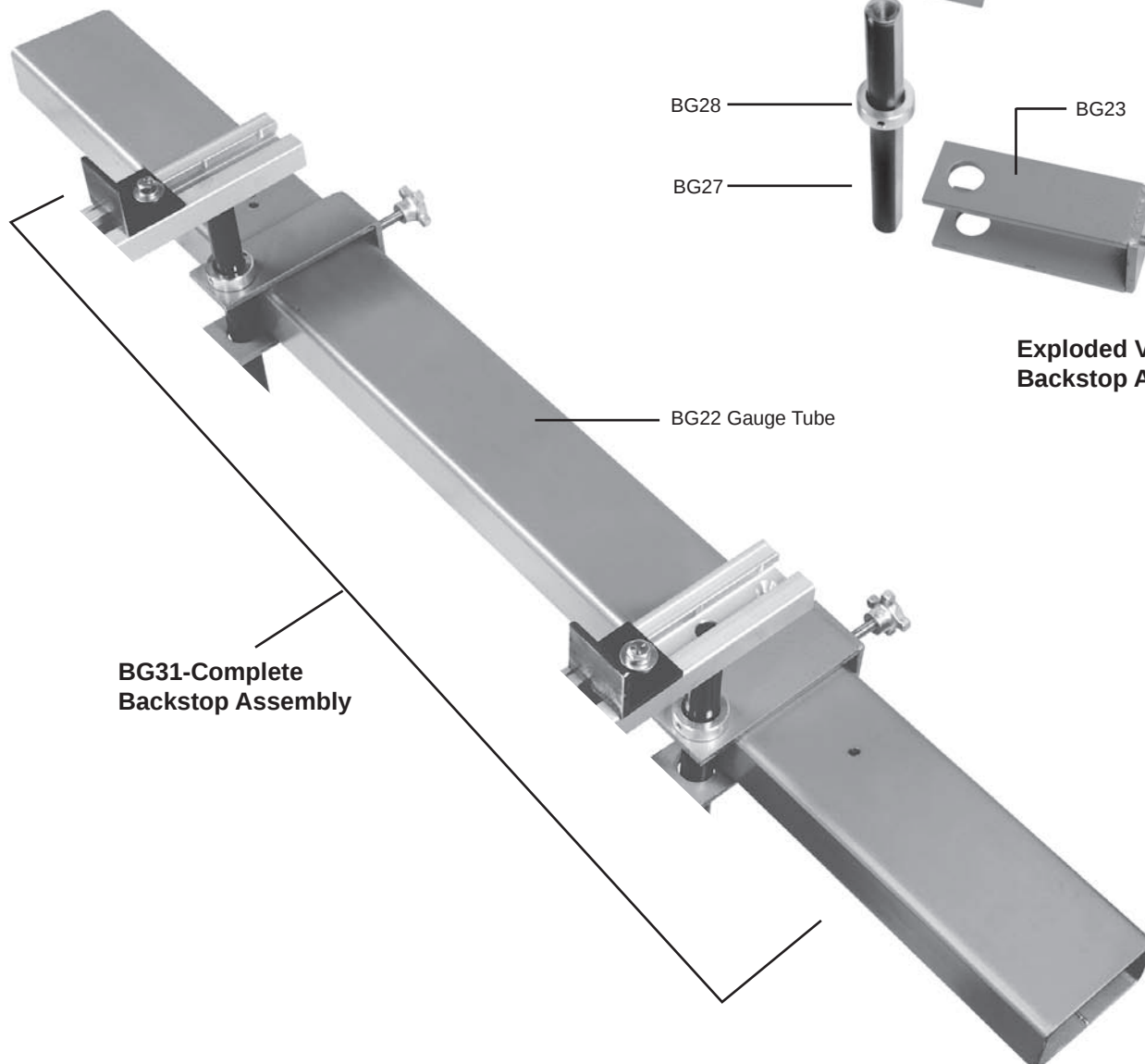
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ITEM #	PART #	DESCRIPTION	QTY.
BG31.....	10751.....	Backstop Assy.....	1
BG22.....	XTB.....	Gauge Tube.....	1
BG23.....	CLV-PRBG.....	Clevis/Gauge Arm.....	2
BG24.....	CS513.....	Clamp Screw.....	2
BG25.....	ALM10.....	Gauge Arm.....	2
BG26.....	STANG.....	Stop Angle.....	2
BG27.....	SPR14.....	Support Rod/Gauge Arm.....	2
BG28.....	COL-716.....	Collar/Support Rod.....	2
BG32.....		1/2" Washer.....	2
BG33.....		1/2" Lock Washer.....	2
BG34.....		1/2" x 1 1/4" Hex Head Bolt.....	2
BG35.....		T-Nut.....	2
BG36.....		1/2" x 1' Flat Head Screw.....	2



**Exploded View
Backstop Assembly**



**BG31-Complete
Backstop Assembly**

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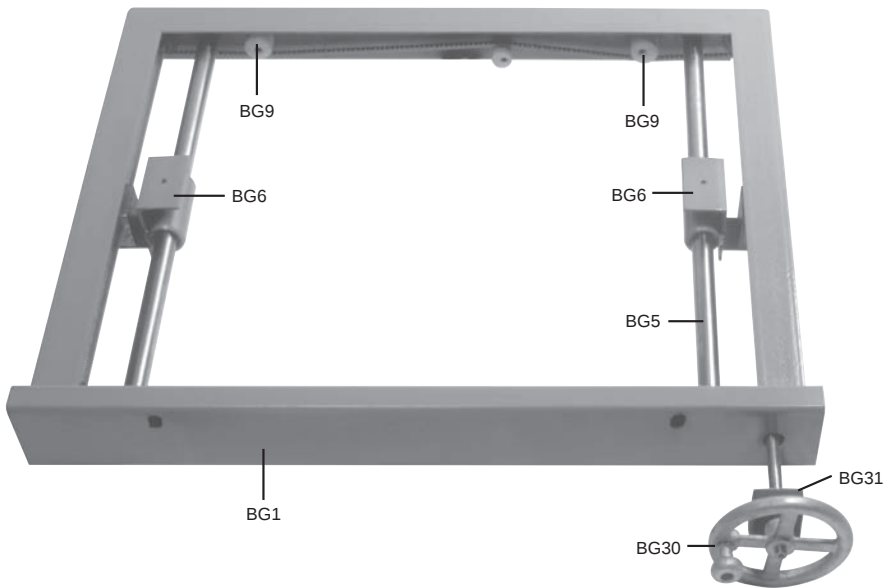
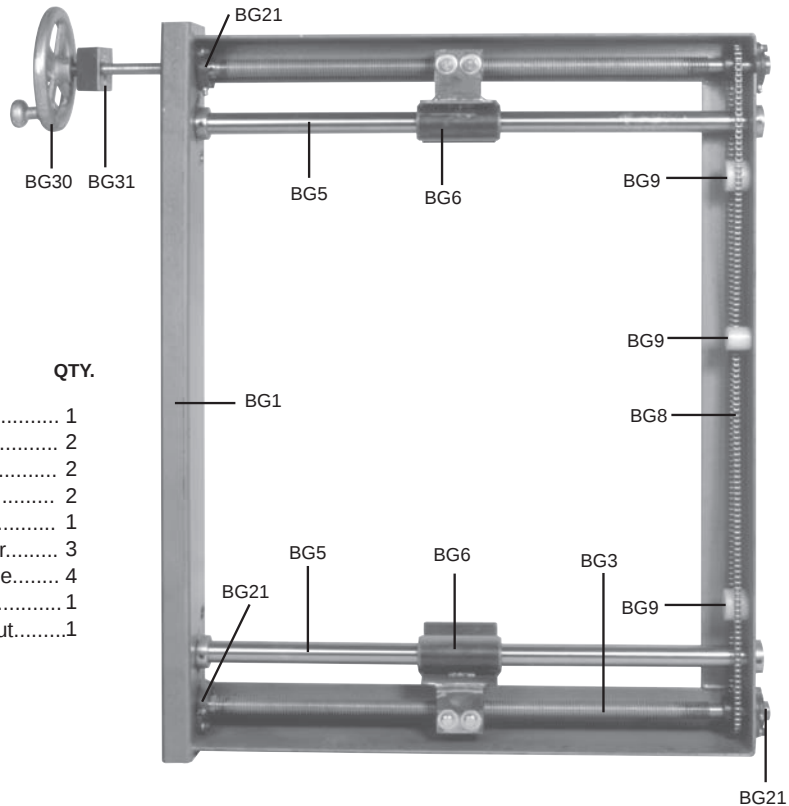
FRONT OPERATING BACKGAUGE PARTS-CONT.

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PRESS BRAKE: FRONT OPERATING MANUAL BACKGAUGE FRAME

ITEM #	PART #	DESCRIPTION	QTY.
BG1.....		Frame.....	1
BG3.....	A524M.....	ACME Screw.....	2
BG5.....	GS43.....	Guide Shaft.....	2
BG6.....	BGPRGD.....	Guide.....	2
BG8.....	RC35-48.....	Drive Chain.....	1
BG9.....	ADJ2.....	Chain Adjuster.....	3
BG21.....	VF2S-116M.....	Bearing/Flange.....	4
BG30.....	10" ALUM.....	Hand Wheel.....	1
BG31.....	250B-002.20(50)CCW3/4.....	Digital Readout.....	1



BACKGAUGE PARTS

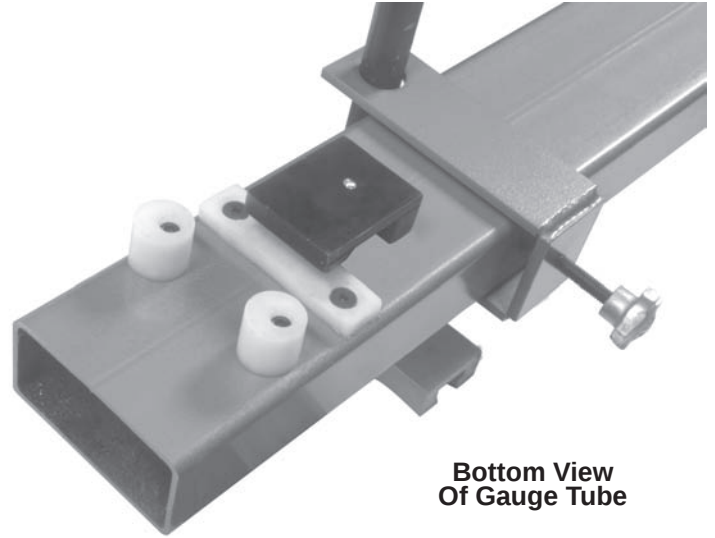
BACKGAUGE PARTS

MANUAL CLAMP BACKGAUGE

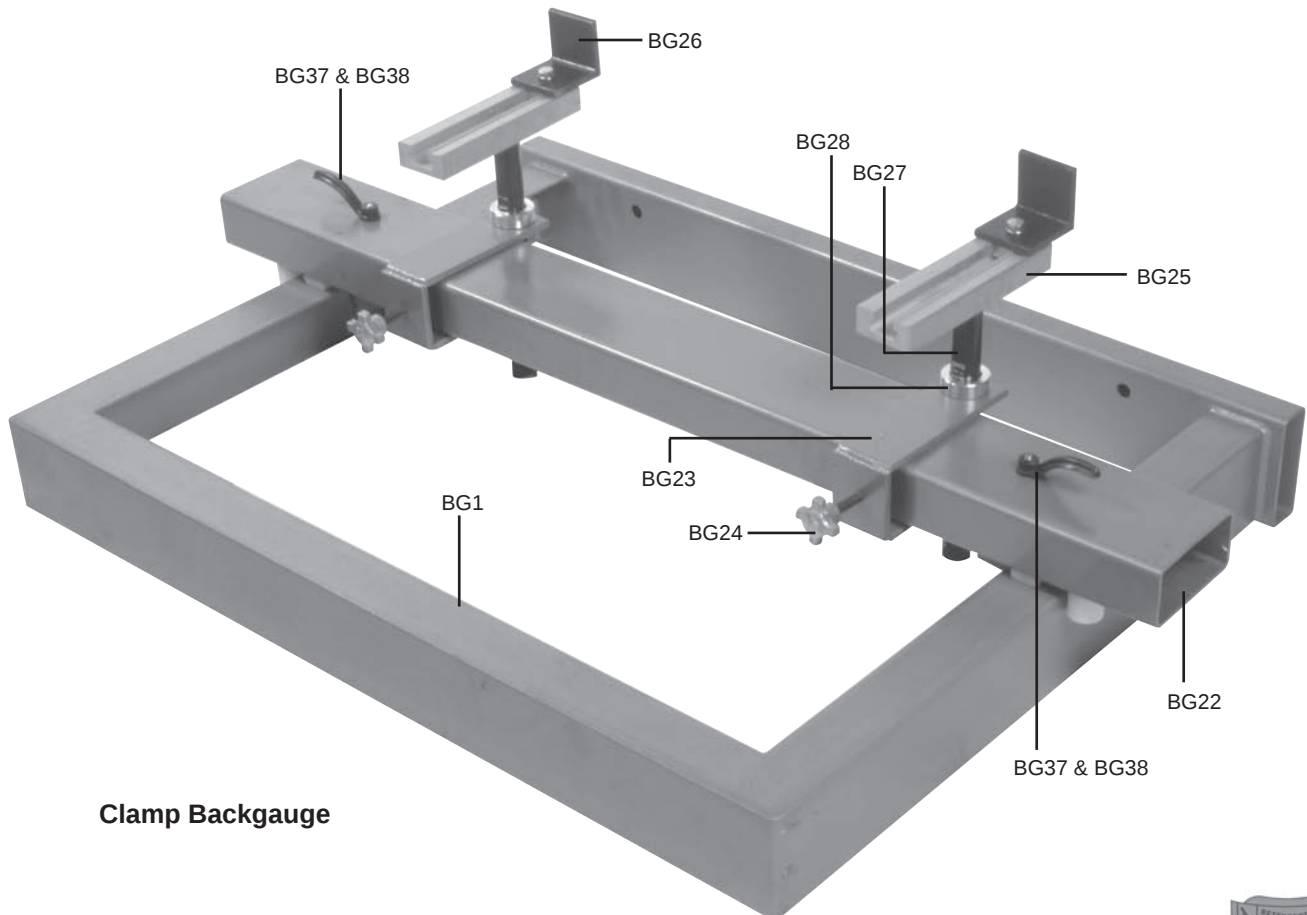
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ITEM #	PART #	DESCRIPTION	QTY.
BG1.....		Frame.....	1
BG22....	XTB.....	Gauge Tube.....	1
BG23....	CLV-PRBG.....	Clevis/Gauge Arm.....	2
BG24....	CS513.....	Clamp Screw.....	2
BG25....	ALM10.....	Gauge Arm.....	2
BG26....	STANG.....	Stop Angle.....	2
BG27....	SPR14.....	Support Rod/Gauge Arm.....	2
BG28....	COL-716.....	Collar/Support Rod.....	2
BG37....	384HHB.....	3/8 X 4 Hex Head Bolt.....	2
BG38....	91043.....	Handle.....	2



Bottom View
Of Gauge Tube



Clamp Backgauge



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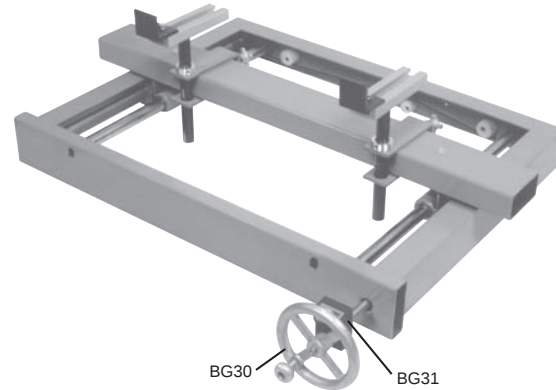
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FRONT OPERATING MANUAL BACKGAUGE

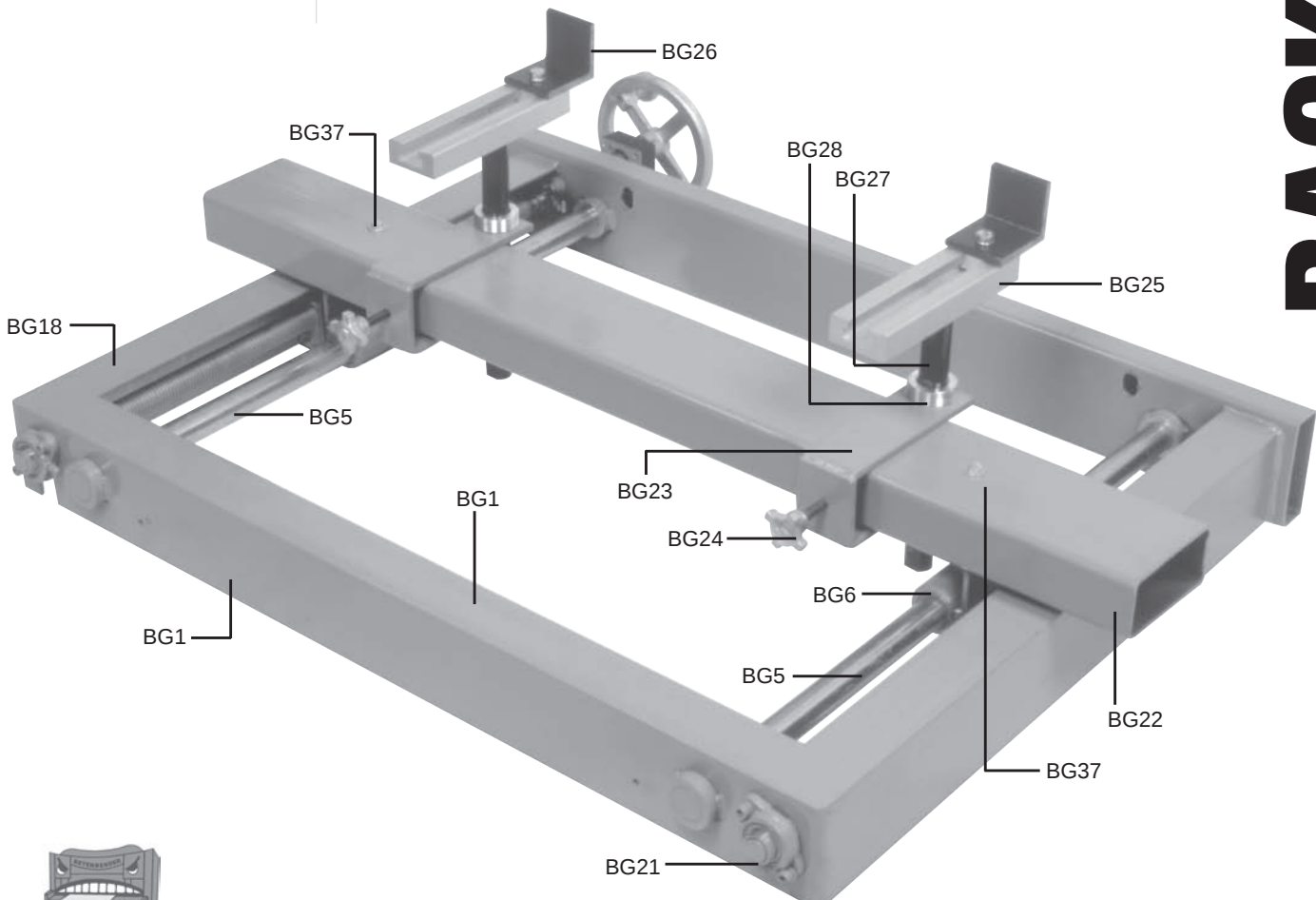
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ITEM #	PART #	DESCRIPTION	QTY.
BG1		Frame	1
BG5	GS43	Guide Shaft	2
BG6	BGPRGD	Guide	2
BG14	GPF13514	Drive Motor	1
BG18	LSR0410	Limit Switch-Rear	1
BG19	LSF0410	Limit Switch-Front	1
BG20	JBXPRS	Junction Box	1
BG21	VF2S-116M	Bearing/Flange	4
BG22	XTB	Gauge Tube	1
BG23	CLV-PRBG	Clevis/Gauge Arm	2
BG24	CS513	Clamp Screw	2
BG25	ALM10	Gauge Arm	2
BG26	STANG	Stop Angle	2
BG27	SPR14	Support Rod/Gauge Arm	2
BG28	COL-716	Collar/Support Rod	2
BG29	GOTO	"GO-TO" Positioner	1
BG30	10" ALUM	Handwheel 10" Aluminum	1
BG31	250B-002.20(50)CCW3/4	Readout	1
BG37	384HHB	3/8 X 4 Hex Head Bolt	2



Front Operated Manual Backgauge



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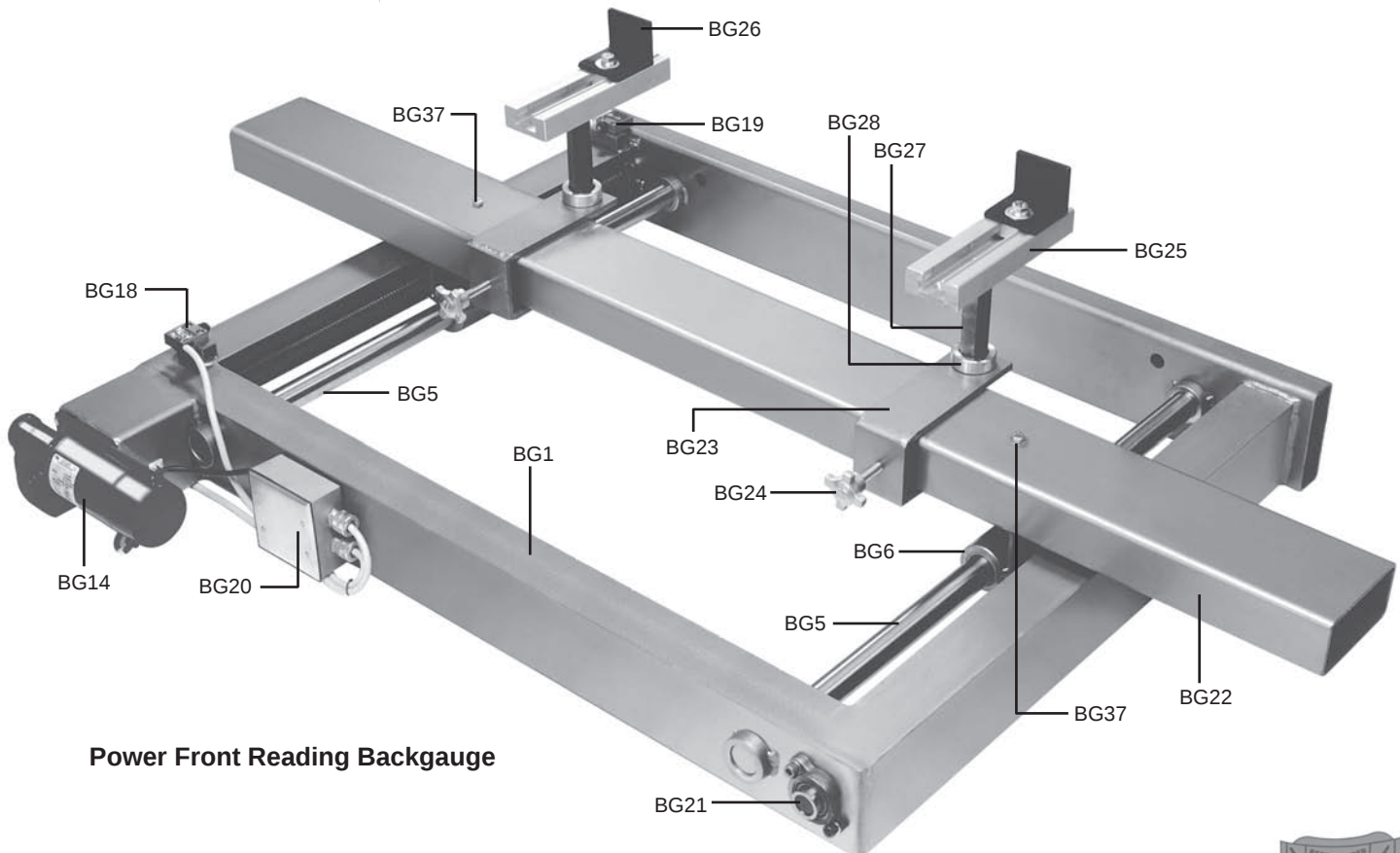
BACKGAUGE PARTS

ITEM #	PART #	DESCRIPTION	QTY.
BG1.....		Frame.....	1
BG5.....	GS43.....	Guide Shaft.....	2
BG6.....	BGPRGD.....	Guide.....	2
BG14.....	GPF13514.....	Drive Motor.....	1
BG18.....	LSR0410.....	Limit Switch-Rear.....	1
BG19.....	LSF0410.....	Limit Switch-Front.....	1
BG20.....	JBXPRS.....	Junction Box.....	1
BG21.....	VF2S-116M.....	Bearing/Flange.....	4
BG22.....	XTB.....	Gauge Tube.....	1
BG23.....	CLV-PRBG.....	Clevis/Gauge Arm.....	2
BG24.....	CS513.....	Clamp Screw.....	2
BG25.....	ALM10.....	Gauge Arm.....	2
BG26.....	STANG.....	Stop Angle.....	2
BG27.....	SPR14.....	Support Rod/Gauge Arm.....	2
BG28.....	COL-716.....	Collar/Support Rod.....	2
BG29.....	GOTO.....	"GO-TO" Positioner.....	1
BG37.....	384HHB.....	3/8 X 4 Hex Head Bolt.....	2
BG38.....	757-5520.....	Inch/Metric Rocker Switch.....	1

"GO-TO" - Positioner
on Pendant

BG29
(listed as E15 in
Electric section)

BG38
(listed as E12 in
Electrical section)



Power Front Reading Backgauge

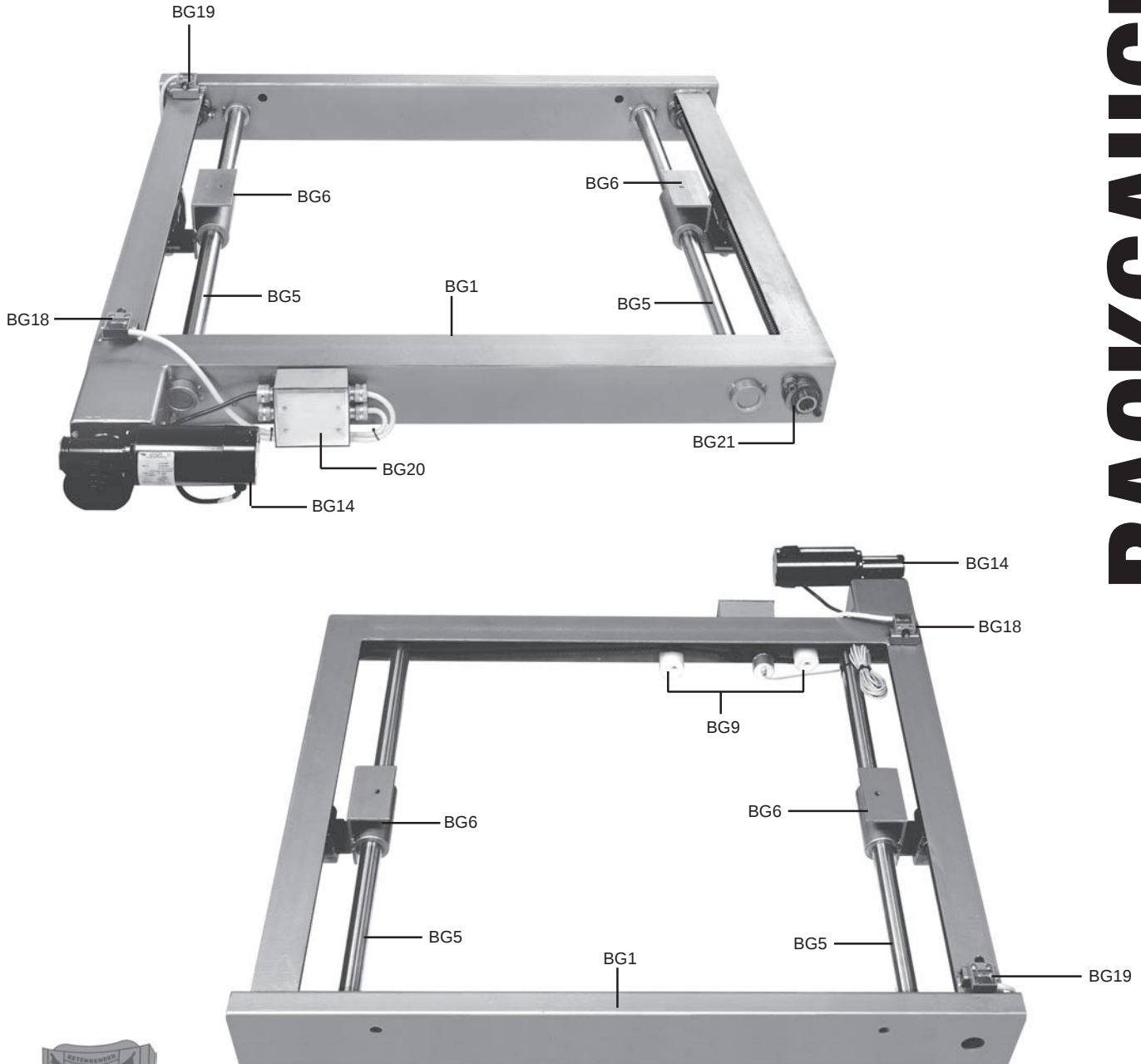


POWER BACKGAUGE-CONTINUED

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ITEM #	PART #	DESCRIPTION	QTY.
BG1.....		Frame.....	1
BG5.....	GS43.....	Guide Shaft.....	2
BG6.....	BGPRGD.....	Guide.....	2
BG9.....	ADJ2.....	Chain Adjuster.....	2
BG14.....	GPF13514.....	Drive Motor.....	1
BG18.....	LSBGR.....	Limit Switch-Rear.....	1
BG19.....	LSBGF.....	Limit Switch-Front.....	1
BG20.....	JBXPRS.....	Junction Box.....	1
BG21.....	VF2S-116M.....	Bearing/Flange.....	4



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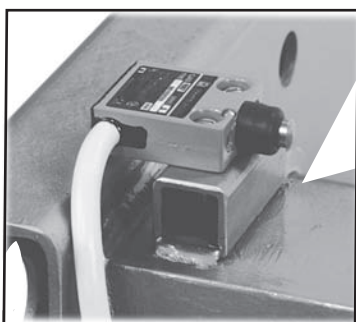
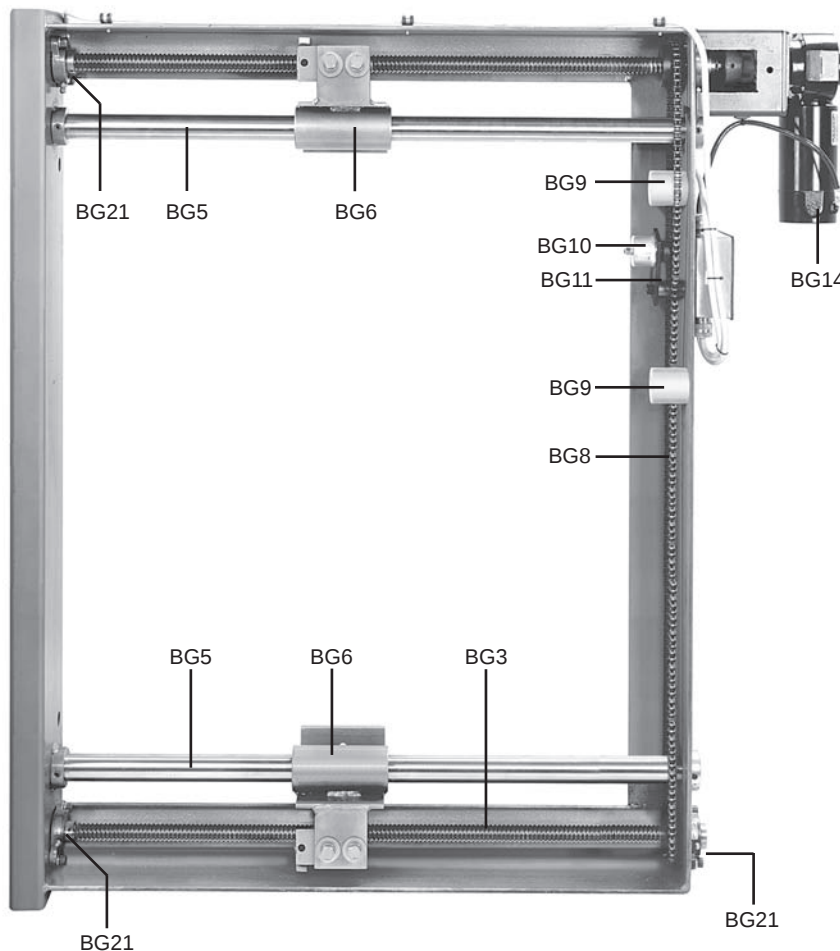
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*ALL SAFETY COVERS AND GUARDS MUST REMAIN ON THE PRESS BRAKE AT ALL TIMES.

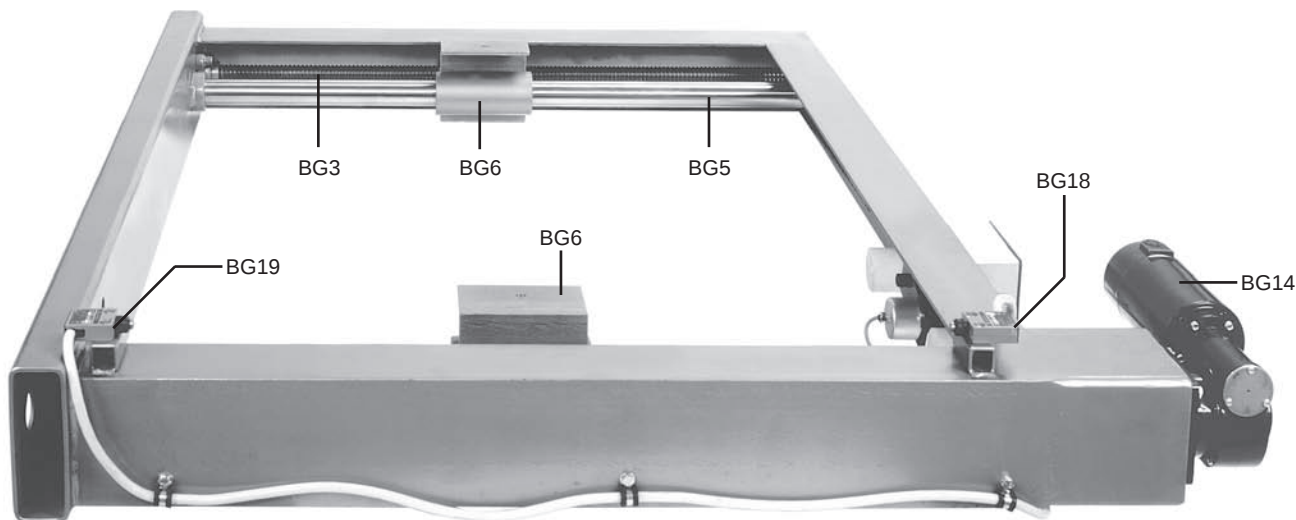
BACKGAUGE PARTS

PRESS BRAKE: POWER BACKGAUGE FRAME

ITEM #	PART #	DESCRIPTION	QTY.
BG3.....	BS24M.....	Ball Screw/Nut.....	2
BG5.....	GS43.....	Guide Shaft.....	2
BG6.....	BGPRGD.....	Guide.....	2
BG8.....	RC35-48.....	Drive Chain.....	1
BG9.....	ADJ2.....	Chain Adjuster.....	2
BG10.....	141-Y-250BNF26L10.....	Encoder.....	1
BG11.....	ENCMNT.....	Mount/Encoder.....	1
BG14.....	GPF13514.....	Drive Motor.....	1
BG18.....	LSBGR.....	Limit Switch-Rear.....	1
BG19.....	LSBGF.....	Limit Switch-Front.....	1
BG21.....	VF2S-116M.....	Bearing/Flange.....	4



BG18 & BG19

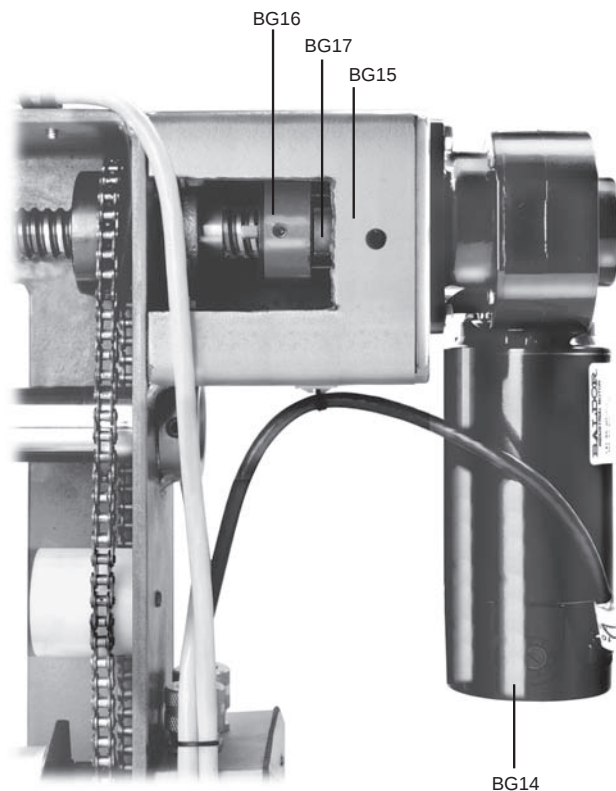
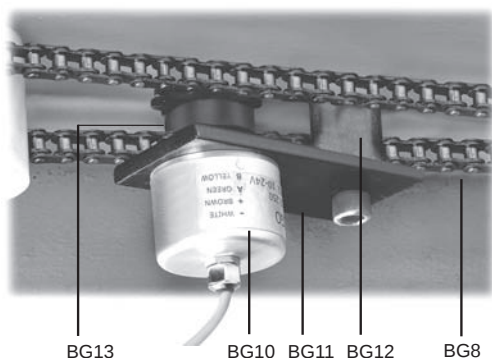


POWER BACKGAUGE CLOSE-UPS

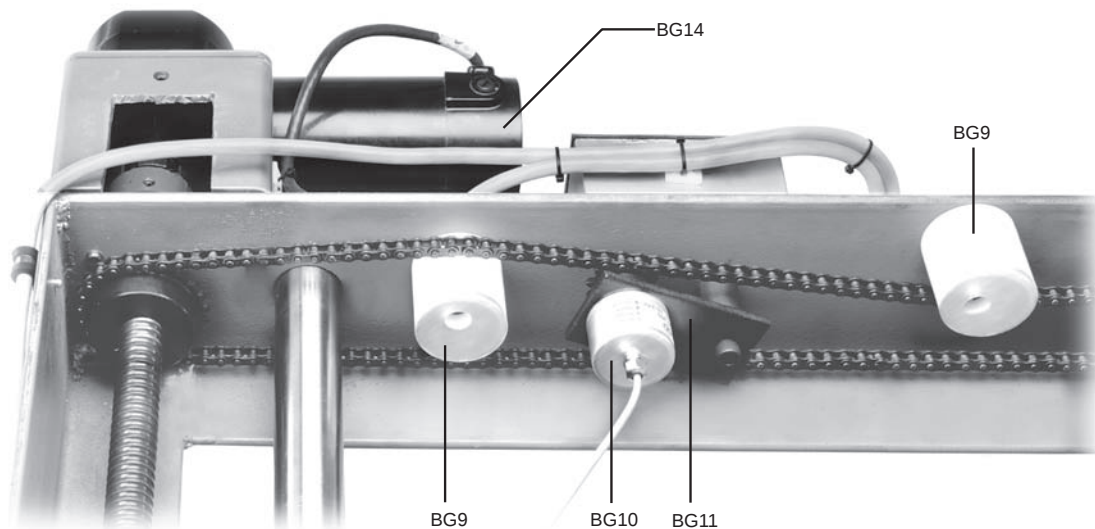
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ITEM #	PART #	DESCRIPTION
BG8.....	RC35-48.....	Drive Chain
BG9.....	ADJ2.....	Chain Adjuster
BG10.....	141-Y-250BNF26L10.....	Encoder
BG11.....	ENCMNT.....	Mount/Encoder
BG12.....	ENC5PCR.....	Spacer/Encoder
BG13.....	35B12.....	Sprocket/Encoder
BG14.....	GPF13514.....	Drive Motor
BG15.....	L95-750.....	Coupler/Motor
BG16.....	L95-100.....	Coupler/Screw
BG17.....	L95-SPDR.....	Spider/Coupler



Motor Coupling Assembly



BACKGAUGE PARTS

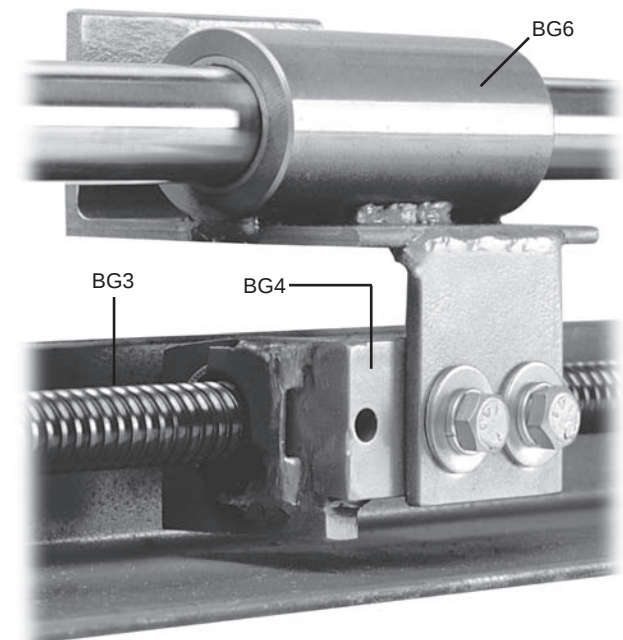
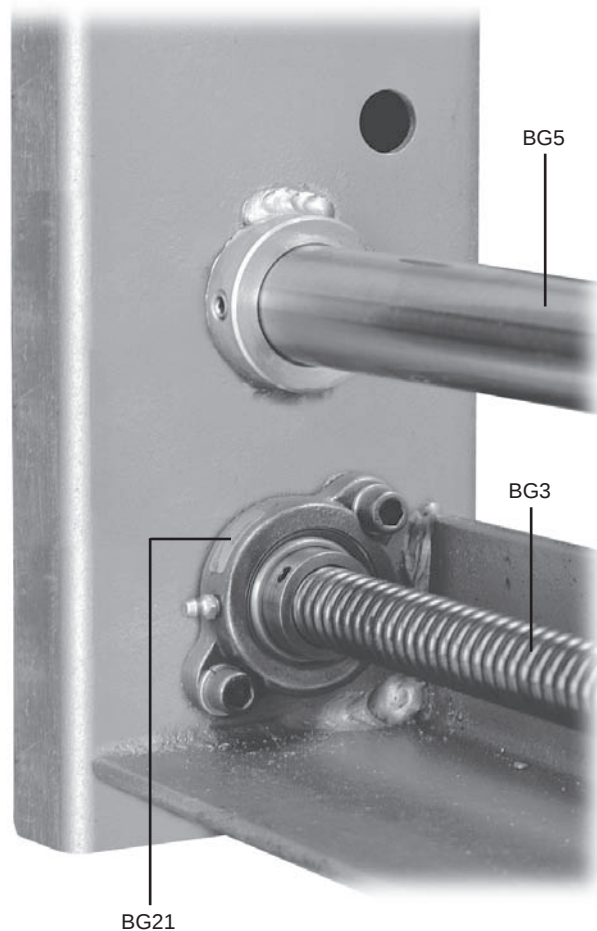
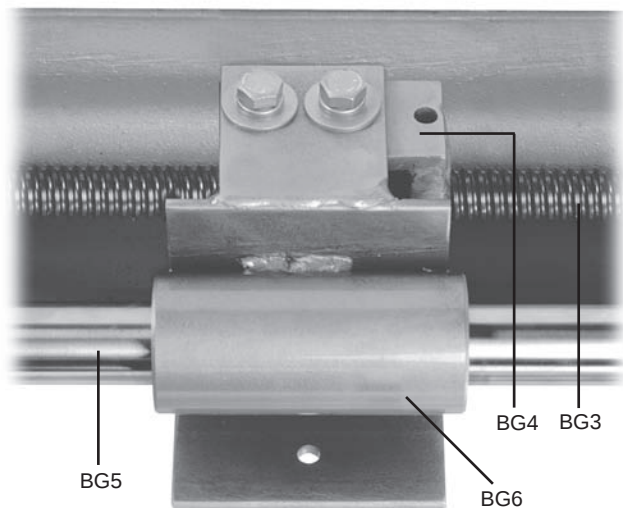
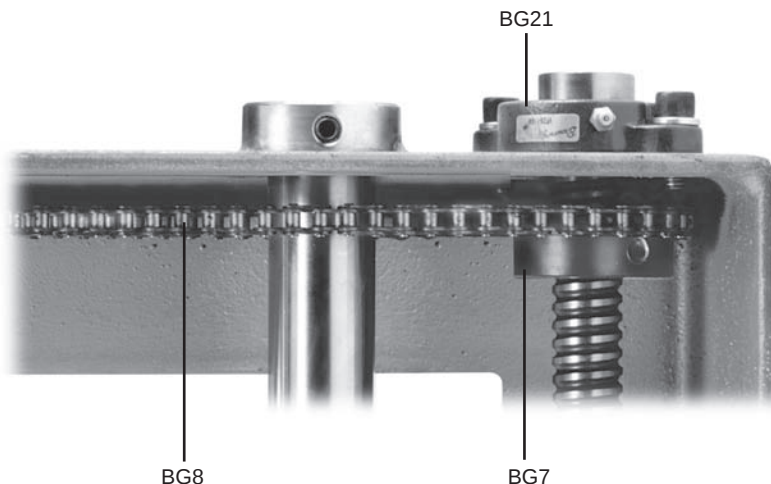


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ITEM #	PART #	DESCRIPTION	QTY.
BG3.....	BS24M.....	Ball Screw/Nut Assy.....	2
BG4.....	BNMNT.....	Mount/Ball Nut.....	2
BG5.....	GS43.....	Guide Shaft.....	2
BG6.....	BGPRGD.....	Guide.....	2
BG7.....	35B24.....	Drive Sprocket.....	2
BG8.....	RC35-48.....	Drive Chain.....	1
BG21.....	VF2S-116M.....	Bearing/Flange.....	4



BETENBENDER

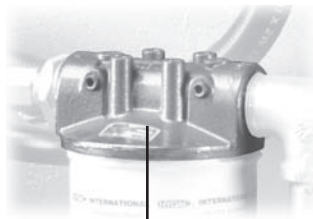
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50-70T TOP TANK PARTS

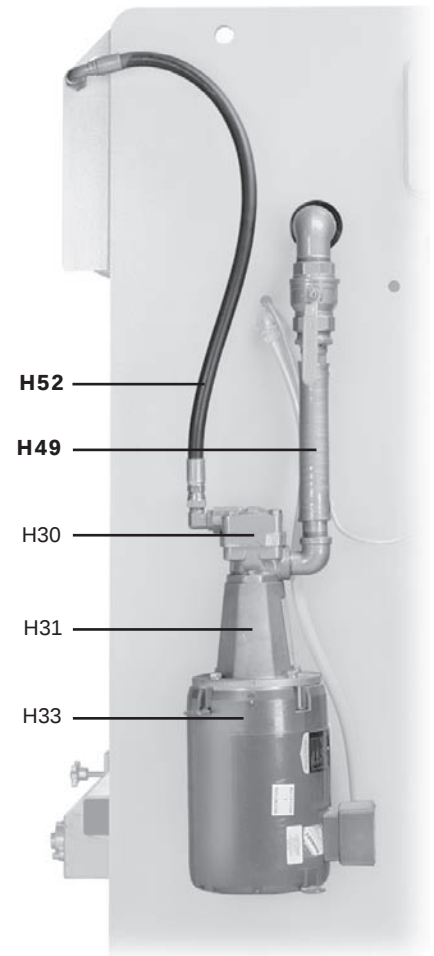
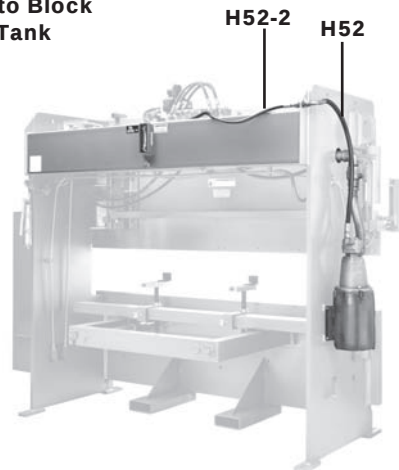
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ITEM #	PART #	DESCRIPTION
H1.....	85-1227F.....	Main Control Block
H4.....	96-0241.....	Block
H9.....	CKEB-XCN.....	Valve
H11.....	CP208-1-8.....	Relief Valve
H16.....	FDCB-LAN.....	Pressure Comp/Flow Control
H20.....	RDDA-LCN.....	Valve
H20-1.....	RDDA-LCN.....	Valve
H22.....	RPEC-KEN.....	Flow Control Valve
H25.....	980503.....	Pilot Block
H27.....	MF160.....	Filter Cap
H28.....	AE10.....	Return Line Filter
H30.....	Pump.....	See Motor Chart, Page 90
H31.....	Bellhousing.....	See Motor Chart, Page 90
H33.....	Motor.....	See Motor Chart, Page 90
H40.....	HOSE 1/2".....	Left Cylinder Supply
H41.....	HOSE 1/2".....	Left Cylinder Return
H42.....	HOSE 1/2".....	Right Cylinder Supply
H43.....	HOSE 1 1/2".....	Right Cylinder Return
H46.....	HOSE 1/4".....	Return to Tonnage Gauge
H48.....	HOSE 1/2".....	Pilot to Main Block
H49.....	HOSE 1 1/2".....	Suction Hose
H52.....	HOSE 3/4".....	Return to Tank
H52-2.....	HOSE 3/4".....	End Plate to Block
H54.....	HOSE 3/4" X 20".....	Return to Tank



H27



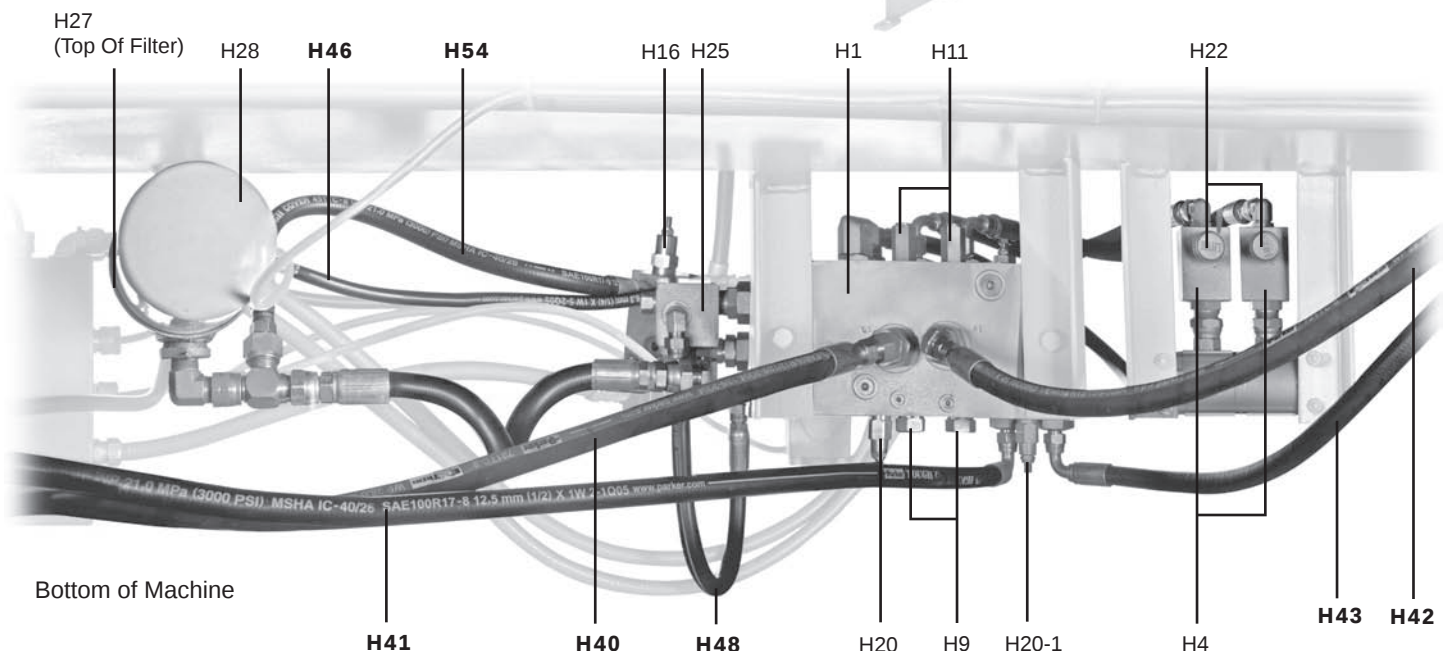
H52

H49

H30

H31

H33

H27
(Top Of Filter)

H28

H46

H54

H16

H25

H1

H11

H22

Bottom of Machine

H41

H40

H48

H20

H9

H20-1

H4

H43

H42

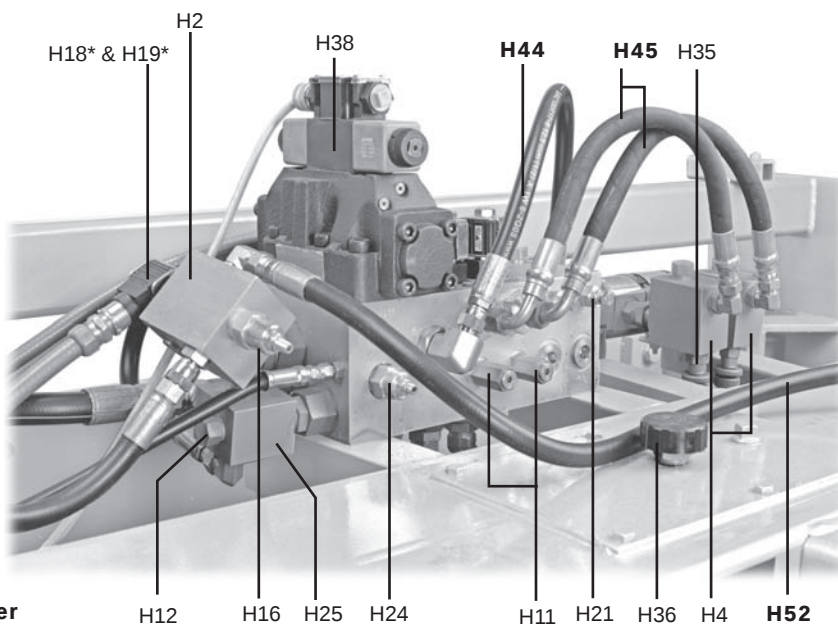
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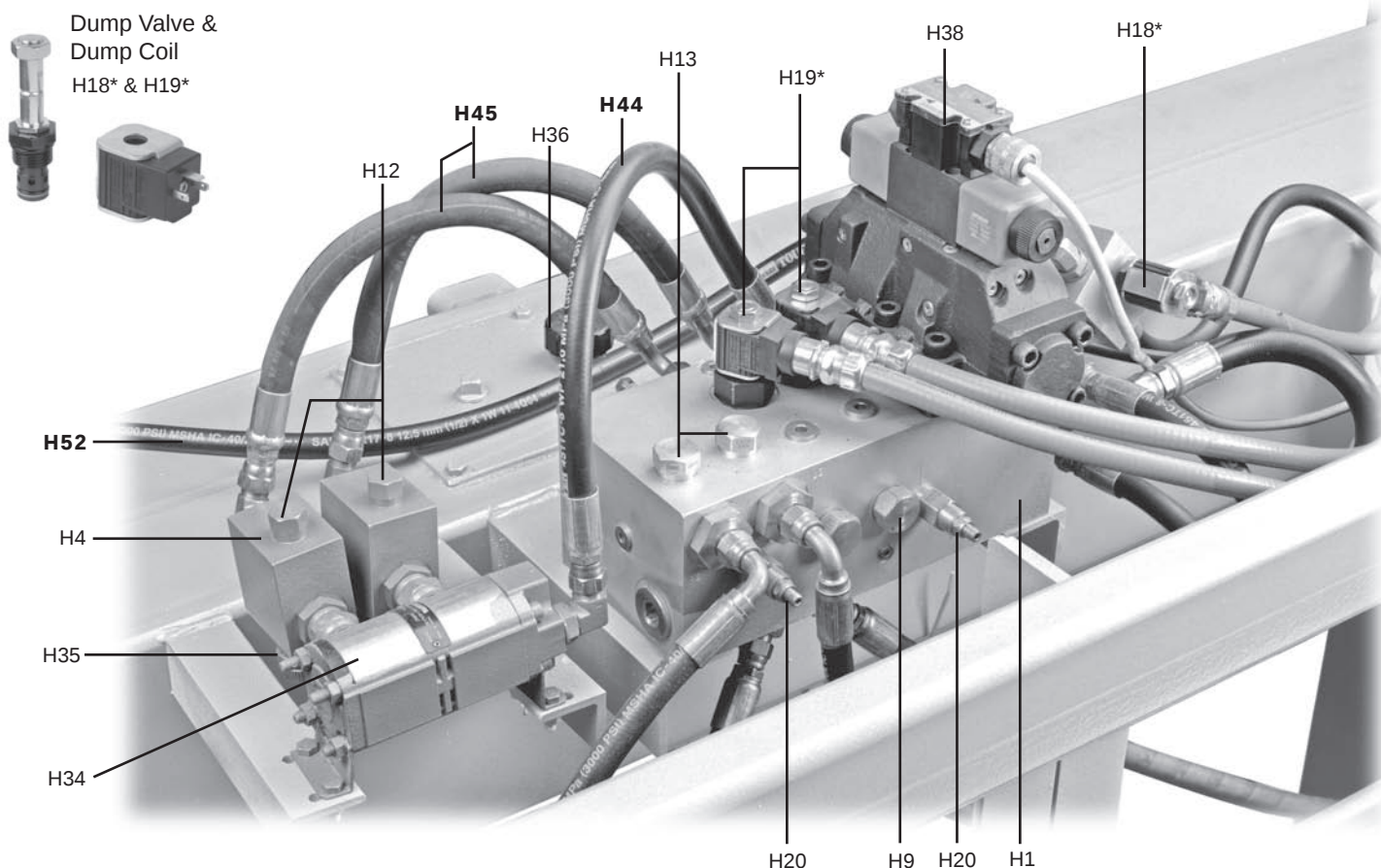
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ITEM #	PART #	DESCRIPTION
H1.....	85-1227F.....	Main Control Block
H2.....	93-0203C.....	2 Speed Block
H4.....	96-0241.....	Block
H9.....	CKEB-XCN.....	Valve
H11.....	CP208-1-8.....	Relief Valve
H12.....	CXDA-XFN.....	Valve
H13.....	CXFA-XAN.....	Check Valve
H16.....	FDCB-LAN.....	Pressure Comp/Flow Control
H18.....	GS41200N.....	Dump Valve
*	CCP115C72.....	Dump Coil
H19.....	GS60400N.....	Dump Valve
*	CCP115C72.....	Dump Coil
H20.....	RDDA-LCN.....	Valve (3000# Cracking)
H21.....	RPEC-FEN.....	Check Valve
H24.....	RVEA-LAN.....	Main Relief Valve
H25.....	98-0503.....	Pilot Block
H34.....	PLD/OCS-OC/204.....	Flow Divider
H35.....	RPEC-KEN.....	Flow Regulator
H36.....	MB07-10.....	Breather Cap
H38.....	D06.....	Directional Control Drive
H44.....	HOSE 1/2".....	Supply to Flow Divider
H45.....	HOSE 1/2".....	Return from Flow Divider
H52.....	HOSE 1/2".....	Pump to 2 Speed



Ref. pg. 31 & 32 for block drawings

Dump Valve &
Dump Coil
H18* & H19*



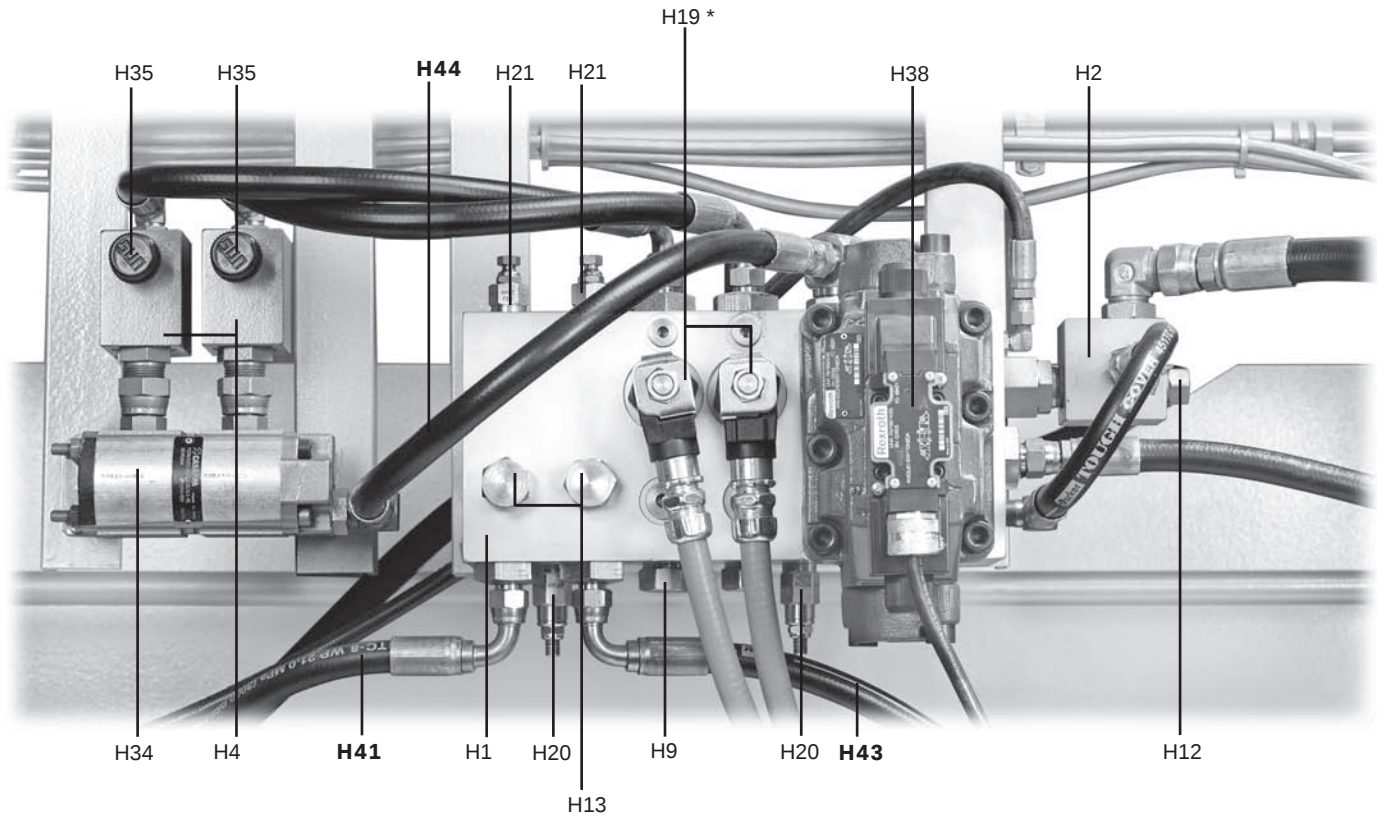
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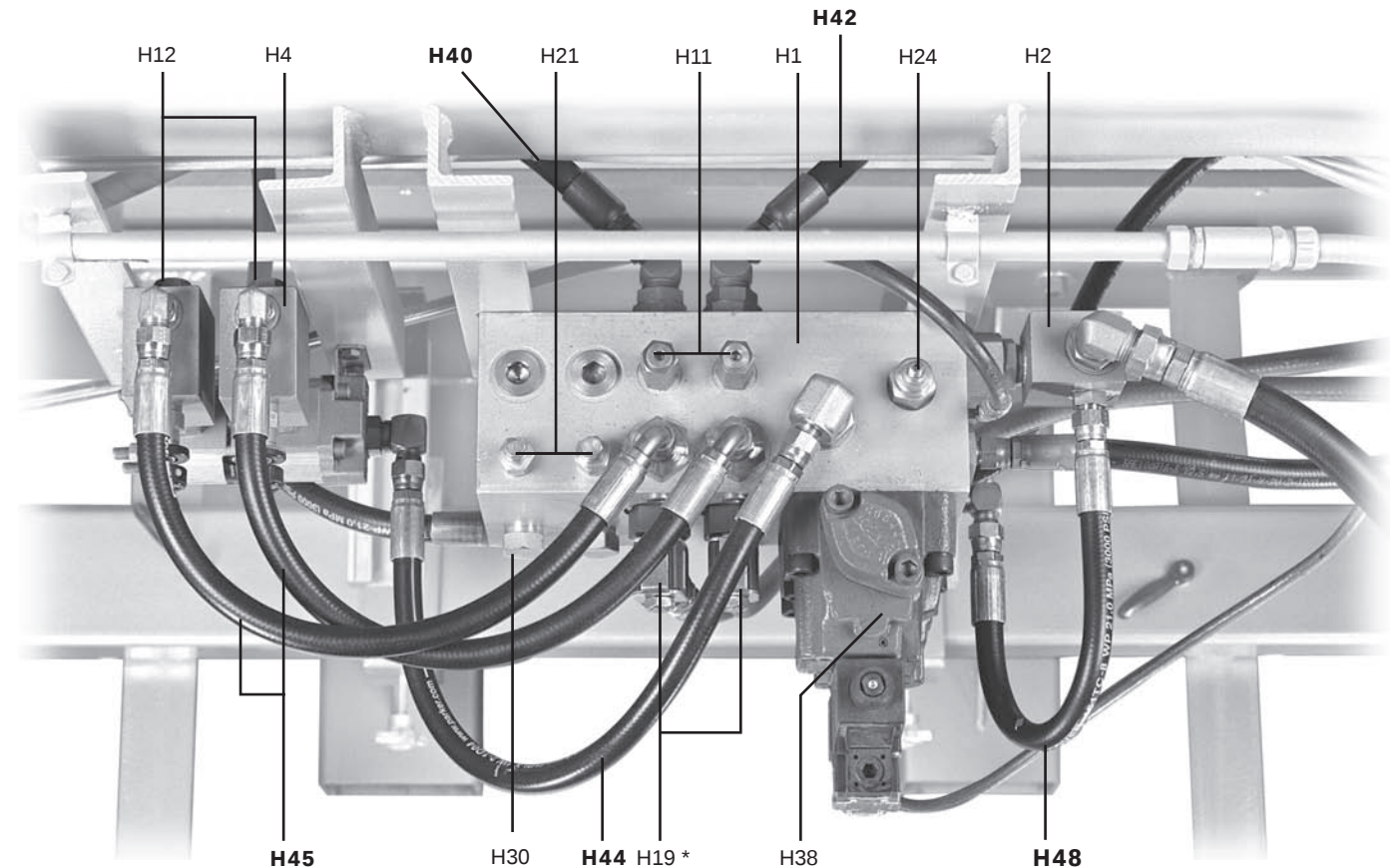
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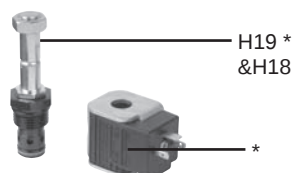
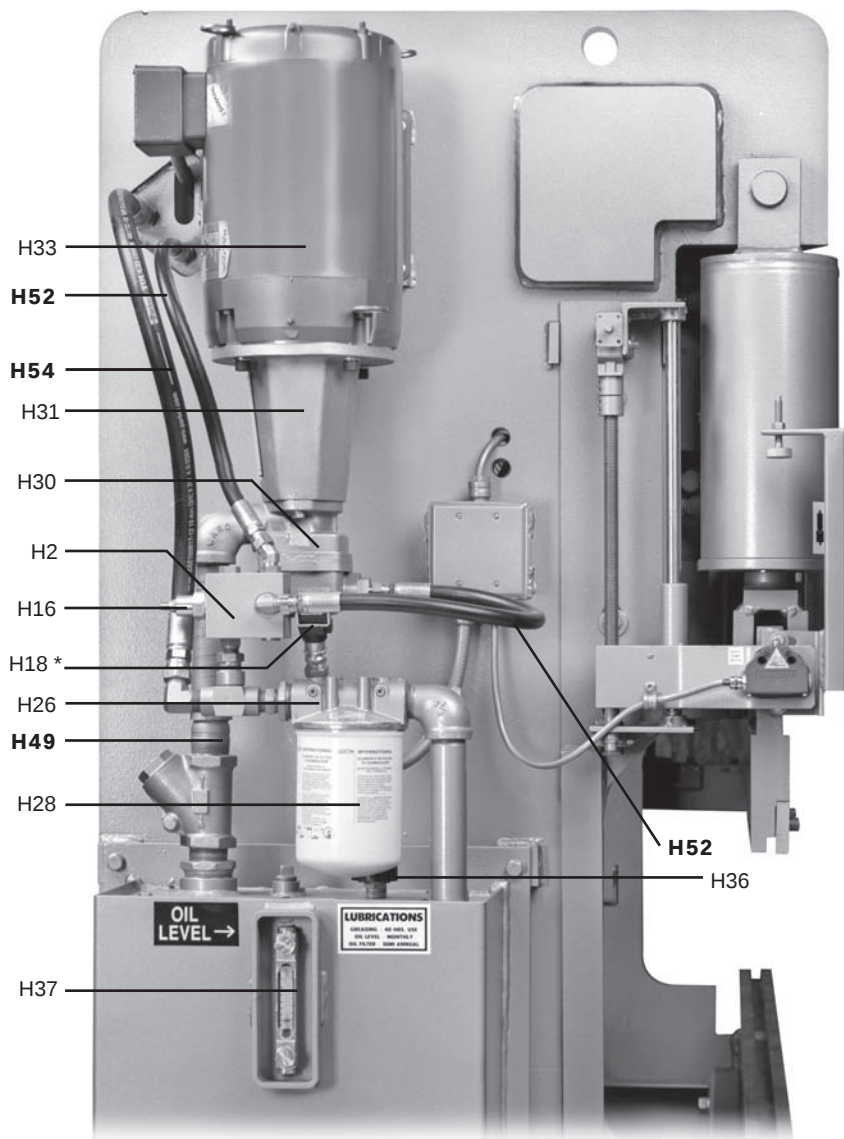
50-70T SIDE TANK PARTS



Ref. pg. 31 & 32 for block drawings

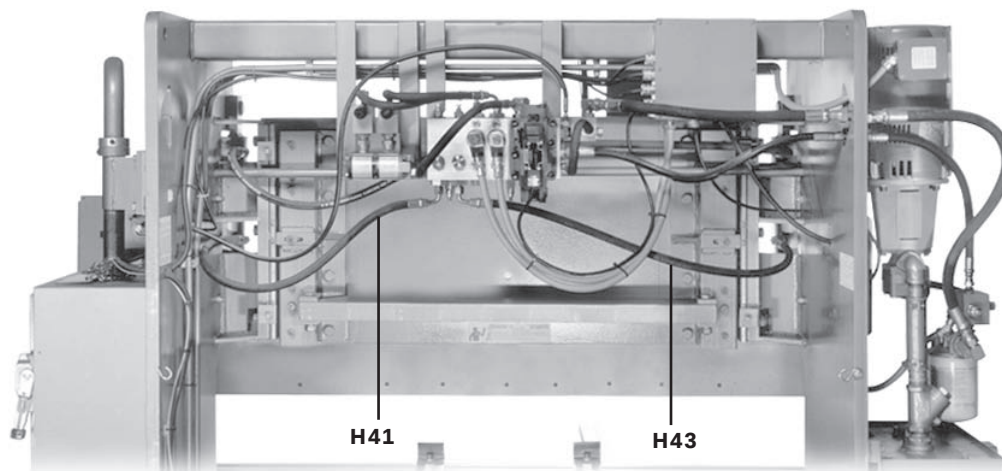


ITEM #	PART #	DESCRIPTION
H1.....	85-1227F.....	Main Control Block
H2.....	93-0203C.....	2 Speed Block
H4.....	96-0241.....	Block
H9.....	CKEB-XCN.....	Valve
H11.....	CP208-1-8.....	Relief Valve
H12.....	CXDA-XFN.....	Valve
H13.....	CXFA-XAN.....	Check Valve
H16.....	FDCB-LAN.....	Pressure Comp/Flow Control
H18.....	GS041200N.....	Dump Valve
*	CCP115C72.....	Dump Coil
H19.....	GS060400N.....	Dump Valve
*	CCP115C7.....	Dump Coil
H20.....	RDDA-LCN.....	Valve (3000# Cracking)
H21.....	RPEC-FEN.....	Check Valve
H24.....	RVEA-LAN.....	Main Relief Valve
H26.....	MFP160.....	Filter Head Assembly
H28.....	AE10.....	Return Line Filter
H30.....	HYDRAULIC PUMP...	See Motor Chart, Page 90
H31.....	BELLHOUSING.....	See Motor Chart, Page 90
H33.....	MOTOR.....	See Motor Chart, Page 90
H34.....	PLD/OCS-OC/204.....	Flow Divider
H35.....	RPEC-KEN.....	Flow Regulator
H36.....	MB07-10.....	Breather Cap
H37.....	G1615-05.....	Site Gauge
H38.....	DO6.....	Directional Control Valve
H40.....	HOSE 1".....	Left Cylinder Supply
H41.....	HOSE 1/2".....	Left Cylinder Return
H42.....	HOSE 1".....	Right Cylinder Supply
H43.....	HOSE 1/2".....	Right Cylinder Return
H44.....	HOSE 1/2".....	Supply To Flow Divider
H48.....	HOSE 1/4".....	Pilot To Main Block
H49.....	HOSE 1 1/4".....	Suction Hose
H52.....	HOSE 1/2".....	Pump To 2 Speed
H54.....	HOSE 3/4".....	Return To Tank



Dump Valve and
Coil Combination

Rear View of Hydraulics



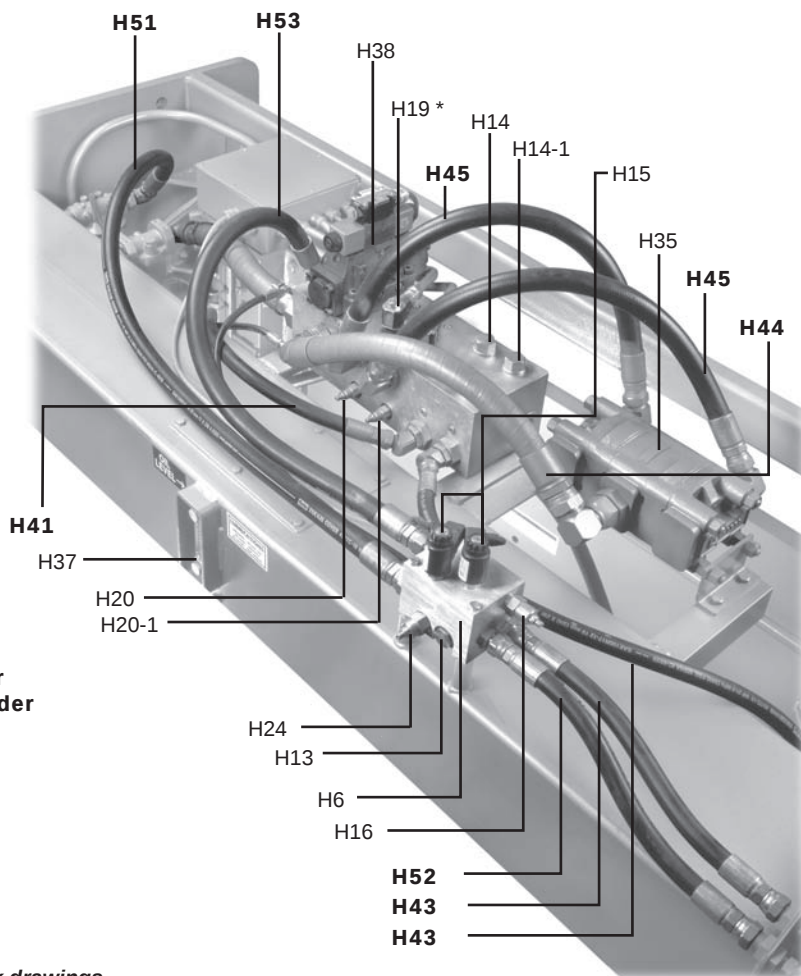
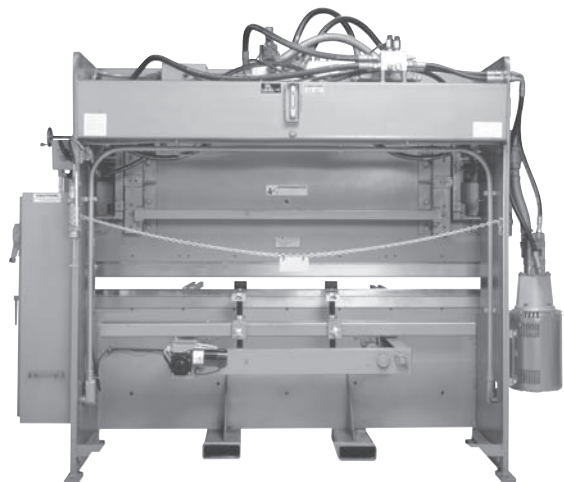
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BETENBENDER

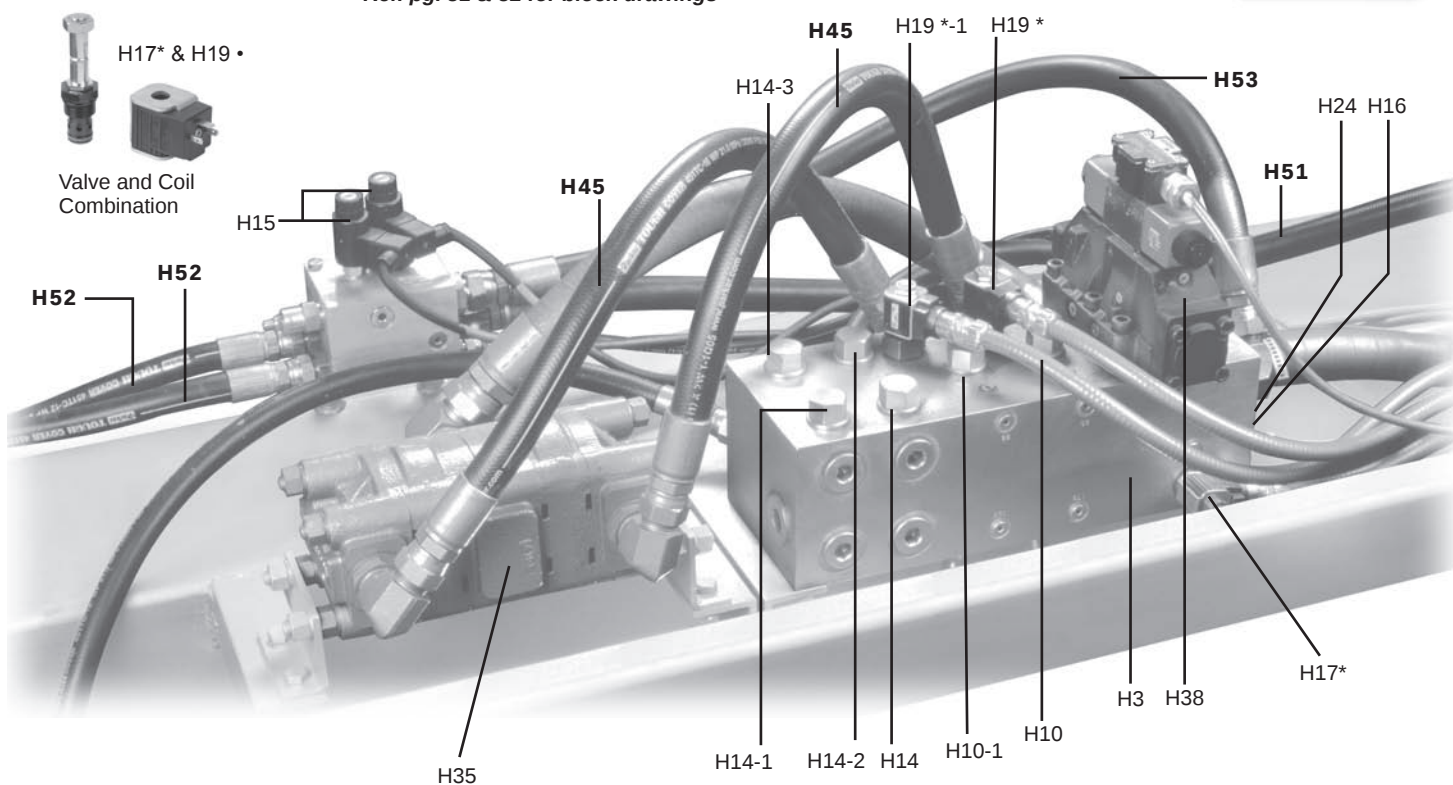
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50-70T HIGH SPEED PARTS



ITEM #	PART #	DESCRIPTION
H40.....	HOSE 1"	Left Cylinder Supply
H41.....	HOSE 1"	Left Cylinder Return
H42.....	HOSE 1"	Right Cylinder Supply
H43.....	HOSE 1"	Right Cylinder Return
H44.....	HOSE 1 1/4"	Supply to Flow Divider
H45.....	HOSE 1"	Return from Flow Divider
H49.....	HOSE 1 1/2"	Suction Hose
H50.....	HOSE 1 1/4"	Block to HP Filter
H51.....	HOSE 3/4"	2 Speed Dump
H52.....	HOSE 3/4"	End Plate to 2 Speed
H52-2...	HOSE 3/4"	Pump to End Plate
H52-3...	HOSE 3/4"	Pump to End Plate
H53.....	HOSE 3/4"	Block to 2 Speed

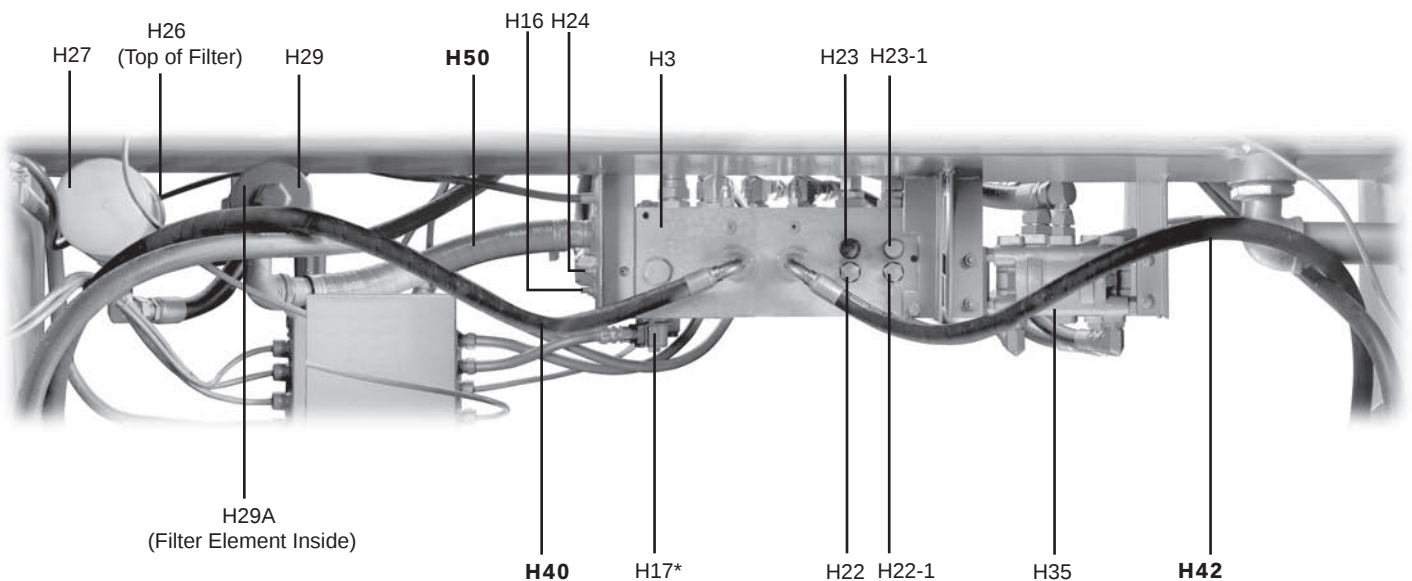
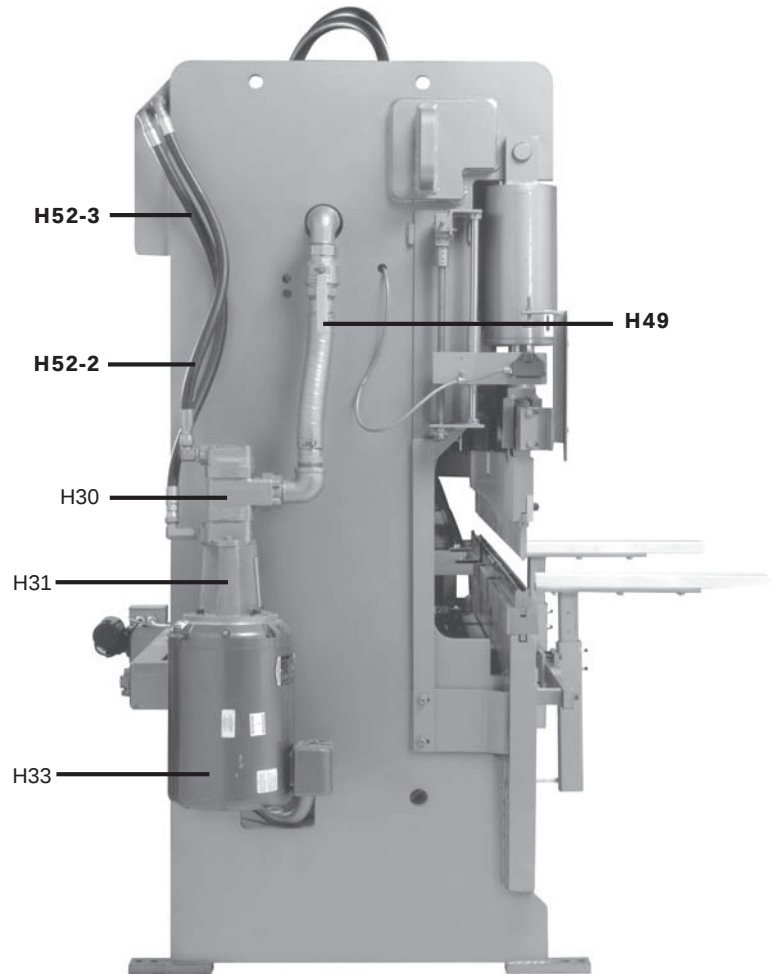
Ref. pg. 31 & 32 for block drawings



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ITEM #	PORT #	PART# #	DESCRIPTION
H3.....		96-0152E.....	Main Control Block
H6.....		A503-282-A07.....	Block
H10.....	4.1.....	CKGB-XCV.....	Check Valve
H10-1.....	4.2.....	CKGB-XCV.....	Check Valve
H13.....		CXFA-XFN.....	Valve
H14.....	7.1.....	CXHA-XCV.....	Check Valve
H14-1.....	7.2.....	CXHA-XCV.....	Check Valve
H14-2.....	7.3.....	CXHA-XCV.....	Check Valve
H14-3.....	7.4.....	CXHA-XCV.....	Check Valve
H15.....		DLDA-MHN.....	Dump Valve
H16.....	9.....	FDCB-LAN.....	Pressure Comp/Flow Control
H17.....	10.....	GS060400N.....	Anti-Backbend Dump Valve
*		CCP115C72.....	Dump Coil
H19.....	3.1.....	GS060400N.....	Dump Valve
*	3.1.....	CCP115C72.....	Dump Coil
H19-1.....	3.2.....	GS060400N.....	Dump Valve
*	3.2.....	CCP115C72.....	Dump Coil
H20.....	5.1.....	RDDA-LCN.....	Relief Valve
H20-1.....	5.2.....	RDDA-LCN.....	Relief Valve
H22.....	6.1.....	RPGC-JEN.....	Pressure Control Valve
H22-1.....	6.2.....	RPGC-JEN.....	Pressure Control Valve
H23.....	6.3.....	RPGC-KEN.....	Pressure Control Valve
H23-1.....	6.4.....	RPGC-KEN.....	Pressure Control Valve
H24.....	1.....	RVEA-LAN.....	Pressure Control Valve
H26.....		MFP160.....	Filter Head Assy.
H27.....		SE10.....	Return Line Filter
H29.....		HPSTR.....	High Pressure Filter
H29A.....		9VZ10.....	Filter Element
H30.....		PUMP.....	See Motor Chart, Page 90
H31.....		BELLHOUSING.....	See Motor Chart, Page 90
H33.....		MOTOR.....	See Motor Chart, Page 90
H35.....		HDD30.51.....	Flow Divide
H37.....		61615-05.....	Site Glass
H38.....		DG5S.....	Directional Control Valve



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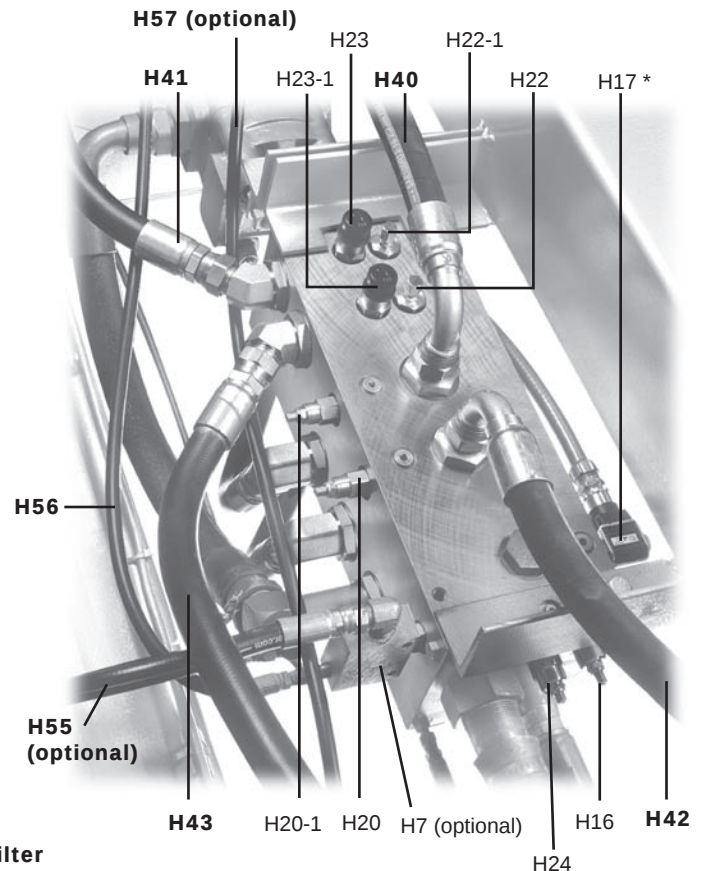


95-350T PARTS

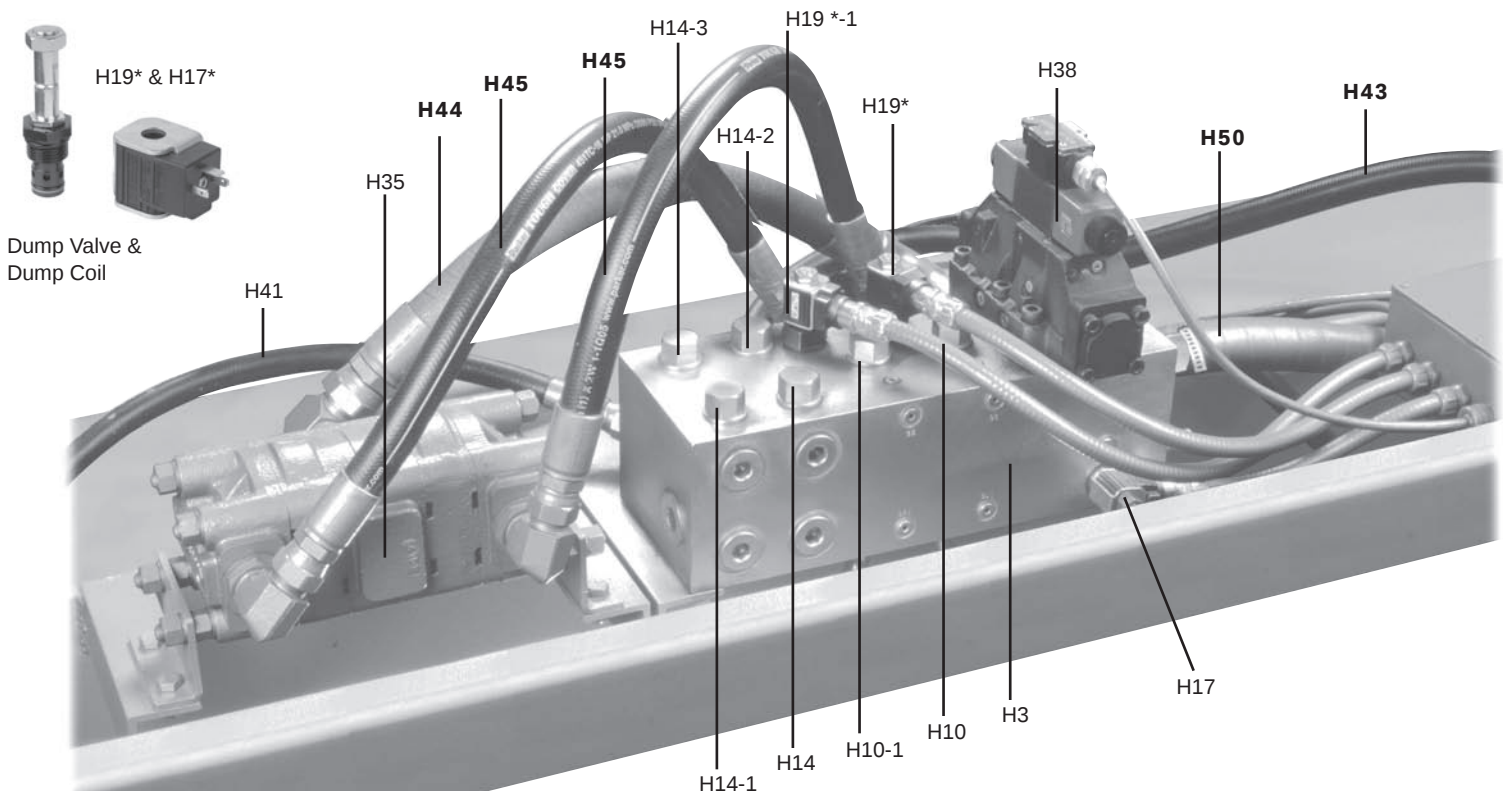
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ITEM #	PORT #	PART#	DESCRIPTION
H3.....		96-0152E.....	Main Control Block
H7.....		98-0503.....	Tonnage Control Block
H10.....	4.1.....	CKGB-XCV.....	Check Valve
H10-1.....	4.2.....	CKGB-XCV.....	Check Valve
H14.....	7.1.....	CXHA-XCV.....	Check Valve
H14-1.....	7.2.....	CXHA-XCV.....	Check Valve
H14-2.....	7.3.....	CXHA-XCV.....	Check Valve
H14-3.....	7.4.....	CXHA-XCV.....	Check Valve
H16.....	9.....	FDCB-LAN.....	Pressure Control Valve
H17.....	10.....	GS060400N.....	Anti-Backbend Dump Valve
*		CCP115C72.....	Dump Coil
H19.....	3.1.....	GS060400N.....	Dump Valve
*	3.1.....	CCP115C72.....	Dump Coil
H19-1.....	3.2.....	GS060400N.....	Dump Valve
*	3.2.....	CCP115C72.....	Dump Coil
H20.....	5.1.....	RDDA-LCN.....	Relief Valve
H20-1.....	5.2.....	RDDA-LCN.....	Relief Valve
H22.....	6.1.....	RPGC-JEN.....	Pressure Control Valve
H22-1.....	6.2.....	RPGC-JEN.....	Pressure Control Valve
H23.....	6.3.....	RPGC-KEN.....	Pressure Control Valve
H23-1.....	6.4.....	RPGC-KEN.....	Pressure Control Valve
H24.....	1.....	RVEA-LAN.....	Pressure Control Valve
H35.....		HDD30.51.....	Flow Divider
H38.....		DG5S.....	Directional Control Valve
H40.....		HOSE 1 1/4".....	Left Cylinder Supply
H41.....		HOSE 1".....	Left Cylinder Return
H42.....		HOSE 1".....	Right Cylinder Supply
H43.....		HOSE 1".....	Right Cylinder Return
H44.....		HOSE 1 1/2".....	Supply to Flow Divider
H45.....		HOSE 1".....	Return from Flow Divider
H50.....		HOSE 1 1/2".....	Block to High Pressure Filter
H55.....		HOSE 1/2".....	Block to Tonnage Control
H56.....		HOSE 1/4".....	Block to Tonnage Gauge
H57.....		HOSE 1/4".....	To Tonnage Control Knob



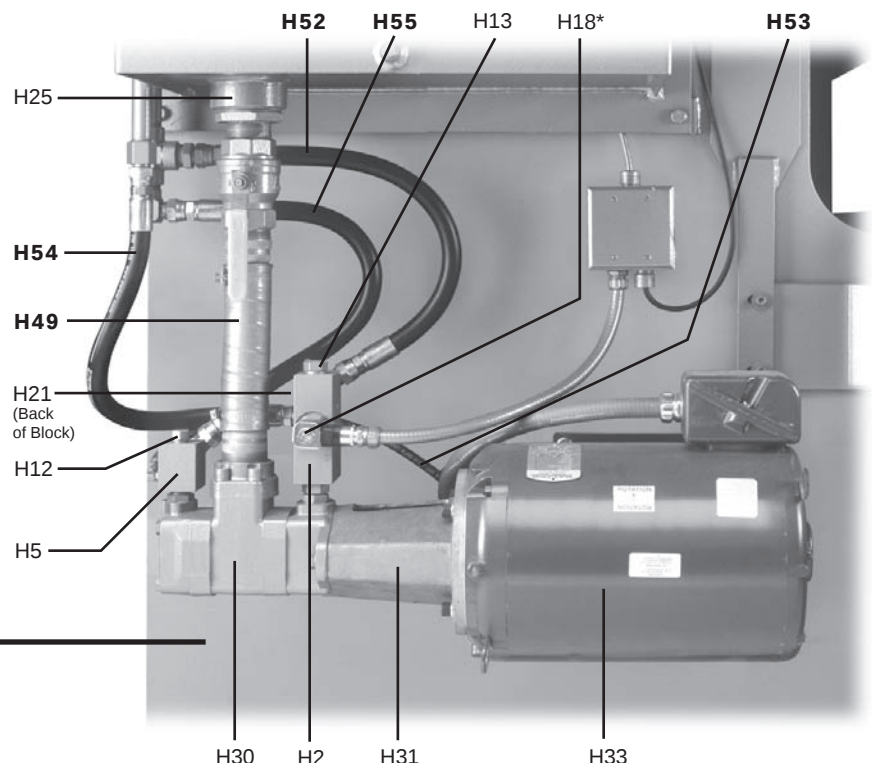
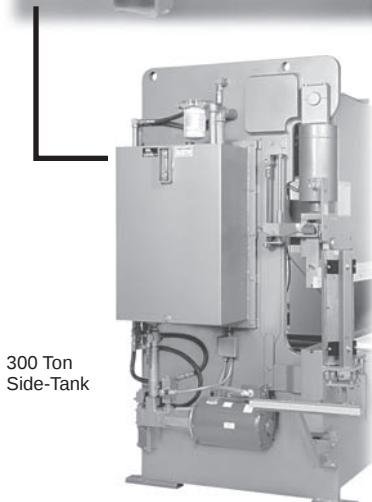
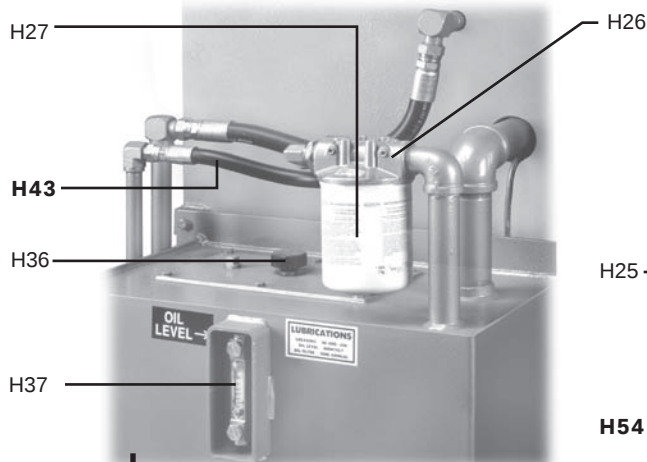
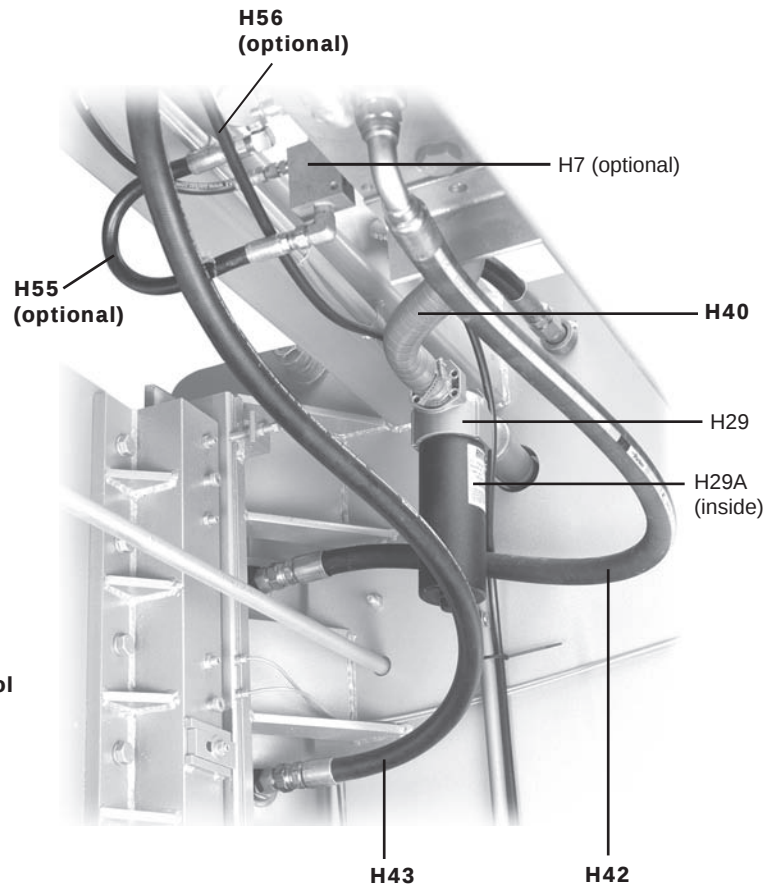
Ref. pg. 31 & 32 for block drawings



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ITEM #	PART #	DESCRIPTION
H2.....	93-0203C.....	2-Speed Block
H5.....	98-0503.....	Pilot Block
H7.....	98-0503.....	Tonnage Control Block
H12.....	CXDA-XFN.....	Check Valve
H13.....	CXFA-XAN.....	Valve
H18.....	CCP115C72.....	Dump Coil
*	GS61200N.....	Dump Valve
H21.....	RPEC-FBN.....	Valve - (Back of Block)
H25.....	TM50 (In Tank).....	Suction Strainer
H26.....	MFP160.....	Filter Head Assembly
H27.....	SE10.....	Return Line Filter
H29.....	9VZ10P20.....	High Pressure Filter
H29A.....	9VZ10.....	Filter Element
H30.....	Pump.....	See Motor Chart, Page 90
H31.....	Motor.....	See Motor Chart, Page 90
H33.....	Bellhousing.....	See Motor Chart, Page 90
H36.....	MB07-10.....	Breather Cap
H37.....	G1615-05.....	Site Glass
H42.....	HOSE 1".....	Right Cylinder Supply
H43.....	HOSE 1".....	Right Cylinder Return
H49.....	HOSE 2" x 9".....	Suction Hose
H52.....	HOSE 3/4" x 34".....	Pump to 2 Speed
H53.....	HOSE 1/2" x 20".....	Block to 2 Speed
H54.....	HOSE 3/4" x 20".....	Return to Tank
H55.....	HOSE 1/2".....	Block to Tonnage Control
H56.....	HOSE 1/4".....	Tonnage Control To High Pressure Filter



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50-70 TON LOW SPEED

ITEM #	PART #	DESCRIPTION
H30.....	7P.....	Hydraulic Pump
H31.....		Bellhousing
H31A.....		Bellhousing Access Cover
H31B.....	L100-0.750.....	Lovejoy Coupling
H31C.....	L100.....	Spider
H31D.....	L100-1.375.....	Lovejoy Coupling
H33.....		10 HP Motor

50-70 TON HIGH SPEED

ITEM #	PART #	DESCRIPTION
H30.....	11S13S.....	Hydraulic Pump
H31.....		Bellhousing
H31A.....		Bellhousing Access Cover
H31B.....	L110-1.625.....	Lovejoy Coupling
H31C.....	L110.....	Spider
H31D.....	L110-0.875.....	Lovejoy Coupling
H33.....		20 HP Motor

95-190 TON

ITEM #	PART #	DESCRIPTION
H30.....	11S13S.....	Hydraulic Pump
H31.....		Bellhousing
H31A.....		Bellhousing Access Cover
H31B.....	L100-0.875.....	Lovejoy Coupling
H31C.....	L100.....	Spider
H31D.....	L100-1.625.....	Lovejoy Coupling
H33.....		20 HP Motor

240-350 TON

ITEM #	PART #	DESCRIPTION
H30.....	14S17S.....	Hydraulic Pump
H31.....		Bellhousing
H31A.....		Bellhousing Access Cover
H31B.....	L150-1.875.....	Lovejoy Coupling
H31C.....	L150.....	Spider
H31D.....	L150-1.875.....	Lovejoy Coupling
H33.....		30 HP Motor

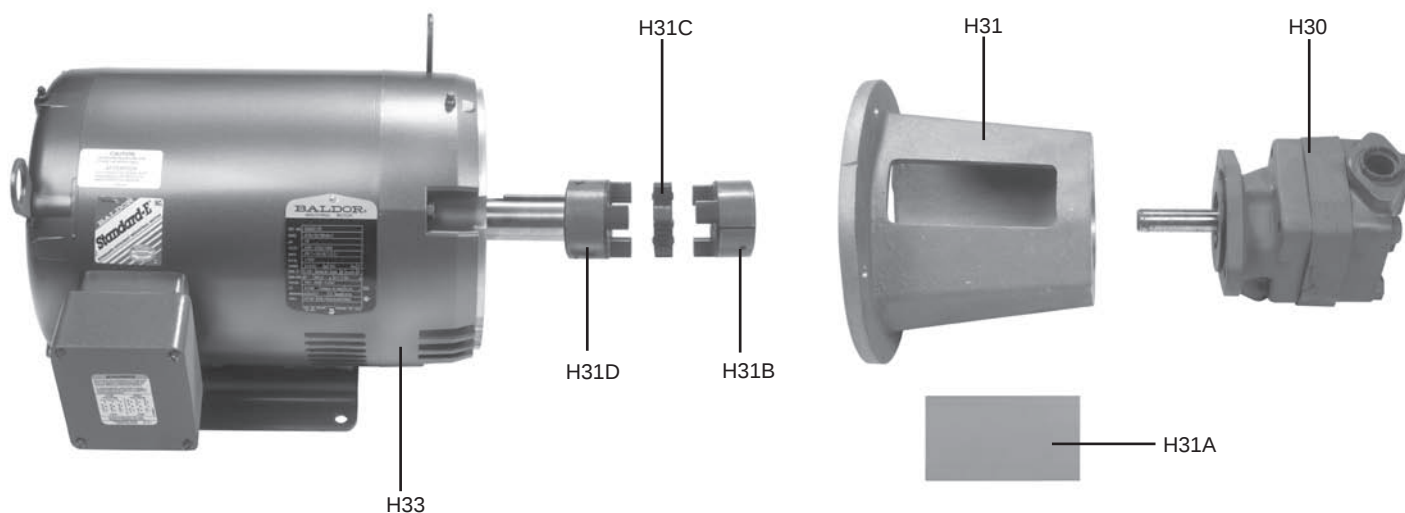
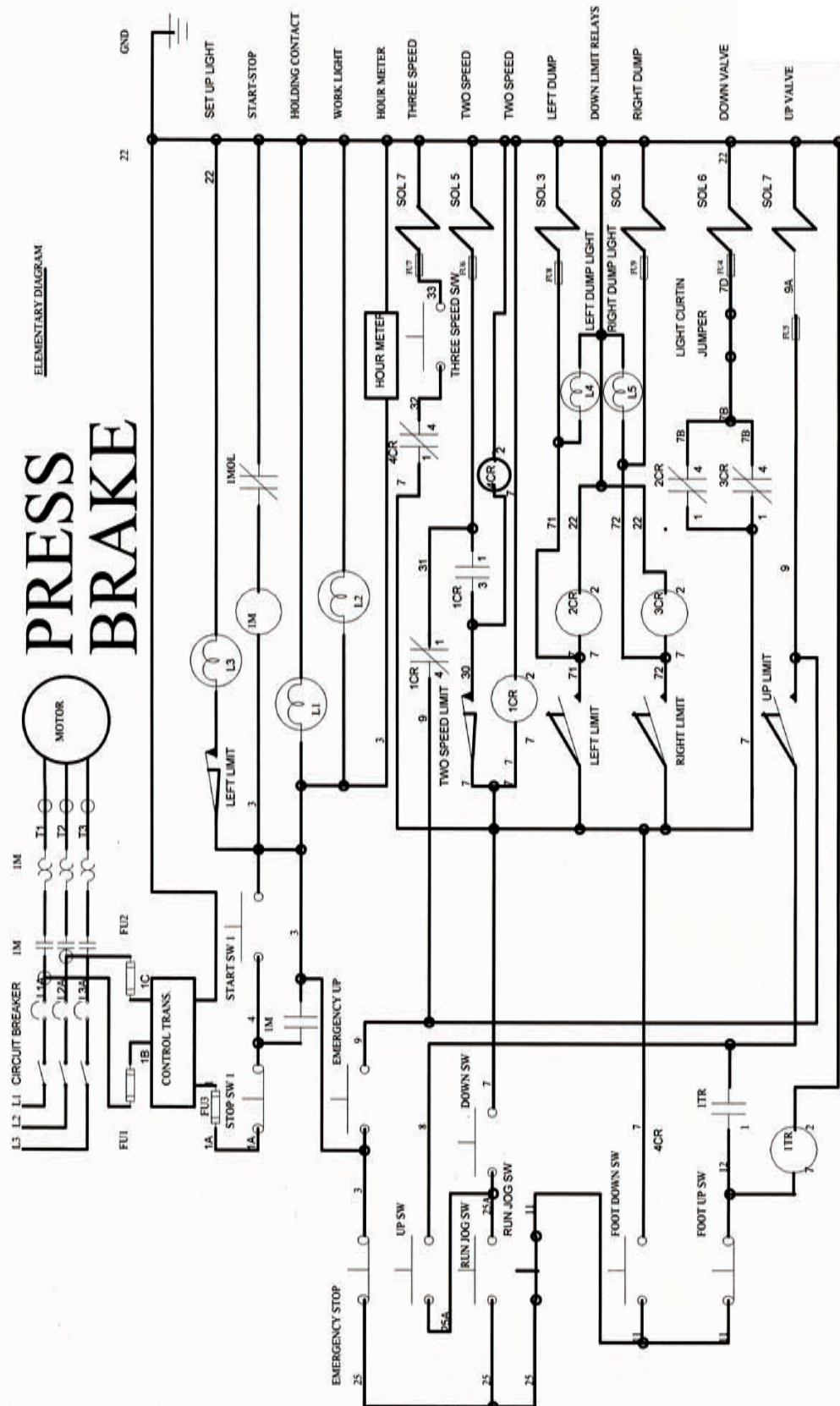


Illustration for reference only
See above for specific sizes of Motor & Pump

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ELECTRICAL PARTS



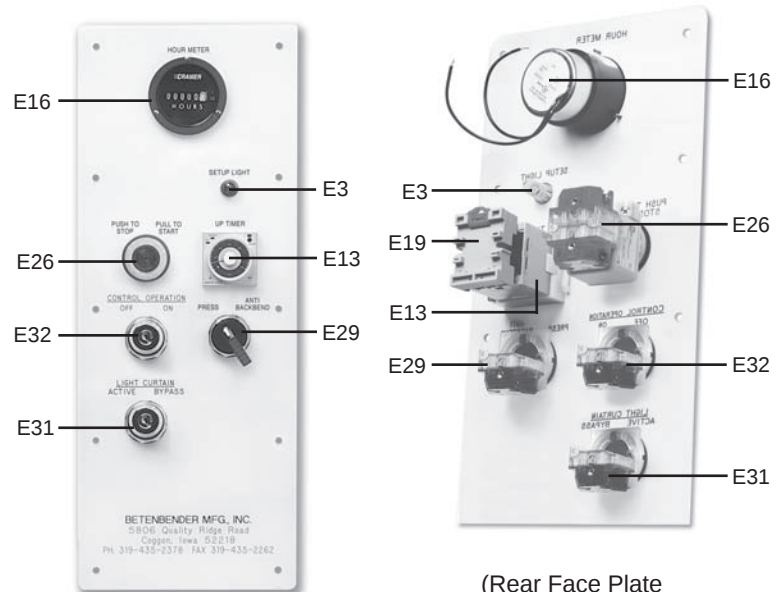
FACE PLATE PARTS & MOTOR CHART

Betenbender Manufacturing, Inc.

ELECTRICAL PARTS

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ITEM #	PART #	DESCRIPTION
E3.....	105OQA1.....	Set Up Light
E13.....	2A180A.....	Up Timer
E16.....	6X137.....	Hour Meter
E19.....	8501NR51B.....	Up Timer Socket
E26.....	9001KR8P1RH25.....	Stop-Start Assembly
*	9001KA3.....	Contact Block
*	9001KA5.....	Contact Block
E29.....	9001KS11FB.....	Press - Anti Backbend Switch (95T - 350T Only)
E31.....	9001KS11FB.....	Light Curtain / Active - By Pass (Optional)
E32.....	9001KS11K3H13.....	2 Pos. Key Lock (Optional)



(Front Face Plate
shown with options)

(Rear Face Plate
shown with options)

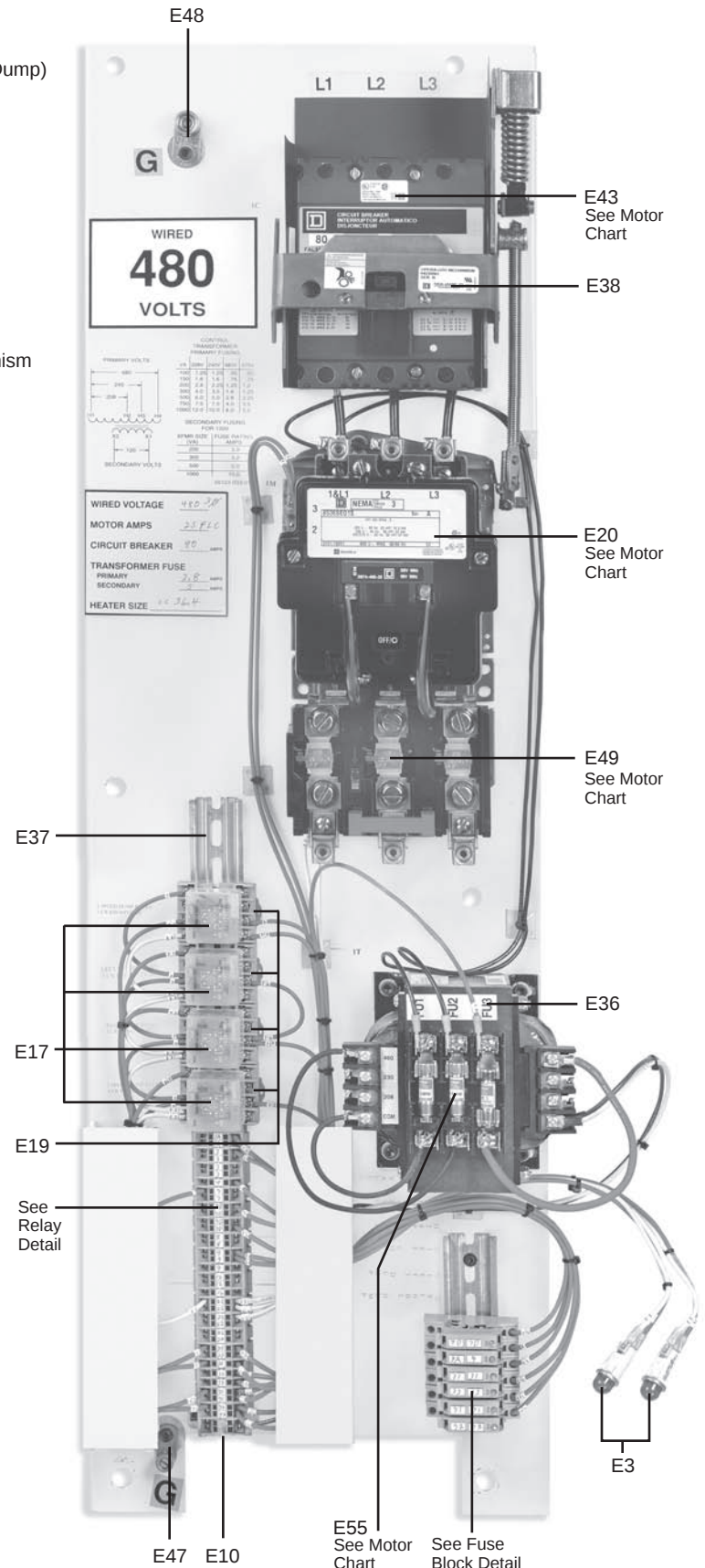
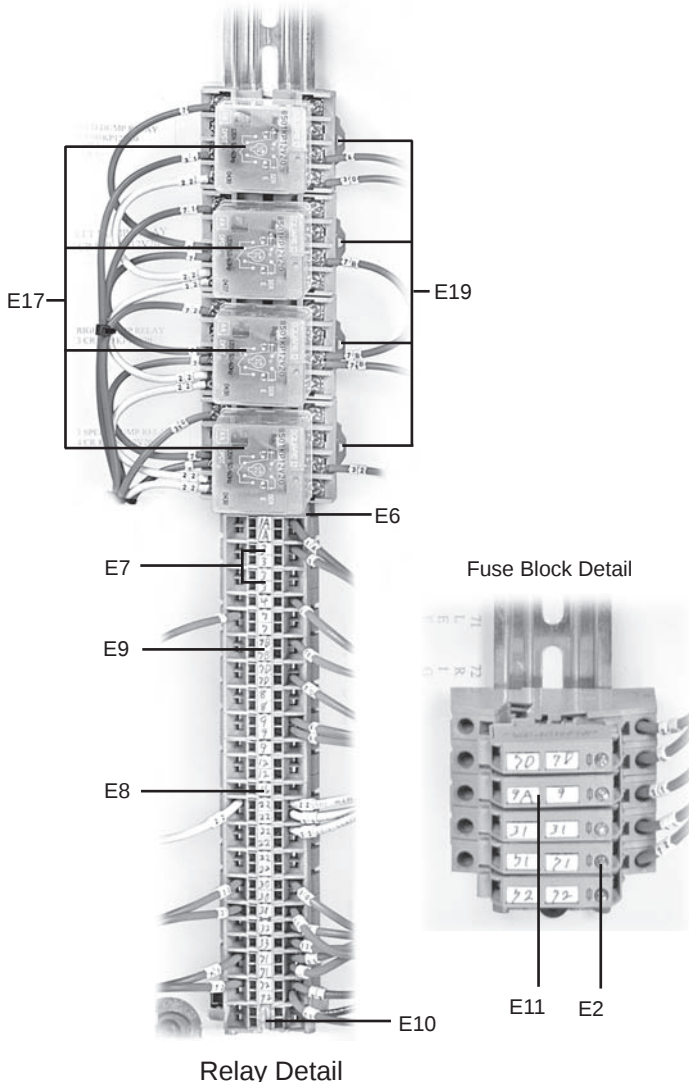
HP	MOTOR FRAME	MOTOR#	VOLTAGE	WIRE	CIRCUIT BREAKER	FULL LOAD CURRENT	STARTER SIZE	STARTER#	THERMAL OVERLOAD
5HP	184TC	CM3218T	208 230 460	12 12 12	20 20 20	14 13.8 6.9	1 1 1		
10HP	215T	M3313T-8	200	10	40	33	2	8536SD01V02S	B62
10HP	215TC	CM3313T	208 230 460	10 10 10	40 40 30	28.1 26.6 13.3	2 2 2	8536SD01V02S 8536SD01V02S 8536SD01V02S	B45 B45 B22
15HP	254TC	CM2513T	208 230 460	8 8 8	60 60 30	40.9 40.6 20.3	2 2 2	8536SD01V02S 8536SD01V02S 8536SD01V02S	B79 B79 B36
20HP	256TC	CM2515T	208 230 460	6 6 6	80 70 40	53 50 25	3 3 3	8536SE01V02S 8536SE01V02S 8536SE01V02S	CC87.7 CC81.5 CC36.4
25HP	284TC	CM2531T	208 230 460	6 6 6	80 50	66 62 31	3 3 3	8536SE01V02S 8536SE01V02S 8536SE01V02S	CC112 CC103 CC46.6
30HP	284TC	CM2535T	208 230 460	4 6 6	100 100 60	77 72 36	4 3 3	8536SF01V02S 8536SE01V02S 8536SE01V02S	CC132 CC54.5
40HP	324TC	CM2539T	208 230 460	4 4 4	100 70	106 98 49	4 4 4	8536SF01V02S 8536SF01V02S 8536SF01V02S	
50HP	326TC	CM2543T	208 230 460			133 124 62	4 4 4	8536SF01V02S 8536SF01V02S	

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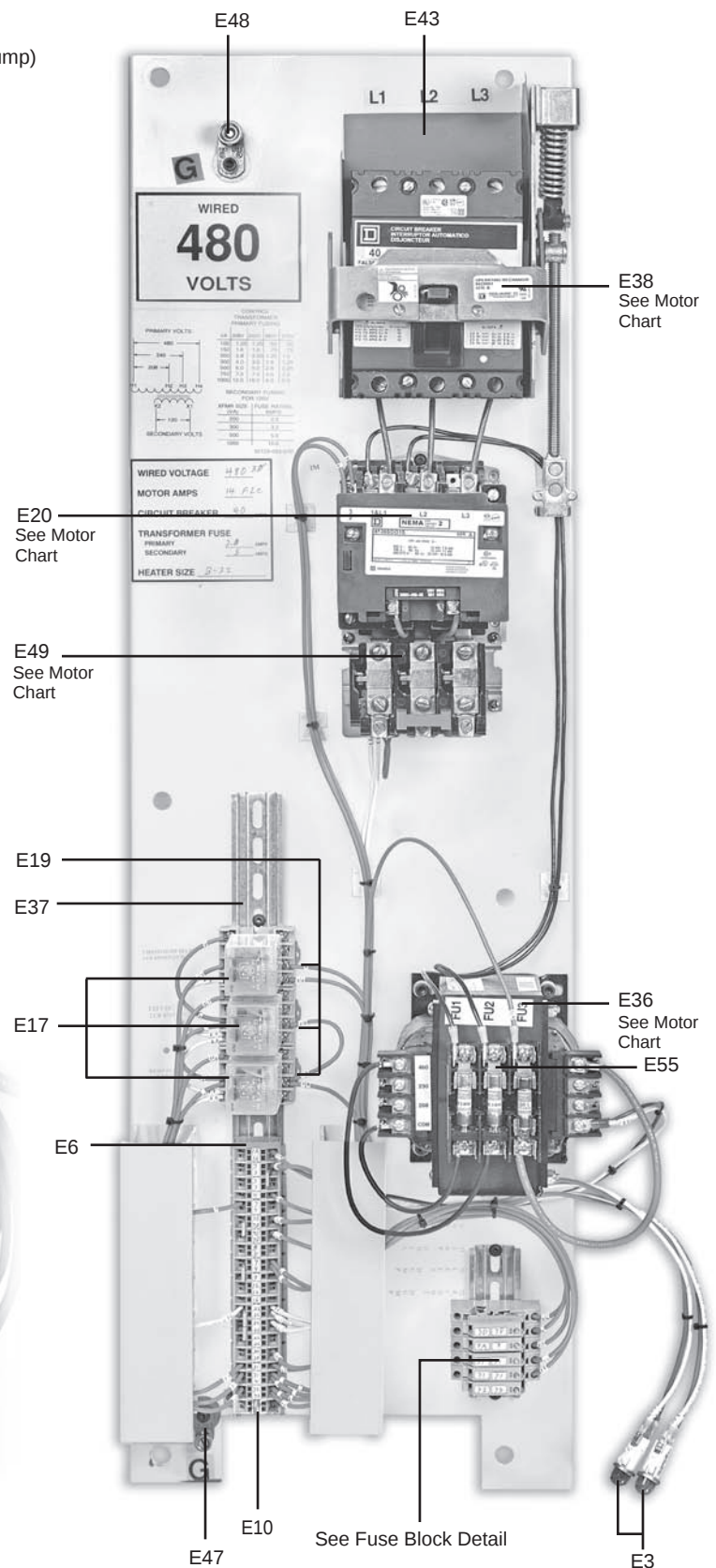
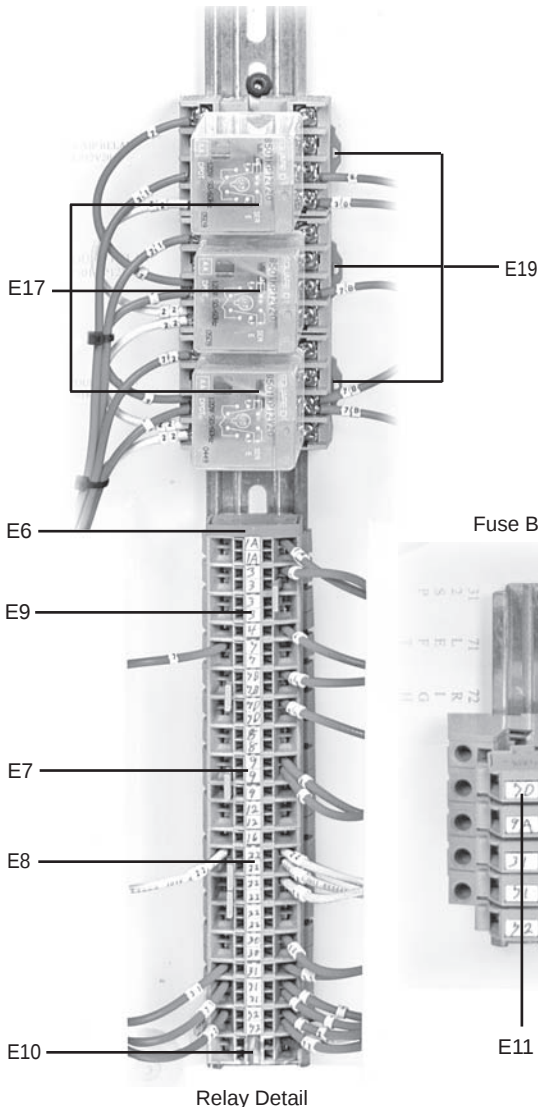
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ITEM #	PART #	DESCRIPTION
E2.....	0312003V.....	3 Amp Fuse for Terminal
E3.....	1050QA1.....	Red Light (Set-Up) (Right & Left Dump)
E6.....	264-369.....	Terminal Block Cap
E7.....	264-402.....	Jumper
E8.....	264-711.....	Single Terminal Block
E9.....	264-731.....	Double Terminal Block
E10.....	264-737.....	Double Terminal Block (Ground)
E11.....	281-623/281-418.....	Fused Terminal
E17.....	8501KP12V20.....	Relay - 120V
E19.....	8501NR51B.....	Relay Socket
E20.....	Starter.....	See Motor Chart, Page 93
E36.....	9070F500D20.....	Transformer
E37.....	9080MH339.....	Mounting Rail
E38.....	9422RN1.....	Circuit Breaker Operating Mechanism
E43.....	Curcuit Breaker.....	See Motor Chart, Page 93
E47.....	L125BB.....	Copper Terminal Lug
E48.....	L70.....	Copper Terminal Lug
E49.....	Overload Relay Thermal....	See Motor Chart, Page 93
	Unit (Heaters)	
E55.....	Transformer Fuses.....	See Motor Chart, Page 93



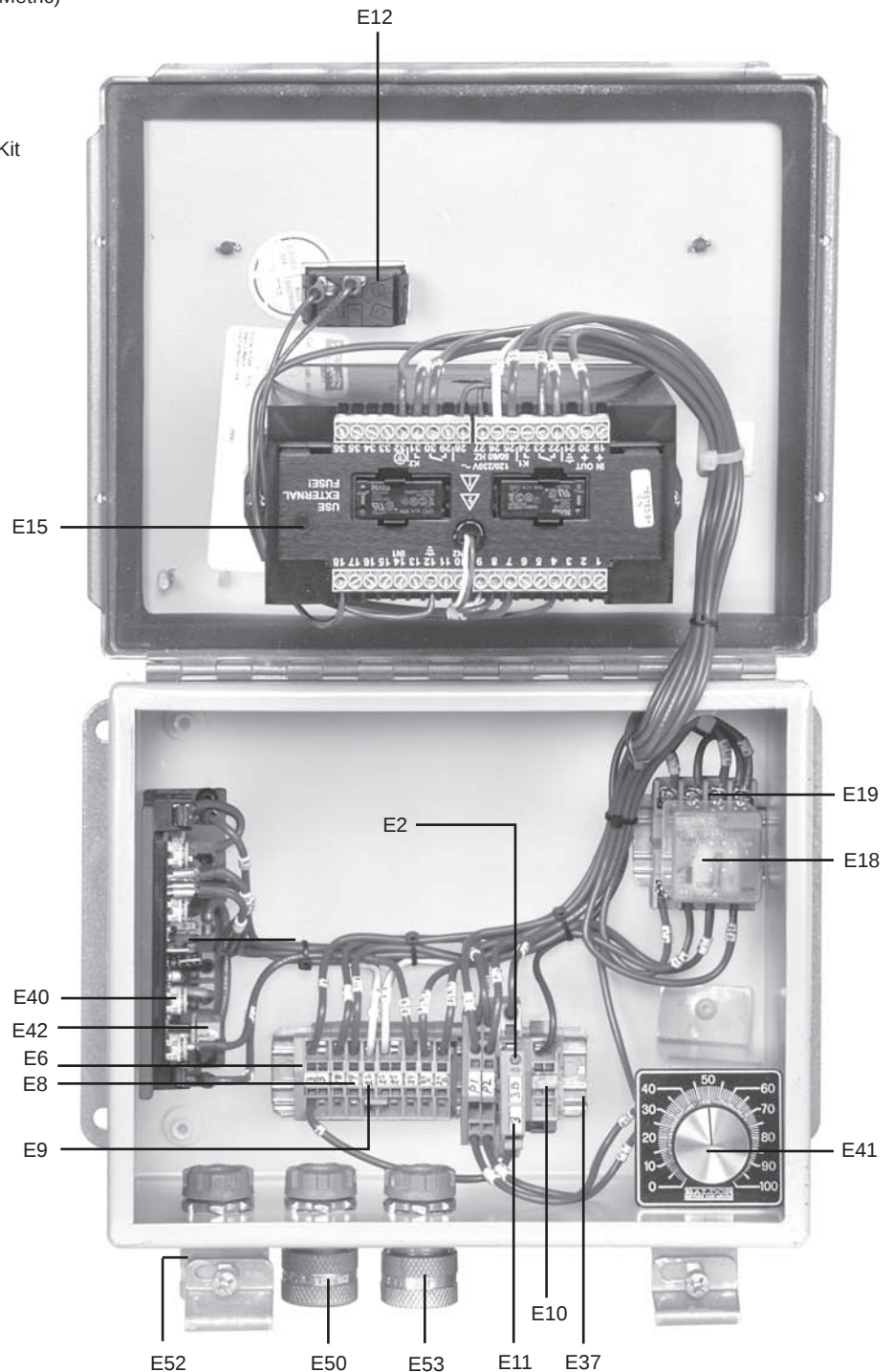
ITEM #	PART #	DESCRIPTION
E2.....	0312003V.....	3 Amp Fuse for Terminal
E3.....	1050QA1.....	Red Light (Set-Up) (Right & Left Dump)
E6.....	264-369.....	Terminal Block Cap
E7.....	264-402.....	Jumper
E8.....	264-711.....	Single Terminal Block
E9.....	264-731.....	Double Terminal Block
E10.....	264-737.....	Double Terminal Block (Ground)
E11.....	281-623/281-418.....	Fused Terminal
E17.....	8501KP12V20.....	Relay - 120V
E19.....	8501NR51B.....	Relay Socket
E20.....	Starter.....	See Motor Chart, Page 93
E36.....	9070F500D20.....	Transformer
E37.....	9080MH339.....	Mounting Rail
E38.....	9422RN1.....	Circuit Breaker
		Operating Mechanism
E43.....	Circuit Breaker.....	See Motor Chart, Page 93
E47.....	L125BB.....	Copper Terminal Lug
E48.....	L70.....	Copper Terminal Lug
E49.....	Overload Relay.....	See Motor Chart, Page 93
	Thermal Unit (Heaters)	
E55.....	Transformer Fuses.....	See Motor Chart, Page 93



ITEM #	PART #	DESCRIPTION
E2.....	0312003V.....	3 Amp Fuse for Terminal
E6.....	264-369.....	Terminal Block Cap
E8.....	264-711.....	Single Terminal Block
E9.....	264-731.....	Double Terminal Block
E10.....	264-737.....	Double Terminal Block Ground
E11.....	281-623/281-418.....	Fused Terminal
E12.....	3JC02.....	Rocker Switch (Inch-Metric)
E15.....	58868-400.....	Durant Control
E18.....	8501KPD12V51.....	12V Relay
E19.....	8501NR51B.....	Relay Socket
E37.....	9080MH339.....	Mounting Rail
E40.....	BC141.....	DC Power Board
E41.....	BC149.....	Potentiometer Knob Kit
E42.....	BR0025.....	DC Fuse Kit
E50.....	SHC-1021.....	Red Connector
E52.....	SHC-1023.....	Blue Connector
E53.....	SHC-1024.....	Brown Connector



Power Front Reading Backgauge Adjustment
w/5 Station NC "GO-TO" Positioner on Pendant



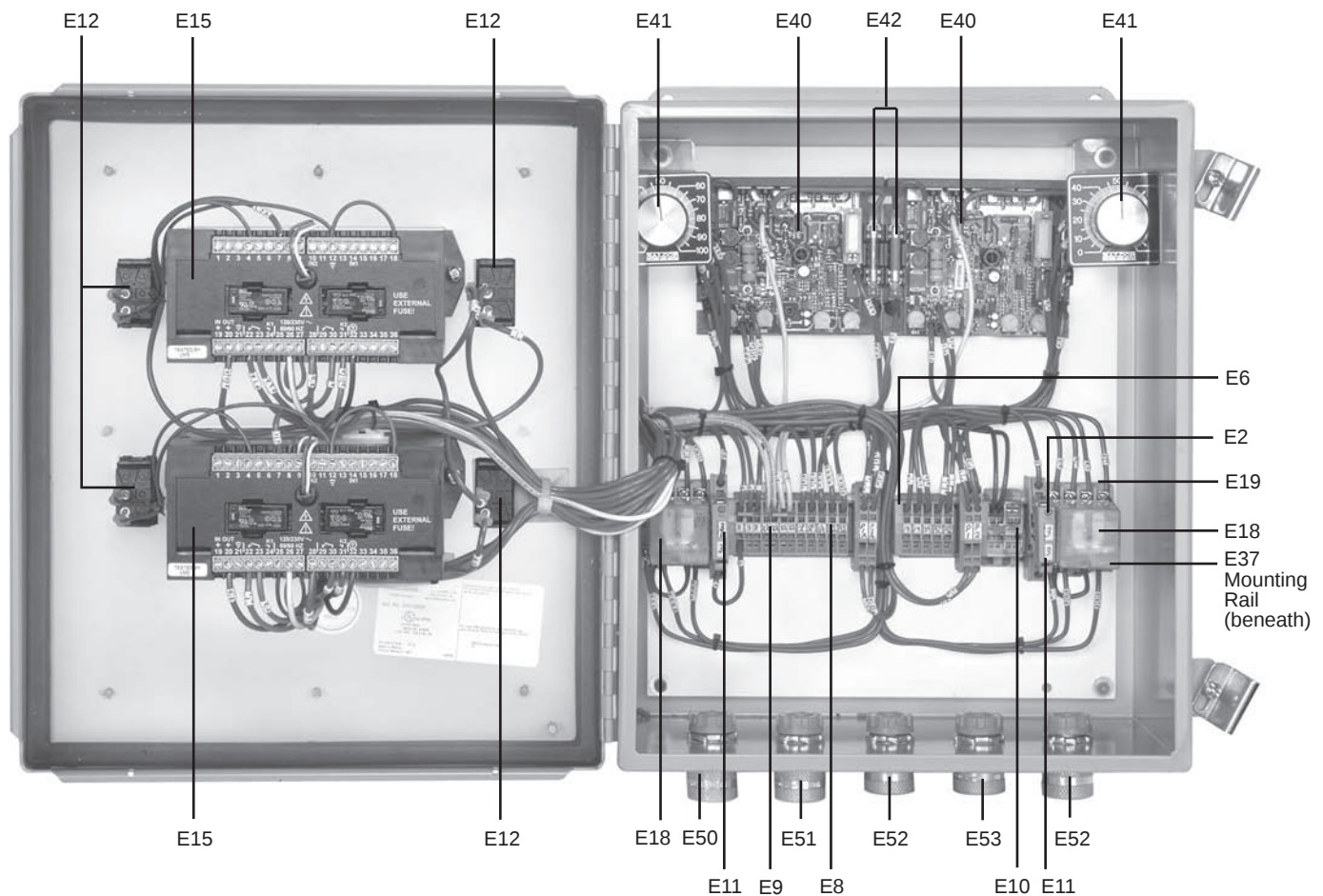
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ITEM #	PART #	DESCRIPTION
E2.....	0312003V.....	3 Amp Fuse for Terminal
E6.....	264-369.....	Terminal Block Cap
E8.....	264-711.....	Single Terminal Block
E9.....	264-731.....	Double Terminal Block
E10.....	264-737.....	Double Terminal Block (Ground)
E11.....	281-623/281-418.....	Fused Terminal
E12.....	3JC02.....	Rocker Switch On-Off (Inch-Metric)
E15.....	58868-400.....	Durant Control-Ram Pos.
E15.....	58868-400.....	Durant Control Back Gauge Pos.
E18.....	8501KPD12V51.....	12V Relay
E19.....	8501NR51B.....	Relay Socket
E37.....	9080MH339.....	Mounting Rail
E40.....	BC141.....	DC Power Board
E41.....	BC149.....	Potentiometer Knob Kit
E42.....	BR0025.....	DC Fuse Kit
E50.....	SHC 1021.....	Red Connector
E51.....	SHC-1022.....	White Connector
E52.....	SHC-1023.....	Blue Connector
E53.....	SHC-1024.....	Brown Connector

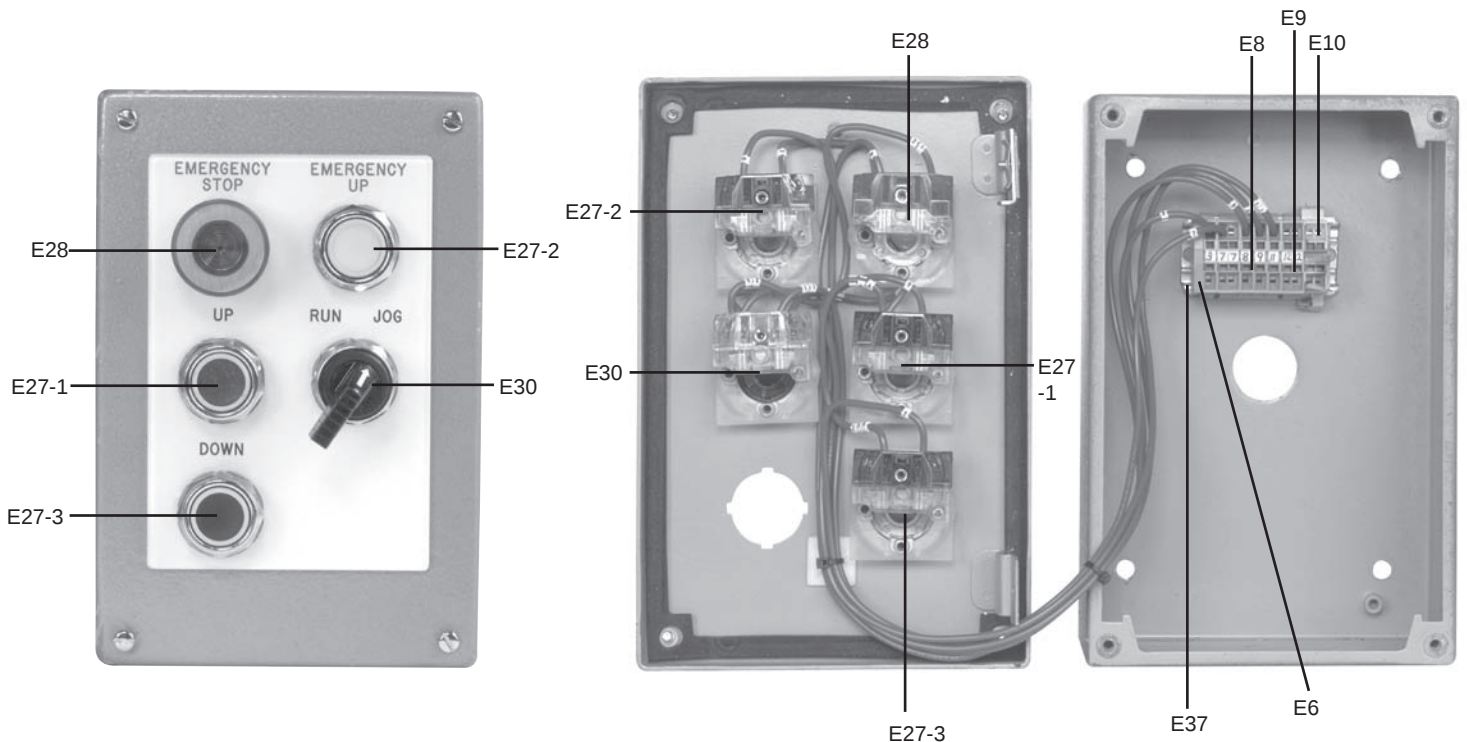
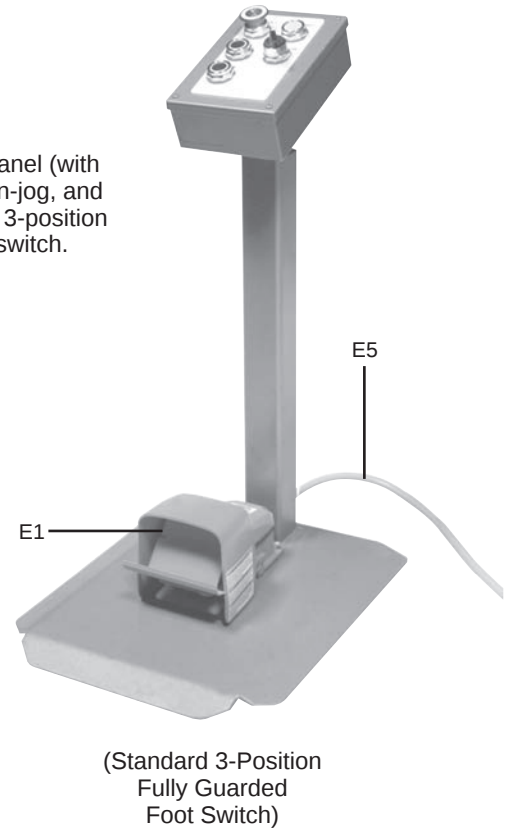
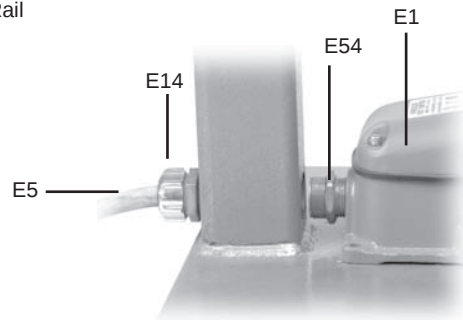


Power Front Reading Backgauge and Power Ram Adjustment w/ Station NC "GO-TO" Positioner on Pendant

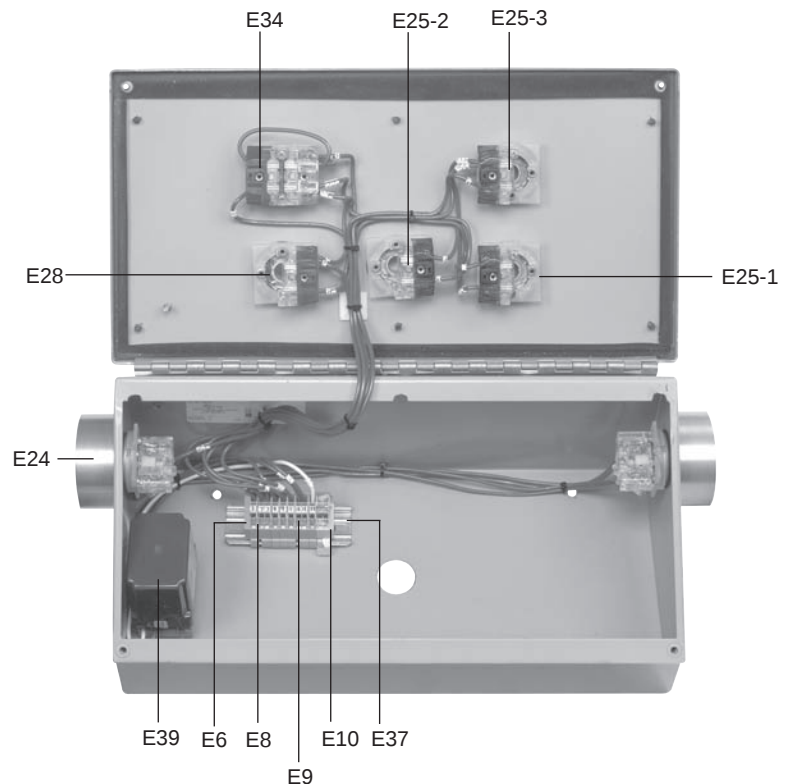
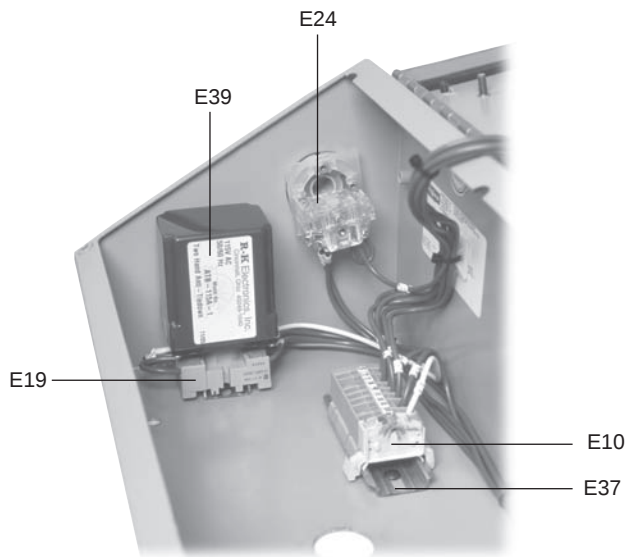
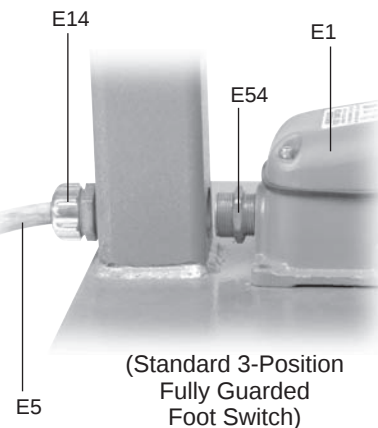


ITEM #	PART #	DESCRIPTION
E1.....	535 SWHOXG.....	3 Pos. Foot Switch
E5.....	16-6 SOOWA.....	Yellow Cord
E6.....	264-369.....	Terminal Block Cap
E8.....	264-711.....	Single Terminal Block
E9.....	264-731.....	Double Terminal Block
E10.....	264-737.....	Double Terminal Block (Ground)
E14.....	2534.....	Connector
E27-1.....	9001KR1UH5.....	Push Button Jog-Up
*	9001KA2.....	Contact
E27-2.....	9001KR1UH5.....	Push Button-Emergency Up
*	9001KA2.....	Contact
E27-3.....	9001KR1UH5.....	Push Button Jog Down
*	9001KA2.....	Contact
E28.....	9001KR9RH6.....	Emergency Stop
*	9001KA3.....	Contact
E30.....	9001KS11FB.....	2 Pos. Run-Jog Switch
*	9001KA2.....	Contact
E37.....	9080MH339.....	Mounting Rail
E54.....	TC-212-SC.....	Connector

Multi-switch control panel (with emergency switch, run-jog, and up-down buttons) and 3-position fully guarded foot switch.



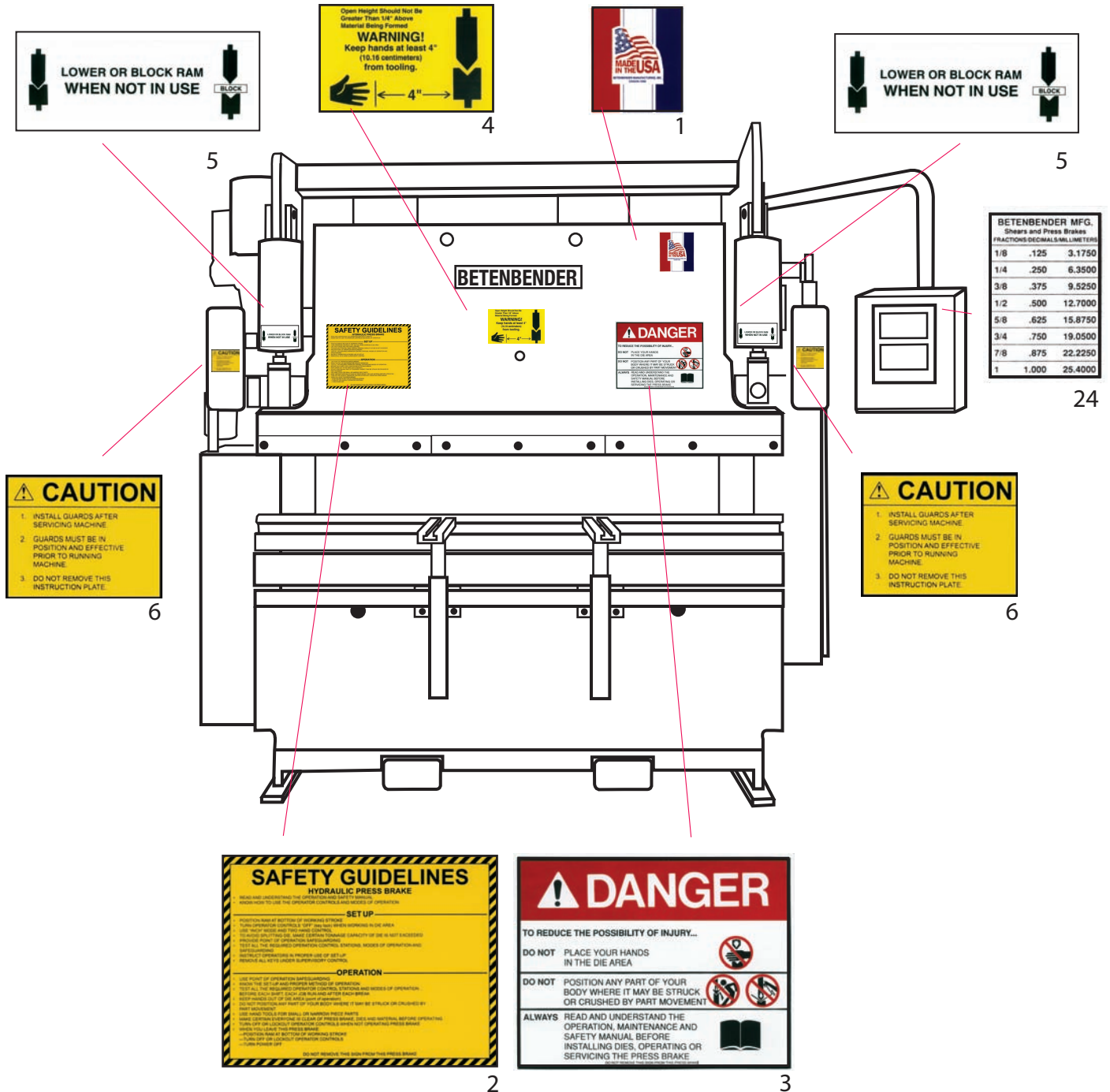
ITEM NO.	PART NO.	DESCRIPTION
E1.....	535-5WHOXG.....	3 Pos. Foot Switch
E5.....	16-7-SOOWA.....	Yellow Cord
E6.....	264-369.....	Terminal Block Cap
E8.....	264-711.....	Single Terminal Block
E9.....	264-731.....	Double Terminal Block
E10.....	264-737.....	Double Terminal Block (Ground)
E14.....	2534.....	Connector
E19.....	8501NR51B.....	Socket
E24.....	9001KR1UH5.....	Push Button Palm Button Assembly
*	9001K68.....	Palm Button Guard
*	9001K17B.....	Palm Button
*	9001KA2.....	Contact
E25-3....	9001KR1UH5.....	Push Button - Jog Down
*	9001KA2.....	Contact
E25-1....	9001KR1UH5.....	Push Button - Jog Up
*	9001KA2.....	Contact
E25-2....	9001KR1UH5.....	Push Button - Emergency Up
*	9001KA2.....	Contact
E28.....	9001KR9RH6.....	Emergency Stop
*	9001KA3.....	Contact
E33.....	9001KS46K10.....	3 Pos. Key In Place of - E34
		9001KS46FBH28
E34.....	9001K546FBH28.....	3 Pos. Press Control Switch
*	9001KA3.....	Contact
*	9001KA1.....	Contact
E37.....	9080MH339.....	Mounting Rail
E39.....	ATB-115A-1.....	Two Hand Anti-Tie Down
E54.....	TC-212 SC.....	Connector

Operator Station Palm Button Control
w/3-Position Fully Guarded Foot Switch

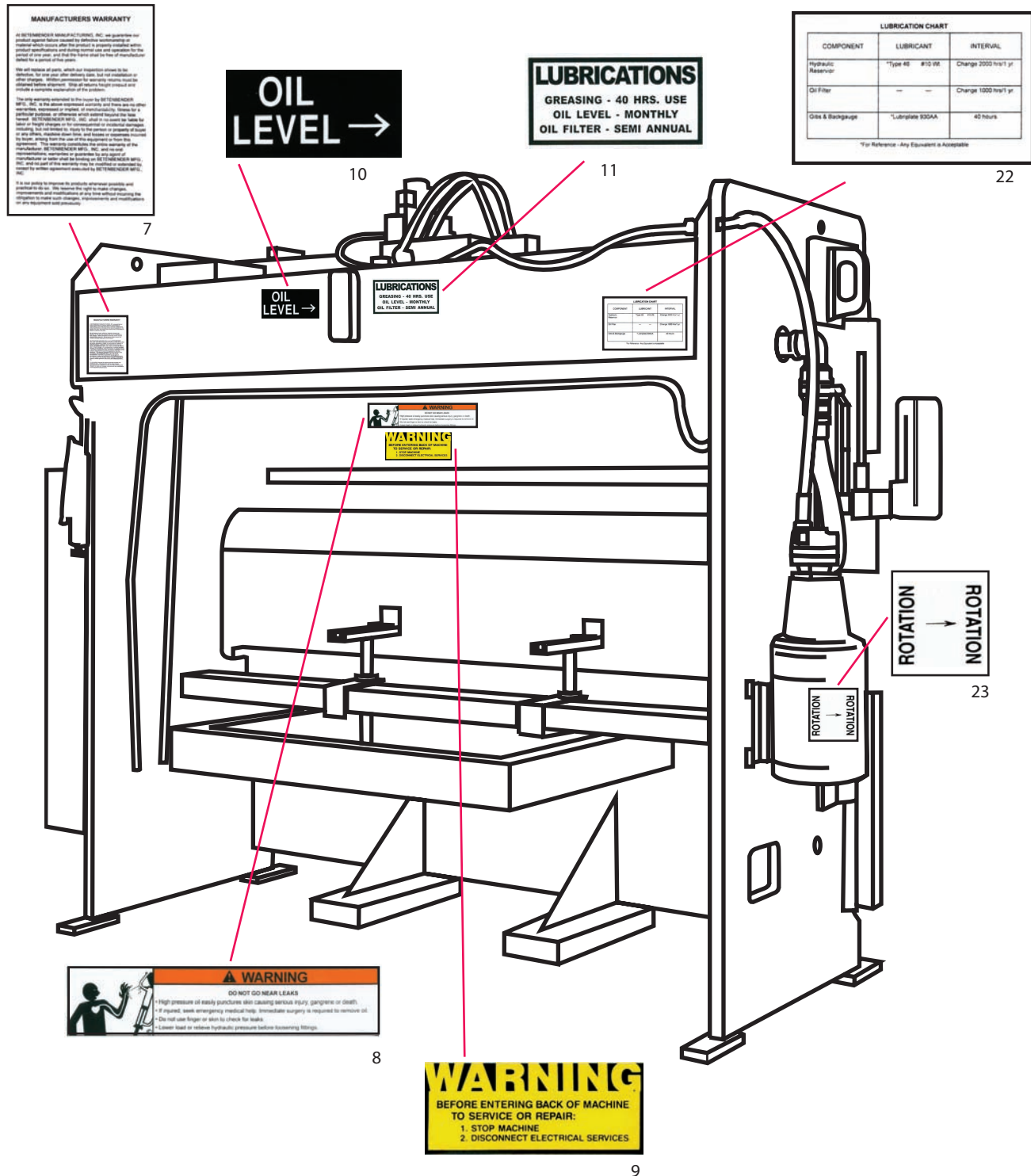


LABELS

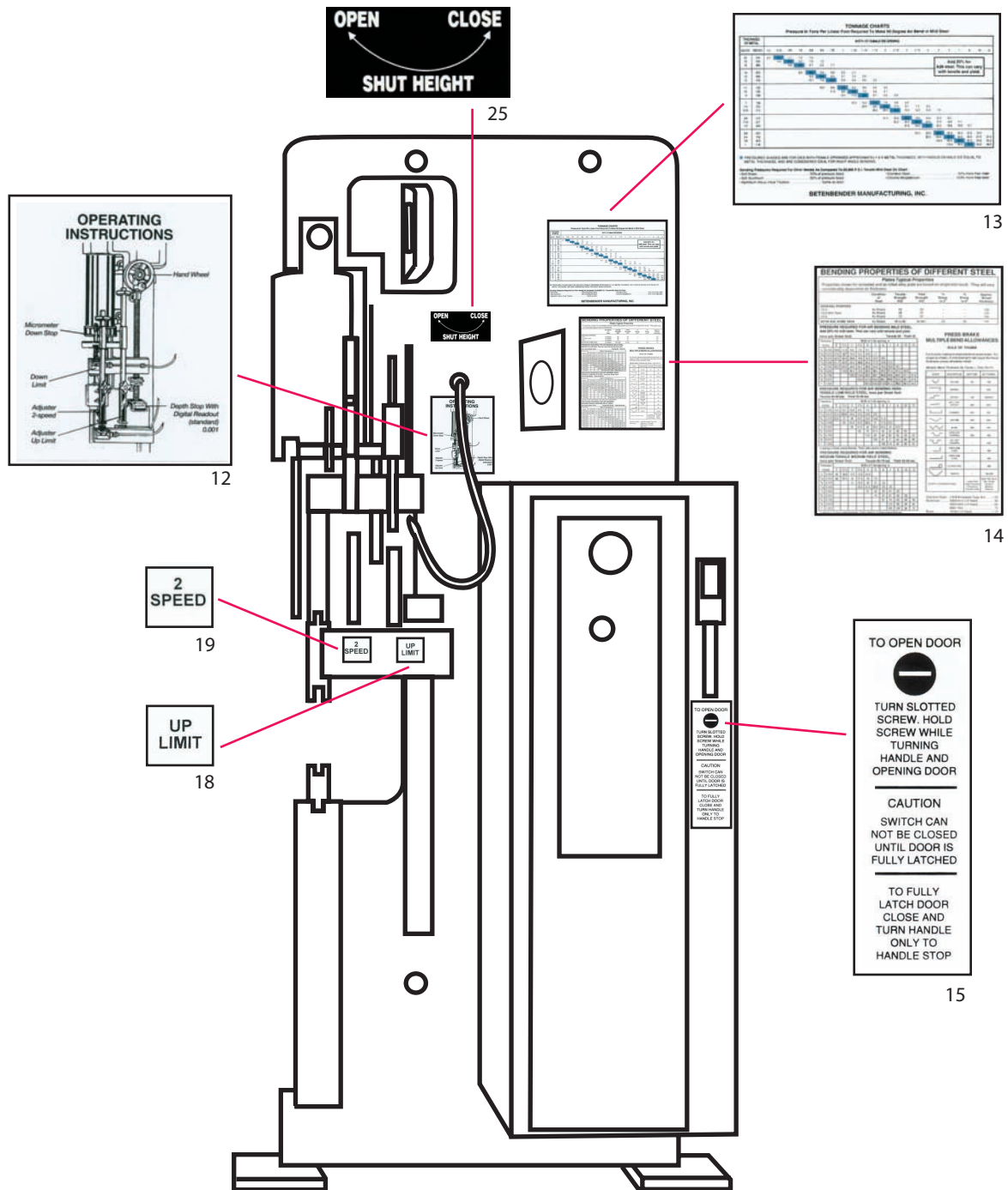
Safety Stickers are available FREE from Betenbender.



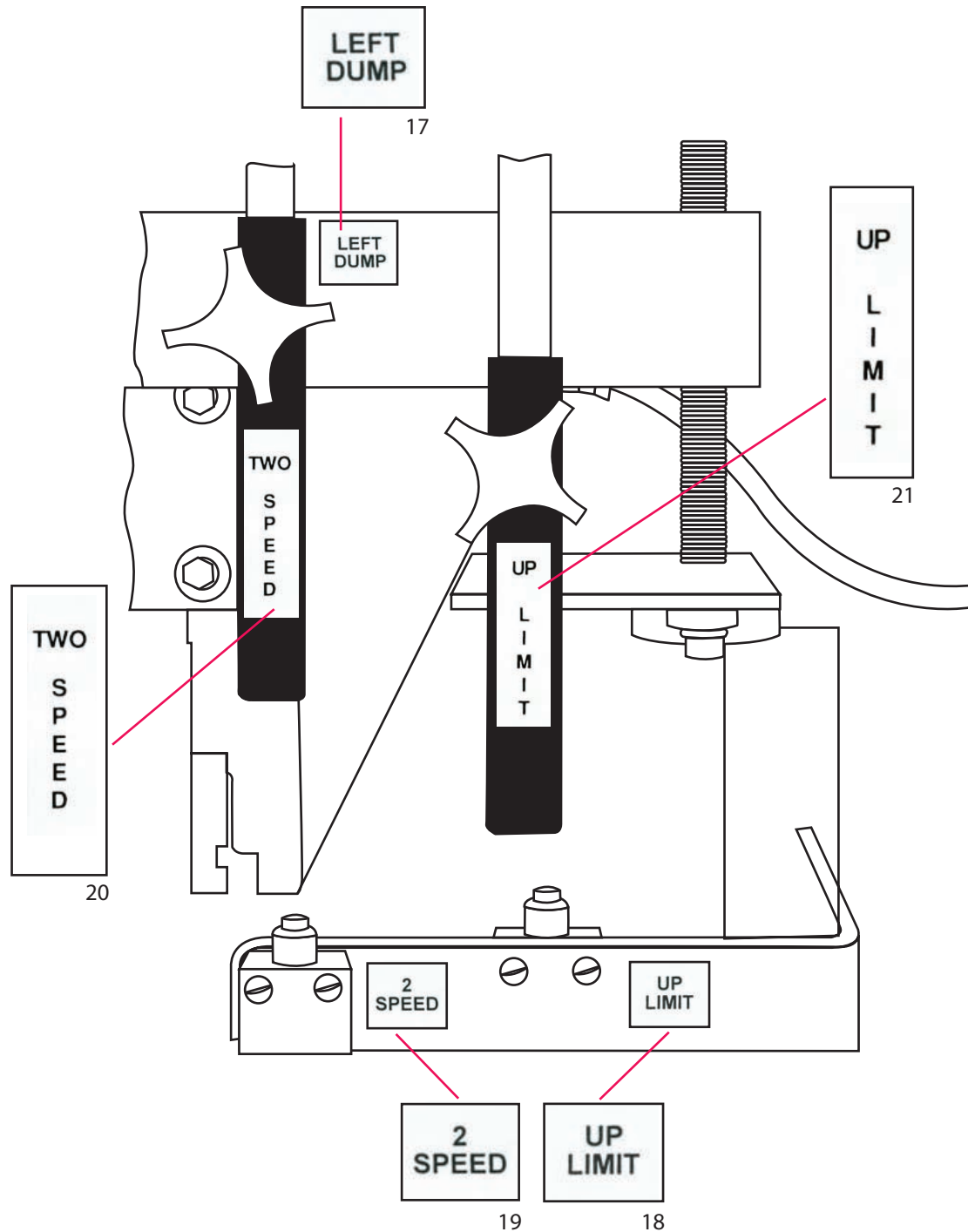
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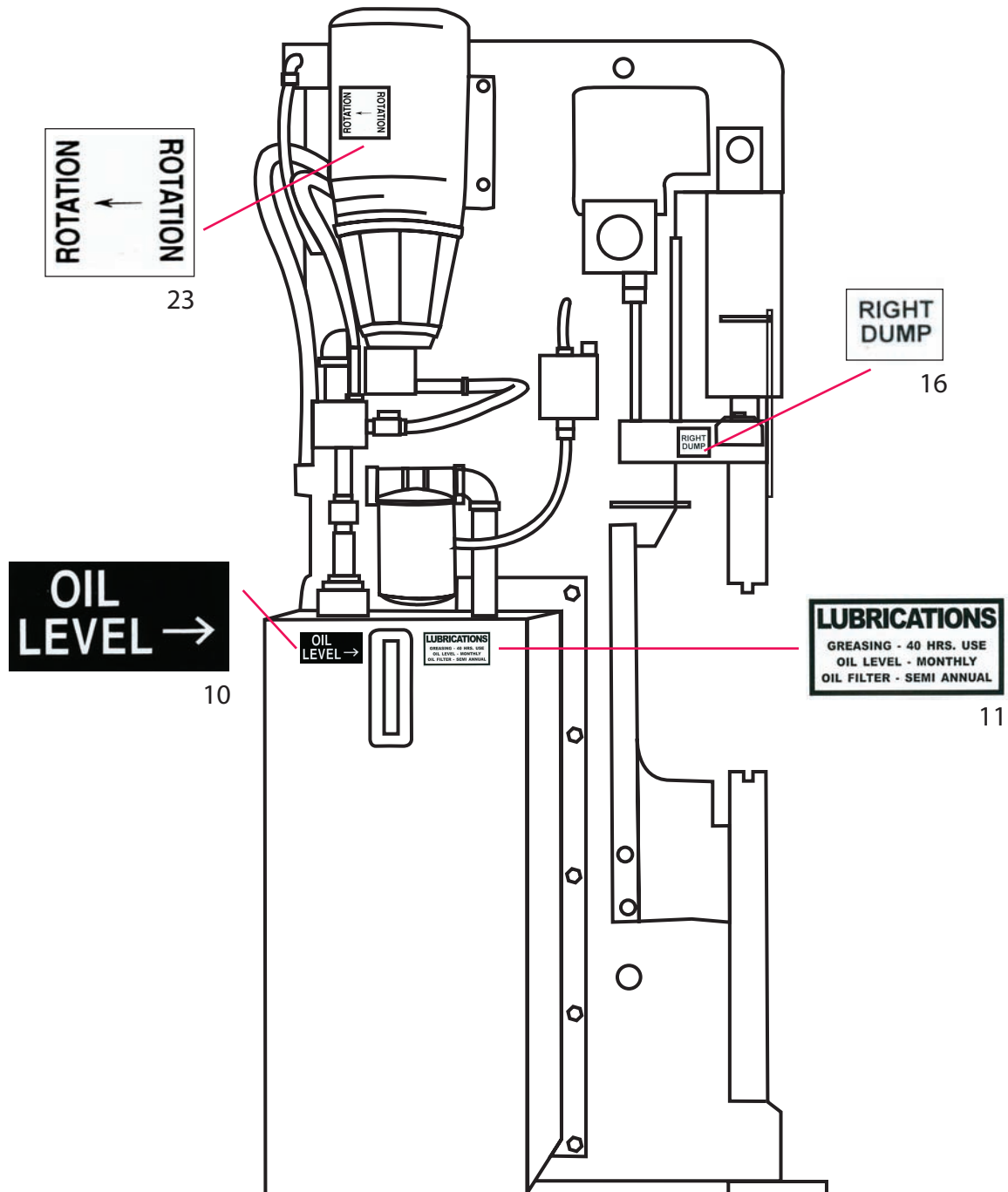
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