

DURMA Press Brakes
Designed for Simplicity, Safety & Precision

AD-R Series



Empire
MACHINERY & TOOLS LTD

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COMPANY PROFILE

DISTRIBUTORS OF NEW & USED METAL FABRICATION EQUIPMENT

Serving Canada and the U.S. since 1987 Empire Machinery & Tools Ltd. in Winnipeg, Manitoba distributes quality new and used sheet metal equipment and metal fabrication machinery.

Empire has a complete in-house service department with experienced service techs available in Manitoba and Ontario for off-site service anywhere in Canada.

We accept trade-ins and sell on consignment so used machinery is thoroughly checked, serviced and available with a 30 Day Used Equipment Guarantee.

New sheet metal machinery and metal fabrication equipment is in stock in both Winnipeg, Manitoba and Toronto, Ontario. Check our web-site by machine category for all the equipment distributed by Empire and Request a Quote.

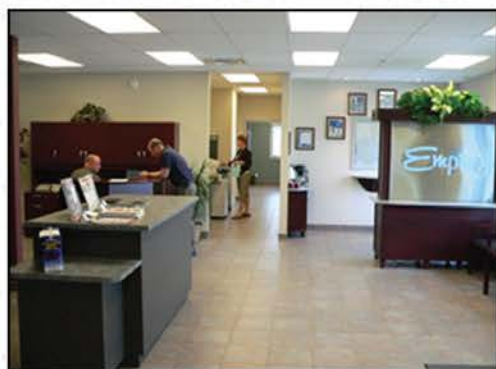
Empire stocks spot welding tips, degalvanizer and a full range of metal fabrication tools. If you are working with metal, Empire Machinery & Tools is here to help!



Empire's 18,000 sq. ft. office & warehouse located in Winnipeg's Brookside Industrial Park just minutes from the airport



20 Ton overhead crane provides safe & easy handling of equipment



Reception area



Warehouse & Service



Showroom

AD-R SERIES PRESS BRAKES



STANDARD EQUIPMENT

- » Y₁, Y₂ Servo Ram Positioning
- » X Axis Back Gauge with Fingertip Lateral Adjustment and Manual R Axis
- » Durma CNC Advantage Control
- » Quickset Front Sheet Supports via Linear Guide
- » Universal Wedge Style Punch Clamp for American or Euro Style Punches
- » Fiessler Akas Ram Mounted Laser Guarding

OPTIONAL EQUIPMENT

- » R Axis Back Gauge
- » Manual Table Crowning
- » Automatic Table Crowning
- » Delem DA 56 or Cybelec DNC 880S Graphical Control
- » Quick Release Punch Clamping
- » Additional Finger Blocks
- » 39" Back Gauge
- » Hydraulic Tool Clamping
- » Tooling

CAPACITIES

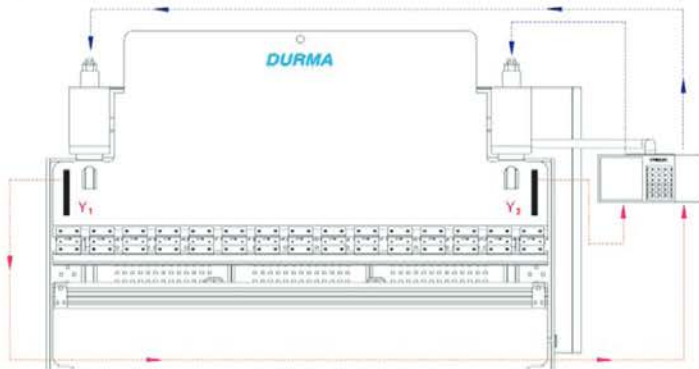
- » 4' - 20' Tandem Systems
- » 70 - 440 Tons



Rear View

AD-R SERIES PRESS BRAKES

FEATURES



Y₁, Y₂ PRECISION & FLEXIBILITY

In the ADS Series Y₁, Y₂ ram positioning system each cylinder operates independently in a closed loop system. Linear encoders combined with precision hydraulic valves and the CNC command center, provide $\pm .0004"$ accuracy and the ability to program all ram position, speeds and ram tilt. Several application advantages follow.

- » Stage or Progressive Bending
- » Fade Out or Conical Work
- » Enhanced Material Handling with Total Ram Control

OVERSIZED RAM GUIDES

Long rectangular shaped guides assure stable, smooth, and secure ram positioning. Conventional machines can typical have these guides mounted on the inside of the frames resulting in obstructions to full length acute angle bends.



LARGE STROKE, DAYLIGHT & THROAT

The large frame dimensions allow versatile production of parts requiring increased clearance to profitably and easily produce.

- » Forming of deep sectioned four sided boxes. .
- » Forming and Removal of Complex Large Parts

These oversized dimension, in some cases, allow the purchase of a machine to process the desired part dimensions.



QUICK-SET FRONT SHEET SUPPORTS

Rugged support arms with disappearing stops are mounted on a linear guide rail system. This allows "fingertip" lateral adjustment as required by the bend length of the part. They are also equipped with side gauges for the fast, easy, and accurate feeding of parts; small or large.

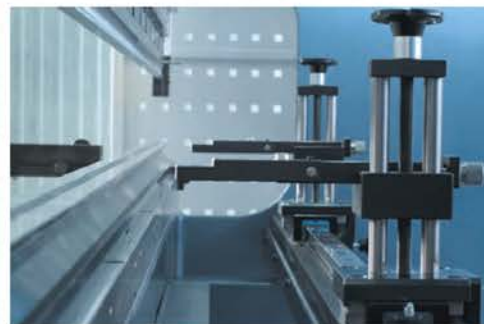


AD-R SERIES PRESS BRAKES

FEATURES

BACK GAUGE

X axis (finger depth) is set automatically via the program. The fingers are mounted on a linear guide for quick, easy, and accurate lateral positioning. A hand crank is located at the top of each finger for height adjustment. Programmable R axis (finger height) is optional.



UNIVERSAL BOX FORMING STYLE PUNCH CLAMPS

Up to 245 tons. A universal wedge style punch clamp accepts either American or European style punches. Because of their deep sectioned characteristics, they are very useful in deep box forming. The ability to form deep boxes with standard height punches is allowed. They are designed with an integrated wedge that allows vertical adjustment due to tool or ram.



AIR BENDING FORCE CHART

		V(°)	0.25	0.313	0.375	0.5	0.625	0.75	0.875	1	1.125	1.25	1.5	2	2.5	3	3.5	4	5
		MF*	0.18	0.225	0.36	0.36	0.45	0.54	0.63	0.72	0.81	0.9	1.08	1.44	1.8	2.159	2.519	2.879	3.599
		IR	0.042	0.052	0.084	0.084	0.104	0.125	0.146	0.167	0.188	0.209	0.251	0.334	0.481	0.501	0.585	0.668	0.835
GAUGE	DEC.	TONS PER FOOT	2.9	2.2	1.7	1.2	1												
20	0.036			4	2.9	2.2	1.6	1.3											
18	0.048				5.6	3.6	2.7	2.2	1.7										
16	0.06					6	4.5	3.4	3	2.5	2.1								
14	0.075						6.8	5.4	4.3	3.7	3.3	2.9							
13	0.09						10.1	7.4	6.3	5.4	4.4	4	3.2						
12	0.105							10.5	8.8	7.2	6.2	5.4	4.3	3.2					
11	0.12								11.3	9.6	8.4	7	5.6	4.1					
10	0.135									13.1	11.9	9	7.6	5.2	3.5				
9	0.15										16.4	14	15.3	7.6	5.8	4.5			
7	0.188											28.8	26	15.3	11.5	9.1	7.5	6.2	
1/4"	0.25												38	26	19.2	16	12.5	10.6	7.6
5/16"	0.312													41	29.9	24	19.4	16	12.3
3/8"	0.375														45.2	35	28	24	17
7/16"	0.438															47.9	39	33.1	24
1/2"	0.5																69.5	58	42.2
5/8"	0.625																	92	69
3/4"	0.75																		104
7/8"	0.875																		
1"	1																		

T = Material Thickness

V = V-Opening

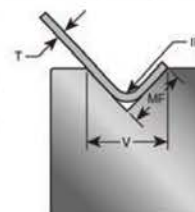
MF = Minimum Flange Length

IR = Inside Radius

The bending force (tonnage) figures listed above are based on mild steel with a tensile strength of 60,000 psi. To calculate the approximate bending force requirements for other materials, please use the following multipliers:

Soft Brass
Soft Aluminum
Heat Treated Aluminum Alloys
Stainless Steel

Tons Per Foot x 50%
Tons Per Foot x 50%
Tons Per Foot x 100%
Tons Per Foot x 150%



**Based on bending to an included angle of 88 degrees. This dimension will increase when bending to an included angle of less than 88 degrees. A36 steel requires a safety multiplier of 1.33 (80,000 psi) to the chart.*

AD-R SERIES PRESS BRAKES

OPTIONAL FEATURES

X/R STYLE BACK GAUGE

With the X/R style back gauge, the height of the back gauge is programmable in addition to the depth. This is very useful for changes in die height, extreme crowning settings, and for gauging to a flange that may be a different height than the die.



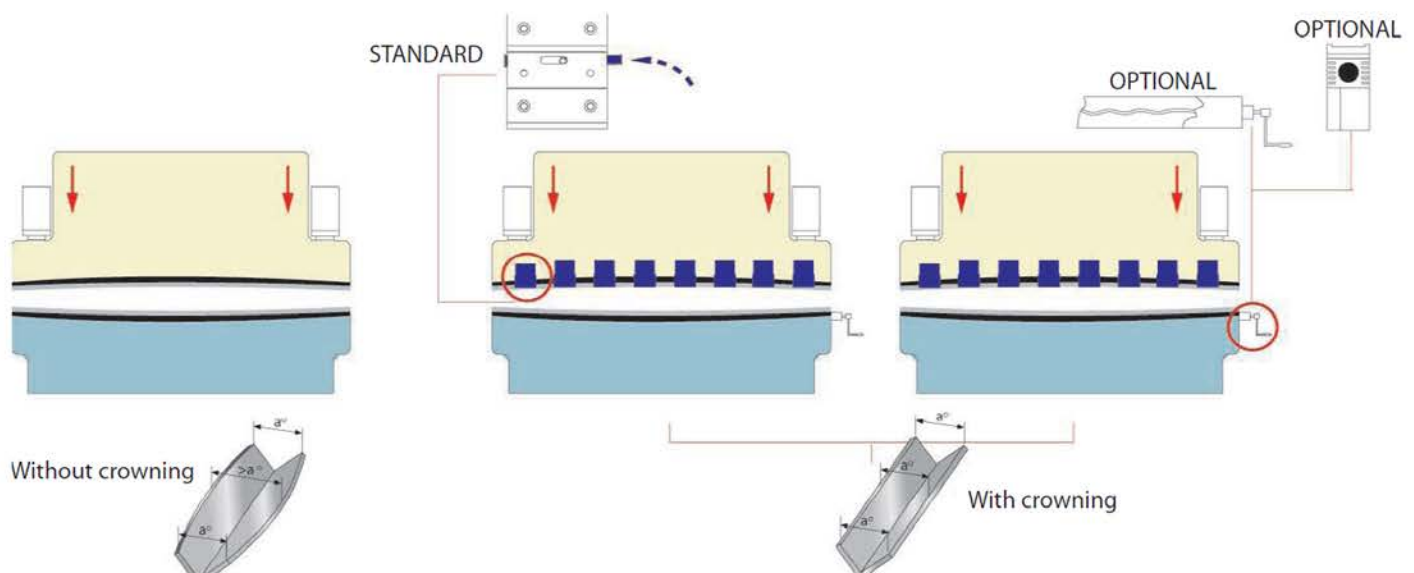
SAFETY

Due to the multiple purpose use of press brakes, point of operation guarding is the responsibility of the machine buyer/user. For this reason we offer the Akas ram mounted "laser" style point of operation guard. The system is based off of the location of the punch tip. Simply by pressing a button (ADS Series) the system travels down and finds the safe setting relevant to the punch being used at the time.



SHIMLESS BENDING

Both manual and automatic controlled crowning systems are available. The manual style is equipped with single point adjustment and position readout. In the case of the CNC type the setting is automatically calculated and set from normal program information. Different than manual crowning, the position is automatically set via CNC.



AD-R SERIES PRESS BRAKES

CONTROL UNITS

CNC ADVANTAGE (Standard)

With angle correction, bend sequence and allowance calculations, programming is easy with the Advantage CNC control. The operator simply selects material, punch and die from a library; enters the desired angles and flanges; then proceeds to bend the part.

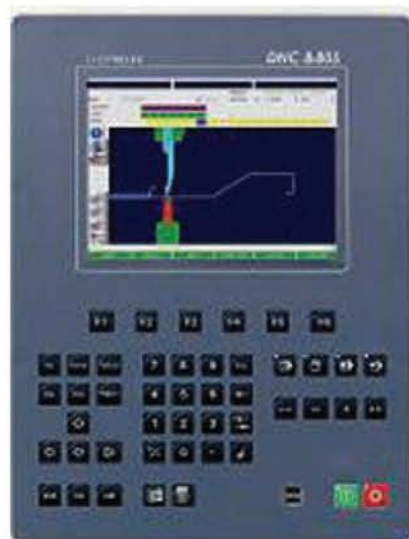
- » 2D Black and White 7.4" display
- » Graphic Display on Programming Screen
- » Easy Bend Function
- » Bend Sequence Calculation
- » Offline Programming Software
- » 85 Programs (12 steps per program)
- » 32 Punches and 32 Dies
- » Multiple Language with Direct Interpolation



CYBELEC DNC 880S CONTROL (Optional)

The DNC 880S provides easy to use graphical bend sequence calculation from very basic program info; tooling, bend angle, and flange length. This allows the operator to see how the part is sequenced prior to bending.

- » 2D Graphical Programming
- » 10" Color LCD TFT Display
- » Windows XP Operating System
- » Automatic Bend Sequence Calculation
- » Shear Length Calculation
- » USB Port for Storage & Backup
- » Product and Tool Memory
- » Graphic Tool Programming
- » Auto Bumping
- » Includes 2D Offline Software



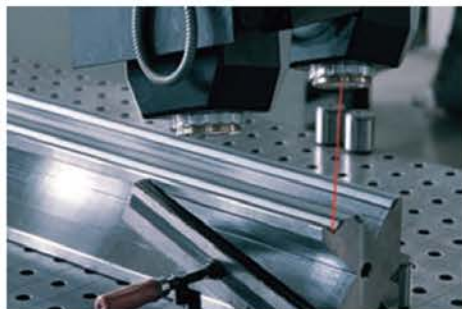
DELEM DA 56 CONTROL (Optional)

The DA 56 provides graphical bend sequence calculation from very basic program info; tooling, bend angle, and flange length. This allows the operator to see how the part is sequenced prior to bending.

- » 2D Graphical Programming
- » 10.4" Color LCD TFT Display
- » Alpha Numeric Programming
- » Bend Sequence Determination
- » Stretch Length Calculation (blank size)
- » USB Port for Storage & Backup
- » 2 MB Product and Tool Memory
- » Graphic Tool Programming
- » Auto Bumping
- » Angle Correction Database



AD-R SERIES PRESS BRAKES TOOLING & TOOL CLAMPING



DURMA LASER HARDENED TOOLING

Typically machines 350 tons and over are equipped as standard with an American style punch clamp and a large multi-vee table with five or more v-openings. The opening sizes are dependent on the machine tonnage.



PRECISION GROUND EURO-STYLE TOOL PACKAGE

A very flexible and affordable precision ground tooling package is available. It consists of a four way bottom die with .625"/88° - .866"/88° - 1.37"/85° - 1.96"/85° openings, a four way die holder, and a 75 degree punch with .030 radius. The longest punch or die is 32".



LEVER-STYLE QUICK RELEASE PUNCH CLAMPING

A push pull lever eliminates the need for loosening and tightening bolts for punch removal. This style does not allow vertical loading/unloading of tools with safety tang. Available for European style punches and is not self seating.



NEW STANDARD STYLE

The New Standard concept is also available. This concept is generally a little harder and utilizes the patented "hour glass" tang for self seating.



HYDRAULIC DIE CLAMPING

Hydraulic die clamping provides an equally fast method of securing the lower dies. It is available for both American and New Standard style dies.



AMERICAN STYLE TOOLING

Both precision ground and sectionalized tooling, as well as conventional full length style tooling is available.



DURMA HYDRAULIC PUNCH CLAMPING

Patented "easy slide" removal of the punch. Built to withstand loads up to 330 tons per foot for demanding jobs with heavy load over short area.



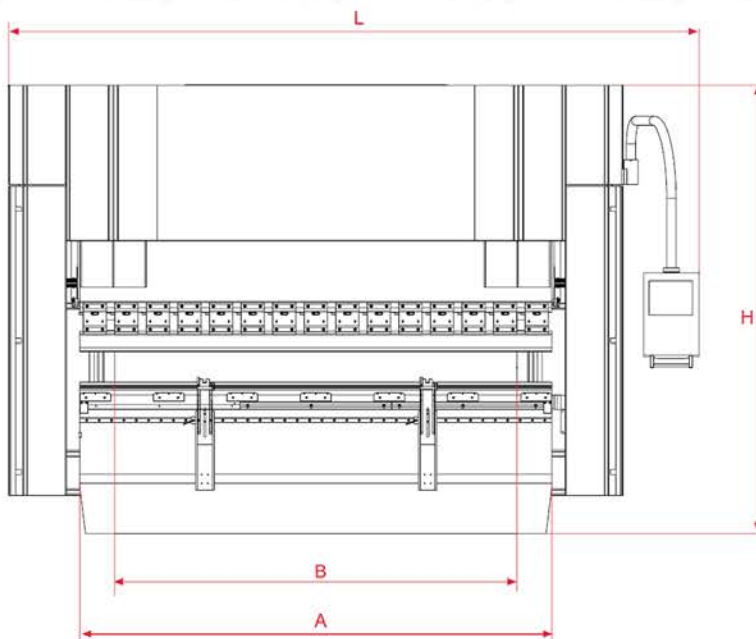
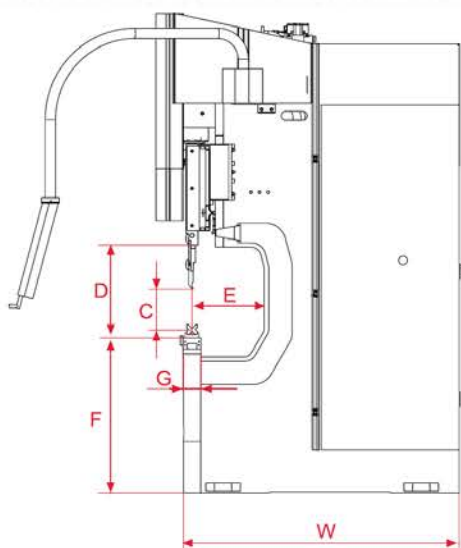
HYDRAULIC PUNCH CLAMPING

We offer several styles of hydraulic punch clamping. Each automatically centers & seats the punch & allows vertical removal. Setup times can be dramatically reduced. It is available for American & New Standard style concepts.



AD-R SERIES PRESS BRAKES

SPECIFICATIONS



R Series	Model	12 40	20 40	20 66	25 100	30 100	30 135	30 175	37 175	14 175	30 220	37 220	43 220	30 320	40 320	43 320	40 400	43 400	60 220	60 320	60 400
Bending force	U.S. ton	44	44	66	110	110	150	195	195	195	245	245	245	350	350	350	440	440	245	350	440
Bending length	(A) inch	49	80	80	100	120	120	120	145	168	120	145	168	120	159	168	159	168	240	240	240
Between columns	(B) inch	41	67	67	86	102	102	102	122	146	102	122	146	102	141	146	134	146	200	200	200
Y Rapid speed	ipm	354	354	472	425	425	378	283	283	283	282	282	282	236	236	236	236	236	236	236	236
Y Working speed	ipm	35	35	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	19
Y Return speed	ipm	236	236	283	283	283	283	236	236	236	236	236	236	236	236	236	189	189	236	236	189
Daylight	(D) inch	17	17	21	21	21	21	21	21	21	21	21	21	25	25	25	25	25	21	25	25
Table width	(G) inch	4	4	4	4	4	4	4	4	4	4	4	4.1	6	6	6	6	6	6	6	6
Table height	(F) inch	31	31	35	35	35	35	35	35	35	35	35	35	35	35	35	41	41	43	43	48
Stroke	(C) inch	6	6	10	10	10	10	10	10	10	10	10	10	10	14	14	14	14	10	14	14
Throat depth	(E) inch	14	14	16	16	16	16	16	16	16	16	16	16	16	16	16	20	20	16	16	20
Support arms	Qty	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	4	4
B.G. Gauge Fingers		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	4	4
X Axis Speed	ipm	590	590	590	590	590	590	590	590	590	5900	590	590	590	590	590	590	590	590	590	590
X Axis Travel	inch	19.7	19.7	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	29.5	29.5	29.5	29.5	29.5
Motor power	hp	5	5	10	15	15	20	25	25	25	30	30	30	50	50	50	50	50	30	50	50
Oil tank capacity	Gallon	15.9	15.9	26.4	26.4	26.4	39.6	66	66	66	66	66	66	66	66	66	118.9	118.9	66	66	132.1
Length	(L) inch	83	98	130	150	165	165	171	195	207	167	195	207	169	209	209	226	226	295	295	295
Width	(W) inch	49	51	65	66	66	66	67	67	67	70	70	70	72	75	75	83	83	70	75	83
Height	(H) inch	95	94	109	109	109	109	109	109	108	114	109	114	128	127	127	139	139	128	136	146
Weight (approx)	pounds	7,040	7716	12897	19070	20393	22597	24802	28600	29842	27007	31592	32518	38030	45746	47643	58974	59873	45393	62281	78815

Specifications are approximate and subject to change without notice.

OTHER DURMA PRESS BRAKES

Durma press brakes guarantee precision, low maintenance and operating costs, as well as long-term reliability. These features along with large investments in modern manufacturing equipment have made Durma the largest volume press brake producer in the world. All Durma press brakes are produced with modern design technology and incorporate rigid stress-relieved frames to increase your productivity with accurate part production. Demanding applications are easily achieved. A broad offering of sizes and features satisfy nearly all economical requirements.

AD-S SERIES

Unlimited possibilities and features provide faster and quicker setups. A wide assortment of material handling accessories and back gauge configurations allow the ADS to cost-effectively produce the most demanding parts.



Standard Equipment

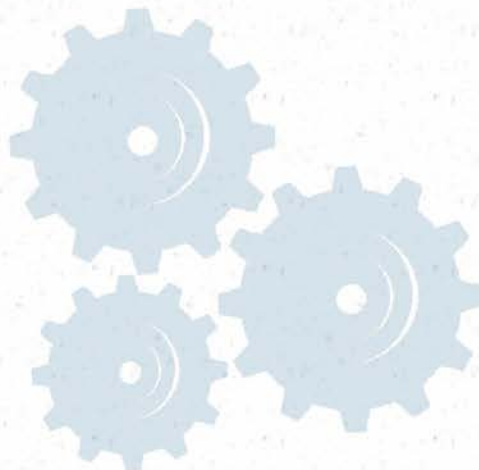
- » Large Stroke-Daylight-Throat
- » Y₁, Y₂ Ram Positioning
- » Delem DA 66 or Cybelec ModEva Graphic Control
- » Euro/American Style Punch Clamp
- » X/R Back Gauge
- » Quickset Sliding Front Sheet Support
- » CNC Table Crowning
- » Rear Work Light
- » Side and Rear Safety Doors
- » Laser Guarding

Capacities

- » 6' - 30' Lengths
- » Tandem & Trio
- » 44 - 3,000 Tons

Options

- » Up to Six Axis Back Gauge
- » Laser Style Angle Measuring System
- » CNC Controlled Sheet Followers
- » CNC Controlled Die Shuttle Systems
- » 3D Controller
- » 2D & 3D Programming Software



COMPANY PROFILE

DURMA AIMS FOR CONTINUOUS DEVELOPMENT

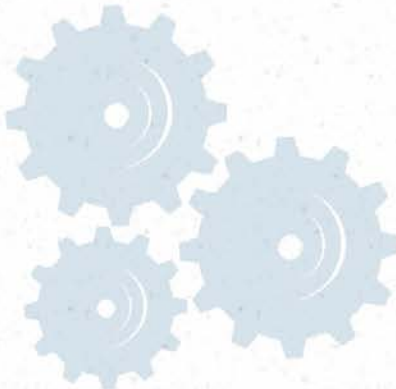
DURMA's large investment in machining centers and production equipment, as well as its ISO-certified factories totaling 1,350,000 square feet and 1,000 employees, make one of the world's largest, efficient and most contemporary facilities in the world.

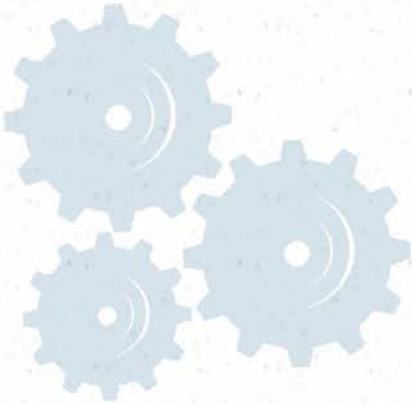
In order to offer customer solutions and further develop patents, the Durma Research and Development center opened in 2010. Fifty engineers were added over the last two years.

Designed and engineered with modern technology, Durma products are equipped with high quality and proven readily available components.

Established in 1956, Durma has vast experience in building and supplying quality products. With over 60,000 machines delivered worldwide, Durma has earned a reputation as a supplier of innovative "value oriented" solutions.

Your partner today, tomorrow, and forever.





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